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Stream Water-Quality Characteristics and Trends, James River Basin, North Dakota, 1949-95

Water-Resources Investigations Report 99-4187

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

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By M.E. Brigham and G.A. Payne

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Bismarck, North Dakota
1999

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Stream Water-Quality Characteristics and Trends, James River Basin, North Dakota, 1949-95

By M.E. Brigham *and* G.A. Payne

Abstract

Water-quality data collected at 16 water-quality-sampling sites in the James River Basin during 1949-95 were statistically summarized. Analysis of variance of data ranks was used to make comparisons among sites for selected constituents that had 20 or more analyses per site. Statistically significant differences among sites were indicated for specific conductance, dissolved solids, major ions, and nutrients. Regression analyses indicated negative relations to streamflow at most sites for specific conductance, dissolved solids, hardness, and most major ions. Several nutrients related positively to streamflow. Seasonal trends were prevalent for calcium, magnesium, sodium, potassium, sulfate, and chloride. Seasonal trends for nutrients were less frequent. Time trends were indicated for one or more constituents at all sites.

INTRODUCTION

Part of the Pick-Sloan Missouri River Basin program (Goolsby and others, 1989) consisted of a proposal to divert Missouri River water via the James River to areas in east-central and southeastern North Dakota for agricultural, environmental, industrial, municipal, and recreational uses. Because of concerns about the effects of irrigation return water on the water quality of the James River, water-quality information was collected for numerous streams in the James River Basin. In recent years, de-emphasis on the irrigation component of the Pick-Sloan Missouri River Basin program in North Dakota has lessened the need for intensive water-quality monitoring in the James River Basin, and, to date, Missouri River water has not been diverted into the basin. However, characterization of the water quality in the basin still is useful to water-resource planners. Knowledge of the spatial distribution of chemical constituents, for example, can be used to evaluate the effect of point discharges, and the relation of water quality to stream discharge and time of year is important in the design of water-withdrawal systems for municipal use. Therefore, in 1996, the U.S. Geological Survey conducted a study in cooperation with the Bureau of Reclamation to analyze data collected for streams in the James River Basin during 1949-95.

Purpose and Scope

The purpose of this report is to summarize stream water quality in the James River Basin. The characterization consists of a statistical summary of data collected at 16 water-quality-sampling sites in the basin during 1949-95 (fig. 1; table 1 at end of report). Of the 16 sites, 10 are on the main stem of the James River and the remaining 6 are on 5 James River tributaries. This report (1) provides statistical summaries of constituent concentrations, (2) describes similarities and differences in constituent concentrations between upstream and downstream sites, (3) describes the relation of constituent concentrations to streamflow, (4) describes seasonal trends in relation to constituent concentrations, and (5) describes time trends in constituent concentrations.

Description of Study Area

Spatial variability in water quality and water-quality trends often results from complex interactions within the natural framework of basin geomorphology, soils, biological organisms, and climate and human influences such as land use. Measurable differences in water quality within a river basin and detected trends can provide important information for more detailed studies that may be needed to understand cause-and-effect relations between natural and human influences. The following is a general overview of the terrain, soils, climate, and land use in the James River Basin.

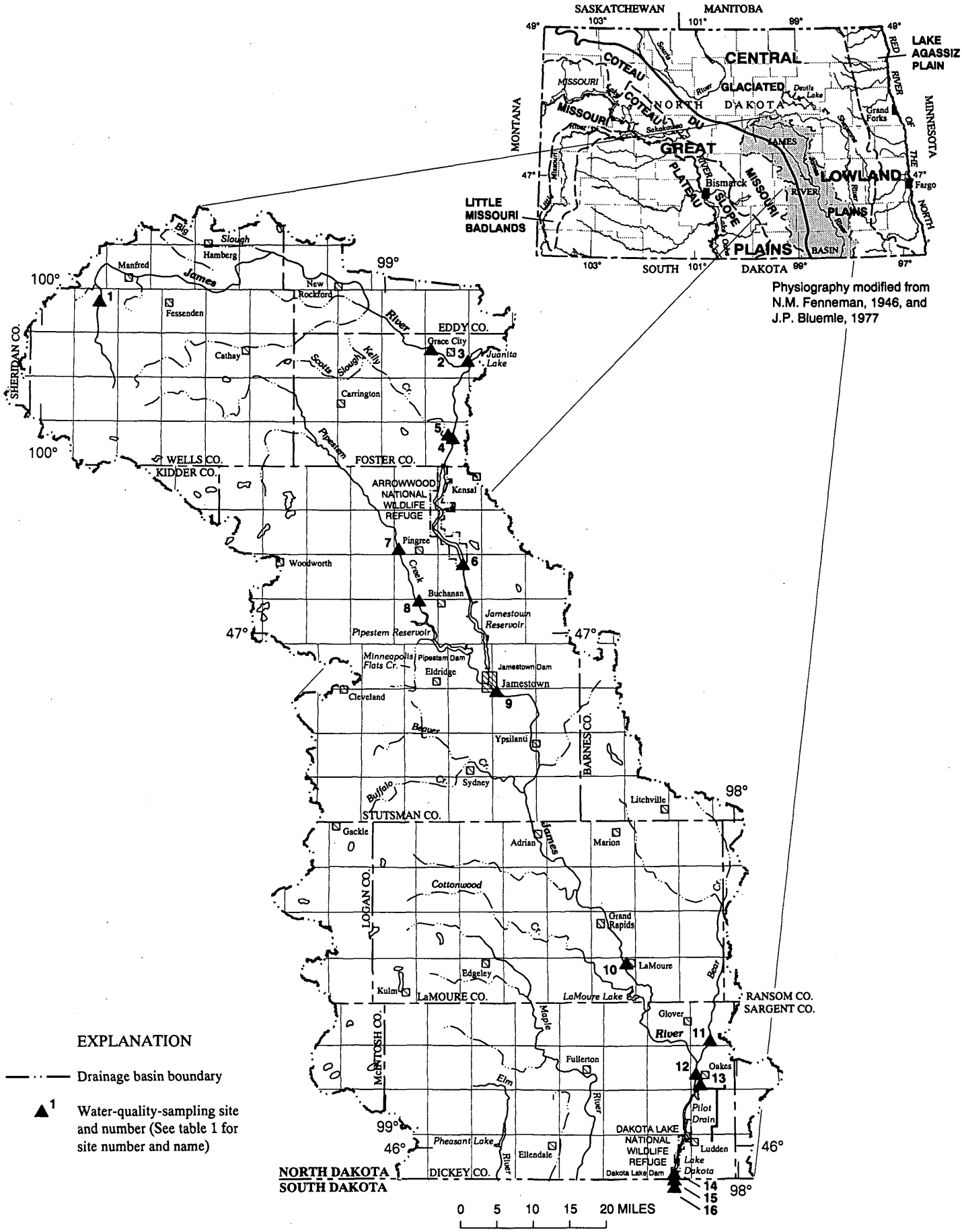

Figure 1. Locations of water-quality-sampling sites in the James River Basin, North Dakota, 1949-95.

The drainage area of the James River Basin at the North Dakota-South Dakota State line is 5,480 square miles. The total drainage area of the James River Basin in North Dakota, including the drainage area of the Maple River, which joins the James River in South Dakota, is about 6,547 square miles. A substantial part of the basin, about 3,300 square miles, usually is noncontributing because of the lack of an integrated stream system. The noncontributing part primarily is located along the western edge of the James River Basin in an area known as the Coteau du Missouri, a glacial stagnation area that contains numerous depressions surrounded by rolling hills and ridges that effectively isolate the depressional areas from stream drainage. The other prominent landscape features in the basin are gently undulating glaciated plains and a glacial lake plain.

The headwaters of the James River are in glacial-moraine deposits near Manfred. The river flows from the headwaters through an old glacial-meltwater channel until it reaches the lake plain of glacial Lake Dakota near Glover and then flows through the lake plain to the State line. The average channel slope from Manfred to the Arrowwood National Wildlife Refuge near Kensal is about 1.9 feet per mile. The channel slope is about 1.2 feet per mile from Jamestown to LaMoure and about 0.2 foot per mile downstream of LaMoure.

Natural lakes, low-head dams, and regulated reservoirs are located along the James River and its tributaries. The river flows through natural lakes and a marsh in the Arrowwood National Wildlife Refuge, where water levels are managed through a system of earthen dams and stoplog spillways. Low-head dams with fixed-crest spillways are located at or near New Rockford, Ypsilanti, Grand Rapids, LaMoure, and Ludden. Major reservoirs that are capable of storing and releasing water include the Jamestown Reservoir on the James River, Pipestem Reservoir on Pipestem Creek, and LaMoure Lake on Cottonwood Creek. Pipestem Creek and Cottonwood Creek are James River tributaries. Jamestown Reservoir was constructed in 1953, the dam impounding LaMoure Lake was constructed in 1973, and the dam impounding Pipestem Reservoir was constructed in 1974. The dams impounding LaMoure Lake and Pipestem Reservoir were constructed approximately at the midpoint of the period of water-quality records used in this report and near the beginning of the period of record used to evaluate time trends.

Decreasing channel slopes in the downstream part of the James River, along with lakes, channel pools, and reservoirs, may affect water quality, particularly as related to constituents associated with particles. Increased water residence time associated with diminished channel slopes and water impoundments probably results in the settling of particulate matter, an increase in biological processing, and a potential for periodic releases of some chemical constituents from accumulated organic and inorganic matter in the low velocity reaches.

Soils in the James River Basin are mostly loams or sandy loams. However, the soils vary considerably and range from silty clay loams to loamy sands.

Average annual precipitation, based on 1961-90 data, ranges from about 17 inches in the west-central part of the basin to about 20 inches in the south-central part of the basin (Owenby and Ezell, 1992). The highest average annual precipitation for the basin, 26.76 inches, was recorded in 1993. Annual potential evapotranspiration ranges from about 35 inches in the northern part of the basin to about 40 inches in the southern part of the basin. Actual evapotranspiration differs from potential evapotranspiration, depending on existing environmental conditions, and in this basin generally is slightly less than annual precipitation.

Land use is determined largely by terrain features, soil type, and climate. In the James River Basin, land use primarily is agricultural. In the Coteau du Missouri area of the basin, cropland, primarily small grains, is interspersed with a substantial amount of pasture land and hayed grasslands. The percentage of cropland increases in the glaciated plains, where row cropping becomes more prevalent, and is largest in the glaciated lake plain. A substantial amount of cropland was retired to grassland during the study period because of the establishment of the Federal Conservation Reserve Program in 1985.

The James River Basin is sparsely populated. The largest community, Jamestown, had a 1990 population of 16,000. Other communities in the basin generally have populations of less than 5,000 and most have populations of less than 1,000.

Approach and Methods

Water-quality data for 16 water-quality-sampling sites in the James River Basin were retrieved from the water-quality data base of the U.S. Geological Survey in North Dakota, yielding data for 2,015 water samples. Codes specifying the collecting and analyzing agencies indicated that 963 samples were collected by the U.S. Geological Survey, 20 samples were collected by the North Dakota State Water Commission, and 1,032 samples were of unknown origin. Similarly, of the 2,015 samples, 1,028 were analyzed by the U.S. Geological Survey and 111 were analyzed by the North Dakota State Water Commission. Codes specifying the collecting and analyzing agencies frequently were missing for samples collected during the 1950's through the early 1970's but were included for the 980 samples collected during 1982-95. During 1982-95, 960 samples were collected by the U.S. Geological Survey, and 20 samples were collected by the North Dakota State Water Commission. The U.S. Geological Survey analyzed 918 of the 980 samples, and the North Dakota State Water Commission analyzed 62 of the 980 samples.

Constituent concentrations that were too low to be quantified by an analytical method (censored data) were reported in the data base as zero or as less than a specified reporting limit. Furthermore, reporting limits for some constituents changed with time. Therefore, for some of the graphical and statistical analyses used to prepare this report, all data for a constituent were censored at a common reporting limit. Typically, data were censored at the highest reporting limit for each constituent. For example, censored data for nitrite plus nitrate as nitrogen were reported as zero, <0.01, <0.02, <0.05, <0.09, or <0.1 milligram per liter (mg/L). These and all uncensored data reported at a concentration of <0.1 mg/L were censored at <0.1 mg/L for data analysis. In this example, <0.1 mg/L was the most frequently used reporting limit for nitrite plus nitrate as nitrogen.

An exception to this approach was used for some constituents that had a few data censored at anomalously high levels (at least ten times greater than the commonly used reporting limit) and where censoring data at that level would eliminate most of the useful data for that constituent. In each of these cases, the anomalously high reporting limit was associated with less than 1 percent of the data for that constituent. Therefore, the next highest reporting limit was selected as the censoring level, and the data censored at levels greater than the selected level were set to the selected level. For example, of 837 analyses for dissolved phosphorus, 1 was reported as zero, 18 were reported as <0.01 mg/L, 3 were reported as <0.2 mg/L, and 1 was reported as <1.0 mg/L. The values of zero, <0.2 mg/L, and <1.0 mg/L were set to <0.01 mg/L. Any dissolved phosphorus values between zero and 0.01 mg/L, had they existed in the data base, also would have been set to <0.01 mg/L.

Data censored according to these guidelines were used for the statistical summaries given in this report and to determine detection frequencies. For site comparisons and regression analyses, the same data set was used but the less-than symbol was ignored (for example, <0.01 mg/L was treated as 0.01 mg/L). Further details of the statistical analyses are discussed, as needed, in later sections. Helsel and Hirsch (1992) summarized the technical issues that relate to many of the analyses and explained most of the statistical terms used in this report. Additional references are noted where applicable. Generally, tests or results are described as significant if p is less than α. p is the attained significance level (also called the p-value) calculated from the data and the test procedure, and α is the critical significance level. For this report, α equals 0.05 was used as the critical significance level.

For the Shapiro-Wilk test for normality, the null hypothesis is that the data are normally distributed. A test statistic, W, and the probability, p, that W (or a less probable W) could result if the data actually are normally distributed are calculated. If p is less than α, the null hypothesis is rejected, and the conclusion is made that the data probably are not normally distributed. For this report, results of the Shapiro-Wilk test (next section and table 2 at end of report) indicate that most data were not normally distributed. Therefore, rank-transformed data were used for statistical site comparisons.

For regression results, t-tests for the coefficients of each independent variable indicate whether the coefficient is significantly different from zero. A significant coefficient (p is less than 0.05) is indicated by a significant relation between the independent variable (for example, the logarithm of streamflow) and the dependent variable (for example, the concentration). Because some users of this report may have different criteria, p-values are included in the tables. Further details of the t-tests are given in sections where test results are presented.

Most trace-element data reported herein were collected before the implementation of improved sampling protocols for trace-inorganic constituents (excluding mercury) at the microgram-per-liter level (Horowitz and others, 1994). Before

1994, element concentrations in the low microgram-per-liter range and below could be biased by contamination introduced in the sampling process (Horowitz and others, 1994). Low or zero frequency of detection of dissolved cadmium, chromium, cobalt, copper, lead, selenium, silver, and vanadium indicates a lack of sample contamination at detectable levels for these elements. The more frequent detection of mercury and zinc at concentrations much higher than those generally detected in uncontaminated rivers (Shiller and Boyle, 1985; Babiarz and Andren, 1995) warrants caution.

Acknowledgments

U.S. Geological Survey personnel Dave Lorenz, Aldo (Skip) Vecchia, and Charles Crawford provided statistical advice. Wayne Berkas and Debra Sneck-Fahrer, also of the U.S. Geological Survey, provided helpful review comments.

WATER-QUALITY CHARACTERISTICS

Summaries by Site

Statistical summaries given in table 2 provide basic information for each water-quality-sampling site. The summaries were obtained from the UNIVARIATE procedure using SAS software (SAS Institute, 1988). The information includes the sample size (the number of samples collected), the number of samples that had concentrations greater than or equal to the reporting limit (uncensored data), and the period of record. Also included are the minimum, mean, median, and maximum values as well as the 10th-, 25th-, 75th-, and 90th-percentile values. Mean values calculated using substitutions (either zero or the censoring level as previously described) for censored data are listed in separate columns in the table. The last two columns, which give the p-values for the Shapiro-Wilk test for normality, can be used to determine whether the untransformed data and the $\log_e$-transformed data are normally distributed. Low p-values (values less than 0.05) indicate non-normality.

Using an example from table 2, the statistical summary for site 2 for dissolved sulfate indicates 82 samples were collected between April 26, 1972, and August 29, 1995. The concentrations were greater than or equal to the reporting limit in all samples and ranged from 25 mg/L to 440 mg/L. The median concentration was 145 mg/L, and one-half of the concentrations ranged from 82 mg/L (25th percentile) to 210 mg/L (75th percentile). The p-values for the Shapiro-Wilk test for normality for both untransformed (p equals 0.0011) and $\log_e$-transformed (p equals 0.0036) data indicate that the data are not normally distributed.

The analytical results are summarized in table 2 although the sample size is small for some constituents, especially trace elements. The small sample size resulted from infrequent sampling for those constituents. If the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; and if the sample size equals 1 or 2, the median is not shown.

Summaries by Constituent

Statistical summaries given in table 3 (at end of report) are arranged by constituent, rather than by site as in table 2, to allow for site-to-site comparisons for a constituent of interest. The basic information given in table 3 is the same as that given in table 2.

Comparisons Among Sites

Box plots combined with site groupings (figs. 2 through 7) show similarities and differences for selected constituents that had 20 or more analyses per site. The constituents include physical properties, major ions, nutrients, and suspended sediment. For each constituent, an analysis of variance (ANOVA) of data ranks for each site was conducted using the general linear-model procedure (SAS Institute, 1989a, 1989b). The sites then were assigned to groups using the

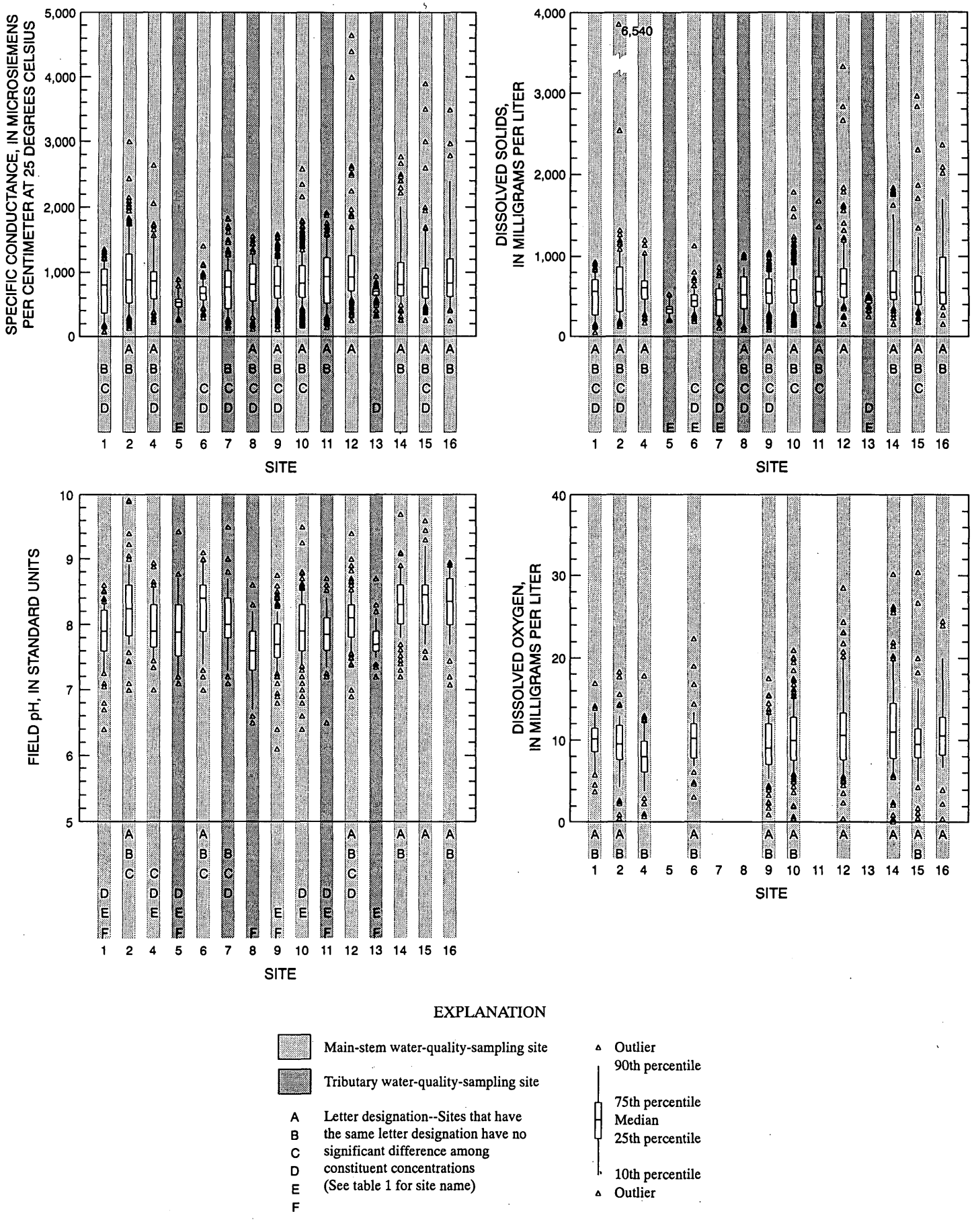

Figure 2. Specific-conductance values, dissolved-solids concentrations, pH values, and dissolved-oxygen concentrations at selected sampling sites in the James River Basin, North Dakota.

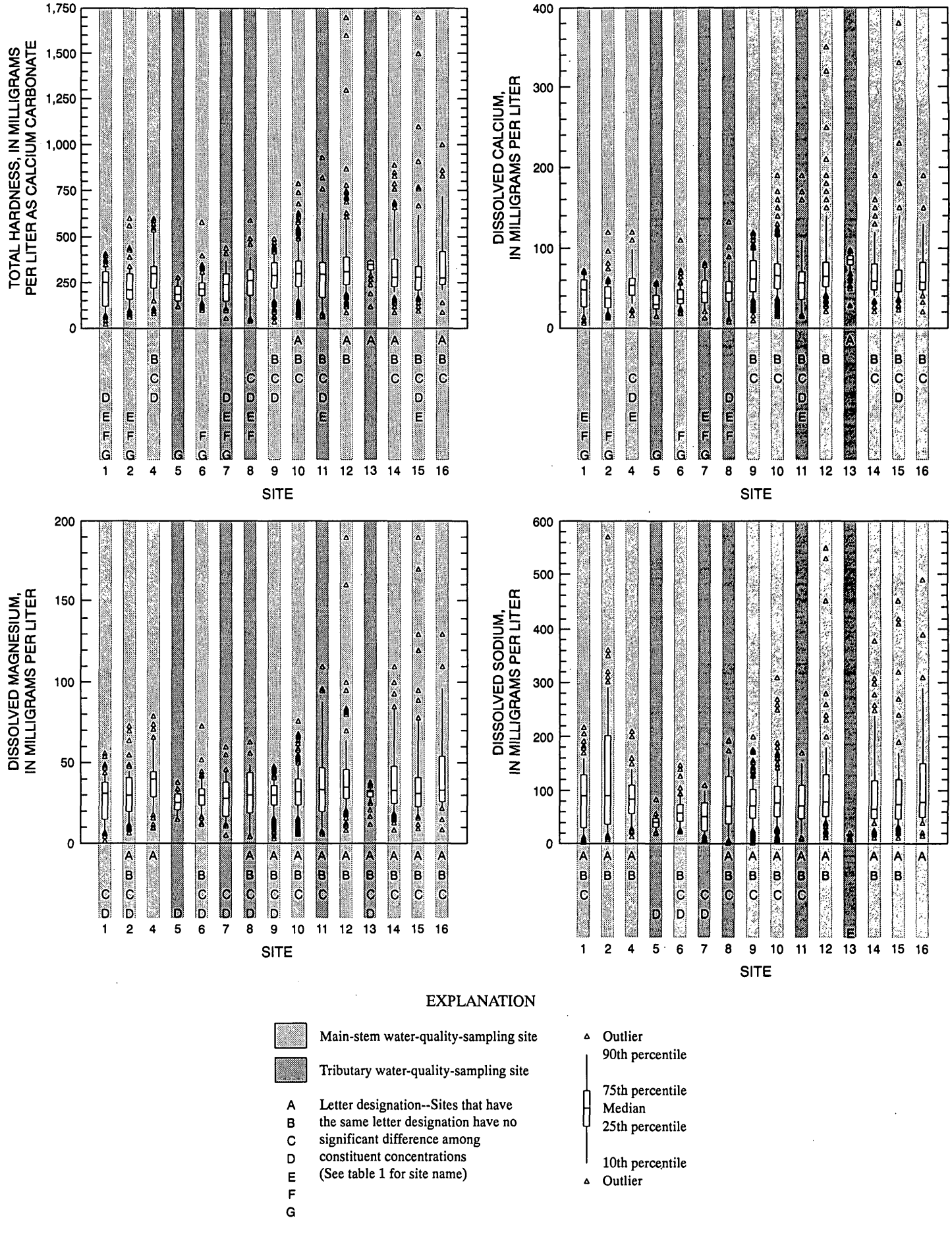

Figure 3. Total hardness values and dissolved calcium, magnesium, and sodium concentrations at selected sampling sites in the James River Basin, North Dakota.

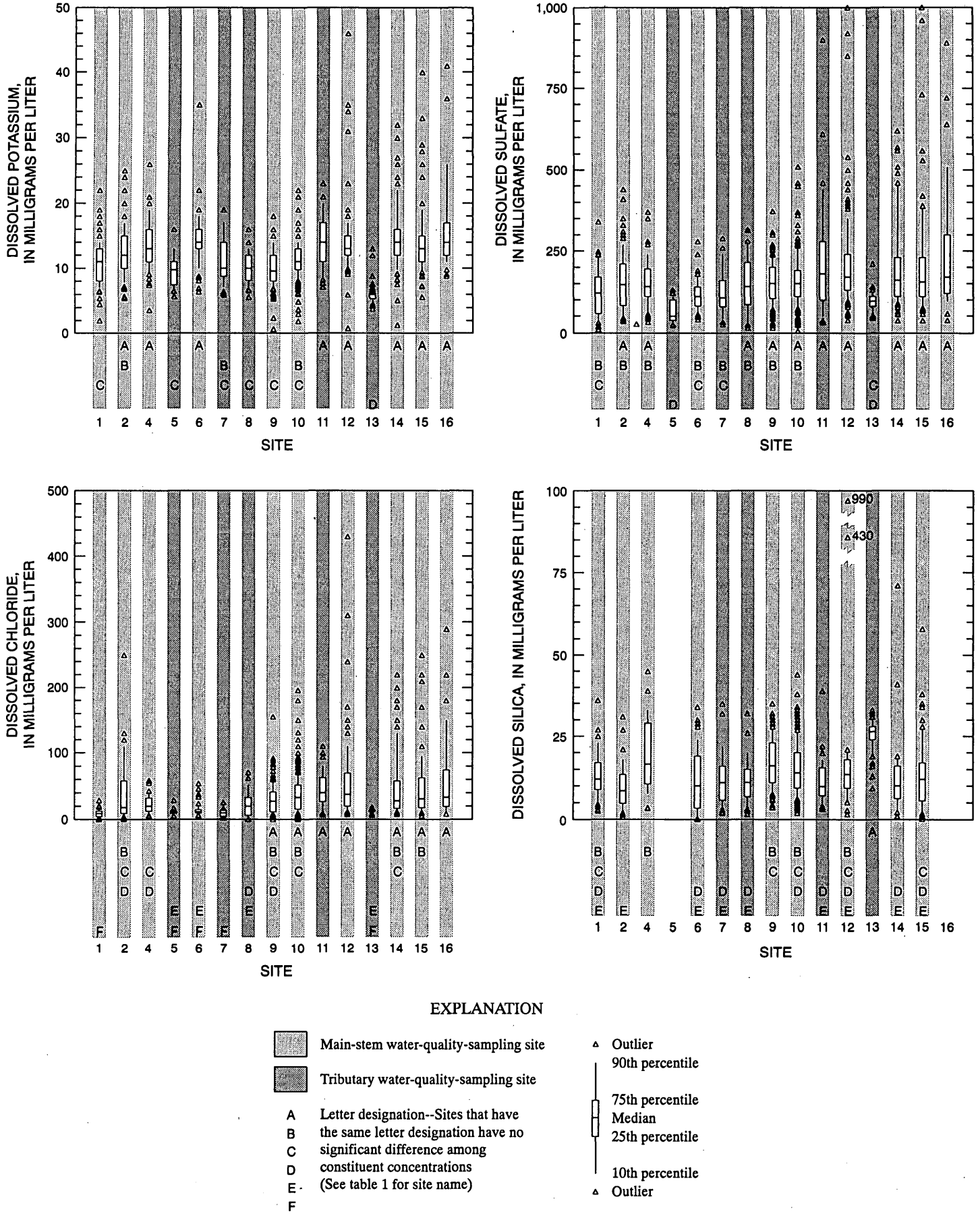

Figure 4. Dissolved potassium, sulfate, chloride, and silica concentations at selected sampling sites in the James River Basin, North Dakota.

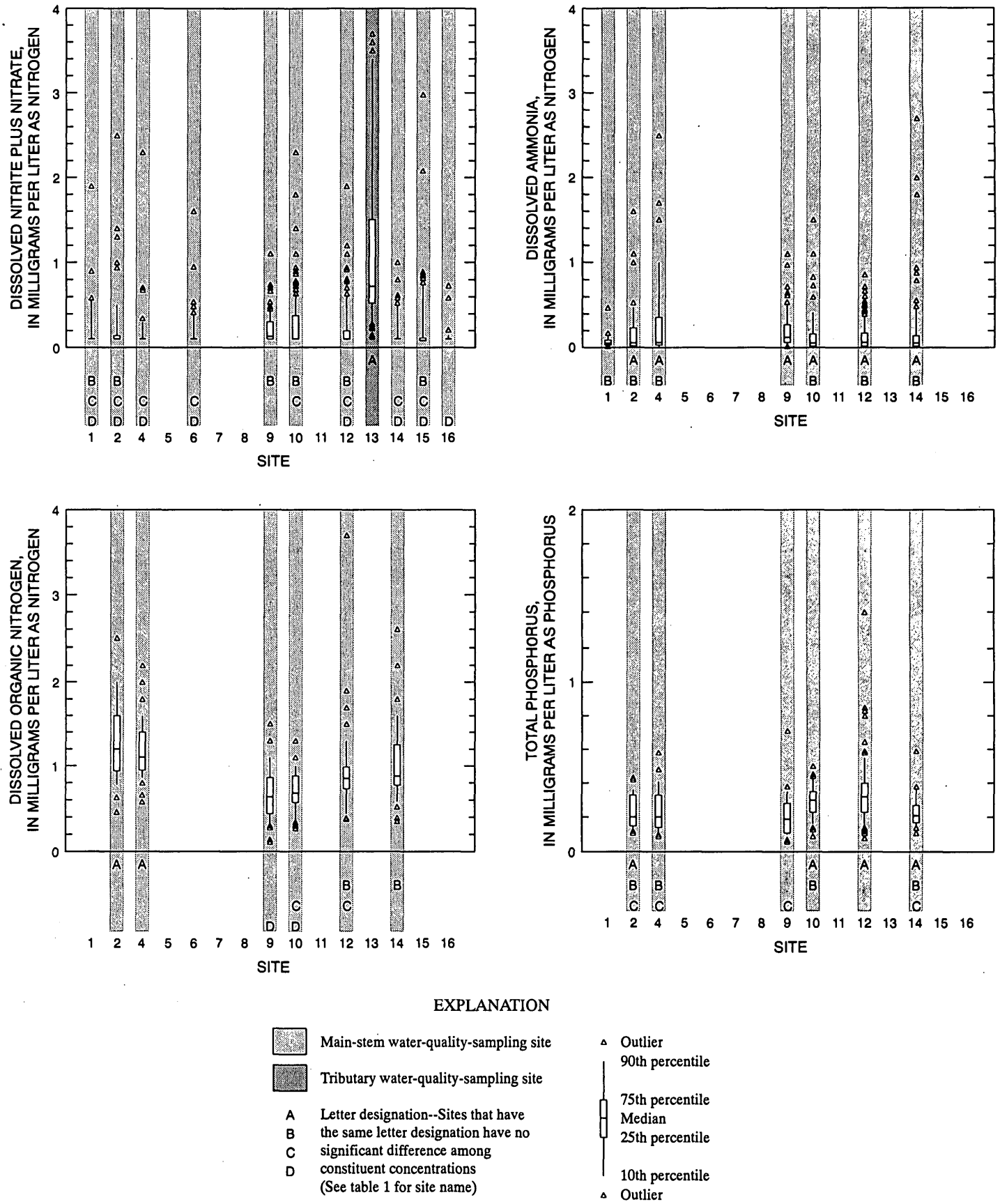

Figure 5. Dissolved nitrite plus nitrate, ammonia, and organic nitrogen concentrations and total phosphorus concentrations at selected sampling sites in the James River Basin, North Dakota.

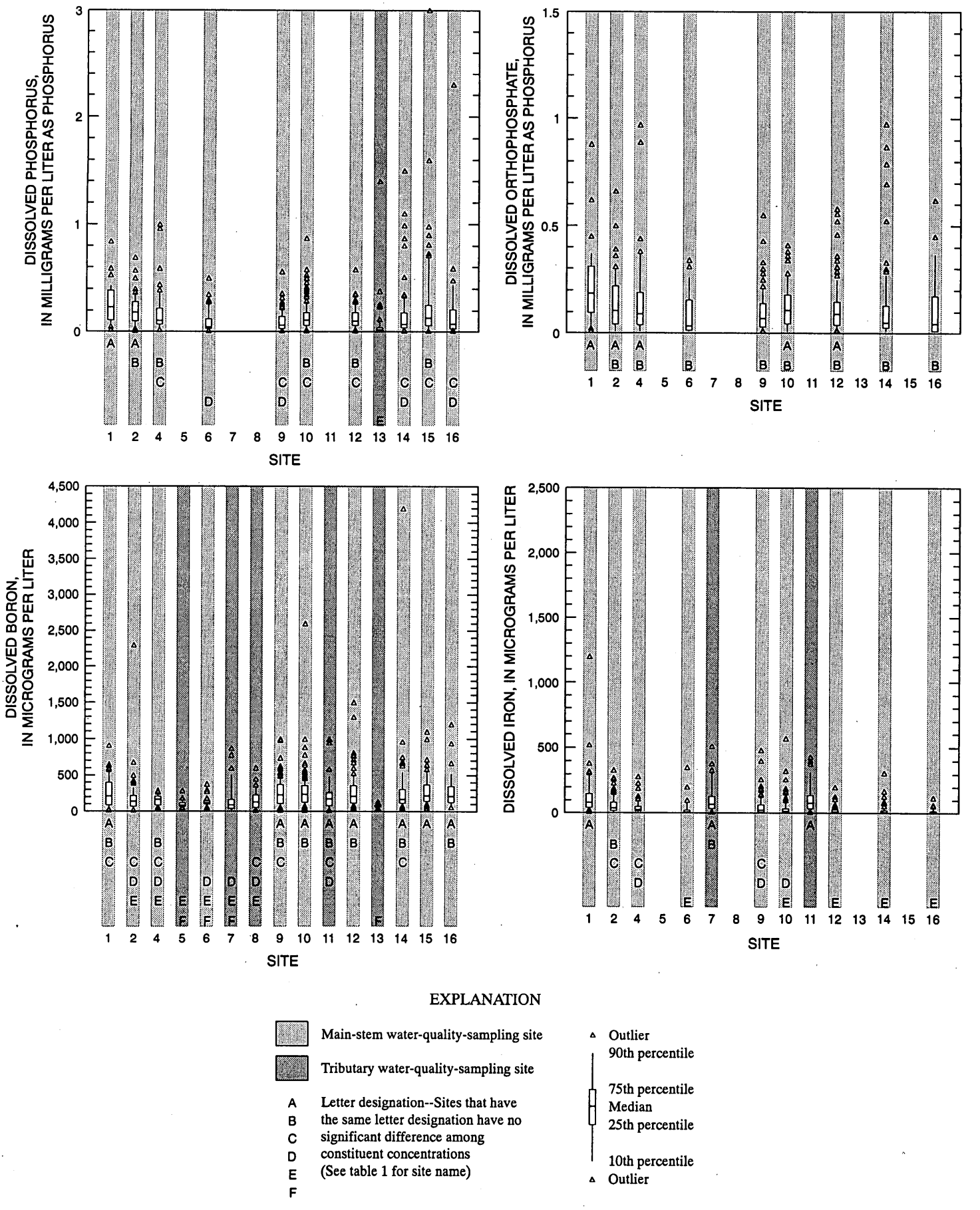

Figure 6. Dissolved phosphorus, orthophosphate, boron, and iron concentrations at selected sampling sites in the James River Basin, North Dakota.

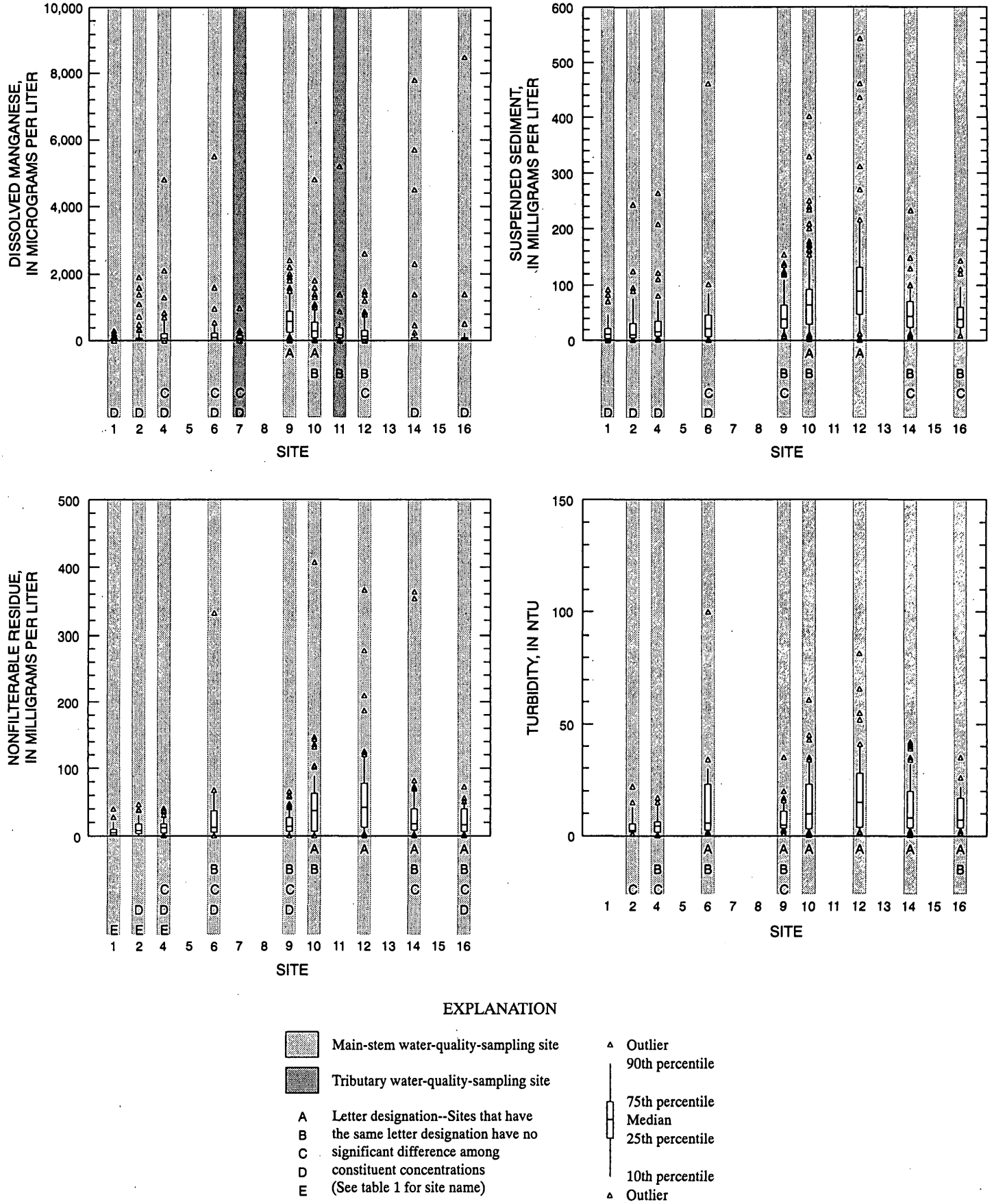

Figure 7. Dissolved manganese concentrations, suspended-sediment concentrations, nonfilterable-residue concentrations, and turbidity values at selected sampling sites in the James River Basin, North Dakota.

Tukey-Kramer method (SAS Institute, 1989b). Use of data ranks in parametric tests (for example, ANOVA, Tukey-Kramer) is preferred because the tests lose little power when the data are normal and are more robust to violation of the assumption of normality (Conover and Iman, 1981). Box plots were not compiled for site 3 because each of the constituents at that site had less than 20 analyses.

Output from the Tukey-Kramer analysis results in a letter designation (A, B, C, etc.) for each site. Sites that have the same letter designation have no significant differences among the concentrations for the constituents being tested at α equals 0.05. The box plots shown in figures 2 through 7 give a visual indication of the differences among sites, and the letter designations indicate whether the differences are significant. The sites are arranged from left to right in downstream order.

Differences among sites can result from different sampling periods. If a time trend is present and a site was sampled frequently during that period, the indicated water-quality differences among the sites may be largely related to the trend. For example, climatic cycles, such as drought, can affect constituent concentrations. If one site is sampled frequently during an extended drought and another is sampled infrequently or not at all during the drought, the indicated differences between the two sites may be largely related to the nonconcurrent sampling periods. Effects of the different sampling periods may override possible effects of land use, physiographic setting, pollution, and other factors, but results for sites 7 and 8, both of which are located on Pipestem Creek, indicate the different sampling periods may not pose a serious problem. Although sites 7 and 8 were sampled nonconcurrently, the concentrations for most constituents have no significant differences.

Properties and Dissolved Solids

Specific conductance is a measure of the ability of water to conduct electricity. The ability of water to conduct electricity is proportional to the concentration of dissolved ions. The greater the concentration of ions, the greater the ability to conduct electricity and the larger the specific-conductance value. Thus, specific conductance is related to the dissolved solids in the water. Because ions have different charges (for example, sodium has a charge of +1 and calcium and magnesium have a charge of +2), the mixture of ions in the water controls the proportionality between dissolved solids and specific conductance. For the James River, the mean ratio between dissolved solids and specific conductance is 0.66 and the ratio ranges from 0.42 to 1.07.

Median specific-conductance values and dissolved-solids concentrations for the James River main-stem sites increased slightly from site 1 to sites 2 and 4, decreased at site 6, increased to a maximum at site 12, and plateaued at sites 14, 15, and 16 (fig. 2). The decrease in dissolved-solids concentrations between sites 4 and 6 was significant. Kelly Creek (site 5) had significantly lower specific-conductance values than all other sites and lower dissolved-solids concentrations than most other sites. Inflow of more dilute water from the creek probably affected the values and concentrations at site 6, which is located on the main stem of the James River. The increases in specific-conductance values and dissolved-solids concentrations between sites 6 and 12 also were significant.

Dissolved-solids concentrations at Kelly Creek (site 5) and Pilot Drain (site 13) were similar and were lower and less variable than at most other sites. Specific-conductance values had a similar pattern but were slightly (and significantly) higher at site 13 than at site 5. The values and concentrations for two tributaries, Pipestem Creek (sites 7 and 8) and Bear Creek (site 11), were similar to those for the James River main-stem sites.

pH values were similar for some main-stem sites but not for others (fig. 2). At sites 9 and 10, pH values were significantly lower than at sites 6, 14, 15, and 16. The difference between pH values at sites 7 and 8 also was significant. The median value for site 7, which was sampled during 1974-95, was about 0.4 unit greater than the median value for site 8, which was sampled during 1957-74 (table 3). To assess the validity of this apparent temporal increase, pH values for other sites that had more than 20 pH measurements during each of those time periods were evaluated. The median pH value for site 9 increased 0.3 unit, and the value for site 10 increased 0.4 unit. In contrast, the values for sites 12 and 13 changed less with time. The value for site 12 decreased 0.02 unit, and the value for site 13 decreased 0.1 unit. Thus, no consistent temporal bias existed.

The differences among dissolved-oxygen concentrations for all sites generally were not significant (fig. 2). The concentrations varied widely at each site and ranged from near zero to more than 20 mg/L at several sites. Those concentrations greater than 14 mg/L indicate supersaturated conditions, which may be caused by high rates of photosynthesis.

Total hardness values generally increased from upstream to downstream in the basin (fig. 3). Sites 1, 2, 5, 6, and 7 had significantly lower hardness values than sites 10, 12, 13, 14, and 16. Some sites, particularly main-stem sites located downstream from Jamestown, had wide ranges in total hardness values. These wide ranges were in contrast to the relatively narrow ranges for site 5 on Kelly Creek and site 13 on Pilot Drain.

Major Ions and Silica

The patterns for major ions and silica generally reflect the patterns for specific conductance and dissolved solids. For Pilot Drain (site 13), specific-conductance values and dissolved-solids concentrations were relatively low; calcium, magnesium, and silica concentrations were relatively high; and sodium, potassium, sulfate, and chloride concentrations were low.

Median dissolved calcium concentrations at sites 1, 2, 4, 5, and 6 in the upstream part of the James River Basin indicate site-to-site variability. Concentrations at site 4 were significantly higher than those at sites 2 and 6, but concentrations at site 6 were significantly lower than those at site 9 (fig. 3). The differences among concentrations at sites 9 through 16 in the downstream part of the basin were not significant. Generally, concentrations at sites 9 through 16 were significantly higher and had a wider range than concentrations at sites 1 through 8 in the upstream part of the basin. Concentrations that ranged from 100 to 300 mg/L or more were more common in the downstream part of the basin, and concentrations at site 13 were significantly higher than those at all other main-stem and tributary sites.

Few significant differences occurred in dissolved magnesium concentrations along the main stem of the James River (fig. 3). Concentrations increased significantly from site 1 to site 4 and then decreased slightly at site 6. Differences among concentrations at the downstream main-stem sites were not significant. Concentrations in the downstream part of the basin had a wider range than those in the upstream part and occasionally exceeded 100 mg/L.

The differences among dissolved sodium concentrations at the main-stem sites were not significant, except that concentrations at site 6 were significantly lower than those at site 16 (fig. 3). Concentrations at sites 5 and 13, two tributary sites, had a narrower range than those at the main-stem sites and other tributary sites. Concentrations at site 13 were significantly lower than those at all other sites.

Dissolved potassium concentrations increased along the main stem of the James River between sites 1 and 6 and then decreased significantly between sites 6 and 9 (fig. 4). The decrease possibly was caused by inflow of low-potassium water from Pipestem Creek (sites 7 and 8). Downstream from site 9, potassium concentrations increased significantly along the James River. Concentrations at site 5 were significantly lower than those at sites 4 and 6 on the main stem, and concentrations at site 13 were significantly lower than those at all other sites.

Dissolved sulfate concentrations at the James River main-stem sites generally increased from upstream to downstream (fig. 4). Concentrations at sites 12, 14, 15, and 16 were significantly higher than those at sites 1 and 6. Median concentrations gradually increased from 100 mg/L at site 6 to 170 mg/L at site 12. Concentrations at sites 5 and 13, two tributary sites, were significantly lower and varied less than those at most main-stem sites and those at sites 7, 8, and 11, which also are tributary sites. Occasionally, concentrations of 500 to 1,000 mg/L occurred downstream of Jamestown.

Dissolved chloride concentrations varied significantly along the upper part of the main stem upstream from Jamestown (fig. 4). Concentrations at site 2 were significantly higher than those at site 1 on the main stem, but concentrations at site 6 were significantly lower than those at sites 4 and 9 on the main stem. The differences among concentrations at the main-stem sites downstream from Jamestown were not significant. Concentrations greater than 100 mg/L occurred more often along the lower part of the main stem downstream from Jamestown than along the upper part of the main stem upstream from Jamestown. Concentrations at site 13 were significantly lower than those at nearby main-stem sites and those at site 11, a tributary site located near site 13.

Dissolved silica concentrations were higher at site 4 than at sites 2 and 6 (fig. 4). Concentrations at site 9 were significantly higher than those at site 6, and concentrations at site 13 were significantly higher than those at all other sites.

Nutrients

Median dissolved nitrite concentrations were less than the reporting limit (0.02 mg/L as N) at all sites where 20 or more samples were collected. Median dissolved nitrite plus nitrate concentrations were less than the reporting limit (0.10 mg/L as N) at all but two sites (fig. 5). Concentrations at site 13 ranged from 0.13 to 3.7 mg/L as N and were significantly higher than those at other sites in the basin.

Dissolved ammonia samples were collected mostly during 1981-95. However, at site 12, samples were collected during 1969-95. The tributary sites were not sampled often enough for statistical evaluation. The differences in ammonia concentrations among the main-stem sites were not significant except that concentrations at site 9 were significantly higher than those at site 1 (fig. 5).

Only six sites, all of which are on the main stem, had sufficient data to evaluate dissolved organic nitrogen. All of the samples were collected during a relatively short period (1987-95). Concentrations at sites 2 and 4 in the upstream part of the basin were significantly higher than those at sites 9, 10, 12, and 14 in the downstream part of the basin (fig. 5). Concentrations at site 14 in the downstream part of the basin were significantly higher than those at sites 9 and 10.

Only six sites, all of which are on the main stem, had sufficient data to evaluate total phosphorus. Total phosphorus concentrations at sites 2 and 4 in the upstream part of the basin were similar to those at site 9 at Jamestown (fig. 5). Concentrations downstream of Jamestown at sites 10 and 12 were significantly higher than those at site 9.

Median dissolved phosphorus concentrations gradually decreased from 0.23 mg/L as P at site 1 on the main stem to 0.05 mg/L as P at site 6 on the main stem (fig. 6). This decrease may reflect uptake and utilization of soluble phosphorus in Arrowwood National Wildlife Refuge. Only one tributary, Pilot Drain at site 13, had sufficient data to evaluate dissolved phosphorus. Concentrations at site 13 were significantly lower than those at the main-stem sites. However, dissolved phosphorus sampling at site 13 ended in 1983, and sampling at most other sites continued through 1995. Median dissolved orthophosphate concentrations also decreased between sites 1 and 6 on the main stem (fig. 6).

Trace Elements

Median dissolved boron concentrations decreased between sites 1 and 6 on the main stem and then nearly doubled between sites 6 and 9 (fig. 6). Concentrations at site 13 were significantly lower than those at other sites downstream of Jamestown.

Dissolved iron concentrations decreased significantly between sites 1 and 6 on the main stem and then increased significantly between sites 6 and 9 (fig. 6). The increase between sites 6 and 9 may be a result of inflow from Pipestem Creek, which had concentrations that were significantly higher than those at sites 6 and 9. Concentrations decreased downstream of site 9.

The differences among dissolved manganese concentrations at the main-stem sites and the tributary sites upstream of Jamestown were not significant (fig. 7). However, median concentrations increased about sixfold between site 6, which had a concentration of 89 micrograms per liter (µg/L), and site 9, which had a concentration of 570 µg/L. Concentrations decreased downstream of site 9. Concentrations at site 12 were significantly lower than those at site 9, and concentrations at sites 14 and 16 were significantly lower than those at site 12. The sampling periods for sites 14 and 16 were shorter than those for sites 9, 10, and 12.

Suspended Sediment

Median suspended-sediment concentrations were lowest in the upstream part of the basin. Concentrations at sites 1, 2, and 4 in the upstream part of the basin were significantly lower than those at sites 9, 10, 12, 14, and 16 in the downstream part of the basin (fig. 7). Median concentrations increased steadily from 22 mg/L at site 6 to 89 mg/L at site 12 and then

decreased significantly at sites 14 and 16. Concentrations at site 12 were significantly higher than those at all other sites except site 10.

Nonfilterable residue, often termed total suspended solids, is a measure of the amount of suspended material in a water sample. The analytical procedures for residue and suspended sediment differ. Suspended-sediment concentrations are determined from the entire contents of a whole-water sample, and nonfilterable-residue concentrations are determined using a pipetted subsample of a whole-water sample. The nonfilterable-residue procedure often underestimates the amount of suspended material, especially if the sample contains a significant percentage of sand-sized particles. Median nonfilterable-residue concentrations along the main stem steadily increased between sites 1 and 12 and then decreased between sites 12 and 16 (fig. 7). The analysis of nonfilterable-residue data supports the analysis of suspended-sediment data.

Turbidity data generally reflect the patterns of the suspended-sediment and nonfilterable-residue data although statistical differences among sites are not as pronounced for turbidity (fig. 7). Turbidity values were low in the upstream part of the basin, increased in the middle part of the basin, and slightly (not significantly) decreased in the downstream part of the basin (sites 14 and 16; fig. 7). Turbidity relates to the concentration and particle sizes (clay, silt, and sand) of suspended material and, thus, is an imperfect surrogate for suspended sediment.

WATER-QUALITY TRENDS

Regression analyses were used to evaluate the relation of constituent concentrations to streamflow, season, and time. Information about the relations to streamflow and season can be useful to water users, managers of waste-load allocation, and designers of water-quality monitoring programs. Also, streamflow and season frequently impart variability to water quality and should be accounted for when evaluating trends (Helsel and Hirsch, 1992). This section describes the regression approach, highlights exploratory analyses of specific-conductance data at sites 9 and 10 to illustrate the regression analyses, and summarizes regression-model results for other constituents and sites.

Regression analyses were used to evaluate major-ion, nutrient, and suspended-sediment data for sites that had 30 or more samples for the period of interest. The REG procedure (SAS Institute, 1989b) was used for the evaluation. The regression analyses were conducted for study purposes only and were not intended for predicting concentrations.

To evaluate the relation of constituent concentrations to streamflow, season, and time, the following regression equations were used:

$$\text{conc.} = A + B\log_e(Q) + C\sin(2\pi t) + D\cos(2\pi t) + Et \quad (1)$$

and

$$\log_e(\text{conc.}) = A + B\log_e(Q) + C\sin(2\pi t) + D\cos(2\pi t) + Et \quad (2)$$

where

conc. is the constituent concentration (includes specific conductance, which is not strictly a concentration; see table 2 for units);

A through E are regression coefficients;

$\log_e$ is the natural (base-e) logarithm;

Q is streamflow, in cubic feet per second;

sin and cos are sine and cosine (trigonometric functions);

π is 3.14159; and

t is time, in years, since January 1, 1960 (for example, July 1, 1980, has a value of $t = 20.50$).

The significance of regression coefficients can be affected by outlier values. The effect of outliers was eliminated by conducting an initial regression analysis and then including in subsequent analyses only those observations for which the absolute value of the studentized residuals was less than 2.1.

Normality of residuals and a constant variance of residuals (significance of less than 0.05 for both tests) were used as indicators of good regressions. If regressions could not be accepted as good on the basis of those criteria, normality of residuals was used as the indicator of fair regressions. If regressions could not be accepted as good or fair for a given constituent and site, the regressions were judged poor and unsuitable for determining the relation of constituent concentrations to streamflow, season, and time.

Serial autocorrelation typically was low and exceeded 0.5 only in the model for $\log_e$-transformed data for specific conductance at site 7 and untransformed and $\log_e$-transformed data for potassium at sites 1 and 9. Autocorrelation should not adversely affect the validity of the regression models, which in this report are not used for predicting concentrations.

Regression Analysis

Specific conductance at sites 9 and 10 is used to illustrate the evaluation of water-quality trends. Data for site 9 were collected during 1949-95, and data for site 10 were collected during 1957-95. Specific conductance is inversely related to the natural logarithm of streamflow at both sites (fig. 8) because of dilution caused by inflows of low-conductance rainfall and snowmelt runoff. Residuals from the regression of specific conductance with the natural logarithms of streamflow vary with season. Higher values occur in the winter, and lower values occur from spring through autumn (fig. 9).

Regression of specific conductance with the natural logarithm of streamflow and the seasonal terms (herein, sine and cosine of $2\pi t$, where t is time, in years, from January 1, 1960) (Helsel and Hirsch, 1992; p. 341) accounts for the effects of both streamflow and season on specific conductance. Based on comparisons with climatic records, the regression (fig. 10) indicated that the distribution of residuals seems to be affected by periods that are very dry or very wet.

Specific-conductance values for site 9 were considered in terms of five different time segments, and values for site 10 were considered in terms of four different time segments. The values then were input into regression models of specific conductance with the natural logarithm of streamflow, seasonal terms, and time (eq. 1). The results of the regression analyses are given in table 4 (at end of report). The significance and sign of the time trends (coefficient E in table 4) depended on the time period chosen. For example, wet conditions that occurred during 1993-95 near the end of the study period strongly affected trends in specific conductance with time. Wahl (1998) noted that trend analyses can be affected by multiyear extremes that occur near the beginning or end of a study period. Therefore, data from 1993-95 were excluded from further regression analyses (table 5 at end of report).

The effect of multiyear extremes was investigated further by analyzing streamflow records for four James River gaging stations (sites 2, 9, and 10 and the James River at Columbia, S. Dak., which is about 22 miles downstream of the study area) for trends in streamflow with time. The assumption was made that streamflow conditions at the four sites represented streamflow conditions basinwide. Monthly streamflows for 1971-93 had no apparent trend, but monthly streamflows for 1971-95 had an upward trend because of the wet conditions that occurred during 1994-95. Therefore, to minimize the effect of a trend in streamflow with time, 1972-93 was used to determine the relation of constituent concentrations to streamflow, season, and time. Use of that time period resulted in fewer time trends than were indicated for 1972-95. Time trends indicated for 1972-95, but not for 1972-93, probably are a result of the wet conditions that occurred at the end of the study period.

The results of the regression analyses for 1972-93 are given in detail in table 5, and the significant (α equals 0.05) relations to streamflow, season, and time are summarized in table 6 (at end of report). Regression coefficients significantly different from zero (p-values less than 0.05) indicate a significant relation between the constituent concentration (or the logarithm of concentration) and the regression coefficient. Significant positive relations (denoted by "1" in table 6) indicate the constituent concentration increases as the natural logarithm of streamflow increases or as time increases, and significant negative relations (denoted by "-1" in table 6) indicate the constituent concentration decreases as the natural logarithm of streamflow increases or as time increases. Significant relations to the sine term, the cosine term, or both terms (denoted by "Y" in table 6) indicate significant seasonal trends. The coefficients for seasonal trends are more difficult to

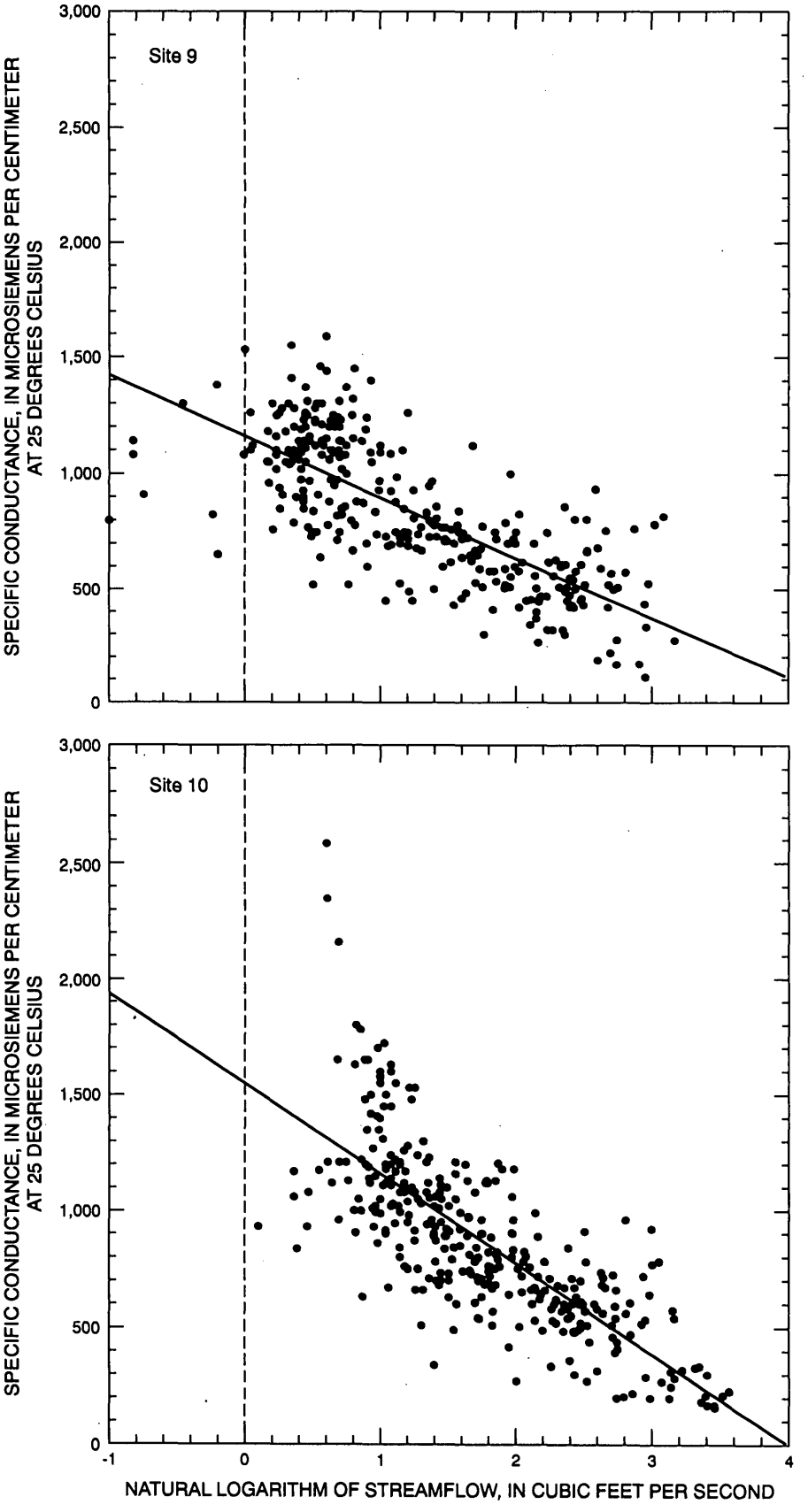

Figure 8. Plot and regression line of specific conductance with natural logarithm of streamflow for site 9, James River at Jamestown, North Dakota, 1949-95, and site 10, James River at LaMoure, North Dakota, 1957-95.

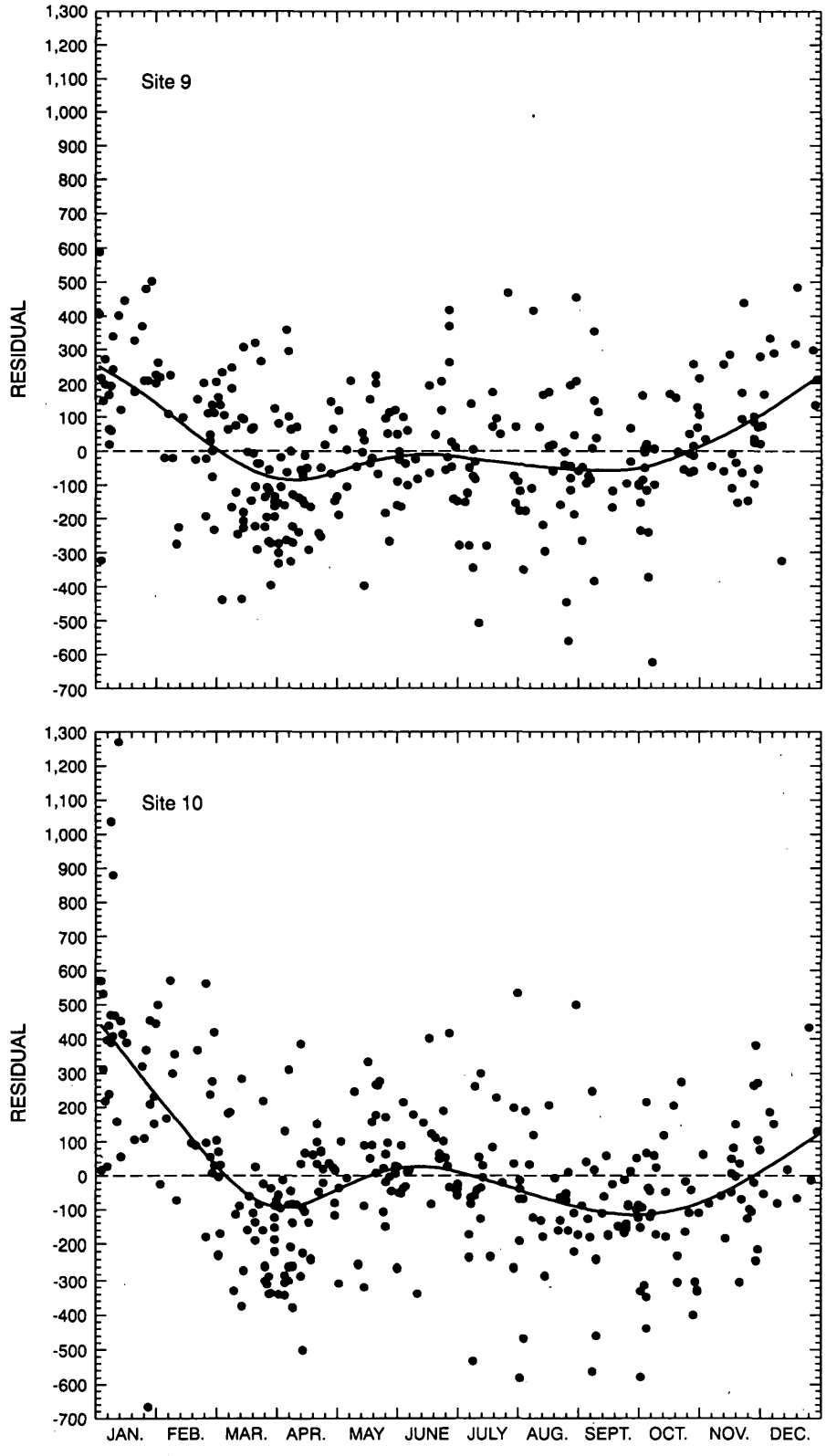

Figure 9. Residuals from regression of specific conductance with natural logarithm of streamflow, with smooth line, for site 9, James River at Jamestown, North Dakota, 1949-95, and site 10, James River at LaMoure, North Dakota, 1957-95.

interpret than those for streamflow because season is cyclic rather than linear. Information that was determined from the coefficients is given in the last two columns in table 5. The "Magnitude" column gives the magnitude of the seasonal trend, and the "Month" column gives the month when the flow-adjusted seasonal peak value should occur. For example, a magnitude of 100 indicates that flow-adjusted seasonal peak values are about 100 units greater than the mean value. Flow-adjusted seasonal minimum values, similarly, are about 100 units less than the mean value and occur 6 months after peak values, a constraint of the model. Peak values for both the constituent concentration and the logarithm of the concentration should occur within 1 month of each other except when one model is good and the other is poor or when seasonal terms are insignificant in the model. The values given in the "Magnitude" column were determined using equation 3,

$$\text{Magnitude} = \left(C^2 + D^2 \right)^{0.5}, \tag{3}$$

where

C and D are as previously defined (eqs. 1 and 2),

and the months given in the "Month" column were determined using equation 4,

$$\text{Month} = \arctan\left(-\frac{C}{D} \right), \tag{4}$$

where

arctan is the trigonometric arctangent function, and

C and D are as previously defined.

Equations 3 and 4 were developed from equations 7.11., 7.12, and 7.13 given by Chatfield (1980, p. 134). The following discussion of significant results generally excludes regressions judged poor or fair.

Relation to Streamflow

Water quality can be affected substantially by streamflow rate. Knowledge of the variability in water quality that is associated with changes in streamflow can be useful for water-management purposes, especially for streams where flow rates can be regulated. Furthermore, the effect of streamflow on water quality needs to be accounted for when evaluating data for water-quality trends with time. Streamflow varies with time in response to wet and dry cycles. An apparent change in water quality during a time period may be a reflection of watershed responses to climatic cycles rather than to direct human effects on the watershed. Regression coefficients used to determine the relation between streamflow and constituent concentrations at each site are given in table 5.

Data for 1972-93 for seven main-stem sites and three tributary sites produced acceptable regressions based on the criteria described earlier. Specific conductance related negatively to streamflow at nine of those sites. These results may be because high flow often is a response to rainfall or snowmelt that contains a larger proportion of overland runoff than low flow, which is dominated by ground-water discharge. Ground water typically has higher specific conductance than overland runoff. The negative relation of specific conductance to streamflow occurred at main-stem sites in upstream parts of the basin as well as in downstream parts of the basin and at two tributary sites--sites 7 and 11. Negative relations to streamflow also were indicated at most sites for dissolved solids, hardness, calcium, magnesium, sodium, potassium, sulfate, chloride, fluoride, silica, boron, and manganese.

Specific conductance related positively to streamflow at one site--site 13. Also at site 13, magnesium, sodium, and sulfate increased as streamflow increased. The response of those constituents to streamflow at site 13 was opposite in sign, but lower in the magnitude of coefficient for $\log_e$ (streamflow), than the response at other sites.

At site 9, dissolved oxygen, potassium, and organic nitrogen increased as streamflow increased. Several nutrients related positively to streamflow. The regressions of $\log_e$-transformed data generally gave better model results than those

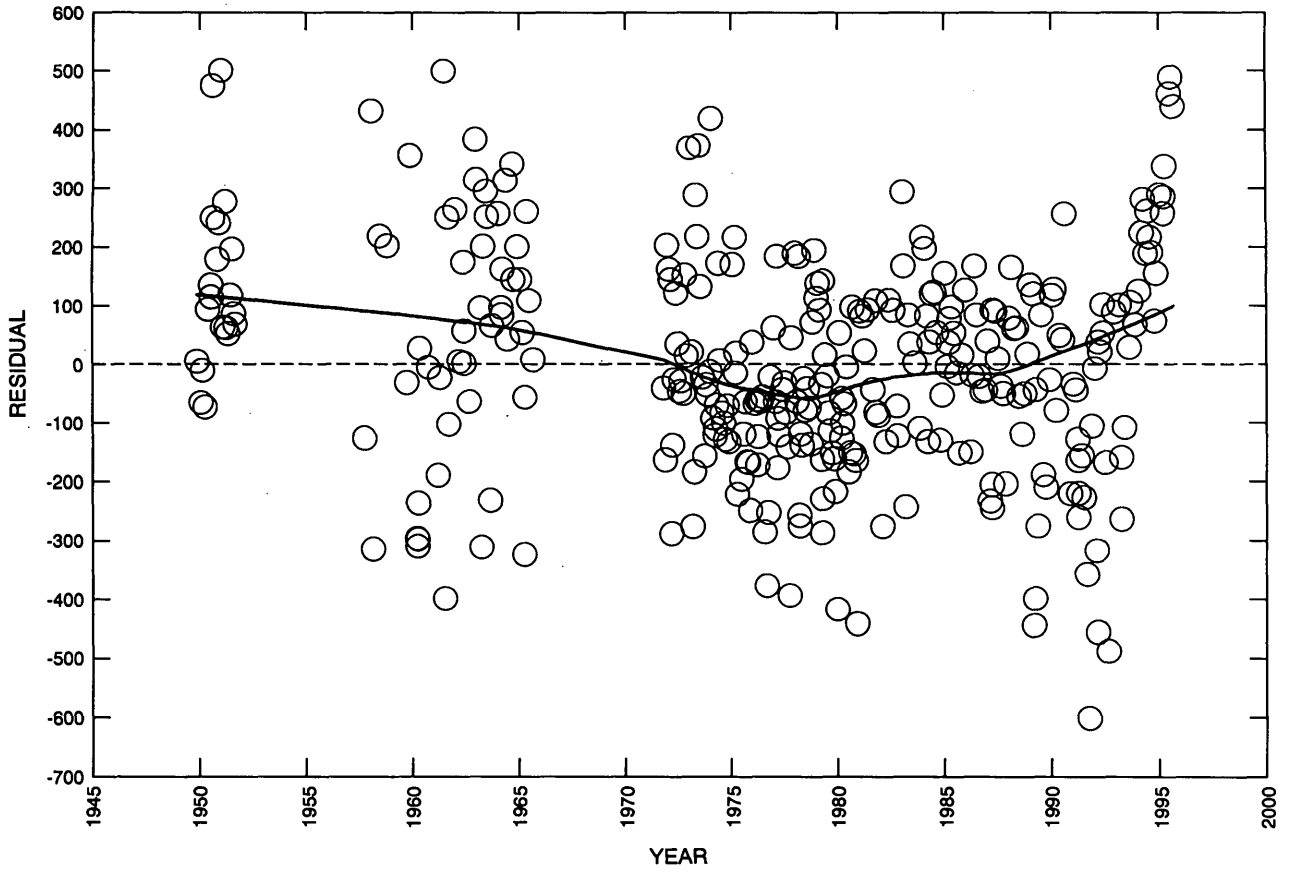

Figure 10. LOWESS smooth fitted to residuals from regression of specific conductance with natural logarithm of streamflow and seasonal terms for site 9, James River at Jamestown, North Dakota, 1949-95.

for untransformed data. Log_e-transformed data for nitrate (parameter codes 00618 and 71851) and nitrite plus nitrate related positively to streamflow at site 9 although the model for nitrite plus nitrate was judged fair. As with specific conductance and major ions, the response of nitrite plus nitrate at site 13 was opposite the response at other sites. Log_e-transformed data for dissolved phosphorus and/or orthophosphate related positively to streamflow at sites 2, 9, and 10, but no relation existed farther downstream at site 14.

Seasonal Trends

Knowledge of seasonal trends can be useful when planning for withdrawals of water. Seasonal trends also must be accounted for when testing for long-term trends in data. The regression model indicated seasonal trends for some of the constituents at some of the sampling sites. Constituents and sites that have seasonal trends are given in table 6.

Seasonal trends were most prevalent for calcium, magnesium, sodium, potassium, sulfate, and chloride but also occurred for specific conductance, dissolved solids, or hardness at 9 of the 10 sites for which regression analyses were conducted. Concentrations generally peaked between October and February except at sites 1, 7, and 13. A seasonal trend for boron was indicated at sites 13 and 14.

Seasonal trends for nutrients were less frequent. Winter peaks were indicated for nitrite plus nitrate at sites 12 and 13, ammonia at site 9, and ammonia plus organic nitrogen at sites 9 and 14. Log_e-transformed dissolved phosphorus and orthophosphate concentrations peaked in January at site 14, and dissolved phosphorus concentrations peaked in July at site 2.

At main-stem sites, seasonal trends were indicated throughout the basin. These trends explain a significant part of the water-quality variability for some constituents. The seasonal trends in specific conductance and major ions may be caused by ground-water discharge that dominates streamflow in the winter. Winter peaks for several nutrients may indicate release

from decomposition of organic matter or possibly from wastewater discharge. Pilot Drain primarily drains ground water from the unconfined, surficial Oakes aquifer and receives little overland drainage (Wayne Berkas, U.S. Geological Survey, oral commun., August 1999). If ground-water discharge dominates the streamflow in Pilot Drain, the stream water would be minimally diluted with surface runoff, and solute concentrations would not be expected to decrease with increasing flow. The low specific-conductance values and dissolved-solids concentrations, the low variability of these data compared to data for other sites, and the similarity in major-ion concentrations for site 13 (summarized herein) and the Oakes aquifer (summarized in Armstrong, 1980) are consistent with this hypothesis.

Time Trends

Regression coefficients for time trends are given in table 5. The time units are years starting January 1, 1960. For untransformed data, a time coefficient (E) of 1.0 indicates the constituent increased at a rate of 1.0 unit per year (for example, 1.0 mg/L per year). For time trends determined from regressions of $\log_e$-transformed data, the time coefficient can be converted to an annual percentage change by exponentiating the time coefficient (E, eqs. 1 and 2) and multiplying by 100: $(e^E\text{-}1)100$. Alternatively, a rate of change in the units of the constituent (typically in milligrams per liter per year) is given by the median or mean concentration times $(e^E\text{-}1)$ (Helsel and Hirsch, 1992). The environmental significance of statistically significant results also should be considered. For example, a statistically significant trend in phosphorus concentration of 0.001 mg/L per year may have little or no environmental significance, but a trend of 0.01 mg/L per year may have a substantial, and potentially harmful, environmental significance. Similarly, consistent patterns among sites or within groups of related constituents probably merit more consideration than sporadic significant relations for a constituent or site.

No time trends for specific conductance were indicated at sites in the upstream and middle parts of the James River Basin (sites 1, 2, 4, 7, 9, and 10). Specific conductance increased with time at main-stem sites 12 and 14 in the downstream part of the basin and at tributary site 11, also in the downstream part of the basin. The magnitude of change was about 15.5 microsiemens per centimeter (µS/cm) per year at site 12, 24.7 µS/cm per year at site 14, and 11.9 µS/cm per year at site 11. The time trends in specific conductance at those sites are supported by trends of increasing dissolved solids, hardness, calcium, and sulfate at site 12 and increasing dissolved solids, sodium, sulfate, chloride, and boron at site 14. At site 11, potassium and chloride increased with time. Specific conductance decreased about 4.6 µS/cm per year at site 13. This trend was not supported by trends in dissolved solids or by trends in individual constituents.

Dissolved-solids concentrations increased about 10 mg/L per year at site 12 and 33 mg/L per year at site 14. Hirsch and others (1991) indicated that data for 1974-90 show an increase of 29 mg/L per year for flow-adjusted dissolved solids in the James River near Scotland, S. Dak., about 200 miles downstream of the North Dakota-South Dakota State line. The increasing trend at a site located well outside of the study area indicates that the time trends for the James River in southern North Dakota may be occurring across a broader geographic area.

A time trend for dissolved-oxygen concentrations was indicated at only one site--site 9. The magnitude of the trend, about -0.38 mg/L per year, is sufficiently high to have environmental significance and, thus, prompted further consideration and analysis. A simpler regression model that substitutes water temperature for the two seasonal terms in equations 1 and 2 may be more appropriate for dissolved oxygen because oxygen saturation varies inversely with temperature and temperature is a reasonable proxy for season in temperate climates. Use of the simpler model yielded significant negative relations with temperature at sites 9, 10, and 14; positive relations with streamflow at sites 4 and 9; a negative relation with streamflow at site 12; a positive relation with time at site 1 (0.32 mg/L per year); and a negative relation with time at site 9 (-0.25 mg/L per year). Data were not sufficient to evaluate diel fluctuations of dissolved oxygen or their potential effect on the observed trends. Given that low dissolved-oxygen concentrations (less than 5.0 mg/L) occur in the James River and that both regression analyses indicate decreasing dissolved oxygen at site 9, further study may be useful.

Sodium concentrations increased about 6.2 mg/L per year at site 14. Potassium concentrations increased with time at sites 2, 7, 9, and 11, and $\log_e$-transformed potassium concentrations increased slightly with time at sites 1, 2, 7, 9, 10, and 11. The increases ranged from about 0.14 to 0.27 mg/L per year or, for regressions on $\log_e$-transformed concentrations, about 1.5 to 2.0 percent per year. Exceptions to this trend were at site 4, which had a negative time trend, and sites 13 and 14, which had no time trend. Sulfate concentrations increased about 5.7 mg/L per year at site 12, 4.0 mg/L per year at

site 13, and 7.6 mg/L per year at site 14. Concentrations decreased with time at site 4. Chloride concentrations increased slightly with time at sites 7 and 11 and about 4.2 mg/L per year at site 14. Silica concentrations increased with time at sites 2, 7, and 9.

Few time trends were indicated for nutrients. Nitrate concentrations decreased with time at site 9, and nitrite plus nitrate concentrations decreased with time at site 12. Dissolved phosphorus (logarithm) concentrations increased with time at sites 9 and 14 at rates of about 12 to 14 percent per year, and dissolved orthophosphate (logarithm) concentrations increased with time at sites 10 and 14.

SUMMARY AND CONCLUSIONS

Water-quality data collected at 16 water-quality-sampling sites in the James River Basin during 1949-95 were statistically summarized. The summaries provide an inventory of water-quality data and information about the properties of data distributions at each site. The summaries are organized by site and by constituent.

Comparisons were made among sites for selected constituents that had 20 or more analyses per site. The comparisons were made using box plots and an analysis of variance (ANOVA) followed by Tukey-Kramer comparison based on data ranks. The box plots give a visual indication of the differences among sites, and the Tukey-Kramer groupings indicate if the differences are statistically significant. Statistically significant differences among sites were indicated for specific conductance, dissolved solids, major ions, and nutrients.

Regression analyses indicated negative relations to streamflow at most sites for specific conductance, dissolved solids, hardness, and most major ions. These constituents related positively to streamflow at one site. Several nutrients also related positively to streamflow.

Seasonal trends were most prevalent for calcium, magnesium, sodium, potassium, sulfate, and chloride but also occurred for specific conductance, dissolved solids, and hardness. Seasonal trends for nutrients were less frequent.

Specific-conductance values increased with time at two main-stem sites and one tributary site, dissolved-solids concentrations increased with time at two main-stem sites, and dissolved-oxygen concentrations decreased with time at one main-stem site. Sodium concentrations increased with time at one main-stem site, and potassium concentrations increased with time at most sites. Sulfate concentrations increased with time at two main-stem sites, decreased with time at one main-stem site, and increased with time at one tributary site. Chloride concentrations increased with time at one main-stem site and two tributary sites, and silica concentrations increased with time at two main-stem sites and one tributary site. Nitrate and nitrite plus nitrate concentrations decreased with time at one main-stem site, and dissolved phosphorus and dissolved orthophosphate concentrations increased with time at two main-stem sites.

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Table 1. Water-quality-sampling sites in the James River Basin, North Dakota, 1949-95

Site number	Station identification number	Site name	Latitude and longitude
1	06467600	James River near Manfred, N. Dak.	47°38'40", 099°49'40"
2	06468170	James River near Grace City, N. Dak.	47°33'29", 098°51'45"
3	06468190	Juanita Lake Tributary near Grace City, N. Dak.	47°32'54", 098°45'31"
4	06468250	James River above Arrowwood Lake near Kensal, N. Dak.	47°23'59", 098°47'50"
5	06468300	Kelly Creek below Niccum Reservoir near Bordulac, N. Dak.	47°24'01", 098°49'43"
6	06468500	James River near Pingree, N. Dak.	47°08'30", 098°47'00"
7	06469400	Pipestem Creek near Pingree, N. Dak.	47°10'03", 098°58'07"
8	06469500	Pipestem Creek near Buchanan, N. Dak.	47°03'59", 098°55'07"
9	06470000	James River at Jamestown, N. Dak.	46°53'22", 098°40'58"
10	06470500	James River at LaMoure, N. Dak.	46°21'20", 098°18'15"
11	06470800	Bear Creek near Oakes, N. Dak.	46°13'31", 098°04'17"
12	06470830	James River at Oakes, N. Dak.	46°08'20", 098°06'55"
13	06470833	Pilot Drain at Oakes, N. Dak.	46°07'30", 098°05'49"
14	06470875	James River at Dakota Lake Dam near Ludden, N. Dak.	45°56'52", 098°10'29"
15	06470878	James River at North Dakota-South Dakota State line	45°56'10", 098°10'26"
16	06470980	James River near Hecla, S. Dak.	45°53'34", 098°10'13"

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 1, 06467600, James River
Specific conductance (µS/cm at 25 degrees Celsius)	00095	145	145	100	06/07/59 through 07/26/95
pH, water, whole, field (standard units)	00400	60	60	100	06/07/59 through 07/26/95
pH, water, whole, laboratory (standard units)	00403	38	38	100	04/12/82 through 07/26/95
Turbidity (NTU)	00076	18	18	100	02/25/85 through 03/27/89
Oxygen, dissolved (mg/L)	00300	34	34	100	02/25/85 through 07/26/95
Hardness, total (mg/L as $CaCO_3$)	00900	65	65	100	06/07/59 through 07/26/95
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	65	65	100	06/07/59 through 07/26/95
Solids, sum of constituents, dissolved (mg/L)	70301	63	63	100	06/07/59 through 07/26/95
Residue, nonfilterable (mg/L)	00530	27	24	88.9	02/25/85 through 07/26/95
Calcium, dissolved (mg/L as Ca)	00915	65	65	100	06/07/59 through 07/26/95
Magnesium, dissolved (mg/L as Mg)	00925	65	65	100	06/07/59 through 07/26/95
Sodium, dissolved (mg/L as Na)	00930	65	65	100	06/07/59 through 07/26/95
Sodium (percent of cations)	00932	65	65	100	06/07/59 through 07/26/95
Sodium adsorption ratio	00931	65	65	100	06/07/59 through 07/26/95
Potassium, dissolved (mg/L as K)	00935	65	65	100	06/07/59 through 07/26/95
Sulfate, dissolved (mg/L as SO_4)	00945	65	65	100	06/07/59 through 07/26/95
Chloride, dissolved (mg/L as Cl)	00940	65	63	96.9	06/07/59 through 07/26/95
Fluoride, dissolved (mg/L as F)	00950	47	45	95.7	06/07/59 through 07/26/95
Silica, dissolved (mg/L as SiO_2)	00955	53	53	100	06/07/59 through 07/26/95
Nitrogen, nitrite, dissolved (mg/L as N)	00613	32	6	18.8	02/25/85 through 07/26/95
Nitrogen, nitrate, dissolved (mg/L as N)	00618	32	32	100	03/27/60 through 03/14/95
Nitrogen, nitrate, total (mg/L as NO_3)	71850	1	1	100	06/07/59 through 06/07/59
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	32	32	100	03/27/60 through 03/14/95
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	32	7	21.9	02/25/85 through 07/26/95
Nitrogen, ammonia, total (mg/L as N)	00610	5	5	100	08/24/87 through 03/11/92
Nitrogen, ammonia, dissolved (mg/L as N)	00608	20	18	90.0	08/24/87 through 07/26/95
Nitrogen, organic, total (mg/L as N)	00605	7	7	100	08/24/87 through 07/26/95
Nitrogen, organic, dissolved (mg/L as N)	00607	14	14	100	08/24/87 through 07/26/95
Nitrogen, ammonia plus organic, total (mg/L as N)	00625	7	7	100	08/24/87 through 07/26/95
Nitrogen, ammonia plus organic, dissolved (mg/L as N)	00623	16	16	100	08/24/87 through 07/26/95
Nitrogen, total (mg/L as N)	00600	7	7	100	08/24/87 through 07/26/95
Phosphorus, total (mg/L as P)	00665	14	14	100	03/27/86 through 07/26/95
Phosphorus, dissolved (mg/L as P)	00666	32	32	100	02/25/85 through 07/26/95
Phosphorus, orthophosphate, total (mg/L as P)	70507	8	8	100	03/27/86 through 03/11/92
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	32	30	93.8	04/20/72 through 07/26/95
Phosphorus, organic, total (mg/L as P)	00670	13	13	100	03/27/86 through 07/18/94
Arsenic, total (µg/L as As)	01002	14	14	100	03/27/86 through 07/26/95
Arsenic, dissolved (µg/L as As)	01000	34	34	100	04/12/82 through 07/26/95
Barium, total (µg/L as Ba)	01007	3	2	66.7	03/27/86 through 05/11/87
Barium, dissolved (µg/L as Ba)	01005	7	1	14.3	03/27/86 through 07/06/87

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, log_e-transformed data
near Manfred, N. Dak.										
75.000	205.000	370.000	800.00	1,050.00	1,200.00	1,360.00	722.43	722.43	0.0001	0.0001
6.400	7.275	7.600	7.90	8.22	8.35	8.60	7.86	7.86	0.0033	0.0003
6.900	7.300	7.600	8.00	8.20	8.30	8.60	7.89	7.89	0.0499	0.0258
0.800	0.800	1.500	3.00	4.00	15.00	15.00	--	--	--	--
3.800	5.900	8.600	10.15	11.48	13.40	16.95	10.03	10.03	0.8967	0.0302
23.000	77.000	120.000	250.00	310.00	340.00	410.00	224.74	224.74	0.0030	0.0001
55.000	163.000	270.000	562.00	711.00	812.00	933.00	506.78	506.78	0.0003	0.0001
49.000	149.000	227.000	558.00	674.00	770.00	901.00	479.13	479.13	0.0001	0.0001
<1.000	<1.000	2.000	5.00	10.00	21.00	40.00	8.22	8.33	0.0001	0.1104
6.600	17.000	27.000	48.00	61.00	66.00	73.00	44.71	44.71	0.0005	0.0001
1.600	7.200	15.000	31.00	38.00	43.00	56.00	27.42	27.42	0.0326	0.0001
4.100	15.000	31.000	90.00	130.00	160.00	218.00	84.35	84.35	0.0003	0.0001
14.000	23.000	31.000	38.00	48.00	54.00	63.00	39.00	39.00	0.1484	0.0085
0.400	0.600	1.000	2.00	3.00	4.00	6.00	2.27	2.27	0.0001	0.0002
2.000	7.100	8.100	11.00	13.00	14.00	22.00	10.61	10.61	0.2772	0.0013
8.300	32.000	57.000	120.00	170.00	230.00	340.00	120.39	120.39	0.0208	0.0002
<0.100	2.400	4.500	8.90	13.00	16.00	29.00	9.22	9.22	0.0165	0.0001
<0.100	0.100	0.100	0.20	0.30	0.40	0.50	0.21	0.22	0.0001	0.0001
2.500	5.000	8.900	12.00	17.00	23.00	36.00	13.25	13.25	0.0233	0.1765
<0.020	<0.020	<0.020	<0.02	<0.02	0.03	0.10	0.01	0.03	0.0001	0.0001
0.140	0.180	0.230	0.28	0.58	1.10	1.80	0.50	0.50	0.0001	0.0090
--	--	--	1.50	--	--	--	--	--	--	--
0.600	0.800	1.000	1.25	2.55	4.80	8.00	2.19	2.19	0.0001	0.0125
<0.100	<0.100	<0.100	<0.10	<0.10	0.57	1.90	0.15	0.23	0.0001	0.0001
0.030	--	0.030	0.03	0.09	--	0.19	--	--	--	--
<0.015	0.003	0.030	0.05	0.09	0.13	0.47	0.07	0.08	0.0001	0.5912
0.970	--	1.200	1.30	1.50	--	1.70	--	--	--	--
0.570	0.610	0.780	1.03	1.20	1.30	1.40	--	--	--	--
1.000	--	1.300	1.30	1.50	--	1.90	--	--	--	--
0.500	0.600	0.900	1.10	1.30	1.40	1.40	--	--	--	--
1.000	--	1.300	1.50	2.10	--	3.20	--	--	--	--
0.130	0.140	0.230	0.28	0.43	0.48	0.62	--	--	--	--
0.020	0.080	0.110	0.23	0.39	0.43	0.84	0.27	0.27	0.0277	0.1919
0.063	--	0.097	0.20	0.30	--	0.38	--	--	--	--
<0.010	0.036	0.096	0.19	0.31	0.37	0.88	0.22	0.22	0.0008	0.0012
0.030	0.030	0.050	0.07	0.13	0.29	0.48	--	--	--	--
2.000	2.000	2.000	3.00	5.00	6.00	6.00	--	--	--	--
1.000	2.000	2.000	3.00	5.00	6.00	7.00	3.65	3.65	0.0141	0.0089
<100.000	--	--	100.00	--	--	100.00	--	--	--	--
<100.000	--	<100.000	<100.00	<100.00	--	100.00	--	--	--	--

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 1, 06467600, James River
Beryllium, total (µg/L as Be)	01012	3	0	0	03/27/86 through 05/11/87
Beryllium, dissolved (µg/L as Be)	01010	7	0	0	03/27/86 through 07/06/87
Boron, total (µg/L as B)	01022	3	3	100	03/27/86 through 05/11/87
Boron, dissolved (µg/L as B)	01020	65	64	98.5	06/07/59 through 07/26/95
Cadmium, total (µg/L as Cd)	01027	6	2	33.3	03/27/86 through 03/27/89
Cadmium, dissolved (µg/L as Cd)	01025	13	0	0	03/27/86 through 03/27/89
Chromium, dissolved (µg/L as Cr)	01030	7	0	0	03/27/86 through 07/06/87
Cobalt, dissolved (µg/L as Co)	01035	7	0	0	03/27/86 through 07/06/87
Copper, dissolved (µg/L as Cu)	01040	18	0	0	02/25/85 through 03/27/89
Iron, total (µg/L as Fe)	01045	5	5	100	06/07/59 through 03/27/89
Iron, dissolved (µg/L as Fe)	01046	52	52	100	04/20/72 through 07/26/95
Lead, dissolved (µg/L as Pb)	01049	23	0	0	04/12/82 through 03/27/89
Lithium, dissolved (µg/L as Li)	01130	5	5	100	04/12/82 through 03/26/84
Manganese, total (µg/L as Mn)	01055	9	7	77.8	04/27/60 through 03/27/89
Manganese, dissolved (µg/L as Mn)	01056	52	48	92.3	04/20/72 through 07/26/95
Mercury, dissolved (µg/L as Hg)	71890	37	22	59.5	04/12/82 through 07/26/95
Molybdenum, dissolved (µg/L as Mo)	01060	5	0	0	04/12/82 through 03/26/84
Nickel, total (µg/L as Ni)	01067	2	2	100	03/27/86 through 04/06/87
Nickel, dissolved (µg/L as Ni)	01065	7	3	42.9	03/27/86 through 07/06/87
Selenium, total (µg/L as Se)	01147	14	0	0	03/27/86 through 07/26/95
Selenium, dissolved (µg/L as Se)	01145	39	1	2.6	04/12/82 through 07/26/95
Silver, total (µg/L as Ag)	01077	2	0	0	03/27/86 through 04/06/87
Silver, dissolved (µg/L as Ag)	01075	7	0	0	03/27/86 through 07/06/87
Strontium, dissolved (µg/L as Sr)	01080	5	5	100	04/12/82 through 03/26/84
Zinc, dissolved (µg/L as Zn)	01090	18	7	38.9	02/25/85 through 03/27/89
Sediment, suspended, concentration (mg/L)	80154	31	31	100	05/13/85 through 07/26/95
					Site 2, 06468170, James River
Specific conductance (µS/cm at 25 degrees Celsius)	00095	199	199	100	11/30/71 through 08/29/95
pH, water, whole, field (standard units)	00400	75	75	100	04/26/72 through 08/29/95
pH, water, whole, laboratory (standard units)	00403	64	64	100	04/13/82 through 08/29/95
Turbidity (NTU)	00076	23	23	100	03/18/85 through 08/13/90
Oxygen, dissolved (mg/L)	00300	54	54	100	03/18/85 through 08/29/95
Hardness, total (mg/L as $CaCO_3$)	00900	82	82	100	04/26/72 through 08/29/95
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	82	82	100	04/26/72 through 08/29/95
Solids, sum of constituents, dissolved (mg/L)	70301	79	79	100	04/26/72 through 08/29/95
Residue, nonfilterable (mg/L)	00530	39	36	92.3	03/18/85 through 08/29/95
Calcium, dissolved (mg/L as Ca)	00915	82	82	100	04/26/72 through 08/29/95
Magnesium, dissolved (mg/L as Mg)	00925	82	82	100	04/26/72 through 08/29/95
Sodium, dissolved (mg/L as Na)	00930	82	82	100	04/26/72 through 08/29/95
Sodium (percent of cations)	00932	82	82	100	04/26/72 through 08/29/95
Sodium adsorption ratio	00931	82	82	100	04/26/72 through 08/29/95
Potassium, dissolved (mg/L as K)	00935	82	82	100	04/26/72 through 08/29/95

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
near Manfred, N. Dak.--Continued										
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
130.000	--	--	200.00	--	--	280.00	--	--	--	--
<20.000	60.000	90.000	210.00	400.00	560.00	910.00	253.38	253.69	0.0001	0.0165
<1.000	--	<1.000	<1.00	1.00	--	2.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<20.00	--	--	--	--	--	--	--
--	--	--	<3.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
80.000	--	180.000	210.00	280.00	--	590.00	--	--	--	--
10.000	30.000	45.000	80.50	150.00	290.00	1200.00	133.29	133.29	0.0001	0.9602
--	--	--	<10.00	--	--	--	--	<10.00	--	--
7.000	--	14.000	24.00	52.00	--	60.00	--	--	--	--
<10.000	--	10.000	30.00	90.00	--	200.00	--	--	--	--
<10.000	11.000	28.500	50.00	73.00	120.00	300.00	61.98	62.75	0.0001	0.1546
<0.100	<0.100	<0.100	0.10	0.20	0.60	1.30	0.20	0.24	0.0001	0.0001
--	--	--	<10.00	--	--	--	--	--	--	--
1.000	--	--	2.50	--	--	4.00	--	--	--	--
<2.000	--	<2.000	<2.00	4.00	--	5.00	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	1.00	0.03	1.00	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
79.000	--	97.000	110.00	260.00	--	390.00	--	--	--	--
<10.000	<10.000	<10.000	<10.00	11.00	16.00	16.00	--	--	--	--
0.700	3.000	4.000	11.00	22.00	47.20	92.00	18.96	18.96	0.0001	0.7378
near Grace City, N. Dak.										
130.000	320.000	525.000	880.00	1290.00	1730.00	3000.00	953.69	953.69	0.0001	0.0004
7.000	7.700	7.830	8.24	8.60	8.92	9.92	8.28	8.28	0.2354	0.5623
6.700	7.300	7.600	8.20	8.40	8.90	9.80	8.09	8.09	0.4264	0.5174
1.000	1.400	2.000	2.50	5.50	13.00	22.00	4.91	4.91	0.0001	0.0389
0.500	4.300	7.600	9.54	11.80	12.90	18.31	9.48	9.48	0.1933	0.0001
62.000	110.000	160.000	210.00	300.00	330.00	600.00	228.94	228.94	0.0001	0.5788
127.000	203.000	310.000	590.50	865.00	1060.00	6540.00	690.05	690.05	0.0001	0.0801
108.000	176.000	305.000	544.00	752.00	1050.00	2000.00	582.70	582.70	0.0001	0.0476
<1.000	1.000	4.000	8.00	18.00	31.00	47.00	12.26	12.33	0.0001	0.0494
13.000	20.000	26.000	38.00	52.00	57.00	120.00	41.05	41.05	0.0001	0.1923
6.600	13.000	20.000	30.00	41.00	45.00	73.00	30.71	30.71	0.0288	0.0150
7.300	18.000	36.000	89.00	200.00	290.00	570.00	123.93	123.93	0.0001	0.0193
15.000	22.000	30.000	38.50	61.00	74.00	80.00	44.16	44.16	0.0001	0.0005
0.400	0.700	1.000	2.00	5.00	9.00	12.00	3.60	3.60	0.0001	0.0001
5.400	7.900	10.000	12.00	15.00	17.00	25.00	12.57	12.57	0.0230	0.1555

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 2, 06468170, James River
Sulfate, dissolved (mg/L as SO_4)	00945	82	82	100	04/26/72 through 08/29/95
Chloride, dissolved (mg/L as Cl)	00940	82	82	100	04/26/72 through 08/29/95
Fluoride, dissolved (mg/L as F)	00950	59	56	94.9	04/26/72 through 08/29/95
Silica, dissolved (mg/L as SiO_2)	00955	52	52	100	04/26/72 through 08/29/95
Nitrogen, nitrite, dissolved (mg/L as N)	00613	56	17	30.4	03/18/85 through 08/29/95
Nitrogen, nitrate, dissolved (mg/L as N)	00618	31	30	96.8	04/26/72 through 04/05/95
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	32	30	93.8	04/26/72 through 04/05/95
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	56	15	26.8	03/18/85 through 08/29/95
Nitrogen, ammonia, total (mg/L as N)	00610	13	13	100	08/24/87 through 07/09/92
Nitrogen, ammonia, dissolved (mg/L as N)	00608	45	40	88.9	08/24/87 through 08/29/95
Nitrogen, organic, total (mg/L as N)	00605	14	14	100	08/24/87 through 07/31/95
Nitrogen, organic, dissolved (mg/L as N)	00607	29	29	100	08/24/87 through 06/28/95
Nitrogen, ammonia plus organic, total (mg/L as N)	00625	14	14	100	08/24/87 through 07/31/95
Nitrogen, ammonia plus organic, dissolved (mg/L as N)	00623	33	33	100	08/24/87 through 08/29/95
Nitrogen, total (mg/L as N)	00600	14	14	100	08/24/87 through 07/31/95
Phosphorus, total (mg/L as P)	00665	24	24	100	04/24/86 through 07/31/95
Phosphorus, dissolved (mg/L as P)	00666	56	56	100	03/18/85 through 08/29/95
Phosphorus, orthophosphate, total (mg/L as P)	70507	16	15	93.8	04/24/86 through 07/09/92
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	59	51	86.4	04/26/72 through 08/29/95
Phosphorus, organic, total (mg/L as P)	00670	23	23	100	04/24/86 through 04/05/95
Arsenic, total (µg/L as As)	01002	24	23	95.8	04/24/86 through 07/31/95
Arsenic, dissolved (µg/L as As)	01000	61	59	96.7	04/13/82 through 08/29/95
Barium, total (µg/L as Ba)	01007	3	3	100	04/24/86 through 05/11/87
Barium, dissolved (µg/L as Ba	01005	8	1	12.5	03/27/86 through 05/11/87
Beryllium, total (µg/L as Be)	01012	3	0	0	04/24/86 through 05/11/87
Beryllium, dissolved (µg/L as Be)	01010	8	0	0	03/27/86 through 05/11/87
Boron, total (µg/L as B)	01022	3	3	100	04/24/86 through 05/11/87
Boron, dissolved (µg/L as B)	01020	82	78	95.1	04/26/72 through 08/29/95
Cadmium, total (µg/L as Cd)	01027	10	2	20.0	04/24/86 through 08/13/90
Cadmium, dissolved (µg/L as Cd)	01025	20	0	0	03/27/86 through 08/13/90
Chromium, dissolved (µg/L as Cr)	01030	8	0	0	03/27/86 through 05/11/87
Cobalt, dissolved (µg/L as Co)	01035	8	0	0	03/27/86 through 05/11/87
Copper, dissolved (µg/L as Cu)	01040	23	0	0	03/18/85 through 08/13/90
Iron, total (µg/L as Fe)	01045	8	8	100	08/24/87 through 08/13/90
Iron, dissolved (µg/L as Fe)	01046	82	76	92.7	04/26/72 through 08/29/95
Lead, dissolved (µg/L as Pb)	01049	29	0	0	04/13/82 through 08/13/90
Lithium, dissolved (µg/L as Li)	01130	6	6	100	04/13/82 through 04/03/90
Manganese, total (µg/L as Mn)	01055	8	8	100	08/24/87 through 08/13/90
Manganese, dissolved (µg/L as Mn)	01056	82	77	93.9	04/26/72 through 08/29/95
Mercury, dissolved (µg/L as Hg)	71890	64	31	48.4	04/13/82 through 08/29/95

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, log_e-transformed data
near Grace City, N. Dak.--Continued										
25.000	46.000	82.000	145.00	210.00	270.00	440.00	156.98	156.98	0.0011	0.0036
0.300	4.200	9.300	18.00	58.00	110.00	250.00	38.61	38.61	0.0001	0.2179
<0.100	0.100	0.100	0.20	0.20	0.30	2.80	0.23	0.24	0.0001	0.0001
0.800	2.500	4.850	8.55	13.50	18.00	31.00	10.17	10.17	0.0002	0.0586
<0.020	<0.020	<0.020	<0.02	0.02	0.04	0.21	0.01	0.03	0.0001	0.0001
<0.010	0.130	0.230	0.26	0.79	1.27	2.29	0.52	0.52	0.0001	0.0038
<0.100	0.580	1.000	1.35	3.15	5.60	10.00	2.31	2.32	0.0001	0.0429
<0.100	<0.100	<0.100	<0.10	0.14	0.51	2.50	0.18	0.26	0.0001	0.0001
0.020	0.020	0.030	0.04	0.05	0.35	0.54	--	--	--	--
<0.015	<0.015	0.020	0.05	0.23	0.48	1.60	0.18	0.19	0.0001	0.0009
1.100	1.100	1.300	1.65	1.90	2.50	2.80	--	--	--	--
0.460	0.780	0.940	1.20	1.60	2.00	2.50	1.28	1.28	0.0374	0.7147
1.100	1.100	1.400	1.70	2.20	2.50	2.80	--	--	--	--
0.500	0.900	1.000	1.30	1.70	2.30	2.80	1.45	1.45	0.0509	0.7720
1.100	1.100	1.700	2.10	2.60	3.00	4.20	--	--	--	--
0.110	0.130	0.150	0.20	0.33	0.36	0.43	0.24	0.24	0.0207	0.1175
0.010	0.040	0.100	0.18	0.28	0.36	0.69	0.20	0.20	0.0002	0.0473
<0.010	0.030	0.054	0.11	0.15	0.21	0.26	--	--	--	--
<0.010	<0.010	0.042	0.11	0.22	0.30	0.66	0.15	0.15	0.0001	0.0005
0.010	0.030	0.050	0.08	0.14	0.21	0.43	0.11	0.11	0.0002	0.8309
<1.000	2.000	2.000	3.00	4.00	6.00	6.00	3.17	3.21	0.0184	0.0550
<1.000	2.000	2.000	3.00	4.00	5.00	9.00	3.33	3.36	0.0001	0.0023
100.000	--	--	100.00	--	--	100.00	--	--	--	--
<100.000	--	<100.000	<100.00	<100.00	--	120.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
50.000	--	--	70.00	--	--	110.00	--	--	--	--
<20.000	40.000	70.000	140.00	220.00	330.00	2300.00	191.34	192.32	0.0001	0.1317
<1.000	<1.000	<1.000	<1.00	<1.00	1.00	1.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	<10.00	--	--
--	--	--	<20.00	--	--	--	--	--	--	--
--	--	--	<3.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	<10.00	--	--
60.000	--	100.000	175.00	675.00	--	1700.00	--	--	--	--
<10.000	10.000	19.000	37.50	85.00	140.00	330.00	60.78	61.51	0.0001	0.2122
--	--	--	<10.00	--	--	--	--	<10.00	--	--
8.000	--	16.000	29.50	45.00	--	64.00	--	--	--	--
70.000	--	120.000	150.00	270.00	--	370.00	--	--	--	--
<10.000	10.000	21.000	41.00	86.00	210.00	1900.00	143.61	144.22	0.0001	0.0003
<0.100	<0.100	<0.100	<0.10	0.25	0.50	1.50	0.18	0.23	0.0001	0.0001

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 2, 06468170, James River
Molybdenum, dissolved (µg/L as Mo)	01060	6	0	0	04/13/82 through 04/03/90
Nickel, total (µg/L as Ni)	01067	2	2	100	04/24/86 through 04/06/87
Nickel, dissolved (µg/L as Ni)	01065	8	4	50.0	03/27/86 through 05/11/87
Selenium, total (µg/L as Se)	01147	24	1	4.2	04/24/86 through 07/31/95
Selenium, dissolved (µg/L as Se)	01145	64	0	0	04/13/82 through 08/29/95
Silver, total (µg/L as Ag)	01077	2	0	0	04/24/86 through 04/06/87
Silver, dissolved (µg/L as Ag)	01075	8	0	0	03/27/86 through 05/11/87
Strontium, dissolved (µg/L as Sr)	01080	6	6	100	04/13/82 through 04/03/90
Zinc, dissolved (µg/L as Zn)	01090	23	4	17.4	03/18/85 through 08/13/90
Sediment, suspended, concentration (mg/L)	80154	54	54	100	05/14/85 through 08/29/95
					Site 3, 06468190, Juanita Lake
Specific conductance (µS/cm at 25 degrees Celsius)	00095	10	10	100	03/27/86 through 04/19/89
pH, water, whole, field (standard units)	00400	5	5	100	03/27/86 through 04/10/89
pH, water, whole, laboratory (standard units)	00403	6	6	100	03/27/86 through 04/10/89
Turbidity (NTU)	00076	6	6	100	03/27/86 through 04/10/89
Oxygen, dissolved (mg/L)	00300	6	6	100	03/27/86 through 04/10/89
Hardness, total (mg/L as $CaCO_3$)	00900	6	6	100	03/27/86 through 04/10/89
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	6	6	100	03/27/86 through 04/10/89
Solids, sum of constituents, dissolved (mg/L)	70301	6	6	100	03/27/86 through 04/10/89
Residue, nonfilterable (mg/L)	00530	4	2	50.0	04/06/87 through 04/10/89
Calcium, dissolved (mg/L as Ca)	00915	6	6	100	03/27/86 through 04/10/89
Magnesium, dissolved (mg/L as Mg)	00925	6	6	100	03/27/86 through 04/10/89
Sodium, dissolved (mg/L as Na)	00930	6	6	100	03/27/86 through 04/10/89
Sodium (percent of cations)	00932	6	6	100	03/27/86 through 04/10/89
Sodium adsorption ratio	00931	6	6	100	03/27/86 through 04/10/89
Potassium, dissolved (mg/L as K)	00935	6	6	100	03/27/86 through 04/10/89
Sulfate, dissolved (mg/L as SO_4)	00945	6	6	100	03/27/86 through 04/10/89
Chloride, dissolved (mg/L as Cl)	00940	6	6	100	03/27/86 through 04/10/89
Silica, dissolved (mg/L as SiO_2)	00955	3	3	100	03/27/86 through 04/06/87
Nitrogen, nitrite, dissolved (mg/L as N)	00613	6	0	0	03/27/86 through 04/10/89
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	6	0	0	03/27/86 through 04/10/89
Nitrogen, ammonia, total (mg/L as N)	00610	3	3	100	04/06/88 through 04/10/89
Nitrogen, ammonia, dissolved (mg/L as N)	00608	3	3	100	04/06/88 through 04/10/89
Nitrogen, organic, total (mg/L as N)	00605	3	3	100	04/06/88 through 04/10/89
Nitrogen, organic, dissolved (mg/L as N)	00607	3	3	100	04/06/88 through 04/10/89
Nitrogen, ammonia plus organic, total (mg/L as N)	00625	3	3	100	04/06/88 through 04/10/89
Nitrogen, ammonia plus organic, dissolved (mg/L as N)	00623	3	3	100	04/06/88 through 04/10/89
Nitrogen, total (mg/L as N)	00600	3	3	100	04/06/88 through 04/10/89
Phosphorus, total (mg/L as P)	00665	4	4	100	04/06/87 through 04/10/89
Phosphorus, dissolved (mg/L as P)	00666	6	6	100	03/27/86 through 04/10/89
Phosphorus, orthophosphate, total (mg/L as P)	70507	4	4	100	04/06/87 through 04/10/89

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for *normality*, untrans-formed data	p-value for test for *normality*, $\log_e$-transformed data
near Grace City, N. Dak.--Continued										
--	--	--	<10.00	--	--	--	--	--	--	--
2.000	--	--	6.00	--	--	10.00	--	--	--	--
<2.000	--	<2.000	0	2.50	--	3.00	--	--	--	--
<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	6.00	0.25	1.21	0.0001	0.0001
--	--	--	<1.00	--	--	--	--	<1.00	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
93.000	--	93.000	163.50	240.00	--	300.00	--	--	--	--
<10.000	<10.000	<10.000	<10.00	<10.00	11.00	14.00	2.13	10.39	0.0001	0.0558
2.000	4.000	6.000	10.70	31.00	76.00	243.00	27.56	27.56	0.0001	0.1541
Tributary near Grace City, N. Dak.										
300.000	350.000	450.000	550.00	710.00	840.00	910.00	--	--	--	--
7.450	--	7.600	7.75	8.25	--	8.25	--	--	--	--
7.600	--	7.700	8.05	8.20	--	8.30	--	--	--	--
0.500	--	0.600	1.30	2.00	--	12.00	--	--	--	--
9.200	--	10.000	10.15	12.00	--	12.40	--	--	--	--
100.000	--	160.000	205.00	240.00	--	370.00	--	--	--	--
192.000	--	255.000	344.00	464.00	--	589.00	--	--	--	--
185.000	--	235.000	312.00	455.00	--	555.00	--	--	--	--
<1.000	--	<1.000	2.50	9.00	--	12.00	--	--	--	--
21.000	--	38.000	43.50	59.00	--	77.00	--	--	--	--
12.000	--	15.000	20.50	29.00	--	43.00	--	--	--	--
19.000	--	22.000	27.00	62.00	--	65.00	--	--	--	--
18.000	--	22.000	26.00	27.00	--	36.00	--	--	--	--
0.700	--	0.800	0.85	1.00	--	2.00	--	--	--	--
6.200	--	7.000	7.20	7.50	--	8.50	--	--	--	--
34.000	--	35.000	82.00	120.00	--	160.00	--	--	--	--
6.000	--	6.100	14.50	24.00	--	37.00	--	--	--	--
13.000	--	--	15.00	--	--	23.00	--	--	--	--
--	--	--	<0.02	--	--	--	--	--	--	--
--	--	--	<0.10	--	--	--	--	--	--	--
0.030	--	--	0.06	--	--	0.08	--	--	--	--
0.040	--	--	0.06	--	--	0.09	--	--	--	--
0.770	--	--	0.84	--	--	1.70	--	--	--	--
0.640	--	--	0.66	--	--	1.20	--	--	--	--
0.800	--	--	0.90	--	--	1.80	--	--	--	--
0.700	--	--	0.70	--	--	1.30	--	--	--	--
0.800	--	--	0.90	--	--	1.80	--	--	--	--
0.070	--	0.075	0.09	0.16	--	0.22	--	--	--	--
0.020	--	0.040	0.06	0.07	--	0.18	--	--	--	--
0.023	--	0.033	0.05	0.11	--	0.16	--	--	--	--

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 3, 06468190, Juanita Lake
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	6	5	83.3	03/27/86 through 04/10/89
Phosphorus, organic, total (mg/L as P)	00670	4	4	100	04/06/87 through 04/10/89
Arsenic, total (µg/L as As)	01002	4	4	100	04/06/87 through 04/10/89
Arsenic, dissolved (µg/L as As)	01000	6	3	50.0	03/27/86 through 04/10/89
Barium, total (µg/L as Ba)	01007	1	0	0	04/06/87 through 04/06/87
Barium, dissolved (µg/L as Ba	01005	3	0	0	03/27/86 through 04/06/87
Beryllium, total (µg/L as Be)	01012	1	0	0	04/06/87 through 04/06/87
Beryllium, dissolved (µg/L as Be)	01010	3	0	0	03/27/86 through 04/06/87
Boron, total (µg/L as B)	01022	1	1	100	04/06/87 through 04/06/87
Boron, dissolved (µg/L as B)	01020	6	6	100	03/27/86 through 04/10/89
Cadmium, total (µg/L as Cd)	01027	4	2	50.0	04/06/87 through 04/10/89
Cadmium, dissolved (µg/L as Cd)	01025	6	0	0	03/27/86 through 04/10/89
Chromium, dissolved (µg/L as Cr)	01030	3	0	0	03/27/86 through 04/06/87
Cobalt, dissolved (µg/L as Co)	01035	3	0	0	03/27/86 through 04/06/87
Copper, dissolved (µg/L as Cu)	01040	6	0	0	03/27/86 through 04/10/89
Iron, total (µg/L as Fe)	01045	3	3	100	04/06/88 through 04/10/89
Iron, dissolved (µg/L as Fe)	01046	6	6	100	03/27/86 through 04/10/89
Lead, dissolved (µg/L as Pb)	01049	6	0	0	03/27/86 through 04/10/89
Manganese, total (µg/L as Mn)	01055	3	3	100	04/06/88 through 04/10/89
Manganese, dissolved (µg/L as Mn)	01056	6	6	100	03/27/86 through 04/10/89
Mercury, dissolved (µg/L as Hg)	71890	6	6	100	03/27/86 through 04/10/89
Nickel, total (µg/L as Ni)	01067	1	1	100	04/06/87 through 04/06/87
Nickel, dissolved (µg/L as Ni)	01065	3	1	33.3	03/27/86 through 04/06/87
Selenium, total (µg/L as Se)	01147	4	0	0	04/06/87 through 04/10/89
Selenium, dissolved (µg/L as Se)	01145	6	0	0	03/27/86 through 04/10/89
Silver, total (µg/L as Ag)	01077	1	0	0	04/06/87 through 04/06/87
Silver, dissolved (µg/L as Ag)	01075	3	0	0	03/27/86 through 04/06/87
Zinc, dissolved (µg/L as Zn)	01090	6	1	16.7	03/27/86 through 04/10/89
Sediment, suspended, concentration (mg/L)	80154	6	6	100	03/27/86 through 04/10/89
					Site 4, 06468250, James River above
Specific conductance (µS/cm at 25 degrees Celsius)	00095	72	72	100	06/26/85 through 08/29/95
pH, water, whole, field (standard units)	00400	49	49	100	06/26/85 through 08/29/95
pH, water, whole, laboratory (standard units)	00403	52	52	100	06/26/85 through 08/29/95
Turbidity (NTU)	00076	36	36	100	06/26/85 through 09/09/93
Oxygen, dissolved (mg/L)	00300	52	52	100	06/26/85 through 08/29/95
Hardness, total (mg/L as $CaCO_3$)	00900	52	52	100	06/26/85 through 08/29/95
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	52	52	100	06/26/85 through 08/29/95
Solids, sum of constituents, dissolved (mg/L)	70301	49	49	100	06/26/85 through 08/29/95
Residue, nonfilterable (mg/L)	00530	52	51	98.1	06/26/85 through 08/29/95
Calcium, dissolved (mg/L as Ca)	00915	52	52	100	06/26/85 through 08/29/95

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
Tributary near Grace City, N. Dak.--Continued										
<0.010	--	0.015	0.03	0.05	--	0.15	--	--	--	--
0.030	--	0.040	0.05	0.06	--	0.06	--	--	--	--
1.000	--	1.000	1.00	1.50	--	2.00	--	--	--	--
<1.000	--	<1.000	0	1.00	--	4.00	--	--	--	--
--	--	--	<100.00	--	--	--	--	--	--	--
--	--	--	<100.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	20.00	--	--	--	--	--	--	--
30.000	--	40.000	40.00	40.00	--	60.00	--	--	--	--
<1.000	--	<1.000	0	1.00	--	1.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<20.00	--	--	--	--	--	--	--
--	--	--	<3.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
90.000	--	--	110.00	--	--	120.00	--	--	--	--
19.000	--	70.000	74.50	89.00	--	130.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
30.000	--	--	60.00	--	--	90.00	--	--	--	--
17.000	--	22.000	30.00	71.00	--	84.00	--	--	--	--
0.100	--	0.100	0.20	0.30	--	0.40	--	--	--	--
--	--	--	1.00	--	--	--	--	--	--	--
<2.000	--	--	<2.00	--	--	2.00	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
<10.000	--	<10.000	<10.00	<10.00	--	11.00	--	--	--	--
1.000	--	3.600	5.70	8.80	--	9.50	--	--	--	--
Arrowwood Lake near Kensal, N. Dak.										
225.000	410.000	587.500	860.00	1010.00	1570.00	2640.00	884.96	884.96	0.0001	0.2334
7.000	7.500	7.660	7.90	8.30	8.58	8.94	7.99	7.99	0.3371	0.4145
7.300	7.500	7.600	7.90	8.10	8.20	8.80	7.88	7.88	0.2101	0.2361
0.400	0.700	1.850	4.40	6.40	14.00	17.00	5.48	5.48	0.0001	0.1538
0.780	3.800	6.110	7.95	9.88	12.30	17.83	8.08	8.08	0.4922	0.0001
81.000	160.000	220.000	300.00	340.00	530.00	600.00	302.62	302.62	0.0015	0.0408
171.000	304.000	464.500	604.50	693.00	1030.00	1200.00	611.00	611.00	0.0166	0.0567
153.000	274.000	423.000	555.00	630.00	978.00	1200.00	567.88	567.88	0.0211	0.0642
<1.000	3.000	5.000	12.00	18.00	29.00	41.00	13.44	13.46	0.0001	0.0128
16.000	31.000	41.500	54.00	62.50	99.00	120.00	56.79	56.79	0.0001	0.0893

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 4, 06468250, James River above
Magnesium, dissolved (mg/L as Mg)	00925	52	52	100	06/26/85 through 08/29/95
Sodium, dissolved (mg/L as Na)	00930	52	52	100	06/26/85 through 08/29/95
Sodium (percent of cations)	00932	52	52	100	06/26/85 through 08/29/95
Sodium adsorption ratio	00931	52	52	100	06/26/85 through 08/29/95
Potassium, dissolved (mg/L as K)	00935	52	52	100	06/26/85 through 08/29/95
Sulfate, dissolved (mg/L as SO_4)	00945	52	52	100	06/26/85 through 08/29/95
Chloride, dissolved (mg/L as Cl)	00940	52	52	100	06/26/85 through 08/29/95
Fluoride, dissolved (mg/L as F)	00950	28	28	100	04/08/91 through 08/29/95
Silica, dissolved (mg/L as SiO_2)	00955	28	28	100	06/26/85 through 08/29/95
Nitrogen, nitrite, dissolved (mg/L as N)	00613	50	15	30.0	06/26/85 through 08/29/95
Nitrogen, nitrate, dissolved (mg/L as N)	00618	15	15	100	10/09/86 through 06/29/95
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	15	14	93.3	10/09/86 through 06/29/95
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	50	13	26.0	06/26/85 through 08/29/95
Nitrogen, ammonia, total (mg/L as N)	00610	11	11	100	08/25/87 through 07/08/92
Nitrogen, ammonia, dissolved (mg/L as N)	00608	38	33	86.8	08/25/87 through 08/29/95
Nitrogen, organic, total (mg/L as N)	00605	19	19	100	08/25/87 through 07/31/95
Nitrogen, organic, dissolved (mg/L as N)	00607	33	33	100	08/25/87 through 06/29/95
Nitrogen, ammonia plus organic, total (mg/L as N)	00625	19	19	100	08/25/87 through 07/31/95
Nitrogen, ammonia plus organic, dissolved (mg/L as N)	00623	38	38	100	08/25/87 through 08/29/95
Nitrogen, total (mg/L as N)	00600	19	19	100	08/25/87 through 07/31/95
Phosphorus, total (mg/L as P)	00665	23	23	100	04/23/86 through 07/31/95
Phosphorus, dissolved (mg/L as P)	00666	50	50	100	06/26/85 through 08/29/95
Phosphorus, orthophosphate, total (mg/L as P)	70507	16	16	100	01/07/86 through 07/08/92
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	49	43	87.8	10/30/85 through 08/29/95
Phosphorus, organic, total (mg/L as P)	00670	22	22	100	04/23/86 through 07/31/95
Arsenic, total (µg/L as As)	01002	24	24	100	01/07/86 through 07/31/95
Arsenic, dissolved (µg/L as As)	01000	50	50	100	01/07/86 through 08/29/95
Barium, total (µg/L as Ba)	01007	5	4	80.0	01/07/86 through 05/13/87
Barium, dissolved (µg/L as Ba	01005	10	2	20.0	01/07/86 through 07/07/87
Beryllium, total (µg/L as Be)	01012	5	0	0	01/07/86 through 05/13/87
Beryllium, dissolved (µg/L as Be)	01010	10	0	0	01/07/86 through 07/07/87
Boron, total (µg/L as B)	01022	4	4	100	04/23/86 through 05/13/87
Boron, dissolved (µg/L as B)	01020	52	52	100	06/26/85 through 08/29/95
Cadmium, total (µg/L as Cd)	01027	17	3	17.6	01/07/86 through 08/11/93
Cadmium, dissolved (µg/L as Cd)	01025	34	0	0	01/07/86 through 09/09/93
Chromium, total (µg/L as Cr)	01034	1	1	100	01/07/86 through 01/07/86
Chromium, dissolved (µg/L as Cr)	01030	10	0	0	01/07/86 through 07/07/87
Cobalt, dissolved (µg/L as Co)	01035	9	0	0	04/23/86 through 07/07/87
Copper, dissolved (µg/L as Cu)	01040	36	0	0	06/26/85 through 09/09/93
Iron, total (µg/L as Fe)	01045	13	13	100	08/25/87 through 08/11/93

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
Arrowwood Lake near Kensal, N. Dak.--Continued										
9.700	20.000	29.000	40.00	44.50	64.00	79.00	39.09	39.09	0.1296	0.0027
14.000	34.000	57.500	83.50	110.00	140.00	210.00	88.21	88.21	0.1347	0.0227
21.000	25.000	32.500	35.00	42.50	47.00	63.00	36.58	36.58	0.3431	0.2814
0.600	1.000	2.000	2.00	3.00	3.00	5.00	2.16	2.16	0.0001	0.0001
3.600	9.600	11.000	13.00	16.00	19.00	26.00	13.42	13.42	0.2539	0.0191
31.000	62.000	110.000	140.00	195.00	240.00	370.00	152.15	152.15	0.0263	0.0603
4.100	9.900	13.000	20.00	32.50	41.00	59.00	23.35	23.35	0.0001	0.3237
0.100	0.100	0.150	0.20	0.20	0.20	0.30	0.18	0.18	0.0001	0.0001
3.300	7.700	10.650	16.50	29.00	33.00	45.00	19.50	19.50	0.1341	0.1084
<0.020	<0.020	<0.020	<0.02	0.02	0.04	0.20	0.01	0.03	0.0001	0.0001
0.019	0.030	0.054	0.12	0.31	0.69	2.10	--	--	--	--
<0.100	0.130	0.240	0.53	1.40	3.10	9.30	--	--	--	--
<0.100	<0.100	<0.100	<0.10	0.10	0.30	2.30	0.12	0.19	0.0001	0.0001
0.020	0.020	0.020	0.03	0.06	0.66	1.10	--	--	--	--
<0.015	<0.015	0.030	0.06	0.36	1.00	2.50	0.29	0.29	0.0001	0.0017
0.970	1.100	1.200	1.40	1.70	1.90	2.90	--	--	--	--
0.580	0.860	0.950	1.10	1.40	1.60	2.20	1.19	1.19	0.0370	0.6635
1.000	1.100	1.300	1.60	1.90	2.80	2.90	--	--	--	--
0.600	0.900	1.000	1.25	1.60	2.00	4.30	1.46	1.46	0.0001	0.0157
1.000	1.100	1.400	1.60	2.30	3.10	4.10	--	--	--	--
0.090	0.110	0.140	0.20	0.33	0.41	0.58	0.24	0.24	0.0179	0.6281
0.020	0.030	0.070	0.11	0.22	0.37	1.00	0.18	0.18	0.0001	0.4943
0.018	0.022	0.049	0.09	0.18	0.31	2.50	--	--	--	--
<0.010	<0.010	0.040	0.09	0.19	0.37	0.97	0.16	0.16	0.0001	0.0066
0.010	0.030	0.050	0.08	0.10	0.23	0.58	0.12	0.12	0.0001	0.1278
1.000	2.000	2.000	2.00	4.00	5.00	7.00	3.04	3.04	0.0006	0.0059
1.000	1.500	2.000	2.50	4.00	5.00	9.00	3.00	3.00	0.0001	0.0017
<100.000	--	100.000	100.00	100.00	--	100.00	--	--	--	--
<100.000	<100.000	<100.000	<100.00	<100.00	125.00	130.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
10.000	--	60.000	110.00	155.00	--	200.00	--	--	--	--
40.000	70.000	90.000	165.00	210.00	260.00	290.00	159.23	159.23	0.0204	0.0045
<1.000	<1.000	<1.000	<1.00	<1.00	1.00	2.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	<10.00	--	--
--	--	--	5.00	--	--	--	--	--	--	--
--	--	--	<20.00	--	--	--	--	--	--	--
--	--	--	<3.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	<10.00	--	--
40.000	80.000	140.000	210.00	280.00	460.00	680.00	--	--	--	--

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 4, 06468250, James River above
Iron, dissolved (µg/L as Fe)	01046	52	46	88.5	06/26/85 through 08/29/95
Lead, dissolved (µg/L as Pb)	01049	36	0	0	06/26/85 through 09/09/93
Manganese, total (µg/L as Mn)	01055	13	13	100	08/25/87 through 08/11/93
Manganese, dissolved (µg/L as Mn)	01056	52	48	92.3	06/26/85 through 08/29/95
Mercury, dissolved (µg/L as Hg)	71890	51	24	47.1	06/26/85 through 08/29/95
Nickel, total (µg/L as Ni)	01067	4	3	75.0	01/07/86 through 04/07/87
Nickel, dissolved (µg/L as Ni)	01065	9	6	66.7	04/23/86 through 07/07/87
Selenium, total (µg/L as Se)	01147	23	1	4.3	04/23/86 through 07/31/95
Selenium, dissolved (µg/L as Se)	01145	52	0	0	06/26/85 through 08/29/95
Silver, total (µg/L as Ag)	01077	4	1	25.0	01/07/86 through 04/07/87
Silver, dissolved (µg/L as Ag)	01075	10	0	0	01/07/86 through 07/07/87
Zinc, dissolved (µg/L as Zn)	01090	36	4	11.1	06/26/85 through 09/09/93
Sediment, suspended, concentration (mg/L)	80154	50	50	100	06/26/85 through 08/29/95
					Site 5, 06468300, Kelly Creek below
Specific conductance (µS/cm at 25 degrees Celsius)	00095	28	28	100	10/07/59 through 05/16/89
pH, water, whole, field (standard units)	00400	20	20	100	10/07/59 through 05/16/89
pH, water, whole, laboratory (standard units)	00403	9	9	100	03/26/86 through 05/16/89
Turbidity (NTU)	00076	9	9	100	03/26/86 through 05/16/89
Oxygen, dissolved (mg/L)	00300	10	10	100	03/26/86 through 05/16/89
Hardness, total (mg/L as $CaCO_3$)	00900	20	20	100	10/07/59 through 05/16/89
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	20	20	100	10/07/59 through 05/16/89
Solids, sum of constituents, dissolved (mg/L)	70301	20	20	100	10/07/59 through 05/16/89
Residue, nonfilterable (mg/L)	00530	8	7	87.5	04/24/86 through 05/16/89
Calcium, dissolved (mg/L as Ca)	00915	20	20	100	10/07/59 through 05/16/89
Magnesium, dissolved (mg/L as Mg)	00925	20	20	100	10/07/59 through 05/16/89
Sodium, dissolved (mg/L as Na)	00930	20	20	100	10/07/59 through 05/16/89
Sodium (percent of cations)	00932	20	20	100	10/07/59 through 05/16/89
Sodium adsorption ratio	00931	20	20	100	10/07/59 through 05/16/89
Potassium, dissolved (mg/L as K)	00935	20	20	100	10/07/59 through 05/16/89
Sulfate, dissolved (mg/L as SO_4)	00945	20	20	100	10/07/59 through 05/16/89
Chloride, dissolved (mg/L as Cl)	00940	20	20	100	10/07/59 through 05/16/89
Fluoride, dissolved (mg/L as F)	00950	11	11	100	10/07/59 through 05/20/64
Silica, dissolved (mg/L as SiO_2)	00955	15	15	100	10/07/59 through 07/07/87
Nitrogen, nitrite, dissolved (mg/L as N)	00613	9	2	22.2	03/26/86 through 05/16/89
Nitrogen, nitrate, dissolved (mg/L as N)	00618	1	1	100	04/11/89 through 04/11/89
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	12	12	100	10/07/59 through 04/11/89
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	9	1	11.1	03/26/86 through 05/16/89
Nitrogen, ammonia, total (mg/L as N)	00610	5	5	100	08/25/87 through 05/16/89
Nitrogen, ammonia, dissolved (mg/L as N)	00608	5	4	80.0	08/25/87 through 05/16/89

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
Arrowwood Lake near Kensal, N. Dak.--Continued										
<10.000	<10.000	15.500	27.00	52.00	98.00	280.00	46.13	47.29	0.0001	0.6092
--	--	--	<10.00	--	--	--	--	<10.00	--	--
40.000	40.000	60.000	200.00	300.00	480.00	810.00	--	--	--	--
<10.000	13.000	25.000	72.50	210.00	600.00	4800.00	294.23	295.00	0.0001	0.8219
<0.100	<0.100	<0.100	<0.10	0.20	0.30	0.70	0.12	0.18	0.0001	0.0001
<1.000	--	0.500	3.50	6.50	--	8.00	--	--	--	--
<2.000	--	<2.000	2.00	2.00	--	3.00	--	--	--	--
<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	1.00	0.04	1.00	--	--
--	--	--	<1.00	--	--	--	--	<1.00	--	--
<1.000	--	<1.000	<1.00	0	--	1.00	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
<10.000	<10.000	<10.000	<10.00	<10.00	10.00	14.00	1.33	10.22	0.0001	0.0009
2.000	5.900	9.000	16.00	35.00	73.20	264.00	32.92	32.92	0.0001	0.4254
Niccum Reservoir near Bordulac, N. Dak.										
260.000	336.000	468.000	532.00	583.50	760.00	890.00	530.64	530.64	0.4720	0.2366
7.100	7.250	7.525	7.89	8.30	8.71	9.43	7.94	7.94	0.4179	0.6668
7.500	--	8.000	8.20	8.40	--	9.10	--	--	--	--
1.500	--	3.100	3.40	4.00	--	20.00	--	--	--	--
6.400	7.100	8.000	9.15	9.80	12.35	14.70	--	--	--	--
120.000	125.000	150.000	185.00	230.00	265.00	280.00	190.00	190.00	0.3180	0.3669
201.000	241.500	295.500	340.50	372.00	482.00	529.00	344.70	344.70	0.3301	0.7437
187.000	197.000	261.500	307.50	364.50	447.50	481.00	317.55	317.55	0.6058	0.6286
<1.000	--	3.000	9.00	48.00	--	81.00	--	--	--	--
15.000	18.500	24.500	30.00	41.50	55.50	58.00	33.95	33.95	0.2042	0.3745
15.000	15.500	21.000	25.50	30.50	33.00	38.00	25.45	25.45	0.7950	0.3187
20.000	22.500	32.000	41.00	48.00	54.00	84.00	41.20	41.20	0.0566	0.4735
21.000	24.000	27.000	29.00	34.00	39.50	44.00	30.50	30.50	0.1796	0.7150
0.800	0.850	1.000	1.00	1.00	2.00	2.00	1.17	1.17	0.0001	0.0001
5.700	6.700	7.500	9.75	11.00	13.00	16.00	9.71	9.71	0.4745	0.8260
21.000	25.000	37.000	49.00	99.50	110.00	130.00	62.65	62.65	0.0267	0.1852
4.800	5.700	9.500	11.50	12.50	16.00	29.00	11.64	11.64	0.0007	0.0993
0.100	0.200	0.200	0.20	0.30	0.30	0.30	--	--	--	--
1.800	2.200	4.600	8.50	14.00	18.00	18.00	--	--	--	--
<0.020	--	<0.020	<0.02	<0.02	--	0.05	--	--	--	--
--	--	--	0.63	--	--	--	--	--	--	--
0.300	0.400	1.150	3.10	4.90	6.70	9.40	--	--	--	--
<0.100	--	<0.100	<0.10	<0.10	--	0.68	--	--	--	--
0.020	--	0.020	0.02	0.04	--	0.51	--	--	--	--
<0.015	--	0.020	0.04	0.08	--	0.49	--	--	--	--

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 5, 06468300, Kelly Creek below
Nitrogen, organic, total (mg/L as N)	00605	5	5	100	08/25/87 through 05/16/89
Nitrogen, organic, dissolved (mg/L as N)	00607	5	5	100	08/25/87 through 05/16/89
Nitrogen, ammonia plus organic, total (mg/L as N)	00625	5	5	100	08/25/87 through 05/16/89
Nitrogen, ammonia plus organic, dissolved (mg/L as N)	00623	5	5	100	08/25/87 through 05/16/89
Nitrogen, total (mg/L as N)	00600	5	5	100	08/25/87 through 05/16/89
Phosphorus, total (mg/L as P)	00665	8	8	100	04/24/86 through 05/16/89
Phosphorus, dissolved (mg/L as P)	00666	9	9	100	03/26/86 through 05/16/89
Phosphorus, orthophosphate, total (mg/L as P)	70507	8	8	100	04/24/86 through 05/16/89
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	9	7	77.8	03/26/86 through 05/16/89
Phosphorus, organic, total (mg/L as P)	00670	8	8	100	04/24/86 through 05/16/89
Arsenic, total (µg/L as As)	01002	7	7	100	04/24/86 through 05/16/89
Arsenic, dissolved (µg/L as As)	01000	9	9	100	03/26/86 through 05/16/89
Barium, total (µg/L as Ba)	01007	3	2	66.7	04/24/86 through 05/13/87
Barium, dissolved (µg/L as Ba	01005	4	0	0	03/26/86 through 07/07/87
Beryllium, total (µg/L as Be)	01012	3	0	0	04/24/86 through 05/13/87
Beryllium, dissolved (µg/L as Be)	01010	4	0	0	03/26/86 through 07/07/87
Boron, total (µg/L as B)	01022	3	3	100	04/24/86 through 05/13/87
Boron, dissolved (µg/L as B)	01020	20	20	100	10/07/59 through 05/16/89
Cadmium, total (µg/L as Cd)	01027	7	1	14.3	04/24/86 through 05/16/89
Cadmium, dissolved (µg/L as Cd)	01025	9	0	0	03/26/86 through 05/16/89
Chromium, dissolved (µg/L as Cr)	01030	4	0	0	03/26/86 through 07/07/87
Cobalt, dissolved (µg/L as Co)	01035	4	0	0	03/26/86 through 07/07/87
Copper, dissolved (µg/L as Cu)	01040	9	0	0	03/26/86 through 05/16/89
Iron, total (µg/L as Fe)	01045	5	5	100	08/25/87 through 05/16/89
Iron, dissolved (µg/L as Fe)	01046	9	9	100	03/26/86 through 05/16/89
Lead, dissolved (µg/L as Pb)	01049	9	0	0	03/26/86 through 05/16/89
Manganese, total (µg/L as Mn)	01055	11	7	63.6	05/10/60 through 05/16/89
Manganese, dissolved (µg/L as Mn)	01056	9	7	77.8	03/26/86 through 05/16/89
Mercury, dissolved (µg/L as Hg)	71890	9	8	88.9	03/26/86 through 05/16/89
Nickel, total (µg/L as Ni)	01067	2	2	100	04/24/86 through 04/07/87
Nickel, dissolved (µg/L as Ni)	01065	4	0	0	03/26/86 through 07/07/87
Selenium, total (µg/L as Se)	01147	7	0	0	04/24/86 through 05/16/89
Selenium, dissolved (µg/L as Se)	01145	9	0	0	03/26/86 through 05/16/89
Silver, total (µg/L as Ag)	01077	2	0	0	04/24/86 through 04/07/87
Silver, dissolved (µg/L as Ag)	01075	4	0	0	03/26/86 through 07/07/87
Zinc, dissolved (µg/L as Zn)	01090	9	1	11.1	03/26/86 through 05/16/89
Sediment, suspended, concentration (mg/L)	80154	10	10	100	03/26/86 through 05/16/89
					Site 6, 06468500, James River
Specific conductance (µS/cm at 25 degrees Celsius)	00095	63	63	100	10/01/58 through 07/27/95
pH, water, whole, field (standard units)	00400	59	59	100	10/01/58 through 07/27/95
pH, water, whole, laboratory (standard units)	00403	48	48	100	03/04/81 through 07/27/95
Turbidity (NTU)	00076	21	21	100	11/27/84 through 09/09/93
Oxygen, dissolved (mg/L)	00300	43	43	100	01/04/80 through 07/27/95

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
Niccum Reservoir near Bordulac, N. Dak.--Continued										
0.780	--	0.960	0.98	2.10	--	2.40	--	--	--	--
0.420	--	0.660	0.98	1.20	--	1.60	--	--	--	--
0.800	--	1.000	1.00	2.40	--	2.60	--	--	--	--
0.500	--	0.700	1.00	1.60	--	1.70	--	--	--	--
0.800	--	1.000	1.00	2.40	--	3.30	--	--	--	--
0.080	--	0.095	0.13	0.22	--	0.48	--	--	--	--
0.020	--	0.040	0.07	0.10	--	0.41	--	--	--	--
0.015	--	0.024	0.04	0.09	--	0.18	--	--	--	--
<0.010	--	0.019	0.04	0.07	--	0.35	--	--	--	--
0.040	--	0.065	0.08	0.08	--	0.44	--	--	--	--
1.000	--	2.000	2.00	3.00	--	7.00	--	--	--	--
2.000	--	2.000	2.00	3.00	--	8.00	--	--	--	--
<100.000	--	--	100.00	--	--	100.00	--	--	--	--
--	--	--	<100.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
20.000	--	--	50.00	--	--	60.00	--	--	--	--
50.000	55.000	70.000	85.00	120.00	165.00	290.00	104.50	104.50	0.0002	0.3014
<1.000	--	<1.000	<1.00	<1.00	--	1.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<20.00	--	--	--	--	--	--	--
--	--	--	<3.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
180.000	--	190.000	190.00	200.00	--	340.00	--	--	--	--
11.000	--	11.000	17.00	64.00	--	190.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
<10.000	<10.000	<10.000	80.00	220.00	230.00	530.00	--	--	--	--
<10.000	--	10.000	13.00	120.00	--	440.00	--	--	--	--
<0.100	--	0.100	0.30	0.30	--	0.50	--	--	--	--
2.000	--	--	6.00	--	--	10.00	--	--	--	--
--	--	--	<2.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
<10.000	--	<10.000	<10.00	<10.00	--	11.00	--	--	--	--
3.000	3.350	4.100	8.10	12.30	20.35	23.90	--	--	--	--
near Pingree, N. Dak.										
295.000	470.000	570.000	672.00	780.00	930.00	1410.00	691.59	691.59	0.0907	0.8577
7.000	7.400	7.900	8.40	8.60	8.95	9.10	8.27	8.27	0.0195	0.0054
7.300	7.700	7.800	8.00	8.30	8.40	8.80	8.04	8.04	0.6445	0.7240
1.200	2.400	2.800	5.80	23.00	30.00	100.00	15.70	15.70	0.0001	0.3486
3.100	6.800	7.800	10.22	12.00	13.40	22.40	10.27	10.27	0.0455	0.3789

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 6, 06468500, James River
Hardness, total (mg/L as $CaCO_3$)	00900	62	62	100	10/01/58 through 07/27/95
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	62	62	100	10/01/58 through 07/27/95
Solids, sum of constituents, dissolved (mg/L)	70301	61	61	100	10/01/58 through 07/27/95
Residue, nonfilterable (mg/L)	00530	26	25	96.2	11/27/84 through 07/27/95
Calcium, dissolved (mg/L as Ca)	00915	62	62	100	10/01/58 through 07/27/95
Magnesium, dissolved (mg/L as Mg)	00925	62	62	100	10/01/58 through 07/27/95
Sodium, dissolved (mg/L as Na)	00930	62	62	100	10/01/58 through 07/27/95
Sodium (percent of cations)	00932	62	62	100	10/01/58 through 07/27/95
Sodium adsorption ratio	00931	62	62	100	10/01/58 through 07/27/95
Potassium, dissolved (mg/L as K)	00935	62	62	100	10/01/58 through 07/27/95
Sulfate, dissolved (mg/L as SO_4)	00945	62	62	100	10/01/58 through 07/27/95
Chloride, dissolved (mg/L as Cl)	00940	62	62	100	10/01/58 through 07/27/95
Fluoride, dissolved (mg/L as F)	00950	60	58	96.7	10/01/58 through 07/27/95
Silica, dissolved (mg/L as SiO_2)	00955	55	54	98.2	10/01/58 through 07/27/95
Nitrogen, nitrite, dissolved (mg/L as N)	00613	24	5	20.8	11/27/84 through 07/27/95
Nitrogen, nitrate, dissolved (mg/L as N)	00618	3	3	100	04/07/87 through 04/05/95
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	8	8	100	10/01/58 through 04/05/95
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	54	11	20.4	10/05/78 through 07/27/95
Nitrogen, ammonia, total (mg/L as N)	00610	3	3	100	08/25/87 through 05/17/88
Nitrogen, ammonia, dissolved (mg/L as N)	00608	10	9	90.0	08/25/87 through 07/27/95
Nitrogen, organic, total (mg/L as N)	00605	8	8	100	08/25/87 through 07/27/95
Nitrogen, organic, dissolved (mg/L as N)	00607	10	10	100	08/25/87 through 07/27/95
Nitrogen, ammonia plus organic, total (mg/L as N)	00625	8	8	100	08/25/87 through 07/27/95
Nitrogen, ammonia plus organic, dissolved (mg/L as N)	00623	10	10	100	08/25/87 through 07/27/95
Nitrogen, total (mg/L as N)	00600	8	8	100	08/25/87 through 07/27/95
Phosphorus, total (mg/L as P)	00665	13	13	100	03/26/86 through 07/27/95
Phosphorus, dissolved (mg/L as P)	00666	54	53	98.1	10/05/78 through 07/27/95
Phosphorus, orthophosphate, total (mg/L as P)	70507	8	8	100	03/26/86 through 05/17/88
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	20	17	85.0	03/26/86 through 07/27/95
Phosphorus, organic, total (mg/L as P)	00670	10	10	100	03/26/86 through 03/30/94
Aluminum, dissolved (µg/L as Al)	01106	24	13	54.2	10/05/78 through 09/09/93
Arsenic, total (µg/L as As)	01002	15	15	100	03/26/86 through 07/27/95
Arsenic, dissolved (µg/L as As)	01000	41	40	97.6	10/05/78 through 07/27/95
Barium, total (µg/L as Ba)	01007	5	2	40.0	03/26/86 through 05/12/87
Barium, dissolved (µg/L as Ba	01005	32	4	12.5	10/05/78 through 09/09/93
Beryllium, total (µg/L as Be)	01012	4	0	0	03/26/86 through 05/12/87
Beryllium, dissolved (µg/L as Be)	01010	10	0	0	03/26/86 through 07/07/87
Boron, total (µg/L as B)	01022	4	4	100	03/26/86 through 05/12/87
Boron, dissolved (µg/L as B)	01020	61	61	100	10/01/58 through 07/27/95
Cadmium, total (µg/L as Cd)	01027	9	3	33.3	03/26/86 through 09/09/93

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, log_e-transformed data
near Pingree, N. Dak.--Continued										
100.000	150.000	180.000	215.00	250.00	300.00	580.00	224.68	224.68	0.0001	0.8052
191.000	294.000	376.000	441.50	518.00	592.00	1130.00	454.97	454.97	0.0001	0.8874
178.000	277.000	334.000	411.00	464.00	583.00	1010.00	427.28	427.28	0.0004	0.9116
<1.000	5.000	6.000	12.50	37.00	64.00	332.00	33.31	33.35	0.0001	0.4885
18.000	26.000	31.000	36.50	48.00	56.00	110.00	40.29	40.29	0.0001	0.8191
12.000	18.000	24.000	30.00	34.00	41.00	73.00	30.13	30.13	0.0019	0.6179
23.000	28.000	43.000	57.50	74.00	90.00	147.00	60.81	60.81	0.0004	0.1891
22.000	26.000	29.000	33.00	39.00	42.00	55.00	34.55	34.55	0.0011	0.2211
0.900	1.000	1.000	2.00	2.00	2.00	4.00	1.76	1.76	0.0001	0.0001
6.400	10.000	13.000	14.00	16.00	18.00	35.00	14.37	14.37	0.0001	0.0192
39.000	59.000	81.000	110.00	140.00	170.00	280.00	114.35	114.35	0.0079	0.3280
5.800	6.800	9.700	12.00	15.00	22.00	54.00	14.23	14.23	0.0001	0.0011
<0.100	0.100	0.100	0.20	0.20	0.30	0.30	0.17	0.17	0.0001	0.0001
<0.010	0.260	3.400	10.00	19.00	24.00	34.00	11.47	11.47	0.0007	0.0001
<0.020	<0.020	<0.020	<0.02	<0.02	0.03	0.14	0.01	0.03	0.0001	0.0001
0.510	--	--	0.91	--	--	1.46	--	--	--	--
0.500	--	1.000	3.15	5.70	--	7.40	--	--	--	--
<0.100	<0.100	<0.100	<0.10	<0.10	0.38	1.60	0.10	0.18	0.0001	0.0001
0.020	--	--	0.02	--	--	0.03	--	--	--	--
<0.015	0.003	0.020	0.02	0.04	0.39	0.57	--	--	--	--
1.000	--	1.250	1.55	2.50	--	2.90	--	--	--	--
0.660	0.665	0.800	1.04	1.20	1.20	1.20	--	--	--	--
1.100	--	1.350	1.80	2.50	--	2.90	--	--	--	--
0.700	0.700	1.000	1.05	1.20	1.50	1.80	--	--	--	--
1.100	--	1.550	2.25	2.80	--	3.60	--	--	--	--
0.080	0.130	0.150	0.26	0.33	0.38	0.46	--	--	--	--
<0.010	0.020	0.030	0.05	0.12	0.26	0.50	0.09	0.09	0.0001	0.0001
0.019	--	0.027	0.06	0.11	--	0.19	--	--	--	--
<0.010	<0.010	0.014	0.03	0.16	0.26	0.34	0.09	0.09	0.0002	0.4430
0.050	0.055	0.090	0.11	0.18	0.26	0.32	--	--	--	--
<10.000	<10.000	<10.000	10.00	20.00	30.00	40.00	11.67	16.25	0.0001	0.0001
1.000	1.000	2.000	2.00	5.00	8.00	8.00	--	--	--	--
<1.000	1.000	2.000	2.00	4.00	5.00	7.00	2.88	2.90	0.0001	0.0025
<100.000	--	<100.000	<100.00	100.00	--	100.00	--	--	--	--
<100.000	<100.000	<100.000	<100.00	<100.00	100.00	200.00	18.75	106.25	0.0001	0.0847
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
30.000	--	40.000	65.00	90.00	--	100.00	--	--	--	--
40.000	70.000	100.000	120.00	150.00	160.00	380.00	127.87	127.87	0.0001	0.0286
<1.000	--	<1.000	<1.00	1.00	--	2.00	--	--	--	--

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 6, 06468500, James River
Cadmium, dissolved (µg/L as Cd)	01025	36	0	0	10/05/78 through 09/09/93
Chromium, dissolved (µg/L as Cr)	01030	29	0	0	10/05/78 through 07/07/87
Cobalt, dissolved (µg/L as Co)	01035	32	1	3.1	10/05/78 through 09/09/93
Copper, dissolved (µg/L as Cu)	01040	39	0	0	10/05/78 through 09/09/93
Iron, total (µg/L as Fe)	01045	5	5	100	08/25/87 through 09/09/93
Iron, dissolved (µg/L as Fe)	01046	44	23	52.3	10/05/78 through 07/27/95
Lead, dissolved (µg/L as Pb)	01049	39	0	0	10/05/78 through 09/09/93
Lithium, dissolved (µg/L as Li)	01130	24	23	95.8	10/05/78 through 09/09/93
Manganese, total (µg/L as Mn)	01055	6	5	83.3	05/11/60 through 09/09/93
Manganese, dissolved (µg/L as Mn)	01056	44	36	81.8	10/05/78 through 07/27/95
Mercury, dissolved (µg/L as Hg)	71890	42	25	59.5	10/05/78 through 07/27/95
Molybdenum, dissolved (µg/L as Mo)	01060	25	2	8.0	10/05/78 through 09/09/93
Nickel, total (µg/L as Ni)	01067	4	4	100	03/26/86 through 05/12/87
Nickel, dissolved (mg/L as Ni)	01065	28	19	67.9	10/05/78 through 07/07/87
Selenium, total (µg/L as Se)	01147	15	0	0	03/26/86 through 07/27/95
Selenium, dissolved (µg/L as Se)	01145	44	3	6.8	10/05/78 through 07/27/95
Silver, total (µg/L as Ag)	01077	4	0	0	03/26/86 through 05/12/87
Silver, dissolved (µg/L as Ag)	01075	10	0	0	03/26/86 through 07/07/87
Strontium, dissolved (µg/L as Sr)	01080	24	24	100	10/05/78 through 09/09/93
Vanadium, dissolved (µg/L as V)	01085	21	0	0	10/05/78 through 09/09/93
Zinc, dissolved (µg/L as Zn)	01090	39	8	20.5	10/05/78 through 09/09/93
Sediment, suspended, concentration (mg/L)	80154	25	25	100	11/27/84 through 07/27/95
					Site 7, 06469400, Pipestem
Specific conductance (µS/cm at 25 degrees Celsius)	00095	139	139	100	04/02/74 through 08/31/95
pH, water, whole, field (standard units)	00400	38	38	100	05/28/74 through 08/31/95
pH, water, whole, laboratory (standard units)	00403	19	19	100	04/13/82 through 08/31/95
Oxygen, dissolved (mg/L)	00300	4	4	100	04/07/87 through 03/05/92
Hardness, total (mg/L as $CaCO_3$)	00900	38	38	100	05/28/74 through 08/31/95
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	38	38	100	05/28/74 through 08/31/95
Solids, sum of constituents, dissolved (mg/L)	70301	38	38	100	05/28/74 through 08/31/95
Calcium, dissolved (mg/L as Ca)	00915	38	38	100	05/28/74 through 08/31/95
Magnesium, dissolved (mg/L as Mg)	00925	38	38	100	05/28/74 through 08/31/95
Sodium, dissolved (mg/L as Na)	00930	38	38	100	05/28/74 through 08/31/95
Sodium (percent of cations)	00932	38	38	100	05/28/74 through 08/31/95
Sodium adsorption ratio	00931	38	38	100	05/28/74 through 08/31/95
Potassium, dissolved (mg/L as K)	00935	38	38	100	05/28/74 through 08/31/95
Sulfate, dissolved (mg/L as SO_4)	00945	38	38	100	05/28/74 through 08/31/95
Chloride, dissolved (mg/L as Cl)	00940	38	38	100	05/28/74 through 08/31/95
Fluoride, dissolved (mg/L as F)	00950	38	38	100	05/28/74 through 08/31/95
Silica, dissolved (mg/L as SiO_2)	00955	36	36	100	05/28/74 through 08/01/94
Nitrogen, nitrate, dissolved (mg/L as N)	00618	11	11	100	05/28/74 through 03/28/83
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	12	12	100	05/28/74 through 03/19/85
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	3	3	100	05/28/74 through 04/23/75

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
near Pingree, N. Dak.--Continued										
--	--	--	<10.00	--	--	--	--	<10.00	--	--
--	--	--	<20.00	--	--	--	--	<20.00	--	--
<3.000	<3.000	<3.000	<3.00	<3.00	<3.00	4.00	0.13	3.03	0.0001	0.0001
--	--	--	<10.00	--	--	--	--	<10.00	--	--
140.000	--	200.000	470.00	850.00	--	900.00	--	--	--	--
<10.000	<10.000	<10.000	10.00	23.00	84.00	350.00	28.34	33.11	0.0001	0.0047
--	--	--	<10.00	--	--	--	--	<10.00	--	--
<10.000	20.000	29.000	40.00	47.50	60.00	90.00	39.13	39.54	0.0937	0.1380
<10.000	--	180.000	275.00	300.00	--	410.00	--	--	--	--
<10.000	<10.000	14.500	89.00	235.00	500.00	5500.00	301.93	303.75	0.0001	0.2166
<0.100	<0.100	<0.100	0.10	0.20	0.50	4.10	0.24	0.28	0.0001	0.0001
<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	15.00	1.00	10.20	0.0001	0.0001
1.000	--	1.500	2.50	3.00	--	3.00	--	--	--	--
<2.000	<2.000	<2.000	2.00	3.50	5.00	7.00	2.21	2.86	0.0001	0.0047
--	--	--	<1.00	--	--	--	--	--	--	--
<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	1.00	0.07	1.00	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
90.000	140.000	190.000	240.00	285.00	350.00	850.00	265.00	265.00	0.0001	0.0827
--	--	--	<6.00	--	--	--	--	<6.00	--	--
<10.000	<10.000	<10.000	<10.00	<10.00	13.00	20.00	2.77	10.72	0.0001	0.0001
2.000	4.000	7.800	22.30	46.50	86.00	461.00	48.35	48.35	0.0001	0.7985
Creek near Pingree, N. Dak.										
130.000	290.000	440.000	770.00	1020.00	1220.00	1830.00	773.74	773.74	0.0010	0.0001
7.100	7.300	7.800	8.00	8.40	8.70	9.50	8.07	8.07	0.7963	0.8870
6.790	6.890	7.220	7.71	8.17	8.26	8.42	--	--	--	--
7.200	--	7.350	9.35	11.70	--	12.20	--	--	--	--
54.000	120.000	150.000	240.00	300.00	370.00	440.00	231.11	231.11	0.2653	0.0964
108.000	202.000	263.000	452.50	595.00	661.00	865.00	435.26	435.26	0.1516	0.1384
94.000	196.000	258.000	448.50	537.00	648.00	743.00	414.47	414.47	0.0638	0.0237
13.000	23.000	32.000	44.50	60.00	75.00	82.00	45.53	45.53	0.1625	0.2835
5.200	13.000	17.000	28.00	38.00	45.00	60.00	28.43	28.43	0.0949	0.0961
7.500	18.000	25.000	51.50	77.00	100.00	110.00	54.43	54.43	0.0022	0.0064
16.000	20.000	24.000	30.50	35.00	40.00	47.00	30.08	30.08	0.7498	0.6771
0.400	0.700	0.900	1.50	2.00	2.00	3.00	1.48	1.48	0.0001	0.0002
5.900	7.200	8.800	10.00	14.00	17.00	19.00	11.15	11.15	0.0370	0.2202
24.000	43.000	79.000	105.00	160.00	240.00	290.00	123.66	123.66	0.0350	0.3235
2.300	4.200	5.200	10.15	14.00	16.00	26.00	10.03	10.03	0.0388	0.1301
0.100	0.100	0.100	0.10	0.20	0.20	0.50	0.14	0.14	0.0001	0.0001
1.900	3.700	5.850	11.00	16.00	22.00	35.00	12.04	12.04	0.0007	0.4261
0.226	0.230	0.230	0.23	0.47	1.00	1.10	--	--	--	--
1.000	1.000	1.000	1.00	2.05	4.50	4.80	--	--	--	--
0.186	--	--	0.23	--	--	0.23	--	--	--	--

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 7, 06469400, Pipestem
Arsenic, dissolved (µg/L as As)	01000	21	21	100	04/13/82 through 08/31/95
Boron, dissolved (µg/L as B)	01020	36	31	86.1	05/28/74 through 08/01/94
Cadmium, dissolved (µg/L as Cd)	01025	1	0	0	08/01/94 through 08/01/94
Iron, dissolved (µg/L as Fe)	01046	38	36	94.7	05/28/74 through 08/31/95
Lead, dissolved (µg/L as Pb)	01049	21	0	0	04/13/82 through 08/31/95
Lithium, dissolved (µg/L as Li)	01130	21	21	100	04/13/82 through 08/31/95
Manganese, dissolved (µg/L as Mn)	01056	37	37	100	05/28/74 through 08/31/95
Mercury, dissolved (µg/L as Hg)	71890	21	15	71.4	04/13/82 through 08/31/95
Molybdenum, dissolved (µg/L as Mo)	01060	21	0	0	04/13/82 through 08/31/95
Selenium, dissolved (µg/L as Se)	01145	21	4	19.0	04/13/82 through 08/31/95
Strontium, dissolved (µg/L as Sr)	01080	21	21	100	04/13/82 through 08/31/95
					Site 8, 06469500, Pipestem
Specific conductance (µS/cm at 25 degrees Celsius)	00095	60	60	100	10/01/57 through 07/31/74
pH, water, whole, field (standard units)	00400	39	39	100	10/01/57 through 07/31/74
Hardness, total (mg/L as $CaCO_3$)	00900	39	39	100	10/01/57 through 07/31/74
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	39	39	100	10/01/57 through 07/31/74
Solids, sum of constituents, dissolved (mg/L)	70301	35	35	100	10/01/57 through 07/31/74
Calcium, dissolved (mg/L as Ca)	00915	35	35	100	10/01/57 through 07/31/74
Magnesium, dissolved (mg/L as Mg)	00925	35	35	100	10/01/57 through 07/31/74
Sodium, dissolved (mg/L as Na)	00930	39	39	100	10/01/57 through 07/31/74
Sodium (percent of cations)	00932	39	39	100	10/01/57 through 07/31/74
Sodium adsorption ratio	00931	39	39	100	10/01/57 through 07/31/74
Potassium, dissolved (mg/L as K)	00935	35	35	100	10/01/57 through 07/31/74
Sulfate, dissolved (mg/L as SO_4)	00945	39	39	100	10/01/57 through 07/31/74
Chloride, dissolved (mg/L as Cl)	00940	39	38	97.4	10/01/57 through 07/31/74
Fluoride, dissolved (mg/L as F)	00950	35	34	97.1	10/01/57 through 07/31/74
Silica, dissolved (mg/L as SiO_2)	00955	35	35	100	10/01/57 through 07/31/74
Nitrogen, nitrate, dissolved (mg/L as N)	00618	4	4	100	04/27/72 through 07/31/74
Nitrogen, nitrate, total (mg/L as NO_3)	71850	5	5	100	10/01/57 through 05/29/59
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	30	30	100	11/23/59 through 07/31/74
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	4	3	75.0	04/27/72 through 07/31/74
Boron, dissolved (µg/L as B)	01020	35	34	97.1	10/01/57 through 07/31/74
Iron, total (µg/L as Fe)	01045	5	5	100	10/01/57 through 05/29/59
Iron, dissolved (µg/L as Fe)	01046	4	4	100	04/27/72 through 07/31/74
Manganese, total (µg/L as Mn)	01055	6	5	83.3	04/14/61 through 05/20/64
Manganese, dissolved (µg/L as Mn)	01056	4	4	100	04/27/72 through 07/31/74
					Site 9, 06470000, James River
Specific conductance (µS/cm at 25 degrees Celsius)	00095	314	314	100	11/28/49 through 08/31/95
pH, water, whole, field (standard units)	00400	174	174	100	11/28/49 through 08/31/95
pH, water, whole, laboratory (standard units)	00403	92	92	100	04/14/82 through 08/31/95
Turbidity (NTU)	00076	69	69	100	11/27/84 through 09/09/93
Oxygen, dissolved (mg/L)	00300	81	81	100	11/27/84 through 08/31/95

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
Creek near Pingree, N. Dak.--Continued										
1.000	1.000	2.000	2.00	4.00	5.00	7.00	2.90	2.90	0.0190	0.0383
<20.000	<20.000	45.000	90.00	165.00	510.00	870.00	165.56	168.33	0.0001	0.5285
--	--	--	<10.00	--	--	--	--	--	--	--
<10.000	20.000	40.000	70.00	130.00	310.00	510.00	111.84	112.37	0.0001	0.6883
--	--	--	<10.00	--	--	--	--	<10.00	--	--
10.000	18.000	19.000	29.00	40.00	70.00	75.00	34.29	34.29	0.0038	0.2192
10.000	30.000	50.000	80.00	160.00	200.00	980.00	122.43	122.43	0.0001	0.7372
<0.100	<0.100	<0.100	0.40	0.60	1.10	1.90	0.46	0.49	0.0003	0.0079
--	--	--	<10.00	--	--	--	--	<10.00	--	--
<1.000	<1.000	<1.000	<1.00	<1.00	1.00	5.00	0.43	1.24	0.0001	0.0001
89.000	100.000	170.000	220.00	290.00	360.00	470.00	235.24	235.24	0.1886	0.2958
Creek near Buchanan, N. Dak.										
118.000	310.000	556.000	811.50	1130.00	1285.00	1560.00	821.25	821.25	0.1533	0.0001
6.500	6.700	7.300	7.60	7.90	8.20	8.60	7.58	7.58	0.2256	0.0987
38.000	56.000	180.000	260.00	320.00	390.00	590.00	252.85	252.85	0.3870	0.0003
82.000	133.000	348.000	519.00	746.00	859.00	1030.00	526.85	526.85	0.2482	0.0024
60.000	109.000	333.000	487.00	718.00	840.00	1030.00	499.09	499.09	0.2890	0.0022
8.300	15.000	34.000	44.00	59.00	83.00	133.00	48.84	48.84	0.0378	0.0339
4.200	5.400	19.000	30.00	44.00	49.00	63.00	30.53	30.53	0.2740	0.0001
3.000	7.900	39.000	71.00	126.00	161.00	194.00	81.07	81.07	0.0601	0.0005
12.000	22.000	29.000	36.00	42.00	55.00	60.00	36.08	36.08	0.7863	0.1028
0.200	0.500	1.000	2.00	3.00	4.00	5.00	1.99	1.99	0.0055	0.0158
5.600	6.800	8.200	10.00	12.00	13.00	16.00	10.37	10.37	0.3121	0.1294
13.000	28.000	85.000	140.00	214.00	274.00	316.00	149.54	149.54	0.0469	0.0017
<0.100	0.600	6.500	20.00	33.00	52.00	71.00	22.08	22.08	0.0014	0.0001
<0.100	0.100	0.100	0.20	0.30	0.30	0.50	0.21	0.21	0.0002	0.0001
1.600	4.200	6.800	11.00	15.00	20.00	32.00	11.68	11.68	0.0603	0.1632
0.230	--	0.230	0.23	0.23	--	0.23	--	--	--	--
0.300	--	1.700	1.90	2.40	--	15.00	--	--	--	--
0.200	0.250	0.400	1.00	1.70	6.25	12.00	2.05	2.05	0.0001	0.1917
<0.010	--	0.023	0.09	0.20	--	0.26	--	--	--	--
<20.000	30.000	60.000	130.00	230.00	340.00	600.00	166.00	166.57	0.0008	0.6088
20.000	--	20.000	30.00	30.00	--	80.00	--	--	--	--
40.000	--	70.000	100.00	150.00	--	200.00	--	--	--	--
<10.000	--	10.000	80.00	80.00	--	280.00	--	--	--	--
50.000	--	90.000	165.00	220.00	--	240.00	--	--	--	--
at Jamestown, N. Dak.										
111.000	450.000	600.000	790.00	1090.00	1240.00	1590.00	833.07	833.07	0.0001	0.0001
6.100	7.280	7.500	7.70	8.01	8.20	8.75	7.74	7.74	0.2441	0.0101
7.300	7.500	7.700	7.80	8.00	8.20	8.80	7.85	7.85	0.0082	0.0259
1.100	3.100	3.600	4.80	11.00	15.00	35.00	7.60	7.60	0.0001	0.0081
1.000	5.300	7.000	9.00	12.00	13.31	17.50	9.24	9.24	0.6981	0.0001

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N≥ RL	Percent detects	Period of record
					Site 9, 06470000, James River
Hardness, total (mg/L as $CaCO_3$)	00900	181	181	100	11/28/49 through 08/31/95
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	176	176	100	11/28/49 through 08/31/95
Solids, sum of constituents, dissolved (mg/L)	70301	158	158	100	01/02/51 through 08/31/95
Residue, nonfilterable (mg/L)	00530	84	80	95.2	11/27/84 through 08/31/95
Calcium, dissolved (mg/L as Ca)	00915	175	175	100	11/28/49 through 08/31/95
Magnesium, dissolved (mg/L as Mg)	00925	176	176	100	11/28/49 through 08/31/95
Sodium, dissolved (mg/L as Na)	00930	162	162	100	10/01/57 through 08/31/95
Sodium (percent of cations)	00932	176	176	100	11/28/49 through 08/31/95
Sodium adsorption ratio	00931	162	162	100	10/01/57 through 08/31/95
Potassium, dissolved (mg/L as K)	00935	160	160	100	10/01/57 through 08/31/95
Sulfate, dissolved (mg/L as SO_4)	00945	176	176	100	11/28/49 through 08/31/95
Chloride, dissolved (mg/L as Cl)	00940	176	174	98.9	11/28/49 through 08/31/95
Fluoride, dissolved (mg/L as F)	00950	129	129	100	11/28/49 through 08/31/95
Silica, dissolved (mg/L as SiO_2)	00955	126	126	100	11/28/49 through 08/31/95
Nitrogen, nitrite, dissolved (mg/L as N)	00613	84	32	38.1	11/27/84 through 08/31/95
Nitrogen, nitrate, dissolved (mg/L as N)	00618	58	58	100	06/27/72 through 07/27/95
Nitrogen, nitrate, total (mg/L as NO_3)	71850	20	20	100	11/28/49 through 09/27/59
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	101	96	95.0	11/23/59 through 07/27/95
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	84	49	58.3	11/27/84 through 08/31/95
Nitrogen, ammonia, total (mg/L as N)	00610	16	15	93.8	08/25/87 through 07/06/92
Nitrogen, ammonia, dissolved (mg/L as N)	00608	64	59	92.2	08/25/87 through 08/31/95
Nitrogen, organic, total (mg/L as N)	00605	25	25	100	08/25/87 through 07/27/95
Nitrogen, organic, dissolved (mg/L as N)	00607	58	58	100	08/25/87 through 07/27/95
Nitrogen, ammonia plus organic, total (mg/L as N)	00625	25	25	100	08/25/87 through 07/27/95
Nitrogen, ammonia plus organic, dissolved (mg/L as N)	00623	62	62	100	08/25/87 through 08/31/95
Nitrogen, total (mg/L as N)	00600	25	25	100	08/25/87 through 07/27/95
Phosphorus, total (mg/L as P)	00665	29	29	100	03/26/86 through 07/27/95
Phosphorus, dissolved (mg/L as P)	00666	84	82	97.6	11/27/84 through 08/31/95
Phosphorus, orthophosphate, total (mg/L as P)	70507	21	20	95.2	12/30/85 through 07/06/92
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	82	76	92.7	06/27/72 through 08/31/95
Phosphorus, organic, total (mg/L as P)	00670	26	26	100	03/26/86 through 06/27/95
Arsenic, total (µg/L as As)	01002	28	28	100	03/26/86 through 07/27/95
Arsenic, dissolved (µg/L as As)	01000	83	80	96.4	04/14/82 through 08/31/95
Barium, total (µg/L as Ba)	01007	5	5	100	12/30/85 through 05/14/87
Barium, dissolved (µg/L as Ba	01005	12	0	0	12/30/85 through 07/07/87
Beryllium, total (µg/L as Be)	01012	5	0	0	12/30/85 through 05/14/87
Beryllium, dissolved (µg/L as Be)	01010	12	0	0	12/30/85 through 07/07/87
Boron, total (µg/L as B)	01022	4	4	100	03/26/86 through 05/14/87
Boron, dissolved (µg/L as B)	01020	167	160	95.8	04/13/50 through 08/31/95
Cadmium, total (µg/L as Cd)	01027	23	2	8.7	12/30/85 through 08/19/93

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
at Jamestown, N. Dak.--Continued										
36.000	170.000	220.000	290.00	360.00	410.00	490.00	287.40	287.40	0.0954	0.0001
82.000	290.000	411.000	537.50	718.50	830.00	1050.00	559.99	559.99	0.0738	0.0001
65.000	279.000	406.000	510.00	692.00	802.00	1020.00	537.41	537.41	0.1930	0.0001
<1.000	2.000	7.000	14.00	27.00	41.00	66.00	18.50	18.55	0.0001	0.0001
9.500	37.000	46.000	62.00	85.00	100.00	120.00	66.07	66.07	0.0007	0.0001
3.000	17.000	24.000	30.00	36.00	40.00	48.00	29.49	29.49	0.0018	0.0001
2.700	29.000	49.000	71.50	102.00	125.00	200.00	76.22	76.22	0.0021	0.0001
11.000	25.000	28.500	34.00	39.00	44.00	56.00	34.23	34.23	0.6905	0.0015
0.200	0.900	1.000	2.00	2.00	3.00	4.00	1.89	1.89	0.0001	0.0001
0.700	6.950	8.100	9.55	12.00	14.00	18.00	10.20	10.20	0.0191	0.0001
13.000	74.000	103.500	150.00	200.00	230.00	372.00	151.98	151.98	0.4962	0.0001
<0.100	8.600	12.000	27.50	41.50	58.00	155.00	30.14	30.14	0.0001	0.0001
0.100	0.100	0.200	0.20	0.20	0.30	0.50	0.21	0.21	0.0001	0.0001
3.500	7.700	11.000	16.00	23.00	27.00	35.00	16.88	16.88	0.0022	0.0001
<0.020	<0.020	<0.020	<0.02	0.02	0.04	0.15	0.01	0.03	0.0001	0.0001
0.052	0.110	0.210	0.28	0.45	0.70	1.60	0.37	0.37	0.0001	0.7117
0.300	1.900	3.200	4.35	6.20	6.85	15.00	4.78	4.78	0.0021	0.0035
<0.100	0.200	0.490	1.00	1.80	3.10	8.40	1.52	1.52	0.0001	0.0045
<0.100	<0.100	<0.100	0.13	0.31	0.45	1.10	0.18	0.23	0.0001	0.0001
<0.010	0.010	0.040	0.06	0.10	0.17	0.32	--	--	--	--
<0.015	0.020	0.060	0.12	0.27	0.50	1.10	0.21	0.21	0.0001	0.1403
0.450	0.630	0.880	1.00	1.30	1.80	2.50	1.12	1.12	0.0172	0.9521
0.110	0.310	0.440	0.64	0.86	1.10	1.50	0.66	0.66	0.1154	0.0167
0.500	0.800	1.000	1.10	1.30	1.80	2.60	1.21	1.21	0.0178	0.7503
0.200	0.500	0.600	0.90	1.10	1.20	2.50	0.87	0.87	0.0005	0.0372
0.500	0.800	1.100	1.40	1.70	1.90	2.70	1.40	1.40	0.6795	0.5165
0.060	0.100	0.110	0.19	0.28	0.35	0.71	0.21	0.21	0.0001	0.3706
<0.010	0.020	0.030	0.06	0.15	0.22	0.56	0.10	0.10	0.0001	0.0804
<0.010	0.027	0.044	0.06	0.09	0.16	0.57	0.09	0.10	0.0001	0.0007
<0.010	0.013	0.030	0.07	0.14	0.21	0.55	0.10	0.10	0.0001	0.0007
0.010	0.030	0.040	0.08	0.15	0.33	0.38	0.11	0.11	0.0001	0.8657
1.000	2.000	2.000	3.00	4.00	5.00	8.00	3.18	3.18	0.0005	0.0451
<1.000	1.000	2.000	2.00	3.00	4.00	5.00	2.45	2.48	0.0001	0.0001
100.000	--	100.000	100.00	100.00	--	100.00	--	--	--	--
--	--	--	<100.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
30.000	--	30.000	60.00	145.00	--	200.00	--	--	--	--
<20.000	70.000	110.000	230.00	370.00	480.00	1000.00	257.31	258.14	0.0001	0.0001
<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	2.00	0.13	1.04	0.0001	0.0001

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 9, 06470000, James River
Cadmium, dissolved (µg/L as Cd)	01025	61	1	1.6	12/30/85 through 09/09/93
Chromium, total (µg/L as Cr)	01034	1	1	100	12/30/85 through 12/30/85
Chromium, dissolved (µg/L as Cr)	01030	13	0	0	12/07/64 through 07/07/87
Cobalt, dissolved (µg/L as Co)	01035	11	0	0	03/26/86 through 07/07/87
Copper, dissolved (µg/L as Cu)	01040	70	0	0	11/27/84 through 09/09/93
Iron, total (µg/L as Fe)	01045	39	39	100	11/28/49 through 08/19/93
Iron, dissolved (µg/L as Fe)	01046	112	90	80.4	06/27/72 through 08/31/95
Lead, dissolved (µg/L as Pb)	01049	76	2	2.6	04/14/82 through 09/09/93
Lithium, dissolved (µg/L as Li)	01130	6	6	100	04/14/82 through 08/29/84
Manganese, total (µg/L as Mn)	01055	28	28	100	07/12/61 through 08/19/93
Manganese, dissolved (µg/L as Mn)	01056	112	111	99.1	06/27/72 through 08/31/95
Mercury, dissolved (µg/L as Hg)	71890	89	51	57.3	04/14/82 through 08/31/95
Molybdenum, dissolved (µg/L as Mo)	01060	4	0	0	03/15/83 through 10/31/85
Nickel, total (µg/L as Ni)	01067	4	4	100	12/30/85 through 04/07/87
Nickel, dissolved (mg/L as Ni)	01065	12	9	75.0	10/31/85 through 07/07/87
Selenium, total (µg/L as Se)	01147	29	1	3.4	12/30/85 through 07/27/95
Selenium, dissolved (µg/L as Se)	01145	92	1	1.1	04/14/82 through 08/31/95
Silver, total (µg/L as Ag)	01077	4	1	25.0	12/30/85 through 04/07/87
Silver, dissolved (µg/L as Ag)	01075	12	0	0	10/31/85 through 07/07/87
Strontium, dissolved (µg/L as Sr)	01080	6	6	100	04/14/82 through 08/29/84
Zinc, dissolved (µg/L as Zn)	01090	70	14	20.0	11/27/84 through 09/09/93
Sediment, suspended, concentration (mg/L)	80154	79	79	100	01/09/85 through 08/31/95
					Site 10, 06470500, James River
Specific conductance (µS/cm at 25 degrees Celsius)	00095	333	333	100	09/30/57 through 08/31/95
pH, water, whole, field (standard units)	00400	255	255	100	09/30/57 through 08/31/95
pH, water, whole, laboratory (standard units)	00403	114	114	100	11/11/80 through 08/31/95
Turbidity (NTU)	00076	71	71	100	11/28/84 through 11/30/94
Oxygen, dissolved (mg/L)	00300	146	146	100	11/02/76 through 08/31/95
Hardness, total (mg/L as $CaCO_3$)	00900	258	258	100	09/30/57 through 08/31/95
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	256	256	100	09/30/57 through 08/31/95
Solids, sum of constituents, dissolved (mg/L)	70301	258	258	100	09/30/57 through 08/31/95
Residue, nonfilterable (mg/L)	00530	77	72	93.5	11/28/84 through 08/31/95
Calcium, dissolved (mg/L as Ca)	00915	257	257	100	09/30/57 through 08/31/95
Magnesium, dissolved (mg/L as Mg)	00925	257	257	100	09/30/57 through 08/31/95
Sodium, dissolved (mg/L as Na)	00930	258	258	100	09/30/57 through 08/31/95
Sodium (percent of cations)	00932	258	258	100	09/30/57 through 08/31/95
Sodium adsorption ratio	00931	258	258	100	09/30/57 through 08/31/95
Potassium, dissolved (mg/L as K)	00935	261	261	100	09/30/57 through 08/31/95
Sulfate, dissolved (mg/L as SO_4)	00945	262	260	99.2	09/30/57 through 08/31/95
Chloride, dissolved (mg/L as Cl)	00940	262	262	100	09/30/57 through 08/31/95
Fluoride, dissolved (mg/L as F)	00950	259	253	97.7	09/30/57 through 08/31/95
Silica, dissolved (mg/L as SiO_2)	00955	205	205	100	09/30/57 through 08/31/95
Nitrogen, nitrite, dissolved (mg/L as N)	00613	80	18	22.5	09/27/71 through 08/31/95

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
at Jamestown, N. Dak.--Continued										
<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	10.00	0.16	10.00	--	0.0001
--	--	--	9.00	--	--	--	--	--	--	--
--	--	--	<20.00	--	--	--	--	--	--	--
--	--	--	<3.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	<10.00	--	--
10.000	20.000	40.000	120.00	590.00	920.00	1400.00	336.15	336.15	0.0001	0.0014
<10.000	<10.000	12.000	23.00	67.00	130.00	480.00	51.44	53.40	0.0001	0.0032
<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	10.00	0.26	10.00	--	0.0001
20.000	--	20.000	26.00	31.00	--	39.00	--	--	--	--
10.000	190.000	365.000	515.00	830.00	890.00	1200.00	559.29	559.29	0.7522	0.0001
<10.000	140.000	250.000	570.00	895.00	1400.00	2400.00	661.38	661.47	0.0001	0.0001
<0.100	<0.100	<0.100	0.10	0.30	0.50	5.00	0.27	0.31	0.0001	0.0001
--	--	--	<10.00	--	--	--	--	--	--	--
1.000	--	2.500	4.00	6.50	--	9.00	--	--	--	--
<2.000	<2.000	0.000	2.00	4.00	5.00	6.00	--	--	--	--
<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	2.00	0.07	1.03	0.0001	0.0001
<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	1.00	0.01	1.00	--	0.0001
<1.000	--	<1.000	<1.00	0	--	1.00	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
80.000	--	89.000	175.00	220.00	--	250.00	--	--	--	--
<10.000	<10.000	<10.000	<10.00	<10.00	14.50	35.00	3.53	11.53	0.0001	0.0001
7.900	13.000	23.500	39.00	64.90	110.00	154.00	49.85	49.85	0.0001	0.0944
at LaMoure, N. Dak.										
160.000	460.000	606.000	830.00	1100.00	1310.00	2585.00	869.15	869.15	0.0001	0.0001
6.400	7.400	7.600	7.90	8.30	8.50	9.50	7.94	7.94	0.5790	0.1775
7.400	7.600	7.800	8.00	8.20	8.40	8.60	7.98	7.98	0.0097	0.0100
0.500	2.500	3.300	9.80	23.00	33.00	61.00	14.70	14.70	0.0001	0.0025
0.500	5.910	7.580	9.95	12.80	15.30	21.00	10.33	10.33	0.1816	0.0001
60.000	160.000	230.000	300.00	370.00	480.00	790.00	307.30	307.30	0.0001	0.0001
141.000	303.000	418.000	577.50	712.00	916.00	1790.00	592.25	592.25	0.0001	0.0001
105.000	288.000	410.000	562.50	711.00	915.00	1730.00	575.76	575.76	0.0001	0.0001
<1.000	2.000	7.000	37.00	63.00	89.00	408.00	44.16	44.22	0.0001	0.0001
15.000	39.000	50.000	66.00	81.00	115.00	190.00	69.73	69.73	0.0001	0.0011
5.500	17.000	24.000	32.00	40.00	49.00	76.00	32.36	32.36	0.0038	0.0001
7.900	32.000	52.000	77.00	108.00	140.00	310.00	82.37	82.37	0.0001	0.0001
17.000	25.000	31.000	34.00	38.00	42.00	79.00	33.93	33.93	0.0001	0.0001
0.400	1.000	1.000	2.00	2.00	3.00	9.00	1.96	1.96	0.0001	0.0001
1.900	8.300	9.800	11.00	13.00	14.00	22.00	11.11	11.11	0.0020	0.0001
<4.000	75.000	110.000	150.00	190.00	264.00	510.00	158.12	158.15	0.0001	0.0001
0.100	10.000	16.000	33.00	52.00	70.00	196.00	37.83	37.83	0.0001	0.0001
<0.100	0.100	0.200	0.20	0.30	0.40	52.00	0.65	0.65	0.0001	0.0001
2.000	6.400	9.500	14.00	20.00	26.00	44.00	15.28	15.28	0.0001	0.0001
<0.020	<0.020	<0.020	<0.02	<0.02	0.03	0.06	0.01	0.02	0.0001	0.0001

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 10, 06470500, James River
Nitrogen, nitrate, dissolved (mg/L as N)	00618	43	36	83.7	01/10/69 through 06/27/95
Nitrogen, nitrate, total (mg/L as NO_3)	71850	7	7	100	09/30/57 through 09/27/59
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	96	95	99.0	11/17/59 through 06/27/95
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	178	84	47.2	06/03/71 through 08/31/95
Nitrogen, ammonia, total (mg/L as N)	00610	16	16	100	08/26/87 through 07/06/92
Nitrogen, ammonia, dissolved (mg/L as N)	00608	57	50	87.7	07/14/81 through 08/31/95
Nitrogen, organic, total (mg/L as N)	00605	24	24	100	08/26/87 through 08/01/95
Nitrogen, organic, dissolved (mg/L as N)	00607	48	48	100	05/24/88 through 06/27/95
Nitrogen, ammonia plus organic, total (mg/L as N)	00625	24	24	100	08/26/87 through 08/01/95
Nitrogen, ammonia plus organic, dissolved (mg/L as N)	00623	54	54	100	08/26/87 through 08/31/95
Nitrogen, total (mg/L as N)	00600	24	24	100	08/26/87 through 08/01/95
Phosphorus, total (mg/L as P)	00665	30	30	100	09/24/84 through 08/01/95
Phosphorus, dissolved (mg/L as P)	00666	187	183	97.9	10/01/69 through 08/31/95
Phosphorus, orthophosphate, total (mg/L as P)	70507	21	20	95.2	01/08/86 through 07/06/92
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	69	63	91.3	07/14/81 through 08/31/95
Phosphorus, organic, total (mg/L as P)	00670	27	27	100	09/24/84 through 08/01/95
Aluminum, total (µg/L as Al)	01105	2	2	100	10/22/68 through 05/26/69
Aluminum, dissolved (µg/L as Al)	01106	7	6	85.7	10/07/70 through 04/19/79
Arsenic, total (µg/L as As)	01002	29	29	100	01/08/86 through 08/01/95
Arsenic, dissolved (µg/L as As)	01000	81	74	91.4	05/26/69 through 08/31/95
Barium, total (µg/L as Ba)	01007	6	6	100	01/08/86 through 05/18/87
Barium, dissolved (µg/L as Ba	01005	20	1	5.0	05/26/69 through 07/08/87
Beryllium, total (µg/L as Be)	01012	6	0	0	01/08/86 through 05/18/87
Beryllium, dissolved (µg/L as Be)	01010	15	0	0	05/23/70 through 07/08/87
Boron, total (µg/L as B)	01022	5	5	100	03/31/86 through 05/18/87
Boron, dissolved (µg/L as B)	01020	259	258	99.6	09/30/57 through 08/31/95
Cadmium, total (µg/L as Cd)	01027	27	4	14.8	01/08/86 through 07/21/94
Cadmium, dissolved (µg/L as Cd)	01025	74	1	1.4	05/26/69 through 11/30/94
Chromium, total (µg/L as Cr)	01034	1	1	100	01/08/86 through 01/08/86
Chromium, dissolved (µg/L as Cr)	01030	22	0	0	05/26/69 through 11/17/87
Cobalt, dissolved (µg/L as Co)	01035	19	0	0	05/26/69 through 07/08/87
Copper, dissolved (µg/L as Cu)	01040	83	2	2.4	10/22/68 through 11/30/94
Iron, total (µg/L as Fe)	01045	32	32	100	09/30/57 through 07/21/94
Iron, dissolved (µg/L as Fe)	01046	116	75	64.7	10/22/68 through 08/31/95
Lead, dissolved (µg/L as Pb)	01049	81	2	2.5	05/26/69 through 11/30/94
Lithium, dissolved (µg/L as Li)	01130	10	10	100	10/22/68 through 04/19/79
Manganese, total (µg/L as Mn)	01055	46	39	84.8	05/11/60 through 07/21/94
Manganese, dissolved (µg/L as Mn)	01056	113	111	98.2	10/01/69 through 08/31/95
Mercury, dissolved (µg/L as Hg)	71890	86	44	51.2	01/04/77 through 08/31/95
Molybdenum, dissolved (µg/L as Mo)	01060	8	1	12.5	05/26/69 through 04/19/79

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
at LaMoure, N. Dak.--Continued										
<0.010	<0.010	0.073	0.32	0.52	0.84	1.38	0.35	0.35	0.0004	0.0001
0.100	--	0.200	2.40	8.70	--	8.70	--	--	--	--
<0.100	0.200	0.350	1.20	2.40	4.30	13.00	1.84	1.84	0.0001	0.0008
<0.100	<0.100	<0.100	<0.10	0.38	0.63	2.30	0.22	0.28	0.0001	0.0002
0.010	0.020	0.020	0.04	0.06	0.15	0.48	--	--	--	--
<0.015	<0.015	0.020	0.05	0.16	0.42	1.50	0.16	0.16	0.0001	0.0013
0.580	0.880	1.100	1.40	1.80	2.00	2.10	1.43	1.43	0.6965	0.2090
0.270	0.370	0.570	0.68	0.88	1.00	1.30	0.72	0.72	0.5960	0.0321
0.600	0.900	1.200	1.60	1.80	2.10	2.10	1.50	1.50	0.4187	0.0440
0.300	0.500	0.700	0.90	1.00	1.40	1.90	0.89	0.89	0.0026	0.2883
0.600	0.900	1.350	1.80	2.05	2.10	2.40	1.65	1.65	0.2144	0.0061
0.090	0.160	0.230	0.30	0.35	0.43	0.50	0.30	0.30	0.9441	0.0175
<0.010	0.030	0.060	0.11	0.18	0.28	0.87	0.14	0.14	0.0001	0.0001
<0.010	0.042	0.056	0.12	0.19	0.24	0.26	0.12	0.13	0.1745	0.0001
<0.010	0.010	0.045	0.11	0.18	0.27	0.41	0.12	0.12	0.0001	0.0001
0.010	0.040	0.090	0.17	0.25	0.31	0.35	0.17	0.17	0.5375	0.0019
100.000	--	--	150.00	--	--	200.00	--	--	--	--
<10.000	--	10.000	20.00	40.00	--	200.00	--	--	--	--
1.000	1.000	2.000	3.00	5.00	6.00	11.00	3.66	3.66	0.0016	0.1822
<1.000	1.000	2.000	2.00	4.00	5.00	16.00	2.93	3.01	0.0001	0.0001
100.000	--	100.000	100.00	100.00	--	200.00	--	--	--	--
<100.000	<100.000	<100.000	<100.00	<100.00	<100.00	500.00	25.00	120.00	0.0001	0.0038
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
60.000	--	120.000	120.00	270.00	--	1200.00	--	--	--	--
<20.000	90.000	130.000	240.00	360.00	450.00	2600.00	266.51	266.58	0.0001	0.1879
<1.000	<1.000	<1.000	<1.00	<1.00	1.00	1.00	0.15	1.00	--	--
<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	10.00	0.14	10.00	--	0.0001
--	--	--	7.00	--	--	--	--	--	--	--
--	--	--	<20.00	--	--	--	--	<20.00	--	--
--	--	--	<3.00	--	--	--	--	--	--	--
<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	30.00	0.72	10.48	0.0001	0.0001
10.000	20.000	60.000	905.00	1450.00	2700.00	4400.00	1035.63	1035.63	0.0002	0.0026
<10.000	<10.000	<10.000	13.00	36.50	100.00	570.00	36.25	39.78	0.0001	0.0001
<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	16.00	0.33	10.09	0.0001	0.0001
5.000	17.500	30.000	58.00	70.00	95.00	120.00	--	--	--	--
<10.000	<10.000	160.000	345.00	730.00	1500.00	2000.00	518.04	519.57	0.0001	0.0001
<10.000	41.000	100.000	284.00	560.00	950.00	4800.00	434.30	434.48	0.0001	0.1184
<0.100	<0.100	<0.100	0.10	0.20	0.50	0.90	0.15	0.20	0.0001	0.0001
<10.000	--	<10.000	<10.00	<10.00	--	12.00	--	--	--	--

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 10, 06470500, James River
Nickel, total (µg/L as Ni)	01067	6	6	100	01/08/86 through 05/18/87
Nickel, dissolved (µg/L as Ni)	01065	20	11	55.0	05/26/69 through 07/08/87
Selenium, total (µg/L as Se)	01147	28	0	0	01/08/86 through 08/01/95
Selenium, dissolved (µg/L as Se)	01145	84	3	3.6	05/26/69 through 08/31/95
Silver, total (µg/L as Ag)	01077	6	0	0	01/08/86 through 05/18/87
Silver, dissolved (µg/L as Ag)	01075	13	0	0	01/04/77 through 07/08/87
Strontium, dissolved (µg/L as Sr)	01080	10	10	100	10/22/68 through 04/19/79
Vanadium, dissolved (µg/L as V)	01085	8	0	0	05/26/69 through 04/19/79
Zinc, dissolved (µg/L as Zn)	01090	82	24	29.3	10/22/68 through 11/30/94
Sediment, suspended, concentration (mg/L)	80154	136	136	100	10/05/76 through 08/31/95
					Site 11, 06470800, Bear Creek
Specific conductance (µS/cm at 25 degrees Celsius)	00095	101	101	100	03/28/77 through 08/30/95
pH, water, whole, field (standard units)	00400	37	37	100	04/05/77 through 06/22/95
pH, water, whole, laboratory (standard units)	00403	15	15	100	04/14/82 through 06/22/95
Oxygen, dissolved (mg/L)	00300	4	4	100	04/12/88 through 04/07/93
Hardness, total (mg/L as $CaCO_3$)	00900	38	38	100	04/05/77 through 06/22/95
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	38	38	100	04/05/77 through 06/22/95
Solids, sum of constituents, dissolved (mg/L)	70301	38	38	100	04/05/77 through 06/22/95
Calcium, dissolved (mg/L as Ca)	00915	38	38	100	04/05/77 through 06/22/95
Magnesium, dissolved (mg/L as Mg)	00925	38	38	100	04/05/77 through 06/22/95
Sodium, dissolved (mg/L as Na)	00930	38	38	100	04/05/77 through 06/22/95
Sodium (percent of cations)	00932	38	38	100	04/05/77 through 06/22/95
Sodium adsorption ratio	00931	38	38	100	04/05/77 through 06/22/95
Potassium, dissolved (mg/L as K)	00935	38	38	100	04/05/77 through 06/22/95
Sulfate, dissolved (mg/L as SO_4)	00945	38	38	100	04/05/77 through 06/22/95
Chloride, dissolved (mg/L as Cl)	00940	38	38	100	04/05/77 through 06/22/95
Fluoride, dissolved (mg/L as F)	00950	38	36	94.7	04/05/77 through 06/22/95
Silica, dissolved (mg/L as SiO_2)	00955	36	36	100	04/05/77 through 06/27/94
Nitrogen, nitrate, dissolved (mg/L as N)	00618	2	2	100	04/14/81 through 04/14/82
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	3	3	100	04/14/81 through 04/03/84
Arsenic, dissolved (µg/L as As)	01000	19	19	100	04/14/82 through 06/22/95
Boron, dissolved (µg/L as B)	01020	36	34	94.4	04/05/77 through 06/27/94
Cadmium, dissolved (µg/L as Cd)	01025	1	0	0	06/27/94 through 06/27/94
Iron, dissolved (µg/L as Fe)	01046	38	37	97.4	04/05/77 through 06/22/95
Lead, dissolved (µg/L as Pb)	01049	19	0	0	04/14/82 through 06/22/95
Lithium, dissolved (µg/L as Li)	01130	19	19	100	04/14/82 through 06/22/95
Manganese, dissolved (µg/L as Mn)	01056	38	37	97.4	04/05/77 through 06/22/95
Mercury, dissolved (µg/L as Hg)	71890	19	15	78.9	04/14/82 through 06/22/95
Molybdenum, dissolved (µg/L as Mo)	01060	19	0	0	04/14/82 through 06/22/95
Selenium, dissolved (µg/L as Se)	01145	19	6	31.6	04/14/82 through 06/22/95
Strontium, dissolved (µg/L as Sr)	01080	19	19	100	04/14/82 through 06/22/95

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
at LaMoure, N. Dak.--Continued										
2.000	--	3.000	5.00	8.00	--	9.00	--	--	--	--
<2.000	<2.000	<2.000	2.50	3.00	4.00	11.00	2.10	3.00	0.0001	0.0093
--	--	--	<1.00	--	--	--	--	<1.00	--	--
<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	18.00	0.35	1.31	0.0001	0.0001
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
70.000	150.000	330.000	370.00	460.00	670.00	780.00	--	--	--	--
--	--	--	<6.00	--	--	--	--	--	--	--
<10.000	<10.000	<10.000	<10.00	10.00	18.00	200.00	7.29	14.37	0.0001	0.0001
2.800	15.000	30.000	64.75	93.05	148.00	402.00	73.57	73.57	0.0001	0.0012
near Oakes, N. Dak.										
140.000	320.000	520.000	930.00	1230.00	1565.00	1920.00	919.53	919.53	0.0016	0.0001
6.500	7.350	7.610	7.85	8.10	8.40	8.70	7.85	7.85	0.5715	0.2681
6.520	6.950	7.400	7.60	7.82	8.26	8.28	--	--	--	--
5.400	--	6.450	8.05	10.60	--	12.60	--	--	--	--
62.000	90.000	170.000	295.00	360.00	630.00	930.00	316.97	316.97	0.0002	0.2986
138.000	167.000	383.000	558.50	746.00	1240.00	1680.00	626.53	626.53	0.0228	0.1347
119.000	172.000	366.000	541.00	713.00	1150.00	1600.00	601.24	601.24	0.0388	0.1796
15.000	20.000	36.000	57.00	71.00	110.00	190.00	63.16	63.16	0.0001	0.5235
6.000	9.700	20.000	33.50	47.00	88.00	110.00	38.70	38.70	0.0003	0.1907
11.000	20.000	48.000	71.50	110.00	150.00	170.00	78.87	78.87	0.0363	0.0067
21.000	24.000	26.000	31.50	41.00	45.00	49.00	33.26	33.26	0.0186	0.0946
0.500	0.800	1.000	2.00	3.00	3.00	4.00	1.96	1.96	0.0008	0.0018
7.100	8.300	11.000	14.00	17.00	20.00	23.00	13.92	13.92	0.3753	0.2370
30.000	51.000	100.000	180.00	280.00	440.00	900.00	217.66	217.66	0.0001	0.7175
6.800	12.000	27.000	40.00	63.00	80.00	110.00	44.83	44.83	0.0816	0.0735
<0.100	0.100	0.100	0.20	0.20	0.30	0.50	0.19	0.19	0.0001	0.0001
3.200	4.400	7.150	9.80	15.50	18.00	39.00	11.36	11.36	0.0001	0.6511
0.230	--	--	0.37	--	--	0.50	--	--	--	--
1.000	--	--	2.20	--	--	7.00	--	--	--	--
1.000	1.000	2.000	2.00	4.00	12.00	14.00	--	--	--	--
<20.000	40.000	85.000	175.00	260.00	490.00	1000.00	225.56	226.67	0.0001	0.3110
--	--	--	<10.00	--	--	--	--	--	--	--
<10.000	20.000	40.000	80.00	140.00	320.00	430.00	115.26	115.53	0.0001	0.4567
--	--	--	<10.00	--	--	--	--	--	--	--
3.000	10.000	20.000	40.00	60.00	110.00	110.00	--	--	--	--
<10.000	40.000	90.000	175.00	400.00	550.00	5200.00	383.16	383.42	0.0001	0.8101
<0.100	<0.100	0.100	0.20	0.40	1.30	1.50	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
<1.000	<1.000	<1.000	<1.00	1.00	1.00	2.00	--	--	--	--
69.000	96.000	230.000	310.00	410.00	630.00	680.00	--	--	--	--

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 12, 06470830, James River
Specific conductance (µS/cm at 25 degrees Celsius)	00095	150	150	100	07/17/69 through 08/30/95
pH, water, whole, field (standard units)	00400	131	131	100	07/17/69 through 08/30/95
pH, water, whole, laboratory (standard units)	00403	88	88	100	03/24/82 through 08/30/95
Turbidity (NTU)	00076	66	66	100	11/30/84 through 11/30/94
Oxygen, dissolved (mg/L)	00300	90	90	100	10/30/73 through 08/30/95
Hardness, total (mg/L as $CaCO_3$)	00900	136	136	100	07/17/69 through 08/30/95
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	121	121	100	07/17/69 through 08/30/95
Solids, sum of constituents, dissolved (mg/L)	70301	87	87	100	01/06/71 through 08/30/95
Residue, nonfilterable (mg/L)	00530	78	76	97.4	11/30/84 through 08/30/95
Calcium, dissolved (mg/L as Ca)	00915	125	125	100	07/30/70 through 08/30/95
Magnesium, dissolved (mg/L as Mg)	00925	125	125	100	07/30/70 through 08/30/95
Sodium, dissolved (mg/L as Na)	00930	106	106	100	09/19/69 through 08/30/95
Sodium (percent of cations)	00932	93	93	100	09/19/69 through 08/30/95
Sodium adsorption ratio	00931	105	105	100	09/19/69 through 08/30/95
Potassium, dissolved (mg/L as K)	00935	93	93	100	09/19/69 through 08/30/95
Sulfate, dissolved (mg/L as SO_4)	00945	138	138	100	07/17/69 through 08/30/95
Chloride, dissolved (mg/L as Cl)	00940	126	126	100	07/30/70 through 08/30/95
Fluoride, dissolved (mg/L as F)	00950	105	103	98.1	09/19/69 through 08/30/95
Silica, dissolved (mg/L as SiO_2)	00955	38	38	100	08/02/72 through 08/30/95
Nitrogen, nitrite, dissolved (mg/L as N)	00613	108	22	20.4	12/05/69 through 08/30/95
Nitrogen, nitrate, dissolved (mg/L as N)	00618	54	47	87.0	12/05/69 through 08/30/95
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	48	45	93.8	12/05/69 through 08/30/95
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	114	41	36.0	06/03/71 through 08/30/95
Nitrogen, ammonia, total (mg/L as N)	00610	25	24	96.0	10/31/72 through 07/07/92
Nitrogen, ammonia, dissolved (mg/L as N)	00608	126	107	84.9	07/17/69 through 08/30/95
Nitrogen, organic, total (mg/L as N)	00605	23	23	100	08/26/87 through 08/02/95
Nitrogen, organic, dissolved (mg/L as N)	00607	47	47	100	08/26/87 through 08/30/95
Nitrogen, ammonia plus organic, total (mg/L as N)	00625	23	23	100	08/26/87 through 08/02/95
Nitrogen, ammonia plus organic, dissolved (mg/L as N)	00623	54	53	98.1	08/26/87 through 08/30/95
Nitrogen, total (mg/L as N)	00600	23	23	100	08/26/87 through 08/02/95
Phosphorus, total (mg/L as P)	00665	75	75	100	07/17/69 through 08/02/95
Phosphorus, dissolved (mg/L as P)	00666	99	97	98.0	07/17/69 through 08/30/95
Phosphorus, orthophosphate, total (mg/L as P)	70507	17	16	94.1	01/07/86 through 07/07/92
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	98	95	96.9	09/26/72 through 08/30/95
Phosphorus, organic, total (mg/L as P)	00670	73	73	100	07/17/69 through 04/27/95
Arsenic, total (µg/L as As)	01002	26	26	100	01/07/86 through 08/02/95
Arsenic, dissolved (µg/L as As)	01000	77	75	97.4	09/19/69 through 08/30/95
Barium, total (µg/L as Ba)	01007	4	2	50.0	01/07/86 through 05/18/87
Barium, dissolved (µg/L as Ba	01005	14	1	7.1	09/19/69 through 07/08/87
Beryllium, total (µg/L as Be)	01012	4	0	0	01/07/86 through 05/18/87

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, log_e-transformed data
at Oakes, N. Dak.										
250.000	600.000	714.000	925.00	1260.00	1690.00	4650.00	1085.80	1085.80	0.0001	0.0816
6.900	7.600	7.810	8.10	8.30	8.50	9.40	8.09	8.09	0.8206	0.6917
7.000	7.600	7.800	7.90	8.17	8.30	8.80	7.96	7.96	0.7262	0.6757
1.400	2.200	4.000	15.00	28.00	40.00	82.00	18.48	18.48	0.0001	0.0002
0.500	5.650	7.600	10.55	13.30	20.00	28.50	11.37	11.37	0.0023	0.0001
86.000	200.000	240.500	310.00	391.00	590.00	1700.00	369.80	369.80	0.0001	0.0037
155.000	392.000	487.000	652.00	844.00	1180.00	3330.00	756.41	756.41	0.0001	0.1091
147.000	356.000	408.000	576.00	809.00	1360.00	3170.00	740.62	740.62	0.0001	0.0028
<1.000	5.000	13.000	42.50	78.00	117.00	367.00	56.76	56.78	0.0001	0.0022
21.000	44.000	52.000	65.00	83.00	140.00	350.00	79.50	79.50	0.0001	0.0002
8.200	22.000	28.000	35.00	46.00	64.00	190.00	41.98	41.98	0.0001	0.0087
13.000	43.000	52.000	79.00	130.00	180.00	550.00	103.88	103.88	0.0001	0.4572
22.000	28.000	29.000	33.00	39.00	44.00	47.00	34.49	34.49	0.0002	0.0063
0.600	1.000	1.000	2.00	3.00	3.00	6.00	2.17	2.17	0.0001	0.0001
0.800	10.000	12.000	13.00	15.00	17.00	46.00	14.19	14.19	0.0001	0.0001
37.000	96.000	130.000	170.00	240.00	350.00	1000.00	206.12	206.12	0.0001	0.2809
7.300	13.000	20.000	37.50	70.00	110.00	430.00	54.84	54.84	0.0001	0.0513
<0.100	0.100	0.200	0.20	0.30	0.40	0.70	0.26	0.27	0.0001	0.0001
1.500	5.300	9.400	13.50	18.00	20.00	990.00	49.31	49.31	0.0001	0.0001
<0.020	<0.020	<0.020	<0.02	<0.02	0.02	0.05	0.01	0.02	0.0001	0.0001
<0.010	<0.010	0.050	0.13	0.50	0.78	1.16	0.29	0.29	0.0001	0.0008
<0.100	0.100	0.300	0.64	2.30	4.10	5.10	1.37	1.37	0.0001	0.0349
<0.100	<0.100	<0.100	<0.10	0.20	0.62	1.90	0.18	0.24	0.0001	0.0001
<0.010	0.020	0.030	0.06	0.16	0.37	0.57	0.12	0.12	0.0001	0.5697
<0.015	<0.015	0.020	0.06	0.17	0.38	0.86	0.13	0.14	0.0001	0.0001
0.700	0.880	1.100	1.30	1.60	1.70	2.60	1.36	1.36	0.0541	0.3277
0.380	0.440	0.730	0.85	0.99	1.30	3.70	0.93	0.93	0.0001	0.0137
0.700	0.900	1.300	1.40	1.60	1.70	2.70	1.43	1.43	0.0128	0.0346
<0.200	0.500	0.800	0.90	1.10	1.60	3.70	1.01	1.02	0.0001	0.0101
0.700	0.900	1.300	1.60	1.70	2.00	2.70	1.53	1.53	0.2838	0.0862
0.080	0.150	0.230	0.32	0.40	0.55	1.40	0.34	0.34	0.0001	0.6394
<0.010	0.030	0.060	0.10	0.18	0.27	0.58	0.13	0.13	0.0001	0.0186
<0.010	0.039	0.093	0.14	0.19	0.25	0.27	--	--	--	--
<0.010	0.020	0.040	0.09	0.15	0.25	0.58	0.12	0.12	0.0001	0.1610
0.030	0.090	0.140	0.28	0.40	0.55	1.40	0.31	0.31	0.0001	0.0566
1.000	2.000	2.000	3.00	4.00	5.00	9.00	3.35	3.35	0.0005	0.0151
<1.000	1.000	2.000	3.00	4.00	8.00	20.00	3.90	3.92	0.0001	0.0001
<100.000	--	<100.000	0.00	100.00	--	100.00	--	--	--	--
<100.000	<100.000	<100.000	<100.00	<100.00	<100.00	100.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 12, 06470830, James River
Beryllium, dissolved (µg/L as Be)	01010	20	1	5.0	03/24/70 through 07/08/87
Boron, total (µg/L as B)	01022	3	3	100	04/01/86 through 05/18/87
Boron, dissolved (µg/L as B)	01020	101	101	100	09/19/69 through 08/30/95
Cadmium, total (µg/L as Cd)	01027	23	7	30.4	01/07/86 through 05/18/94
Cadmium, dissolved (µg/L as Cd)	01025	72	2	2.8	09/19/69 through 11/30/94
Chromium, total (µg/L as Cr)	01034	5	1	20.0	12/05/69 through 01/07/86
Chromium, dissolved (µg/L as Cr)	01030	22	0	0	09/19/69 through 07/08/87
Cobalt, dissolved (µg/L as Co)	01035	13	0	0	09/19/69 through 07/08/87
Copper, dissolved (µg/L as Cu)	01040	77	4	5.2	09/19/69 through 11/30/94
Iron, total (µg/L as Fe)	01045	19	19	100	08/26/87 through 05/18/94
Iron, dissolved (µg/L as Fe)	01046	92	48	52.2	09/19/69 through 08/30/95
Lead, dissolved (µg/L as Pb)	01049	77	2	2.6	09/19/69 through 11/30/94
Manganese, total (µg/L as Mn)	01055	20	20	100	09/19/69 through 05/18/94
Manganese, dissolved (µg/L as Mn)	01056	99	98	99.0	12/05/69 through 08/30/95
Mercury, dissolved (µg/L as Hg)	71890	76	36	47.4	09/24/70 through 08/30/95
Molybdenum, dissolved (µg/L as Mo)	01060	12	2	16.7	09/19/69 through 06/27/72
Nickel, total (µg/L as Ni)	01067	4	4	100	01/07/86 through 05/18/87
Nickel, dissolved (mg/L as Ni)	01065	22	17	77.3	09/19/69 through 07/08/87
Selenium, total (µg/L as Se)	01147	25	0	0	01/07/86 through 08/02/95
Selenium, dissolved (µg/L as Se)	01145	78	6	7.7	09/24/70 through 08/30/95
Silver, total (µg/L as Ag)	01077	4	0	0	01/07/86 through 05/18/87
Silver, dissolved (µg/L as Ag)	01075	22	3	13.6	09/19/69 through 07/08/87
Strontium, dissolved (µg/L as Sr)	01080	4	4	100	09/19/69 through 06/26/70
Vanadium, dissolved (µg/L as V)	01085	4	0	0	09/19/69 through 06/26/70
Zinc, dissolved (µg/L as Zn)	01090	77	31	40.3	09/19/69 through 11/30/94
Sediment, suspended, concentration (mg/L)	80154	61	61	100	01/08/85 through 08/30/95
					Site 13, 06470833, Pilot Drain
Specific conductance (µS/cm at 25 degrees Celsius)	00095	114	114	100	09/16/71 through 03/11/83
pH, water, whole, field (standard units)	00400	88	88	100	09/16/71 through 03/11/83
pH, water, whole, laboratory (standard units)	00403	2	2	100	05/25/82 through 03/11/83
Oxygen, dissolved (mg/L)	00300	1	1	100	07/17/80 through 07/17/80
Hardness, total (mg/L as $CaCO_3$)	00900	89	89	100	09/16/71 through 03/11/83
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	88	88	100	09/16/71 through 05/25/82
Solids, sum of constituents, dissolved (mg/L)	70301	67	67	100	09/16/71 through 03/11/83
Calcium, dissolved (mg/L as Ca)	00915	89	89	100	09/16/71 through 03/11/83
Magnesium, dissolved (mg/L as Mg)	00925	89	89	100	09/16/71 through 03/11/83
Sodium, dissolved (mg/L as Na)	00930	89	89	100	09/16/71 through 03/11/83
Sodium (percent of cations)	00932	89	89	100	09/16/71 through 03/11/83
Sodium adsorption ratio	00931	89	89	100	09/16/71 through 03/11/83
Potassium, dissolved (mg/L as K)	00935	89	89	100	09/16/71 through 03/11/83
Sulfate, dissolved (mg/L as SO_4)	00945	67	67	100	09/16/71 through 03/11/83
Chloride, dissolved (mg/L as Cl)	00940	67	67	100	09/16/71 through 03/11/83

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
at Oakes, N. Dak.–Continued										
<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	10.00	0.50	10.00	--	0.0001
80.000	--	--	90.00	--	--	100.00	--	--	--	--
50.000	100.000	120.000	210.00	360.00	510.00	1500.00	292.24	292.24	0.0001	0.0549
<1.000	<1.000	<1.000	<1.00	1.00	2.00	21.00	1.30	2.00	0.0001	0.0001
<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	60.00	0.97	10.69	0.0001	0.0001
<1.000	--	<1.000	<1.00	<1.00	--	10.00	--	--	--	--
--	--	--	<20.00	--	--	--	--	<20.00	--	--
--	--	--	<3.00	--	--	--	--	--	--	--
<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	50.00	1.49	10.97	0.0001	0.0001
130.000	160.000	490.000	1500.00	2000.00	3600.00	3800.00	--	--	--	--
<10.000	<10.000	<10.000	10.50	27.50	46.00	200.00	17.87	22.65	0.0001	0.0028
<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	12.00	0.29	10.03	0.0001	0.0001
30.000	79.500	175.000	505.00	960.00	1250.00	1300.00	590.95	590.95	0.1006	0.0421
<10.000	24.000	51.000	130.00	310.00	790.00	2600.00	278.97	279.07	0.0001	0.2763
<0.100	<0.100	<0.100	<0.10	0.20	0.30	1.40	0.12	0.17	0.0001	0.0001
<10.000	<10.000	<10.000	<10.00	<10.00	12.00	14.00	--	--	--	--
4.000	--	4.000	5.00	7.50	--	9.00	--	--	--	--
<2.000	<2.000	2.000	3.00	5.00	9.00	12.00	3.91	4.36	0.0003	0.1033
--	--	--	<1.00	--	--	--	--	<1.00	--	--
<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	7.00	0.37	1.29	0.0001	0.0001
--	--	--	<1.00	--	--	--	--	--	--	--
<1.000	<1.000	<1.000	<1.00	<1.00	1.00	1.00	0.14	1.00	--	--
370.000	--	392.000	457.00	517.00	--	534.00	--	--	--	--
--	--	--	<6.00	--	--	--	--	--	--	--
<10.000	<10.000	<10.000	<10.00	12.00	20.00	80.00	7.10	13.08	0.0001	0.0001
2.000	14.000	48.000	89.00	132.00	211.00	544.00	113.40	113.40	0.0001	0.0006
at Oakes, N. Dak.										
320.000	595.000	640.000	700.00	734.00	764.00	940.00	681.67	681.67	0.0001	0.0001
7.200	7.500	7.600	7.70	7.90	8.10	8.70	7.75	7.75	0.0296	0.0653
7.600	--	--	7.75	--	--	7.90	--	--	--	--
--	--	--	9.10	--	--	--	--	--	--	--
120.000	300.000	320.000	350.00	370.00	380.00	380.00	339.21	339.21	0.0001	0.0001
250.000	390.000	417.500	449.50	471.50	490.00	520.00	443.13	443.13	0.0001	0.0001
219.000	378.000	407.000	442.00	466.00	485.00	531.00	433.88	433.88	0.0001	0.0001
29.000	71.000	80.000	86.00	91.00	96.00	99.00	84.42	84.42	0.0001	0.0001
12.000	27.000	29.000	32.00	33.00	35.00	38.00	31.09	31.09	0.0001	0.0001
9.700	14.000	16.000	18.00	19.00	21.00	22.00	17.63	17.63	0.0001	0.0001
7.000	8.000	9.000	10.00	11.00	11.00	20.00	10.04	10.04	0.0001	0.0001
0.300	0.300	0.400	0.40	0.50	0.50	0.60	0.41	0.41	0.0001	0.0001
3.800	4.600	5.400	6.00	6.20	6.60	13.00	5.93	5.93	0.0001	0.0001
44.000	56.000	80.000	96.00	110.00	120.00	210.00	94.31	94.31	0.0008	0.0024
6.500	10.000	12.000	12.00	14.00	16.00	19.00	12.68	12.68	0.0238	0.0004

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 13, 06470833, Pilot Drain
Fluoride, dissolved (mg/L as F)	00950	66	65	98.5	09/16/71 through 03/11/83
Silica, dissolved (mg/L as SiO_2)	00955	66	66	100	09/16/71 through 03/11/83
Nitrogen, nitrite, dissolved (mg/L as N)	00613	3	2	66.7	09/16/71 through 03/11/83
Nitrogen, nitrate, dissolved (mg/L as N)	00618	3	3	100	09/16/71 through 03/11/83
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	3	3	100	09/16/71 through 03/11/83
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	67	67	100	09/16/71 through 03/11/83
Nitrogen, ammonia, dissolved (mg/L as N)	00608	1	1	100	03/11/83 through 03/11/83
Phosphorus, dissolved (mg/L as P)	00666	66	54	81.8	09/16/71 through 03/11/83
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	1	1	100	03/11/83 through 03/11/83
Aluminum, dissolved (µg/L as Al)	01106	9	6	66.7	04/30/74 through 04/17/79
Arsenic, dissolved (µg/L as As)	01000	9	9	100	04/30/74 through 04/17/79
Barium, dissolved (µg/L as Ba	01005	9	2	22.2	04/30/74 through 04/17/79
Beryllium, dissolved (µg/L as Be)	01010	6	1	16.7	04/30/74 through 05/04/77
Boron, dissolved (µg/L as B)	01020	66	66	100	09/16/71 through 03/11/83
Cadmium, dissolved (µg/L as Cd)	01025	9	0	0	04/30/74 through 04/17/79
Chromium, dissolved (µg/L as Cr)	01030	9	0	0	04/30/74 through 04/17/79
Cobalt, dissolved (µg/L as Co)	01035	9	0	0	04/30/74 through 04/17/79
Copper, dissolved (µg/L as Cu)	01040	9	0	0	04/30/74 through 04/17/79
Iron, dissolved (µg/L as Fe)	01046	10	8	80.0	04/30/74 through 03/11/83
Lead, dissolved (µg/L as Pb)	01049	9	0	0	04/30/74 through 04/17/79
Lithium, dissolved (µg/L as Li)	01130	9	9	100	04/30/74 through 04/17/79
Manganese, dissolved (µg/L as Mn)	01056	10	10	100	04/30/74 through 03/11/83
Mercury, dissolved (µg/L as Hg)	71890	9	2	22.2	04/30/74 through 04/17/79
Molybdenum, dissolved (µg/L as Mo)	01060	9	0	0	04/30/74 through 04/17/79
Nickel, dissolved (mg/L as Ni)	01065	9	4	44.4	04/30/74 through 04/17/79
Selenium, dissolved (µg/L as Se)	01145	9	2	22.2	04/30/74 through 04/17/79
Silver, dissolved (µg/L as Ag)	01075	6	0	0	04/30/74 through 05/04/77
Strontium, dissolved (µg/L as Sr)	01080	9	9	100	04/30/74 through 04/17/79
Vanadium, dissolved (µg/L as V)	01085	9	0	0	04/30/74 through 04/17/79
Zinc, dissolved (µg/L as Zn)	01090	9	1	11.1	04/30/74 through 04/17/79
					Site 14, 06470875, James River at Dakota
Specific conductance (µS/cm at 25 degrees Celsius)	00095	106	106	100	04/22/82 through 08/30/95
pH, water, whole, field (standard units)	00400	83	83	100	09/15/82 through 08/30/95
pH, water, whole, laboratory (standard units)	00403	89	89	100	09/15/82 through 08/30/95
Turbidity (NTU)	00076	64	64	100	11/29/84 through 12/01/94
Oxygen, dissolved (mg/L)	00300	91	91	100	09/15/82 through 08/30/95
Hardness, total (mg/L as $CaCO_3$)	00900	89	89	100	09/15/82 through 08/30/95
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	72	72	100	02/09/83 through 08/30/95
Solids, sum of constituents, dissolved (mg/L)	70301	88	88	100	09/15/82 through 08/30/95
Residue, nonfilterable (mg/L)	00530	71	69	97.2	11/29/84 through 08/30/95
Calcium, dissolved (mg/L as Ca)	00915	89	89	100	09/15/82 through 08/30/95

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
at Oakes, N. Dak.–Continued										
<0.100	0.200	0.200	0.20	0.30	0.30	0.60	0.23	0.23	0.0001	0.0001
9.300	20.000	24.000	26.50	28.00	30.00	33.00	25.53	25.53	0.0001	0.0001
<0.020	--	--	0.04	--	--	0.10	--	--	--	--
0.230	--	--	0.25	--	--	1.46	--	--	--	--
1.000	--	--	1.10	--	--	6.50	--	--	--	--
0.130	0.290	0.530	0.72	1.50	3.40	3.70	1.20	1.20	0.0001	0.0007
--	--	--	0.38	--	--	--	--	--	--	--
<0.010	<0.010	0.010	0.02	0.04	0.11	1.40	0.06	0.06	0.0001	0.0001
--	--	--	0.31	--	--	--	--	--	--	--
<10.000	--	<10.000	10.00	20.00	--	30.00	--	--	--	--
4.000	--	5.000	7.00	8.00	--	10.00	--	--	--	--
<100.000	--	<100.000	<100.00	<100.00	--	200.00	--	--	--	--
<10.000	--	<10.000	<10.00	<10.00	--	10.00	--	--	--	--
30.000	60.000	70.000	80.00	90.00	100.00	140.00	82.27	82.27	0.0785	0.0002
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<20.00	--	--	--	--	--	--	--
--	--	--	<3.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
<10.000	<10.000	20.000	30.00	50.00	335.00	410.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
20.000	--	30.000	30.00	30.00	--	30.00	--	--	--	--
84.000	117.000	160.000	350.00	880.00	1050.00	1100.00	--	--	--	--
<0.100	--	<0.100	<0.10	<0.10	--	4.60	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
<2.000	--	<2.000	<2.00	3.00	--	4.00	--	--	--	--
<1.000	--	<1.000	<1.00	<1.00	--	1.00	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
200.000	--	260.000	300.00	310.00	--	350.00	--	--	--	--
--	--	--	<6.00	--	--	--	--	--	--	--
<10.000	--	<10.000	<10.00	<10.00	--	20.00	--	--	--	--
Lake Dam near Ludden, N. Dak.										
250.000	530.000	630.000	805.00	1150.00	2010.00	2770.00	997.27	997.27	0.0001	0.0028
7.200	7.800	8.010	8.30	8.60	8.88	9.70	8.31	8.31	0.9418	0.8980
7.200	7.600	7.800	8.00	8.30	8.50	8.80	8.02	8.02	0.3769	0.3675
0.700	2.600	3.800	8.05	20.00	32.00	42.00	13.20	13.20	0.0001	0.0356
0.200	5.860	7.800	11.00	14.52	19.80	30.20	11.56	11.56	0.0083	0.0001
87.000	200.000	230.000	280.00	380.00	650.00	890.00	337.72	337.72	0.0001	0.0228
156.000	359.000	464.000	551.50	818.00	1520.00	1840.00	724.97	724.97	0.0001	0.0138
149.000	359.000	395.500	512.00	784.00	1470.00	1870.00	663.68	663.68	0.0001	0.0026
<1.000	4.000	9.000	18.00	40.00	66.00	364.00	35.03	35.06	0.0001	0.3394
21.000	41.000	48.000	59.00	81.00	120.00	190.00	68.11	68.11	0.0001	0.0139

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 14, 06470875, James River at Dakota
Magnesium, dissolved (mg/L as Mg)	00925	89	89	100	09/15/82 through 08/30/95
Sodium, dissolved (mg/L as Na)	00930	89	89	100	09/15/82 through 08/30/95
Sodium (percent of cations)	00932	89	89	100	09/15/82 through 08/30/95
Sodium adsorption ratio	00931	89	89	100	09/15/82 through 08/30/95
Potassium, dissolved (mg/L as K)	00935	89	89	100	09/15/82 through 08/30/95
Sulfate, dissolved (mg/L as SO_4)	00945	89	89	100	09/15/82 through 08/30/95
Chloride, dissolved (mg/L as Cl)	00940	89	89	100	09/15/82 through 08/30/95
Fluoride, dissolved (mg/L as F)	00950	89	88	98.9	09/15/82 through 08/30/95
Silica, dissolved (mg/L as SiO_2)	00955	42	42	100	09/15/82 through 08/30/95
Nitrogen, nitrite, dissolved (mg/L as N)	00613	86	17	19.8	09/15/82 through 08/30/95
Nitrogen, nitrate, dissolved (mg/L as N)	00618	19	19	100	02/09/83 through 06/26/95
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	19	19	100	02/09/83 through 06/26/95
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	86	20	23.3	09/15/82 through 08/30/95
Nitrogen, ammonia, total (mg/L as N)	00610	11	11	100	08/27/87 through 07/07/92
Nitrogen, ammonia, dissolved (mg/L as N)	00608	87	74	85.1	09/15/82 through 08/30/95
Nitrogen, organic, total (mg/L as N)	00605	20	20	100	08/27/87 through 08/02/95
Nitrogen, organic, dissolved (mg/L as N)	00607	44	44	100	08/27/87 through 08/02/95
Nitrogen, ammonia plus organic, total (mg/L as N)	00625	20	20	100	08/27/87 through 08/02/95
Nitrogen, ammonia plus organic, dissolved (mg/L as N)	00623	51	51	100	08/27/87 through 08/30/95
Nitrogen, total (mg/L as N)	00600	20	20	100	08/27/87 through 08/02/95
Phosphorus, total (mg/L as P)	00665	25	25	100	04/01/86 through 08/02/95
Phosphorus, dissolved (mg/L as P)	00666	86	85	98.8	09/15/82 through 08/30/95
Phosphorus, orthophosphate, total (mg/L as P)	70507	16	15	93.8	01/09/86 through 07/07/92
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	86	77	89.5	09/15/82 through 08/30/95
Phosphorus, organic, total (mg/L as P)	00670	25	25	100	04/01/86 through 08/02/95
Arsenic, total (µg/L as As)	01002	25	25	100	01/09/86 through 08/02/95
Arsenic, dissolved (µg/L as As)	01000	65	63	96.9	01/09/86 through 08/30/95
Barium, total (µg/L as Ba)	01007	6	5	83.3	01/09/86 through 05/19/87
Barium, dissolved (µg/L as Ba	01005	12	1	8.3	01/09/86 through 07/09/87
Beryllium, total (µg/L as Be)	01012	6	0	0	01/09/86 through 05/19/87
Beryllium, dissolved (µg/L as Be)	01010	12	0	0	01/09/86 through 07/09/87
Boron, total (µg/L as B)	01022	5	5	100	04/01/86 through 05/19/87
Boron, dissolved (µg/L as B)	01020	89	89	100	09/15/82 through 08/30/95
Cadmium, total (µg/L as Cd)	01027	23	5	21.7	01/09/86 through 07/22/94
Cadmium, dissolved (µg/L as Cd)	01025	58	0	0	01/09/86 through 12/01/94
Chromium, total (µg/L as Cr)	01034	1	1	100	01/09/86 through 01/09/86
Chromium, dissolved (µg/L as Cr)	01030	12	0	0	01/09/86 through 07/09/87
Cobalt, dissolved (µg/L as Co)	01035	11	0	0	04/22/86 through 07/09/87
Copper, dissolved (µg/L as Cu)	01040	64	0	0	11/29/84 through 12/01/94
Iron, total (µg/L as Fe)	01045	17	17	100	08/27/87 through 07/22/94

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, log_e-transformed data
Lake Dam near Ludden, N. Dak.--Continued										
8.500	20.000	25.000	33.00	48.00	84.00	110.00	40.75	40.75	0.0001	0.0576
14.000	42.000	50.000	67.00	120.00	240.00	380.00	98.42	98.42	0.0001	0.0058
23.000	28.000	30.000	32.00	39.00	47.00	53.00	34.91	34.91	0.0001	0.0001
0.700	1.000	1.000	2.00	3.00	4.00	6.00	2.17	2.17	0.0001	0.0001
1.300	9.800	12.000	14.00	16.00	22.00	32.00	14.63	14.63	0.0001	0.0001
36.000	90.000	110.000	160.00	230.00	450.00	620.00	204.45	204.45	0.0001	0.1394
7.900	13.000	17.000	28.00	58.00	130.00	220.00	48.34	48.34	0.0001	0.0003
<0.100	0.100	0.200	0.20	0.30	0.40	0.50	0.23	0.23	0.0001	0.0001
0.860	3.000	6.200	10.00	16.00	18.00	71.00	12.65	12.65	0.0001	0.0009
<0.020	<0.020	<0.020	<0.02	<0.02	0.03	0.12	0.01	0.02	0.0001	0.0001
0.029	0.045	0.120	0.34	0.52	0.79	0.96	--	--	--	--
0.130	0.200	0.530	1.50	2.30	3.50	4.20	--	--	--	--
<0.100	<0.100	<0.100	<0.10	<0.10	0.50	1.00	0.09	0.17	0.0001	0.0001
0.010	0.010	0.020	0.03	0.03	0.11	0.48	--	--	--	--
<0.015	<0.015	0.020	0.05	0.14	0.45	2.70	0.19	0.19	0.0001	0.0001
0.870	0.980	1.150	1.35	1.70	2.05	2.20	1.42	1.42	0.2289	0.7451
0.350	0.580	0.770	0.88	1.25	1.60	2.60	1.01	1.01	0.0001	0.6559
0.900	1.000	1.200	1.40	1.70	2.05	2.30	1.47	1.47	0.5338	0.9049
0.400	0.600	0.800	0.90	1.40	1.70	3.60	1.16	1.16	0.0001	0.0447
0.960	1.000	1.250	1.45	1.95	2.15	2.30	1.57	1.57	0.2412	0.2779
0.110	0.150	0.170	0.21	0.27	0.37	0.59	0.24	0.24	0.0006	0.5703
<0.010	0.030	0.040	0.07	0.18	0.32	1.50	0.16	0.16	0.0001	0.0609
<0.010	0.024	0.049	0.07	0.12	0.26	0.90	--	--	--	--
<0.010	<0.010	0.028	0.05	0.13	0.27	0.98	0.12	0.12	0.0001	0.3084
0.010	0.030	0.050	0.12	0.20	0.37	0.51	0.15	0.15	0.0032	0.2238
1.000	1.000	2.000	2.00	4.00	4.00	10.00	2.88	2.88	0.0001	0.0416
<1.000	1.000	2.000	3.00	4.00	5.00	7.00	2.98	3.02	0.0001	0.0001
<100.000	--	100.000	100.00	100.00	--	200.00	--	--	--	--
<100.000	<100.000	<100.000	<100.00	<100.00	<100.00	140.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
40.000	--	110.000	140.00	290.00	--	720.00	--	--	--	--
50.000	90.000	120.000	170.00	310.00	550.00	4200.00	287.30	287.30	0.0001	0.0020
<1.000	<1.000	<1.000	<1.00	<1.00	2.00	3.00	0.39	1.17	0.0001	0.0001
--	--	--	<10.00	--	--	--	--	<10.00	--	--
--	--	--	6.00	--	--	--	--	--	--	--
--	--	--	<20.00	--	--	--	--	--	--	--
--	--	--	<3.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	<10.00	--	--
140.000	240.000	390.000	800.00	1200.00	1500.00	2000.00	--	--	--	--

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 14, 06470875, James River at Dakota
Iron, dissolved (µg/L as Fe)	01046	89	47	52.8	09/15/82 through 08/30/95
Lead, dissolved (µg/L as Pb)	01049	64	0	0	11/29/84 through 12/01/94
Manganese, total (µg/L as Mn)	01055	17	17	100	08/27/87 through 07/22/94
Manganese, dissolved (µg/L as Mn)	01056	89	72	80.9	09/15/82 through 08/30/95
Mercury, dissolved (µg/L as Hg)	71890	71	35	49.3	11/29/84 through 08/30/95
Nickel, total (µg/L as Ni)	01067	6	6	100	01/09/86 through 05/19/87
Nickel, dissolved (µg/L as Ni)	01065	12	9	75.0	01/09/86 through 07/09/87
Selenium, total (µg/L as Se)	01147	24	0	0	01/09/86 through 08/02/95
Selenium, dissolved (µg/L as Se)	01145	71	1	1.4	11/29/84 through 08/30/95
Silver, total (µg/L as Ag)	01077	6	0	0	01/09/86 through 05/19/87
Silver, dissolved (µg/L as Ag)	01075	12	0	0	01/09/86 through 07/09/87
Zinc, dissolved (µg/L as Zn)	01090	64	9	14.1	11/29/84 through 12/01/94
Sediment, suspended, concentration (mg/L)	80154	66	66	100	01/08/85 through 08/30/95
					Site 15, 06470878, James River at North
Specific conductance (µS/cm at 25 degrees Celsius)	00095	80	80	100	10/30/74 through 04/09/87
pH, water, whole, field (standard units)	00400	71	71	100	10/30/74 through 04/09/87
pH, water, whole, laboratory (standard units)	00403	8	8	100	10/07/80 through 08/31/81
Oxygen, dissolved (mg/L)	00300	41	41	100	11/02/76 through 04/09/87
Hardness, total (mg/L as $CaCO_3$)	00900	74	74	100	10/30/74 through 08/31/81
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	74	74	100	10/30/74 through 08/31/81
Solids, sum of constituents, dissolved (mg/L)	70301	74	74	100	10/30/74 through 08/31/81
Calcium, dissolved (mg/L as Ca)	00915	74	74	100	10/30/74 through 08/31/81
Magnesium, dissolved (mg/L as Mg)	00925	74	74	100	10/30/74 through 08/31/81
Sodium, dissolved (mg/L as Na)	00930	74	74	100	10/30/74 through 08/31/81
Sodium (percent of cations)	00932	74	74	100	10/30/74 through 08/31/81
Sodium adsorption ratio	00931	74	74	100	10/30/74 through 08/31/81
Potassium, dissolved (mg/L as K)	00935	74	74	100	10/30/74 through 08/31/81
Sulfate, dissolved (mg/L as SO_4)	00945	74	74	100	10/30/74 through 08/31/81
Chloride, dissolved (mg/L as Cl)	00940	74	74	100	10/30/74 through 08/31/81
Fluoride, dissolved (mg/L as F)	00950	74	74	100	10/30/74 through 08/31/81
Silica, dissolved (mg/L as SiO_2)	00955	74	74	100	10/30/74 through 08/31/81
Nitrogen, nitrite, dissolved (mg/L as N)	00613	1	0	0	07/13/81 through 07/13/81
Nitrogen, nitrate, dissolved (mg/L as N)	00618	1	1	100	07/13/81 through 07/13/81
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	1	1	100	07/13/81 through 07/13/81
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	74	24	32.4	10/30/74 through 08/31/81
Nitrogen, ammonia, dissolved (mg/L as N)	00608	1	1	100	07/13/81 through 07/13/81
Phosphorus, dissolved (mg/L as P)	00666	74	73	98.6	10/30/74 through 08/31/81
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	1	1	100	07/13/81 through 07/13/81
Aluminum, dissolved (µg/L as Al)	01106	9	5	55.6	05/29/75 through 04/24/79

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
Lake Dam near Ludden, N. Dak.--Continued										
<10.000	<10.000	<10.000	10.00	23.00	40.00	310.00	19.83	24.55	0.0001	0.0006
--	--	--	<10.00	--	--	--	--	<10.00	--	--
40.000	80.000	240.000	330.00	520.00	590.00	590.00	--	--	--	--
<10.000	<10.000	14.000	40.00	98.00	240.00	7800.00	304.36	306.27	0.0001	0.0053
<0.100	<0.100	<0.100	<0.10	0.20	0.30	0.70	0.11	0.16	0.0001	0.0001
2.000	--	4.000	5.00	7.00	--	12.00	--	--	--	--
<2.000	<2.000	0.000	2.00	3.50	4.00	5.00	--	--	--	--
--	--	--	<1.00	--	--	--	--	<1.00	--	--
<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	2.00	0.03	1.01	0.0001	0.0001
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
<10.000	<10.000	<10.000	<10.00	<10.00	10.00	29.00	2.39	10.98	0.0001	0.0001
4.500	14.000	25.200	44.50	71.00	93.00	233.00	52.20	52.20	0.0001	0.3700
Dakota-South Dakota State line										
255.000	490.000	600.000	773.00	1065.00	1665.00	3900.00	958.61	958.61	0.0001	0.0147
7.500	7.700	8.000	8.45	8.60	9.20	9.60	8.39	8.39	0.0431	0.0478
7.700	--	7.800	8.10	8.30	--	8.60	--	--	--	--
0.600	5.000	7.900	9.50	11.40	16.30	30.40	10.37	10.37	0.0002	0.0001
95.000	180.000	210.000	280.00	340.00	620.00	1700.00	351.28	351.28	0.0001	0.0001
177.000	324.000	397.000	548.00	754.00	1240.00	2960.00	695.26	695.26	0.0001	0.0100
157.000	306.000	390.000	535.00	759.00	1220.00	2920.00	681.38	681.38	0.0001	0.0307
23.000	38.000	46.000	56.00	73.00	140.00	380.00	73.72	73.72	0.0001	0.0001
9.100	18.000	23.000	31.00	41.00	76.00	190.00	40.57	40.57	0.0001	0.0049
12.000	34.000	47.000	74.00	120.00	170.00	450.00	102.95	102.95	0.0001	0.6938
20.000	26.000	29.000	34.50	40.00	50.00	61.00	35.73	35.73	0.0022	0.5137
0.500	1.000	1.000	2.00	3.00	4.00	6.00	2.27	2.27	0.0001	0.0001
5.600	9.700	11.000	13.00	15.00	19.00	40.00	14.04	14.04	0.0001	0.0104
36.000	79.000	110.000	155.00	230.00	380.00	1000.00	205.26	205.26	0.0001	0.1437
5.500	12.000	18.000	31.00	63.00	95.00	250.00	49.77	49.77	0.0001	0.3421
0.100	0.100	0.200	0.20	0.30	0.40	0.80	0.26	0.26	0.0001	0.0001
0.100	1.900	5.600	12.00	17.00	27.00	58.00	13.31	13.31	0.0001	0.0001
--	--	--	<0.02	--	--	--	--	--	--	--
--	--	--	0.06	--	--	--	--	--	--	--
--	--	--	0.27	--	--	--	--	--	--	--
<0.100	<0.100	<0.100	<0.10	0.13	0.76	3.00	0.19	0.26	0.0001	0.0002
--	--	--	0.09	--	--	--	--	--	--	--
<0.010	0.020	0.060	0.13	0.25	0.70	3.00	0.26	0.26	0.0001	0.2632
--	--	--	0.28	--	--	--	--	--	--	--
<10.000	--	<10.000	10.00	30.00	--	30.00	--	--	--	--

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 15, 06470878, James River at North
Arsenic, dissolved (µg/L as As)	01000	9	9	100	05/29/75 through 04/24/79
Barium, dissolved (µg/L as Ba	01005	9	2	22.2	05/29/75 through 04/24/79
Beryllium, dissolved (µg/L as Be)	01010	5	1	20.0	05/29/75 through 05/03/77
Boron, dissolved (µg/L as B)	01020	74	74	100	10/30/74 through 08/31/81
Cadmium, dissolved (µg/L as Cd)	01025	9	0	0	05/29/75 through 04/24/79
Chromium, dissolved (µg/L as Cr)	01030	9	0	0	05/29/75 through 04/24/79
Cobalt, dissolved (µg/L as Co)	01035	9	0	0	05/29/75 through 04/24/79
Copper, dissolved (µg/L as Cu)	01040	9	0	0	05/29/75 through 04/24/79
Iron, dissolved (µg/L as Fe)	01046	9	8	88.9	05/29/75 through 04/24/79
Lead, dissolved (µg/L as Pb)	01049	9	0	0	05/29/75 through 04/24/79
Lithium, dissolved (µg/L as Li)	01130	9	8	88.9	05/29/75 through 04/24/79
Manganese, dissolved (µg/L as Mn)	01056	9	7	77.8	05/29/75 through 04/24/79
Mercury, dissolved (µg/L as Hg)	71890	9	0	0	05/29/75 through 04/24/79
Molybdenum, dissolved (µg/L as Mo)	01060	9	0	0	05/29/75 through 04/24/79
Nickel, dissolved (µg/L as Ni)	01065	9	6	66.7	05/29/75 through 04/24/79
Selenium, dissolved (µg/L as Se)	01145	9	2	22.2	05/29/75 through 04/24/79
Silver, dissolved (µg/L as Ag)	01075	5	0	0	05/29/75 through 05/03/77
Strontium, dissolved (µg/L as Sr)	01080	9	9	100	05/29/75 through 04/24/79
Vanadium, dissolved (µg/L as V)	01085	9	0	0	05/29/75 through 04/24/79
Zinc, dissolved (µg/L as Zn)	01090	9	1	11.1	05/29/75 through 04/24/79
					Site 16, 06470980, James River
Specific conductance (µS/cm at 25 degrees Celsius)	00095	37	37	100	11/28/84 through 01/08/91
pH, water, whole, field (standard units)	00400	35	35	100	11/28/84 through 01/08/91
pH, water, whole, laboratory (standard units)	00403	34	34	100	11/28/84 through 01/08/91
Turbidity (NTU)	00076	34	34	100	11/28/84 through 01/08/91
Oxygen, dissolved (mg/L)	00300	34	34	100	11/28/84 through 01/08/91
Hardness, total (mg/L as $CaCO_3$)	00900	34	34	100	11/28/84 through 01/08/91
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L)	70300	34	34	100	11/28/84 through 01/08/91
Solids, sum of constituents, dissolved (mg/L)	70301	34	34	100	11/28/84 through 01/08/91
Residue, nonfilterable (mg/L)	00530	34	33	97.1	11/28/84 through 01/08/91
Calcium, dissolved (mg/L as Ca)	00915	34	34	100	11/28/84 through 01/08/91
Magnesium, dissolved (mg/L as Mg)	00925	34	34	100	11/28/84 through 01/08/91
Sodium, dissolved (mg/L as Na)	00930	34	34	100	11/28/84 through 01/08/91
Sodium (percent of cations)	00932	34	34	100	11/28/84 through 01/08/91
Sodium adsorption ratio	00931	34	34	100	11/28/84 through 01/08/91
Potassium, dissolved (mg/L as K)	00935	34	34	100	11/28/84 through 01/08/91
Sulfate, dissolved (mg/L as SO_4)	00945	34	34	100	11/28/84 through 01/08/91
Chloride, dissolved (mg/L as Cl)	00940	34	34	100	11/28/84 through 01/08/91
Fluoride, dissolved (mg/L as F)	00950	1	1	100	01/08/91 through 01/08/91
Silica, dissolved (mg/L as SiO_2)	00955	17	17	100	11/28/84 through 07/09/87
Nitrogen, nitrite, dissolved (mg/L as N)	00613	34	4	11.8	11/28/84 through 01/08/91

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
Dakota-South Dakota State line--Continued										
2.000	--	2.000	4.00	5.00	--	11.00	--	--	--	--
<100.000	--	<100.000	<100.00	<100.00	--	400.00	--	--	--	--
<10.000	--	<10.000	<10.00	<10.00	--	10.00	--	--	--	--
50.000	120.000	150.000	220.00	370.00	570.00	1100.00	297.30	297.30	0.0001	0.5279
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<20.00	--	--	--	--	--	--	--
--	--	--	<3.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
<10.000	--	20.000	30.00	40.00	--	90.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
<10.000	--	30.000	50.00	70.00	--	200.00	--	--	--	--
<10.000	--	20.000	20.00	30.00	--	910.00	--	--	--	--
--	--	--	<0.10	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
<2.000	--	<2.000	3.00	4.00	--	7.00	--	--	--	--
<1.000	--	<1.000	<1.00	<1.00	--	1.00	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
100.000	--	250.000	260.00	370.00	--	650.00	--	--	--	--
--	--	--	<6.00	--	--	--	--	--	--	--
<10.000	--	<10.000	<10.00	<10.00	--	20.00	--	--	--	--
near Hecla, S. Dak.										
260.000	460.000	630.000	840.00	1220.00	2410.00	3500.00	1117.84	1117.84	0.0001	0.2778
7.080	7.700	8.000	8.35	8.70	8.90	8.95	8.30	8.30	0.0469	0.0180
7.500	7.700	7.900	8.10	8.20	8.30	8.60	8.05	8.05	0.0621	0.0480
1.300	2.500	3.800	7.20	17.00	22.00	35.00	10.92	10.92	0.0022	0.1187
0.500	6.600	8.200	10.50	12.80	20.00	24.50	11.32	11.32	0.1347	0.0001
88.000	210.000	240.000	275.00	420.00	720.00	1000.00	369.94	369.94	0.0001	0.0602
156.000	372.000	404.000	545.00	992.00	1700.00	2360.00	776.47	776.47	0.0001	0.1520
153.000	364.000	391.000	524.00	943.00	1630.00	2390.00	757.09	757.09	0.0001	0.1672
<1.000	4.000	7.000	16.50	40.00	50.00	73.00	23.32	23.35	0.0066	0.0891
21.000	44.000	48.000	58.00	83.00	130.00	190.00	71.74	71.74	0.0001	0.1860
8.600	23.000	26.000	33.00	54.00	96.00	130.00	46.19	46.19	0.0001	0.1092
16.000	42.000	51.000	78.00	150.00	290.00	490.00	119.41	119.41	0.0001	0.5438
23.000	28.000	30.000	34.00	43.00	49.00	54.00	36.32	36.32	0.0321	0.3068
0.700	1.000	1.000	2.00	3.00	4.00	7.00	2.46	2.46	0.0002	0.0297
8.800	11.000	12.000	14.00	17.00	26.00	41.00	16.20	16.20	0.0001	0.0098
37.000	95.000	120.000	170.00	300.00	510.00	890.00	244.24	244.24	0.0001	0.4581
8.700	11.000	20.000	33.50	75.00	150.00	290.00	59.52	59.52	0.0001	0.3818
--	--	--	0.30	--	--	--	--	--	--	--
0.700	5.000	9.200	12.00	14.00	19.00	130.00	--	--	--	--
<0.020	<0.020	<0.020	<0.02	<0.02	0.02	0.04	0.00	0.02	0.0001	0.0001

Table 2. Summary of water-quality data, by site, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm,

Water-quality constituent	Parameter code	Sample size	N ≥ RL	Percent detects	Period of record
					Site 16, 06470980, James River
Nitrogen, nitrate, dissolved (mg/L as N)	00618	4	4	100	10/01/85 through 04/04/89
Nitrogen, nitrate, dissolved (mg/L as NO_3)	71851	4	4	100	10/01/85 through 04/04/89
Nitrogen, nitrite plus nitrate, dissolved (mg/L as N)	00631	34	5	14.7	11/28/84 through 01/08/91
Nitrogen, ammonia, total (mg/L as N)	00610	7	6	85.7	08/27/87 through 05/23/90
Nitrogen, ammonia, dissolved (mg/L as N)	00608	17	13	76.5	08/27/87 through 01/08/91
Nitrogen, organic, total (mg/L as N)	00605	7	7	100	08/27/87 through 05/23/90
Nitrogen, organic, dissolved (mg/L as N)	00607	15	15	100	08/27/87 through 01/08/91
Nitrogen, ammonia plus organic, total (mg/L as N)	00625	7	7	100	08/27/87 through 05/23/90
Nitrogen, ammonia plus organic, dissolved (mg/L as N)	00623	17	17	100	08/27/87 through 01/08/91
Nitrogen, total (mg/L as N)	00600	7	7	100	08/27/87 through 05/23/90
Phosphorus, total (mg/L as P)	00665	11	10	90.9	04/01/86 through 05/23/90
Phosphorus, dissolved (mg/L as P)	00666	34	33	97.1	11/28/84 through 01/08/91
Phosphorus, orthophosphate, total (mg/L as P)	70507	11	11	100	01/08/86 through 05/23/90
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	27	21	77.8	01/08/86 through 01/08/91
Phosphorus, organic, total (mg/L as P)	00670	10	10	100	04/01/86 through 05/23/90
Arsenic, total (µg/L as As)	01002	11	11	100	01/08/86 through 05/23/90
Arsenic, dissolved (µg/L as As)	01000	27	27	100	01/08/86 through 01/08/91
Barium, total (µg/L as Ba)	01007	5	4	80.0	01/08/86 through 05/19/87
Barium, dissolved (µg/L as Ba	01005	10	1	10.0	01/08/86 through 07/09/87
Beryllium, total (µg/L as Be)	01012	5	0	0	01/08/86 through 05/19/87
Beryllium, dissolved (µg/L as Be)	01010	10	0	0	01/08/86 through 07/09/87
Boron, total (µg/L as B)	01022	4	4	100	04/01/86 through 05/19/87
Boron, dissolved (µg/L as B)	01020	34	34	100	11/28/84 through 01/08/91
Cadmium, total (µg/L as Cd)	01027	12	4	33.3	01/08/86 through 05/23/90
Cadmium, dissolved (µg/L as Cd)	01025	27	0	0	01/08/86 through 01/08/91
Chromium, total (µg/L as Cr)	01034	1	1	100	01/08/86 through 01/08/86
Chromium, dissolved (µg/L as Cr)	01030	10	0	0	01/08/86 through 07/09/87
Cobalt, dissolved (µg/L as Co)	01035	9	0	0	04/22/86 through 07/09/87
Copper, dissolved (µg/L as Cu)	01040	34	0	0	11/28/84 through 01/08/91
Iron, total (µg/L as Fe)	01045	7	7	100	08/27/87 through 05/23/90
Iron, dissolved (µg/L as Fe)	01046	34	15	44.1	11/28/84 through 01/08/91
Lead, dissolved (µg/L as Pb)	01049	34	0	0	11/28/84 through 01/08/91
Manganese, total (µg/L as Mn)	01055	7	7	100	08/27/87 through 05/23/90
Manganese, dissolved (µg/L as Mn)	01056	33	29	87.9	11/28/84 through 01/08/91
Mercury, dissolved (µg/L as Hg)	71890	34	31	91.2	11/28/84 through 01/08/91
Nickel, total (µg/L as Ni)	01067	5	5	100	01/08/86 through 05/19/87
Nickel, dissolved (µg/L as Ni)	01065	9	8	88.9	04/22/86 through 07/09/87
Selenium, total (µg/L as Se)	01147	9	0	0	08/21/86 through 05/23/90
Selenium, dissolved (µg/L as Se)	01145	34	0	0	11/28/84 through 01/08/91
Silver, total (µg/L as Ag)	01077	5	0	0	01/08/86 through 05/19/87
Silver, dissolved (µg/L as Ag)	01075	10	0	0	01/08/86 through 07/09/87
Zinc, dissolved (µg/L as Zn)	01090	34	16	47.1	11/28/84 through 01/08/91
Sediment, suspended, concentration (mg/L)	80154	32	32	100	01/08/85 through 01/08/91

if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values microsiemens per centimeter; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untrans-formed data	p-value for test for normality, $\log_e$-transformed data
near Hecla, S. Dak.--Continued										
0.100	--	0.135	0.36	0.63	--	0.70	--	--	--	--
0.440	--	0.595	1.58	2.75	--	3.10	--	--	--	--
<0.100	<0.100	<0.100	<0.10	<0.10	0.15	0.73	0.05	0.14	0.0001	0.0001
<0.010	--	0.020	0.03	0.46	--	0.65	--	--	--	--
<0.015	<0.015	0.020	0.04	0.32	0.60	2.10	--	--	--	--
0.970	--	0.970	1.40	1.60	--	3.20	--	--	--	--
0.580	0.610	0.850	0.98	1.90	2.60	3.20	--	--	--	--
1.000	--	1.000	1.50	1.90	--	3.80	--	--	--	--
0.400	0.600	0.800	1.00	2.20	3.30	4.00	--	--	--	--
1.000	--	1.000	1.50	2.50	--	3.80	--	--	--	--
<0.010	0.100	0.140	0.19	0.30	0.35	0.41	--	--	--	--
<0.010	0.030	0.030	0.08	0.21	0.44	2.30	0.20	0.20	0.0001	0.1857
0.028	0.045	0.060	0.10	0.26	0.29	0.51	--	--	--	--
<0.010	<0.010	0.011	0.04	0.17	0.37	0.62	0.12	0.12	0.0001	0.5152
0.040	0.065	0.090	0.11	0.14	0.19	0.20	--	--	--	--
1.000	1.000	2.000	3.00	3.00	4.00	6.00	--	--	--	--
1.000	1.000	2.000	3.00	3.00	4.00	15.00	3.04	3.04	0.0001	0.0017
<100.000	--	100.000	100.00	100.00	--	100.00	--	--	--	--
<100.000	<100.000	<100.000	<100.00	<100.00	20.00	140.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	--	--	--
40.000	--	60.000	120.00	200.00	--	240.00	--	--	--	--
60.000	100.000	130.000	210.00	350.00	530.00	1200.00	289.71	289.71	0.0001	0.6599
<1.000	<1.000	<1.000	<1.00	1.00	1.00	5.00	--	--	--	--
--	--	--	<10.00	--	--	--	--	<10.00	--	--
--	--	--	4.00	--	--	--	--	--	--	--
--	--	--	<20.00	--	--	--	--	--	--	--
--	--	--	<3.00	--	--	--	--	--	--	--
--	--	--	<10.00	--	--	--	--	<10.00	--	--
260.000	--	300.000	950.00	1500.00	--	2000.00	--	--	--	--
<10.000	<10.000	<10.000	<10.00	20.00	50.00	120.00	14.50	20.09	0.0001	0.0082
--	--	--	<10.00	--	--	--	--	<10.00	--	--
220.000	--	230.000	580.00	650.00	--	860.00	--	--	--	--
<10.000	<10.000	15.000	48.00	100.00	240.00	8500.00	367.30	368.52	0.0001	0.0261
<0.100	0.100	0.100	0.20	0.30	0.50	0.90	0.26	0.27	0.0001	0.0058
2.000	--	3.000	3.00	4.00	--	15.00	--	--	--	--
<2.000	--	2.000	2.00	3.00	--	5.00	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	<1.00	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
--	--	--	<1.00	--	--	--	--	--	--	--
<10.000	<10.000	<10.000	<10.00	15.00	22.00	33.00	8.35	13.65	0.0001	0.0010
8.800	14.000	24.900	38.85	60.95	98.00	144.00	48.05	48.05	0.0007	0.5787

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, log_e-transformed data
Specific conductance (µS/cm at 25 degrees Celsius), 00095																
1	06467600	145	145	100	06/07/59 through 07/26/95	75.000	205.000	370.000	800.00	1050.00	1200.00	1360.00	722.43	722.43	0.0001	0.0001
2	06468170	199	199	100	11/30/71 through 08/29/95	130.000	320.000	525.000	880.00	1290.00	1730.00	3000.00	953.69	953.69	0.0001	0.0004
3	06468190	10	10	100	03/27/86 through 04/19/89	300.000	350.000	450.000	550.00	710.00	840.00	910.00	--	--	--	--
4	06468250	72	72	100	06/26/85 through 08/29/95	225.000	410.000	587.500	860.00	1010.00	1570.00	2640.00	884.96	884.96	0.0001	0.2334
5	06468300	28	28	100	10/07/59 through 05/16/89	260.000	336.000	468.000	532.00	583.50	760.00	890.00	530.64	530.64	0.4720	0.2366
6	06468500	63	63	100	10/01/58 through 07/27/95	295.000	470.000	570.000	672.00	780.00	930.00	1410.00	691.59	691.59	0.0907	0.8577
7	06469400	139	139	100	04/02/74 through 08/31/95	130.000	290.000	440.000	770.00	1020.00	1220.00	1830.00	773.74	773.74	0.0010	0.0001
8	06469500	60	60	100	10/01/57 through 07/31/74	118.000	310.000	556.000	811.50	1130.00	1285.00	1560.00	821.25	821.25	0.1533	0.0001
9	06470000	314	314	100	11/28/49 through 08/31/95	111.000	450.000	600.000	790.00	1090.00	1240.00	1590.00	833.07	833.07	0.0001	0.0001
10	06470500	333	333	100	09/30/57 through 08/31/95	160.000	460.000	606.000	830.00	1100.00	1310.00	2585.00	869.15	869.15	0.0001	0.0001
11	06470800	101	101	100	03/28/77 through 08/30/95	140.000	320.000	520.000	930.00	1230.00	1565.00	1920.00	919.53	919.53	0.0016	0.0001
12	06470830	150	150	100	07/17/69 through 08/30/95	250.000	600.000	714.000	925.00	1260.00	1690.00	4650.00	1085.80	1085.80	0.0001	0.0816
13	06470833	114	114	100	09/16/71 through 03/11/83	320.000	595.000	640.000	700.00	734.00	764.00	940.00	681.67	681.67	0.0001	0.0001
14	06470875	106	106	100	04/22/82 through 08/30/95	250.000	530.000	630.000	805.00	1150.00	2010.00	2770.00	997.27	997.27	0.0001	0.0028
15	06470878	80	80	100	10/30/74 through 04/09/87	255.000	490.000	600.000	773.00	1065.00	1665.00	3900.00	958.61	958.61	0.0001	0.0147
16	06470980	37	37	100	11/28/84 through 01/08/91	260.000	460.000	630.000	840.00	1220.00	2410.00	3500.00	1117.84	1117.84	0.0001	0.2778
pH, water, whole, field (standard units), 00400																
1	06467600	60	60	100	06/07/59 through 07/26/95	6.400	7.275	7.600	7.90	8.22	8.35	8.60	7.86	7.86	0.0033	0.0003
2	06468170	75	75	100	04/26/72 through 08/29/95	7.000	7.700	7.830	8.24	8.60	8.92	9.92	8.28	8.28	0.2354	0.5623
3	06468190	5	5	100	03/27/86 through 04/10/89	7.450	--	7.600	7.75	8.25	--	8.25	--	--	--	--
4	06468250	49	49	100	06/26/85 through 08/29/95	7.000	7.500	7.660	7.90	8.30	8.58	8.94	7.99	7.99	0.3371	0.4145
5	06468300	20	20	100	10/07/59 through 05/16/89	7.100	7.250	7.525	7.89	8.30	8.71	9.43	7.94	7.94	0.4179	0.6668
6	06468500	59	59	100	10/01/58 through 07/27/95	7.000	7.400	7.900	8.40	8.60	8.95	9.10	8.27	8.27	0.0195	0.0054
7	06469400	38	38	100	05/28/74 through 08/31/95	7.100	7.300	7.800	8.00	8.40	8.70	9.50	8.07	8.07	0.7963	0.8870
8	06469500	39	39	100	10/01/57 through 07/31/74	6.500	6.700	7.300	7.60	7.90	8.20	8.60	7.58	7.58	0.2256	0.0987
9	06470000	174	174	100	11/28/49 through 08/31/95	6.100	7.280	7.500	7.70	8.01	8.20	8.75	7.74	7.74	0.2441	0.0101
10	06470500	255	255	100	09/30/57 through 08/31/95	6.400	7.400	7.600	7.90	8.30	8.50	9.50	7.94	7.94	0.5790	0.1775

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					pH, water, whole, field (standard units), 00400--Continued											
11	06470800	37	37	100	04/05/77 through 06/22/95	6.500	7.350	7.610	7.85	8.10	8.40	8.70	7.85	7.85	0.5715	0.2681
12	06470830	131	131	100	07/17/69 through 08/30/95	6.900	7.600	7.810	8.10	8.30	8.50	9.40	8.09	8.09	0.8206	0.6917
13	06470833	88	88	100	09/16/71 through 03/11/83	7.200	7.500	7.600	7.70	7.90	8.10	8.70	7.75	7.75	0.0296	0.0653
14	06470875	83	83	100	09/15/82 through 08/30/95	7.200	7.800	8.010	8.30	8.60	8.88	9.70	8.31	8.31	0.9418	0.8980
15	06470878	71	71	100	10/30/74 through 04/09/87	7.500	7.700	8.000	8.45	8.60	9.20	9.60	8.39	8.39	0.0431	0.0478
16	06470980	35	35	100	11/28/84 through 01/08/91	7.080	7.700	8.000	8.35	8.70	8.90	8.95	8.30	8.30	0.0469	0.0180
					pH, water, whole, laboratory (standard units), 00403											
1	06467600	38	38	100	04/12/82 through 07/26/95	6.900	7.300	7.600	8.00	8.20	8.30	8.60	7.89	7.89	0.0499	0.0258
2	06468170	64	64	100	04/13/82 through 08/29/95	6.700	7.300	7.600	8.20	8.40	8.90	9.80	8.09	8.09	0.4264	0.5174
3	06468190	6	6	100	03/27/86 through 04/10/89	7.600	--	7.700	8.05	8.20	--	8.30	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	7.300	7.500	7.600	7.90	8.10	8.20	8.80	7.88	7.88	0.2101	-0.2361
5	06468300	9	9	100	03/26/86 through 05/16/89	7.500	--	8.000	8.20	8.40	--	9.10	--	--	--	--
6	06468500	48	48	100	03/04/81 through 07/27/95	7.300	7.700	7.800	8.00	8.30	8.40	8.80	8.04	8.04	0.6445	0.7240
7	06469400	19	19	100	04/13/82 through 08/31/95	6.790	6.890	7.220	7.71	8.17	8.26	8.42	--	--	--	--
9	06470000	92	92	100	04/14/82 through 08/31/95	7.300	7.500	7.700	7.80	8.00	8.20	8.80	7.85	7.85	0.0082	0.0259
10	06470500	114	114	100	11/11/80 through 08/31/95	7.400	7.600	7.800	8.00	8.20	8.40	8.60	7.98	7.98	0.0097	0.0100
11	06470800	15	15	100	04/14/82 through 06/22/95	6.520	6.950	7.400	7.60	7.82	8.26	8.28	--	--	--	--
12	06470830	88	88	100	03/24/82 through 08/30/95	7.000	7.600	7.800	7.90	8.17	8.30	8.80	7.96	7.96	0.7262	0.6757
13	06470833	2	2	100	05/25/82 through 03/11/83	7.600	--	--	7.75	--	--	7.90	--	--	--	--
14	06470875	89	89	100	09/15/82 through 08/30/95	7.200	7.600	7.800	8.00	8.30	8.50	8.80	8.02	8.02	0.3769	0.3675
15	06470878	8	8	100	10/07/80 through 08/31/81	7.700	--	7.800	8.10	8.30	--	8.60	--	--	--	--
16	06470980	34	34	100	11/28/84 through 01/08/91	7.500	7.700	7.900	8.10	8.20	8.30	8.60	8.05	8.05	0.0621	0.0480
					Turbidity (NTU), 00076											
1	06467600	18	18	100	02/25/85 through 03/27/89	0.800	0.800	1.500	3.00	4.00	15.00	15.00	--	--	--	--
2	06468170	23	23	100	03/18/85 through 08/13/90	1.000	1.400	2.000	2.50	5.50	13.00	22.00	4.91	4.91	0.0001	0.0389
3	06468190	6	6	100	03/27/86 through 04/10/89	0.500	--	0.600	1.30	2.00	--	12.00	--	--	--	--
4	06468250	36	36	100	06/26/85 through 09/09/93	0.400	0.700	1.850	4.40	6.40	14.00	17.00	5.48	5.48	0.0001	0.1538
5	06468300	9	9	100	03/26/86 through 05/16/89	1.500	--	3.100	3.40	4.00	--	20.00	--	--	--	--
6	06468500	21	21	100	11/27/84 through 09/09/93	1.200	2.400	2.800	5.80	23.00	30.00	100.00	15.70	15.70	0.0001	0.3486

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, log_e-transformed data
					Turbidity (NTU), 00076--Continued											
9	06470000	69	69	100	11/27/84 through 09/09/93	1.100	3.100	3.600	4.80	11.00	15.00	35.00	7.60	7.60	0.0001	0.0081
10	06470500	71	71	100	11/28/84 through 11/30/94	0.500	2.500	3.300	9.80	23.00	33.00	61.00	14.70	14.70	0.0001	0.0025
12	06470830	66	66	100	11/30/84 through 11/30/94	1.400	2.200	4.000	15.00	28.00	40.00	82.00	18.48	18.48	0.0001	0.0002
14	06470875	64	64	100	11/29/84 through 12/01/94	0.700	2.600	3.800	8.05	20.00	32.00	42.00	13.20	13.20	0.0001	0.0356
16	06470980	34	34	100	11/28/84 through 01/08/91	1.300	2.500	3.800	7.20	17.00	22.00	35.00	10.92	10.92	0.0022	0.1187
					Oxygen, dissolved (mg/L), 00300											
1	06467600	34	34	100	02/25/85 through 07/26/95	3.800	5.900	8.600	10.15	11.48	13.40	16.95	10.03	10.03	0.8967	0.0302
2	06468170	54	54	100	03/18/85 through 08/29/95	0.500	4.300	7.600	9.54	11.80	12.90	18.31	9.48	9.48	0.1933	0.0001
3	06468190	6	6	100	03/27/86 through 04/10/89	9.200	--	10.000	10.15	12.00	--	12.40	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	0.780	3.800	6.110	7.95	9.88	12.30	17.83	8.08	8.08	0.4922	0.0001
5	06468300	10	10	100	03/26/86 through 05/16/89	6.400	7.100	8.000	9.15	9.80	12.35	14.70	--	--	--	--
6	06468500	43	43	100	01/04/80 through 07/27/95	3.100	6.800	7.800	10.22	12.00	13.40	22.40	10.27	10.27	0.0455	0.3789
7	06469400	4	4	100	04/07/87 through 03/05/92	7.200	--	7.350	9.35	11.70	--	12.20	--	--	--	--
9	06470000	81	81	100	11/27/84 through 08/31/95	1.000	5.300	7.000	9.00	12.00	13.31	17.50	9.24	9.24	0.6981	0.0001
10	06470500	146	146	100	11/02/76 through 08/31/95	0.500	5.910	7.580	9.95	12.80	15.30	21.00	10.33	10.33	0.1816	0.0001
11	06470800	4	4	100	04/12/88 through 04/07/93	5.400	--	6.450	8.05	10.60	--	12.60	--	--	--	--
12	06470830	90	90	100	10/30/73 through 08/30/95	0.500	5.650	7.600	10.55	13.30	20.00	28.50	11.37	11.37	0.0023	0.0001
13	06470833	1	1	100	07/17/80 through 07/17/80	--	--	--	9.10	--	--	--	--	--	--	--
14	06470875	91	91	100	09/15/82 through 08/30/95	0.200	5.860	7.800	11.00	14.52	19.80	30.20	11.56	11.56	0.0083	0.0001
15	06470878	41	41	100	11/02/76 through 04/09/87	0.600	5.000	7.900	9.50	11.40	16.30	30.40	10.37	10.37	0.0002	0.0001
16	06470980	34	34	100	11/28/84 through 01/08/91	0.500	6.600	8.200	10.50	12.80	20.00	24.50	11.32	11.32	0.1347	0.0001
					Hardness, total (mg/L as $CaCO_3$), 00900											
1	06467600	65	65	100	06/07/59 through 07/26/95	23.000	77.000	120.000	250.00	310.00	340.00	410.00	224.74	224.74	0.0030	0.0001
2	06468170	82	82	100	04/26/72 through 08/29/95	62.000	110.000	160.000	210.00	300.00	330.00	600.00	228.94	228.94	0.0001	0.5788
3	06468190	6	6	100	03/27/86 through 04/10/89	100.000	--	160.000	205.00	240.00	--	370.00	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	81.000	160.000	220.000	300.00	340.00	530.00	600.00	302.62	302.62	0.0015	0.0408
5	06468300	20	20	100	10/07/59 through 05/16/89	120.000	125.000	150.000	185.00	230.00	265.00	280.00	190.00	190.00	0.3180	0.3669

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Hardness, total (mg/L as $CaCO_3$), 00900--Continued											
6	06468500	62	62	100	10/01/58 through 07/27/95	100.000	150.000	180.000	215.00	250.00	300.00	580.00	224.68	224.68	0.0001	0.8052
7	06469400	38	38	100	05/28/74 through 08/31/95	54.000	120.000	150.000	240.00	300.00	370.00	440.00	231.11	231.11	0.2653	0.0964
8	06469500	39	39	100	10/01/57 through 07/31/74	38.000	56.000	180.000	260.00	320.00	390.00	590.00	252.85	252.85	0.3870	0.0003
9	06470000	181	181	100	11/28/49 through 08/31/95	36.000	170.000	220.000	290.00	360.00	410.00	490.00	287.40	287.40	0.0954	0.0001
10	06470500	258	258	100	09/30/57 through 08/31/95	60.000	160.000	230.000	300.00	370.00	480.00	790.00	307.30	307.30	0.0001	0.0001
11	06470800	38	38	100	04/05/77 through 06/22/95	62.000	90.000	170.000	295.00	360.00	630.00	930.00	316.97	316.97	0.0002	0.2986
12	06470830	136	136	100	07/17/69 through 08/30/95	86.000	200.000	240.500	310.00	391.00	590.00	1700.00	369.80	369.80	0.0001	0.0037
13	06470833	89	89	100	09/16/71 through 03/11/83	120.000	300.000	320.000	350.00	370.00	380.00	380.00	339.21	339.21	0.0001	0.0001
14	06470875	89	89	100	09/15/82 through 08/30/95	87.000	200.000	230.000	280.00	380.00	650.00	890.00	337.72	337.72	0.0001	0.0228
15	06470878	74	74	100	10/30/74 through 08/31/81	95.000	180.000	210.000	280.00	340.00	620.00	1700.00	351.28	351.28	0.0001	0.0001
16	06470980	34	34	100	11/28/84 through 01/08/91	88.000	210.000	240.000	275.00	420.00	720.00	1000.00	369.94	369.94	0.0001	0.0602
					Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L), 70300											
1	06467600	65	65	100	06/07/59 through 07/26/95	55.000	163.000	270.000	562.00	711.00	812.00	933.00	506.78	506.78	0.0003	0.0001
2	06468170	82	82	100	04/26/72 through 08/29/95	127.000	203.000	310.000	590.50	865.00	1060.00	6540.00	690.05	690.05	0.0001	0.0801
3	06468190	6	6	100	03/27/86 through 04/10/89	192.000	--	255.000	344.00	464.00	--	589.00	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	171.000	304.000	464.500	604.50	693.00	1030.00	1200.00	611.00	611.00	0.0166	0.0567
5	06468300	20	20	100	10/07/59 through 05/16/89	201.000	241.500	295.500	340.50	372.00	482.00	529.00	344.70	344.70	0.3301	0.7437
6	06468500	62	62	100	10/01/58 through 07/27/95	191.000	294.000	376.000	441.50	518.00	592.00	1130.00	454.97	454.97	0.0001	0.8874
7	06469400	38	38	100	05/28/74 through 08/31/95	108.000	202.000	263.000	452.50	595.00	661.00	865.00	435.26	435.26	0.1516	0.1384
8	06469500	39	39	100	10/01/57 through 07/31/74	82.000	133.000	348.000	519.00	746.00	859.00	1030.00	526.85	526.85	0.2482	0.0024
9	06470000	176	176	100	11/28/49 through 08/31/95	82.000	290.000	411.000	537.50	718.50	830.00	1050.00	559.99	559.99	0.0738	0.0001
10	06470500	256	256	100	09/30/57 through 08/31/95	141.000	303.000	418.000	577.50	712.00	916.00	1790.00	592.25	592.25	0.0001	0.0001
11	06470800	38	38	100	04/05/77 through 06/22/95	138.000	167.000	383.000	558.50	746.00	1240.00	1680.00	626.53	626.53	0.0228	0.1347
12	06470830	121	121	100	07/17/69 through 08/30/95	155.000	392.000	487.000	652.00	844.00	1180.00	3330.00	756.41	756.41	0.0001	0.1091
13	06470833	88	88	100	09/16/71 through 05/25/82	250.000	390.000	417.500	449.50	471.50	490.00	520.00	443.13	443.13	0.0001	0.0001
14	06470875	72	72	100	02/09/83 through 08/30/95	156.000	359.000	464.000	551.50	818.00	1520.00	1840.00	724.97	724.97	0.0001	0.0138
15	06470878	74	74	100	10/30/74 through 08/31/81	177.000	324.000	397.000	548.00	754.00	1240.00	2960.00	695.26	695.26	0.0001	0.0100
16	06470980	34	34	100	11/28/84 through 01/08/91	156.000	372.000	404.000	545.00	992.00	1700.00	2360.00	776.47	776.47	0.0001	0.1520

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
Solids, sum of constituents, dissolved (mg/L), 70301																
1	06467600	63	63	100	06/07/59 through 07/26/95	49.000	149.000	227.000	558.00	674.00	770.00	901.00	479.13	479.13	0.0001	0.0001
2	06468170	79	79	100	04/26/72 through 08/29/95	108.000	176.000	305.000	544.00	752.00	1050.00	2000.00	582.70	582.70	0.0001	0.0476
3	06468190	6	6	100	03/27/86 through 04/10/89	185.000	--	235.000	312.00	455.00	--	555.00	--	--	--	--
4	06468250	49	49	100	06/26/85 through 08/29/95	153.000	274.000	423.000	555.00	630.00	978.00	1200.00	567.88	567.88	0.0211	0.0642
5	06468300	20	20	100	10/07/59 through 05/16/89	187.000	197.000	261.500	307.50	364.50	447.50	481.00	317.55	317.55	0.6058	0.6286
6	06468500	61	61	100	10/01/58 through 07/27/95	178.000	277.000	334.000	411.00	464.00	583.00	1010.00	427.28	427.28	0.0004	0.9116
7	06469400	38	38	100	05/28/74 through 08/31/95	94.000	196.000	258.000	448.50	537.00	648.00	743.00	414.47	414.47	0.0638	0.0237
8	06469500	35	35	100	10/01/57 through 07/31/74	60.000	109.000	333.000	487.00	718.00	840.00	1030.00	499.09	499.09	0.2890	0.0022
9	06470000	158	158	100	01/02/51 through 08/31/95	65.000	279.000	406.000	510.00	692.00	802.00	1020.00	537.41	537.41	0.1930	0.0001
10	06470500	258	258	100	09/30/57 through 08/31/95	105.000	288.000	410.000	562.50	711.00	915.00	1730.00	575.76	575.76	0.0001	0.0001
11	06470800	38	38	100	04/05/77 through 06/22/95	119.000	172.000	366.000	541.00	713.00	1150.00	1600.00	601.24	601.24	0.0388	0.1796
12	06470830	87	87	100	01/06/71 through 08/30/95	147.000	356.000	408.000	576.00	809.00	1360.00	3170.00	740.62	740.62	0.0001	0.0028
13	06470833	67	67	100	09/16/71 through 03/11/83	219.000	378.000	407.000	442.00	466.00	485.00	531.00	433.88	433.88	0.0001	0.0001
14	06470875	88	88	100	09/15/82 through 08/30/95	149.000	359.000	395.500	512.00	784.00	1470.00	1870.00	663.68	663.68	0.0001	0.0026
15	06470878	74	74	100	10/30/74 through 08/31/81	157.000	306.000	390.000	535.00	759.00	1220.00	2920.00	681.38	681.38	0.0001	0.0307
16	06470980	34	34	100	11/28/84 through 01/08/91	153.000	364.000	391.000	524.00	943.00	1630.00	2390.00	757.09	757.09	0.0001	0.1672
Residue, nonfilterable (mg/L), 00530																
1	06467600	27	24	88.9	02/25/85 through 07/26/95	<1.000	<1.000	2.000	5.00	10.00	21.00	40.00	8.22	8.33	0.0001	0.1104
2	06468170	39	36	92.3	03/18/85 through 08/29/95	<1.000	1.000	4.000	8.00	18.00	31.00	47.00	12.26	12.33	0.0001	0.0494
3	06468190	4	2	50.0	04/06/87 through 04/10/89	<1.000	--	<1.000	2.50	9.00	--	12.00	--	--	--	--
4	06468250	52	51	98.1	06/26/85 through 08/29/95	<1.000	3.000	5.000	12.00	18.00	29.00	41.00	13.44	13.46	0.0001	0.0128
5	06468300	8	7	87.5	04/24/86 through 05/16/89	<1.000	--	3.000	9.00	48.00	--	81.00	--	--	--	--
6	06468500	26	25	96.2	11/27/84 through 07/27/95	<1.000	5.000	6.000	12.50	37.00	64.00	332.00	33.31	33.35	0.0001	0.4885
9	06470000	84	80	95.2	11/27/84 through 08/31/95	<1.000	2.000	7.000	14.00	27.00	41.00	66.00	18.50	18.55	0.0001	0.0001
10	06470500	77	72	93.5	11/28/84 through 08/31/95	<1.000	2.000	7.000	37.00	63.00	89.00	408.00	44.16	44.22	0.0001	0.0001
12	06470830	78	76	97.4	11/30/84 through 08/30/95	<1.000	5.000	13.000	42.50	78.00	117.00	367.00	56.76	56.78	0.0001	0.0022
14	06470875	71	69	97.2	11/29/84 through 08/30/95	<1.000	4.000	9.000	18.00	40.00	66.00	364.00	35.03	35.06	0.0001	0.3394
16	06470980	34	33	97.1	11/28/84 through 01/08/91	<1.000	4.000	7.000	16.50	40.00	50.00	73.00	23.32	23.35	0.0066	0.0891

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; –, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Calcium, dissolved (mg/L as Ca), 00915											
1	06467600	65	65	100	06/07/59 through 07/26/95	6.600	17.000	27.000	48.00	61.00	66.00	73.00	44.71	44.71	0.0005	0.0001
2	06468170	82	82	100	04/26/72 through 08/29/95	13.000	20.000	26.000	38.00	52.00	57.00	120.00	41.05	41.05	0.0001	0.1923
3	06468190	6	6	100	03/27/86 through 04/10/89	21.000	--	38.000	43.50	59.00	--	77.00	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	16.000	31.000	41.500	54.00	62.50	99.00	120.00	56.79	56.79	0.0001	0.0893
5	06468300	20	20	100	10/07/59 through 05/16/89	15.000	18.500	24.500	30.00	41.50	55.50	58.00	33.95	33.95	0.2042	0.3745
6	06468500	62	62	100	10/01/58 through 07/27/95	18.000	26.000	31.000	36.50	48.00	56.00	110.00	40.29	40.29	0.0001	0.8191
7	06469400	38	38	100	05/28/74 through 08/31/95	13.000	23.000	32.000	44.50	60.00	75.00	82.00	45.53	45.53	0.1625	0.2835
8	06469500	35	35	100	10/01/57 through 07/31/74	8.300	15.000	34.000	44.00	59.00	83.00	133.00	48.84	48.84	0.0378	0.0339
9	06470000	175	175	100	11/28/49 through 08/31/95	9.500	37.000	46.000	62.00	85.00	100.00	120.00	66.07	66.07	0.0007	0.0001
10	06470500	257	257	100	09/30/57 through 08/31/95	15.000	39.000	50.000	66.00	81.00	115.00	190.00	69.73	69.73	0.0001	0.0011
11	06470800	38	38	100	04/05/77 through 06/22/95	15.000	20.000	36.000	57.00	71.00	110.00	190.00	63.16	63.16	0.0001	0.5235
12	06470830	125	125	100	07/30/70 through 08/30/95	21.000	44.000	52.000	65.00	83.00	140.00	350.00	79.50	79.50	0.0001	0.0002
13	06470833	89	89	100	09/16/71 through 03/11/83	29.000	71.000	80.000	86.00	91.00	96.00	99.00	84.42	84.42	0.0001	0.0001
14	06470875	89	89	100	09/15/82 through 08/30/95	21.000	41.000	48.000	59.00	81.00	120.00	190.00	68.11	68.11	0.0001	0.0139
15	06470878	74	74	100	10/30/74 through 08/31/81	23.000	38.000	46.000	56.00	73.00	140.00	380.00	73.72	73.72	0.0001	0.0001
16	06470980	34	34	100	11/28/84 through 01/08/91	21.000	44.000	48.000	58.00	83.00	130.00	190.00	71.74	71.74	0.0001	0.1860
					Magnesium, dissolved (mg/L as Mg), 00925											
1	06467600	65	65	100	06/07/59 through 07/26/95	1.600	7.200	15.000	31.00	38.00	43.00	56.00	27.42	27.42	0.0326	0.0001
2	06468170	82	82	100	04/26/72 through 08/29/95	6.600	13.000	20.000	30.00	41.00	45.00	73.00	30.71	30.71	0.0288	0.0150
3	06468190	6	6	100	03/27/86 through 04/10/89	12.000	--	15.000	20.50	29.00	--	43.00	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	9.700	20.000	29.000	40.00	44.50	64.00	79.00	39.09	39.09	0.1296	0.0027
5	06468300	20	20	100	10/07/59 through 05/16/89	15.000	15.500	21.000	25.50	30.50	33.00	38.00	25.45	25.45	0.7950	0.3187
6	06468500	62	62	100	10/01/58 through 07/27/95	12.000	18.000	24.000	30.00	34.00	41.00	73.00	30.13	30.13	0.0019	0.6179
7	06469400	38	38	100	05/28/74 through 08/31/95	5.200	13.000	17.000	28.00	38.00	45.00	60.00	28.43	28.43	0.0949	0.0961
8	06469500	35	35	100	10/01/57 through 07/31/74	4.200	5.400	19.000	30.00	44.00	49.00	63.00	30.53	30.53	0.2740	0.0001
9	06470000	176	176	100	11/28/49 through 08/31/95	3.000	17.000	24.000	30.00	36.00	40.00	48.00	29.49	29.49	0.0018	0.0001
10	06470500	257	257	100	09/30/57 through 08/31/95	5.500	17.000	24.000	32.00	40.00	49.00	76.00	32.36	32.36	0.0038	0.0001

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Magnesium, dissolved (mg/L as Mg), 00925--Continued											
11	06470800	38	38	100	04/05/77 through 06/22/95	6.000	9.700	20.000	33.50	47.00	88.00	110.00	38.70	38.70	0.0003	0.1907
12	06470830	125	125	100	07/30/70 through 08/30/95	8.200	22.000	28.000	35.00	46.00	64.00	190.00	41.98	41.98	0.0001	0.0087
13	06470833	89	89	100	09/16/71 through 03/11/83	12.000	27.000	29.000	32.00	33.00	35.00	38.00	31.09	31.09	0.0001	0.0001
14	06470875	89	89	100	09/15/82 through 08/30/95	8.500	20.000	25.000	33.00	48.00	84.00	110.00	40.75	40.75	0.0001	0.0576
15	06470878	74	74	100	10/30/74 through 08/31/81	9.100	18.000	23.000	31.00	41.00	76.00	190.00	40.57	40.57	0.0001	0.0049
16	06470980	34	34	100	11/28/84 through 01/08/91	8.600	23.000	26.000	33.00	54.00	96.00	130.00	46.19	46.19	0.0001	0.1092
					Sodium, dissolved (mg/L as Na), 00930											
1	06467600	65	65	100	06/07/59 through 07/26/95	4.100	15.000	31.000	90.00	130.00	160.00	218.00	84.35	84.35	0.0003	0.0001
2	06468170	82	82	100	04/26/72 through 08/29/95	7.300	18.000	36.000	89.00	200.00	290.00	570.00	123.93	123.93	0.0001	0.0193
3	06468190	6	6	100	03/27/86 through 04/10/89	19.000	--	22.000	27.00	62.00	--	65.00	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	14.000	34.000	57.500	83.50	110.00	140.00	210.00	88.21	88.21	0.1347	0.0227
5	06468300	20	20	100	10/07/59 through 05/16/89	20.000	22.500	32.000	41.00	48.00	54.00	84.00	41.20	41.20	0.0566	0.4735
6	06468500	62	62	100	10/01/58 through 07/27/95	23.000	28.000	43.000	57.50	74.00	90.00	147.00	60.81	60.81	0.0004	0.1891
7	06469400	38	38	100	05/28/74 through 08/31/95	7.500	18.000	25.000	51.50	77.00	100.00	110.00	54.43	54.43	0.0022	0.0064
8	06469500	39	39	100	10/01/57 through 07/31/74	3.000	7.900	39.000	71.00	126.00	161.00	194.00	81.07	81.07	0.0601	0.0005
9	06470000	162	162	100	10/01/57 through 08/31/95	2.700	29.000	49.000	71.50	102.00	125.00	200.00	76.22	76.22	0.0021	0.0001
10	06470500	258	258	100	09/30/57 through 08/31/95	7.900	32.000	52.000	77.00	108.00	140.00	310.00	82.37	82.37	0.0001	0.0001
11	06470800	38	38	100	04/05/77 through 06/22/95	11.000	20.000	48.000	71.50	110.00	150.00	170.00	78.87	78.87	0.0363	0.0067
12	06470830	106	106	100	09/19/69 through 08/30/95	13.000	43.000	52.000	79.00	130.00	180.00	550.00	103.88	103.88	0.0001	0.4572
13	06470833	89	89	100	09/16/71 through 03/11/83	9.700	14.000	16.000	18.00	19.00	21.00	22.00	17.63	17.63	0.0001	0.0001
14	06470875	89	89	100	09/15/82 through 08/30/95	14.000	42.000	50.000	67.00	120.00	240.00	380.00	98.42	98.42	0.0001	0.0058
15	06470878	74	74	100	10/30/74 through 08/31/81	12.000	34.000	47.000	74.00	120.00	170.00	450.00	102.95	102.95	0.0001	0.6938
16	06470980	34	34	100	11/28/84 through 01/08/91	16.000	42.000	51.000	78.00	150.00	290.00	490.00	119.41	119.41	0.0001	0.5438
					Sodium (percent of cations), 00932											
1	06467600	65	65	100	06/07/59 through 07/26/95	14.000	23.000	31.000	38.00	48.00	54.00	63.00	39.00	39.00	0.1484	0.0085
2	06468170	82	82	100	04/26/72 through 08/29/95	15.000	22.000	30.000	38.50	61.00	74.00	80.00	44.16	44.16	0.0001	0.0005
3	06468190	6	6	100	03/27/86 through 04/10/89	18.000	--	22.000	26.00	27.00	--	36.00	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	21.000	25.000	32.500	35.00	42.50	47.00	63.00	36.58	36.58	0.3431	0.2814
5	06468300	20	20	100	10/07/59 through 05/16/89	21.000	24.000	27.000	29.00	34.00	39.50	44.00	30.50	30.50	0.1796	0.7150

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Sodium (percent of cations), 00932--Continued											
6	06468500	62	62	100	10/01/58 through 07/27/95	22.000	26.000	29.000	33.00	39.00	42.00	55.00	34.55	34.55	0.0011	0.2211
7	06469400	38	38	100	05/28/74 through 08/31/95	16.000	20.000	24.000	30.50	35.00	40.00	47.00	30.08	30.08	0.7498	0.6771
8	06469500	39	39	100	10/01/57 through 07/31/74	12.000	22.000	29.000	36.00	42.00	55.00	60.00	36.08	36.08	0.7863	0.1028
9	06470000	176	176	100	11/28/49 through 08/31/95	11.000	25.000	28.500	34.00	39.00	44.00	56.00	34.23	34.23	0.6905	0.0015
10	06470500	258	258	100	09/30/57 through 08/31/95	17.000	25.000	31.000	34.00	38.00	42.00	79.00	33.93	33.93	0.0001	0.0001
11	06470800	38	38	100	04/05/77 through 06/22/95	21.000	24.000	26.000	31.50	41.00	45.00	49.00	33.26	33.26	0.0186	0.0946
12	06470830	93	93	100	09/19/69 through 08/30/95	22.000	28.000	29.000	33.00	39.00	44.00	47.00	34.49	34.49	0.0002	0.0063
13	06470833	89	89	100	09/16/71 through 03/11/83	7.000	8.000	9.000	10.00	11.00	11.00	20.00	10.04	10.04	0.0001	0.0001
14	06470875	89	89	100	09/15/82 through 08/30/95	23.000	28.000	30.000	32.00	39.00	47.00	53.00	34.91	34.91	0.0001	0.0001
15	06470878	74	74	100	10/30/74 through 08/31/81	20.000	26.000	29.000	34.50	40.00	50.00	61.00	35.73	35.73	0.0022	0.5137
16	06470980	34	34	100	11/28/84 through 01/08/91	23.000	28.000	30.000	34.00	43.00	49.00	54.00	36.32	36.32	0.0321	0.3068
					Sodium adsorption ratio, 00931											
1	06467600	65	65	100	06/07/59 through 07/26/95	0.400	0.600	1.000	2.00	3.00	4.00	6.00	2.27	2.27	0.0001	0.0002
2	06468170	82	82	100	04/26/72 through 08/29/95	0.400	0.700	1.000	2.00	5.00	9.00	12.00	3.60	3.60	0.0001	0.0001
3	06468190	6	6	100	03/27/86 through 04/10/89	0.700	--	0.800	0.85	1.00	--	2.00	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	0.600	1.000	2.000	2.00	3.00	3.00	5.00	2.16	2.16	0.0001	0.0001
5	06468300	20	20	100	10/07/59 through 05/16/89	0.800	0.850	1.000	1.00	1.00	2.00	2.00	1.17	1.17	0.0001	0.0001
6	06468500	62	62	100	10/01/58 through 07/27/95	0.900	1.000	1.000	2.00	2.00	2.00	4.00	1.76	1.76	0.0001	0.0001
7	06469400	38	38	100	05/28/74 through 08/31/95	0.400	0.700	0.900	1.50	2.00	2.00	3.00	1.48	1.48	0.0001	0.0002
8	06469500	39	39	100	10/01/57 through 07/31/74	0.200	0.500	1.000	2.00	3.00	4.00	5.00	1.99	1.99	0.0055	0.0158
9	06470000	162	162	100	10/01/57 through 08/31/95	0.200	0.900	1.000	2.00	2.00	3.00	4.00	1.89	1.89	0.0001	0.0001
10	06470500	258	258	100	09/30/57 through 08/31/95	0.400	1.000	1.000	2.00	2.00	3.00	9.00	1.96	1.96	0.0001	0.0001
11	06470800	38	38	100	04/05/77 through 06/22/95	0.500	0.800	1.000	2.00	3.00	3.00	4.00	1.96	1.96	0.0008	0.0018
12	06470830	105	105	100	09/19/69 through 08/30/95	0.600	1.000	1.000	2.00	3.00	3.00	6.00	2.17	2.17	0.0001	0.0001
13	06470833	89	89	100	09/16/71 through 03/11/83	0.300	0.300	0.400	0.40	0.50	0.50	0.60	0.41	0.41	0.0001	0.0001
14	06470875	89	89	100	09/15/82 through 08/30/95	0.700	1.000	1.000	2.00	3.00	4.00	6.00	2.17	2.17	0.0001	0.0001
15	06470878	74	74	100	10/30/74 through 08/31/81	0.500	1.000	1.000	2.00	3.00	4.00	6.00	2.27	2.27	0.0001	0.0001
16	06470980	34	34	100	11/28/84 through 01/08/91	0.700	1.000	1.000	2.00	3.00	4.00	7.00	2.46	2.46	0.0002	0.0297

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
						Potassium, dissolved (mg/L as K), 00935										
1	06467600	65	65	100	06/07/59 through 07/26/95	2.000	7.100	8.100	11.00	13.00	14.00	22.00	10.61	10.61	0.2772	0.0013
2	06468170	82	82	100	04/26/72 through 08/29/95	5.400	7.900	10.000	12.00	15.00	17.00	25.00	12.57	12.57	0.0230	0.1555
3	06468190	6	6	100	03/27/86 through 04/10/89	6.200	--	7.000	7.20	7.50	--	8.50	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	3.600	9.600	11.000	13.00	16.00	19.00	26.00	13.42	13.42	0.2539	0.0191
5	06468300	20	20	100	10/07/59 through 05/16/89	5.700	6.700	7.500	9.75	11.00	13.00	16.00	9.71	9.71	0.4745	0.8260
6	06468500	62	62	100	10/01/58 through 07/27/95	6.400	10.000	13.000	14.00	16.00	18.00	35.00	14.37	14.37	0.0001	0.0192
7	06469400	38	38	100	05/28/74 through 08/31/95	5.900	7.200	8.800	10.00	14.00	17.00	19.00	11.15	11.15	0.0370	0.2202
8	06469500	35	35	100	10/01/57 through 07/31/74	5.600	6.800	8.200	10.00	12.00	13.00	16.00	10.37	10.37	0.3121	0.1294
9	06470000	160	160	100	10/01/57 through 08/31/95	0.700	6.950	8.100	9.55	12.00	14.00	18.00	10.20	10.20	0.0191	0.0001
10	06470500	261	261	100	09/30/57 through 08/31/95	1.900	8.300	9.800	11.00	13.00	14.00	22.00	11.11	11.11	0.0020	0.0001
11	06470800	38	38	100	04/05/77 through 06/22/95	7.100	8.300	11.000	14.00	17.00	20.00	23.00	13.92	13.92	0.3753	0.2370
12	06470830	93	93	100	09/19/69 through 08/30/95	0.800	10.000	12.000	13.00	15.00	17.00	46.00	14.19	14.19	0.0001	0.0001
13	06470833	89	89	100	09/16/71 through 03/11/83	3.800	4.600	5.400	6.00	6.20	6.60	13.00	5.93	5.93	0.0001	0.0001
14	06470875	89	89	100	09/15/82 through 08/30/95	1.300	9.800	12.000	14.00	16.00	22.00	32.00	14.63	14.63	0.0001	0.0001
15	06470878	74	74	100	10/30/74 through 08/31/81	5.600	9.700	11.000	13.00	15.00	19.00	40.00	14.04	14.04	0.0001	0.0104
16	06470980	34	34	100	11/28/84 through 01/08/91	8.800	11.000	12.000	14.00	17.00	26.00	41.00	16.20	16.20	0.0001	0.0098
						Sulfate, dissolved (mg/L as SO_4), 00945										
1	06467600	65	65	100	06/07/59 through 07/26/95	8.300	32.000	57.000	120.00	170.00	230.00	340.00	120.39	120.39	0.0208	0.0002
2	06468170	82	82	100	04/26/72 through 08/29/95	25.000	46.000	82.000	145.00	210.00	270.00	440.00	156.98	156.98	0.0011	0.0036
3	06468190	6	6	100	03/27/86 through 04/10/89	34.000	--	35.000	82.00	120.00	--	160.00	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	31.000	62.000	110.000	140.00	195.00	240.00	370.00	152.15	152.15	0.0263	0.0603
5	06468300	20	20	100	10/07/59 through 05/16/89	21.000	25.000	37.000	49.00	99.50	110.00	130.00	62.65	62.65	0.0267	0.1852
6	06468500	62	62	100	10/01/58 through 07/27/95	39.000	59.000	81.000	110.00	140.00	170.00	280.00	114.35	114.35	0.0079	0.3280
7	06469400	38	38	100	05/28/74 through 08/31/95	24.000	43.000	79.000	105.00	160.00	240.00	290.00	123.66	123.66	0.0350	0.3235
8	06469500	39	39	100	10/01/57 through 07/31/74	13.000	28.000	85.000	140.00	214.00	274.00	316.00	149.54	149.54	0.0469	0.0017
9	06470000	176	176	100	11/28/49 through 08/31/95	13.000	74.000	103.500	150.00	200.00	230.00	372.00	151.98	151.98	0.4962	0.0001
10	06470500	262	260	99.2	09/30/57 through 08/31/95	<4.000	75.000	110.000	150.00	190.00	264.00	510.00	158.12	158.15	0.0001	0.0001

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Sulfate, dissolved (mg/L as SO_4), 00945--Continued											
11	06470800	38	38	100	04/05/77 through 06/22/95	30.000	51.000	100.000	180.00	280.00	440.00	900.00	217.66	217.66	0.0001	0.7175
12	06470830	138	138	100	07/17/69 through 08/30/95	37.000	96.000	130.000	170.00	240.00	350.00	1000.00	206.12	206.12	0.0001	0.2809
13	06470833	67	67	100	09/16/71 through 03/11/83	44.000	56.000	80.000	96.00	110.00	120.00	210.00	94.31	94.31	0.0008	0.0024
14	06470875	89	89	100	09/15/82 through 08/30/95	36.000	90.000	110.000	160.00	230.00	450.00	620.00	204.45	204.45	0.0001	0.1394
15	06470878	74	74	100	10/30/74 through 08/31/81	36.000	79.000	110.000	155.00	230.00	380.00	1000.00	205.26	205.26	0.0001	0.1437
16	06470980	34	34	100	11/28/84 through 01/08/91	37.000	95.000	120.000	170.00	300.00	510.00	890.00	244.24	244.24	0.0001	0.4581
					Chloride, dissolved (mg/L as Cl), 00940											
1	06467600	65	63	96.9	06/07/59 through 07/26/95	<0.100	2.400	4.500	8.90	13.00	16.00	29.00	9.22	9.22	0.0165	0.0001
2	06468170	82	82	100	04/26/72 through 08/29/95	0.300	4.200	9.300	18.00	58.00	110.00	250.00	38.61	38.61	0.0001	0.2179
3	06468190	6	6	100	03/27/86 through 04/10/89	6.000	--	6.100	14.50	24.00	--	37.00	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	4.100	9.900	13.000	20.00	32.50	41.00	59.00	23.35	23.35	0.0001	0.3237
5	06468300	20	20	100	10/07/59 through 05/16/89	4.800	5.700	9.500	11.50	12.50	16.00	29.00	11.64	11.64	0.0007	0.0993
6	06468500	62	62	100	10/01/58 through 07/27/95	5.800	6.800	9.700	12.00	15.00	22.00	54.00	14.23	14.23	0.0001	0.0011
7	06469400	38	38	100	05/28/74 through 08/31/95	2.300	4.200	5.200	10.15	14.00	16.00	26.00	10.03	10.03	0.0388	0.1301
8	06469500	39	38	97.4	10/01/57 through 07/31/74	<0.100	0.600	6.500	20.00	33.00	52.00	71.00	22.08	22.08	0.0014	0.0001
9	06470000	176	174	98.9	11/28/49 through 08/31/95	<0.100	8.600	12.000	27.50	41.50	58.00	155.00	30.14	30.14	0.0001	0.0001
10	06470500	262	262	100	09/30/57 through 08/31/95	0.100	10.000	16.000	33.00	52.00	70.00	196.00	37.83	37.83	0.0001	0.0001
11	06470800	38	38	100	04/05/77 through 06/22/95	6.800	12.000	27.000	40.00	63.00	80.00	110.00	44.83	44.83	0.0816	0.0735
12	06470830	126	126	100	07/30/70 through 08/30/95	7.300	13.000	20.000	37.50	70.00	110.00	430.00	54.84	54.84	0.0001	0.0513
13	06470833	67	67	100	09/16/71 through 03/11/83	6.500	10.000	12.000	12.00	14.00	16.00	19.00	12.68	12.68	0.0238	0.0004
14	06470875	89	89	100	09/15/82 through 08/30/95	7.900	13.000	17.000	28.00	58.00	130.00	220.00	48.34	48.34	0.0001	0.0003
15	06470878	74	74	100	10/30/74 through 08/31/81	5.500	12.000	18.000	31.00	63.00	95.00	250.00	49.77	49.77	0.0001	0.3421
16	06470980	34	34	100	11/28/84 through 01/08/91	8.700	11.000	20.000	33.50	75.00	150.00	290.00	59.52	59.52	0.0001	0.3818
					Fluoride, dissolved (mg/L as F), 00950											
1	06467600	47	45	95.7	06/07/59 through 07/26/95	<0.100	0.100	0.100	0.20	0.30	0.40	0.50	0.21	0.22	0.0001	0.0001
2	06468170	59	56	94.9	04/26/72 through 08/29/95	<0.100	0.100	0.100	0.20	0.20	0.30	2.80	0.23	0.24	0.0001	0.0001
4	06468250	28	28	100	04/08/91 through 08/29/95	0.100	0.100	0.150	0.20	0.20	0.20	0.30	0.18	0.18	0.0001	0.0001
5	06468300	11	11	100	10/07/59 through 05/20/64	0.100	0.200	0.200	0.20	0.30	0.30	0.30	--	--	--	--
6	06468500	60	58	96.7	10/01/58 through 07/27/95	<0.100	0.100	0.100	0.20	0.20	0.30	0.30	0.17	0.17	0.0001	0.0001

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
						Fluoride, dissolved (mg/L as F), 00950--Continued										
7	06469400	38	38	100	05/28/74 through 08/31/95	0.100	0.100	0.100	0.10	0.20	0.20	0.50	0.14	0.14	0.0001	0.0001
8	06469500	35	34	97.1	10/01/57 through 07/31/74	<0.100	0.100	0.100	0.20	0.30	0.30	0.50	0.21	0.21	0.0002	0.0001
9	06470000	129	129	100	11/28/49 through 08/31/95	0.100	0.100	0.200	0.20	0.20	0.30	0.50	0.21	0.21	0.0001	0.0001
10	06470500	259	253	97.7	09/30/57 through 08/31/95	<0.100	0.100	0.200	0.20	0.30	0.40	52.00	0.65	0.65	0.0001	0.0001
11	06470800	38	36	94.7	04/05/77 through 06/22/95	<0.100	0.100	0.100	0.20	0.20	0.30	0.50	0.19	0.19	0.0001	0.0001
12	06470830	105	103	98.1	09/19/69 through 08/30/95	<0.100	0.100	0.200	0.20	0.30	0.40	0.70	0.26	0.27	0.0001	0.0001
13	06470833	66	65	98.5	09/16/71 through 03/11/83	<0.100	0.200	0.200	0.20	0.30	0.30	0.60	0.23	0.23	0.0001	0.0001
14	06470875	89	88	98.9	09/15/82 through 08/30/95	<0.100	0.100	0.200	0.20	0.30	0.40	0.50	0.23	0.23	0.0001	0.0001
15	06470878	74	74	100	10/30/74 through 08/31/81	0.100	0.100	0.200	0.20	0.30	0.40	0.80	0.26	0.26	0.0001	0.0001
16	06470980	1	1	100	01/08/91 through 01/08/91	--	--	--	0.30	--	--	--	--	--	--	--
						Silica, dissolved (mg/L as SiO_2), 00955										
1	06467600	53	53	100	06/07/59 through 07/26/95	2.500	5.000	8.900	12.00	17.00	23.00	36.00	13.25	13.25	0.0233	0.1765
2	06468170	52	52	100	04/26/72 through 08/29/95	0.800	2.500	4.850	8.55	13.50	18.00	31.00	10.17	10.17	0.0002	0.0586
3	06468190	3	3	100	03/27/86 through 04/06/87	13.000	--	--	15.00	--	--	23.00	--	--	--	--
4	06468250	28	28	100	06/26/85 through 08/29/95	3.300	7.700	10.650	16.50	29.00	33.00	45.00	19.50	19.50	0.1341	0.1084
5	06468300	15	15	100	10/07/59 through 07/07/87	1.800	2.200	4.600	8.50	14.00	18.00	18.00	--	--	--	--
6	06468500	55	54	98.2	10/01/58 through 07/27/95	<0.010	0.260	3.400	10.00	19.00	24.00	34.00	11.47	11.47	0.0007	0.0001
7	06469400	36	36	100	05/28/74 through 08/01/94	1.900	3.700	5.850	11.00	16.00	22.00	35.00	12.04	12.04	0.0007	0.4261
8	06469500	35	35	100	10/01/57 through 07/31/74	1.600	4.200	6.800	11.00	15.00	20.00	32.00	11.68	11.68	0.0603	0.1632
9	06470000	126	126	100	11/28/49 through 08/31/95	3.500	7.700	11.000	16.00	23.00	27.00	35.00	16.88	16.88	0.0022	0.0001
10	06470500	205	205	100	09/30/57 through 08/31/95	2.000	6.400	9.500	14.00	20.00	26.00	44.00	15.28	15.28	0.0001	0.0001
11	06470800	36	36	100	04/05/77 through 06/27/94	3.200	4.400	7.150	9.80	15.50	18.00	39.00	11.36	11.36	0.0001	0.6511
12	06470830	38	38	100	08/02/72 through 08/30/95	1.500	5.300	9.400	13.50	18.00	20.00	990.00	49.31	49.31	0.0001	0.0001
13	06470833	66	66	100	09/16/71 through 03/11/83	9.300	20.000	24.000	26.50	28.00	30.00	33.00	25.53	25.53	0.0001	0.0001
14	06470875	42	42	100	09/15/82 through 08/30/95	0.860	3.000	6.200	10.00	16.00	18.00	71.00	12.65	12.65	0.0001	0.0009
15	06470878	74	74	100	10/30/74 through 08/31/81	0.100	1.900	5.600	12.00	17.00	27.00	58.00	13.31	13.31	0.0001	0.0001
16	06470980	17	17	100	11/28/84 through 07/09/87	0.700	5.000	9.200	12.00	14.00	19.00	130.00	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Nitrogen, nitrite, dissolved (mg/L as N), 00613											
1	06467600	32	6	18.8	02/25/85 through 07/26/95	<0.020	<0.020	<0.020	<0.02	<0.02	0.03	0.10	0.01	0.03	0.0001	0.0001
2	06468170	56	17	30.4	03/18/85 through 08/29/95	<0.020	<0.020	<0.020	<0.02	0.02	0.04	0.21	0.01	0.03	0.0001	0.0001
3	06468190	6	0	0	03/27/86 through 04/10/89	--	--	--	<0.02	--	--	--	--	--	--	--
4	06468250	50	15	30.0	06/26/85 through 08/29/95	<0.020	<0.020	<0.020	<0.02	0.02	0.04	0.20	0.01	0.03	0.0001	0.0001
5	06468300	9	2	22.2	03/26/86 through 05/16/89	<0.020	--	<0.020	<0.02	<0.02	--	0.05	--	--	--	--
6	06468500	24	5	20.8	11/27/84 through 07/27/95	<0.020	<0.020	<0.020	<0.02	<0.02	0.03	0.14	0.01	0.03	0.0001	0.0001
9	06470000	84	32	38.1	11/27/84 through 08/31/95	<0.020	<0.020	<0.020	<0.02	0.02	0.04	0.15	0.01	0.03	0.0001	0.0001
10	06470500	80	18	22.5	09/27/71 through 08/31/95	<0.020	<0.020	<0.020	<0.02	<0.02	0.03	0.06	0.01	0.02	0.0001	0.0001
12	06470830	108	22	20.4	12/05/69 through 08/30/95	<0.020	<0.020	<0.020	<0.02	<0.02	0.02	0.05	0.01	0.02	0.0001	0.0001
13	06470833	3	2	66.7	09/16/71 through 03/11/83	<0.020	--	--	0.04	--	--	0.10	--	--	--	--
14	06470875	86	17	19.8	09/15/82 through 08/30/95	<0.020	<0.020	<0.020	<0.02	<0.02	0.03	0.12	0.01	0.02	0.0001	0.0001
15	06470878	1	0	0	07/13/81 through 07/13/81	--	--	--	<0.02	--	--	--	--	--	--	--
16	06470980	34	4	11.8	11/28/84 through 01/08/91	<0.020	<0.020	<0.020	<0.02	<0.02	0.02	0.04	0.00	0.02	0.0001	0.0001
					Nitrogen, nitrate, dissolved (mg/L as N), 00618											
1	06467600	32	32	100	03/27/60 through 03/14/95	0.140	0.180	0.230	0.28	0.58	1.10	1.80	0.50	0.50	0.0001	0.0090
2	06468170	31	30	96.8	04/26/72 through 04/05/95	<0.010	0.130	0.230	0.26	0.79	1.27	2.29	0.52	0.52	0.0001	0.0038
4	06468250	15	15	100	10/09/86 through 06/29/95	0.019	0.030	0.054	0.12	0.31	0.69	2.10	--	--	--	--
5	06468300	1	1	100	04/11/89 through 04/11/89	--	--	--	0.63	--	--	--	--	--	--	--
6	06468500	3	3	100	04/07/87 through 04/05/95	0.510	--	--	0.91	--	--	1.46	--	--	--	--
7	06469400	11	11	100	05/28/74 through 03/28/83	0.226	0.230	0.230	0.23	0.47	1.00	1.10	--	--	--	--
8	06469500	4	4	100	04/27/72 through 07/31/74	0.230	--	0.230	0.23	0.23	--	0.23	--	--	--	--
9	06470000	58	58	100	06/27/72 through 07/27/95	0.052	0.110	0.210	0.28	0.45	0.70	1.60	0.37	0.37	0.0001	0.7117
10	06470500	43	36	83.7	01/10/69 through 06/27/95	<0.010	<0.010	0.073	0.32	0.52	0.84	1.38	0.35	0.35	0.0004	0.0001
11	06470800	2	2	100	04/14/81 through 04/14/82	0.230	--	--	0.37	--	--	0.50	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Nitrogen, nitrate, dissolved (mg/L as N), 00618--Continued											
12	06470830	54	47	87.0	12/05/69 through 08/30/95	<0.010	<0.010	0.050	0.13	0.50	0.78	1.16	0.29	0.29	0.0001	0.0008
13	06470833	3	3	100	09/16/71 through 03/11/83	0.230	--	--	0.25	--	--	1.46	--	--	--	--
14	06470875	19	19	100	02/09/83 through 06/26/95	0.029	0.045	0.120	0.34	0.52	0.79	0.96	--	--	--	--
15	06470878	1	1	100	07/13/81 through 07/13/81	--	--	--	0.06	--	--	--	--	--	--	--
16	06470980	4	4	100	10/01/85 through 04/04/89	0.100	--	0.135	0.36	0.63	--	0.70	--	--	--	--
					Nitrogen, nitrate, total (mg/L as NO_3), 71850											
1	06467600	1	1	100	06/07/59 through 06/07/59	--	--	--	1.50	--	--	--	--	--	--	--
8	06469500	5	5	100	10/01/57 through 05/29/59	0.300	--	1.700	1.90	2.40	--	15.00	--	--	--	--
9	06470000	20	20	100	11/28/49 through 09/27/59	0.300	1.900	3.200	4.35	6.20	6.85	15.00	4.78	4.78	0.0021	0.0035
10	06470500	7	7	100	09/30/57 through 09/27/59	0.100	--	0.200	2.40	8.70	--	8.70	--	--	--	--
					Nitrogen, nitrate, dissolved (mg/L as NO_3), 71851											
1	06467600	32	32	100	03/27/60 through 03/14/95	0.600	0.800	1.000	1.25	2.55	4.80	8.00	2.19	2.19	0.0001	0.0125
2	06468170	32	30	93.8	04/26/72 through 04/05/95	<0.100	0.580	1.000	1.35	3.15	5.60	10.00	2.31	2.32	0.0001	0.0429
4	06468250	15	14	93.3	10/09/86 through 06/29/95	<0.100	0.130	0.240	0.53	1.40	3.10	9.30	--	--	--	--
5	06468300	12	12	100	10/07/59 through 04/11/89	0.300	0.400	1.150	3.10	4.90	6.70	9.40	--	--	--	--
6	06468500	8	8	100	10/01/58 through 04/05/95	0.500	--	1.000	3.15	5.70	--	7.40	--	--	--	--
7	06469400	12	12	100	05/28/74 through 03/19/85	1.000	1.000	1.000	1.00	2.05	4.50	4.80	--	--	--	--
8	06469500	30	30	100	11/23/59 through 07/31/74	0.200	0.250	0.400	1.00	1.70	6.25	12.00	2.05	2.05	0.0001	0.1917
9	06470000	101	96	95.0	11/23/59 through 07/27/95	<0.100	0.200	0.490	1.00	1.80	3.10	8.40	1.52	1.52	0.0001	0.0045
10	06470500	96	95	99.0	11/17/59 through 06/27/95	<0.100	0.200	0.350	1.20	2.40	4.30	13.00	1.84	1.84	0.0001	0.0008
11	06470800	3	3	100	04/14/81 through 04/03/84	1.000	--	--	2.20	--	--	7.00	--	--	--	--
12	06470830	48	45	93.8	12/05/69 through 08/30/95	<0.100	0.100	0.300	0.64	2.30	4.10	5.10	1.37	1.37	0.0001	0.0349
13	06470833	3	3	100	09/16/71 through 03/11/83	1.000	--	--	1.10	--	--	6.50	--	--	--	--
14	06470875	19	19	100	02/09/83 through 06/26/95	0.130	0.200	0.530	1.50	2.30	3.50	4.20	--	--	--	--
15	06470878	1	1	100	07/13/81 through 07/13/81	--	--	--	0.27	--	--	--	--	--	--	--
16	06470980	4	4	100	10/01/85 through 04/04/89	0.440	--	0.595	1.58	2.75	--	3.10	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Nitrogen, nitrite plus nitrate, dissolved (mg/L as N), 00631											
1	06467600	32	7	21.9	02/25/85 through 07/26/95	<0.100	<0.100	<0.100	<0.10	<0.10	0.57	1.90	0.15	0.23	0.0001	0.0001
2	06468170	56	15	26.8	03/18/85 through 08/29/95	<0.100	<0.100	<0.100	<0.10	0.14	0.51	2.50	0.18	0.26	0.0001	0.0001
3	06468190	6	0	0	03/27/86 through 04/10/89	--	--	--	<0.10	--	--	--	--	--	--	--
4	06468250	50	13	26.0	06/26/85 through 08/29/95	<0.100	<0.100	<0.100	<0.10	0.10	0.30	2.30	0.12	0.19	0.0001	0.0001
5	06468300	9	1	11.1	03/26/86 through 05/16/89	<0.100	--	<0.100	<0.10	<0.10	--	0.68	--	--	--	--
6	06468500	54	11	20.4	10/05/78 through 07/27/95	<0.100	<0.100	<0.100	<0.10	<0.10	0.38	1.60	0.10	0.18	0.0001	0.0001
9	06470000	84	49	58.3	11/27/84 through 08/31/95	<0.100	<0.100	<0.100	0.13	0.31	0.45	1.10	0.18	0.23	0.0001	0.0001
10	06470500	178	84	47.2	06/03/71 through 08/31/95	<0.100	<0.100	<0.100	<0.10	0.38	0.63	2.30	0.22	0.28	0.0001	0.0002
12	06470830	114	41	36.0	06/03/71 through 08/30/95	<0.100	<0.100	<0.100	<0.10	0.20	0.62	1.90	0.18	0.24	0.0001	0.0001
13	06470833	67	67	100	09/16/71 through 03/11/83	0.130	0.290	0.530	0.72	1.50	3.40	3.70	1.20	1.20	0.0001	0.0007
14	06470875	86	20	23.3	09/15/82 through 08/30/95	<0.100	<0.100	<0.100	<0.10	<0.10	0.50	1.00	0.09	0.17	0.0001	0.0001
15	06470878	74	24	32.4	10/30/74 through 08/31/81	<0.100	<0.100	<0.100	<0.10	0.13	0.76	3.00	0.19	0.26	0.0001	0.0002
16	06470980	34	5	14.7	11/28/84 through 01/08/91	<0.100	<0.100	<0.100	<0.10	<0.10	0.15	0.73	0.05	0.14	0.0001	0.0001
					Nitrogen, ammonia, total (mg/L as N), 00610											
1	06467600	5	5	100	08/24/87 through 03/11/92	0.030	--	0.030	0.03	0.09	--	0.19	--	--	--	--
2	06468170	13	13	100	08/24/87 through 07/09/92	0.020	0.020	0.030	0.04	0.05	0.35	0.54	--	--	--	--
3	06468190	3	3	100	04/06/88 through 04/10/89	0.030	--	--	0.06	--	--	0.08	--	--	--	--
4	06468250	11	11	100	08/25/87 through 07/08/92	0.020	0.020	0.020	0.03	0.06	0.66	1.10	--	--	--	--
5	06468300	5	5	100	08/25/87 through 05/16/89	0.020	--	0.020	0.02	0.04	--	0.51	--	--	--	--
6	06468500	3	3	100	08/25/87 through 05/17/88	0.020	--	--	0.02	--	--	0.03	--	--	--	--
9	06470000	16	15	93.8	08/25/87 through 07/06/92	<0.010	0.010	0.040	0.06	0.10	0.17	0.32	--	--	--	--
10	06470500	16	16	100	08/26/87 through 07/06/92	0.010	0.020	0.020	0.04	0.06	0.15	0.48	--	--	--	--
12	06470830	25	24	96.0	10/31/72 through 07/07/92	<0.010	0.020	0.030	0.06	0.16	0.37	0.57	0.12	0.12	0.0001	0.5697
14	06470875	11	11	100	08/27/87 through 07/07/92	0.010	0.010	0.020	0.03	0.03	0.11	0.48	--	--	--	--
16	06470980	7	6	85.7	08/27/87 through 05/23/90	<0.010	--	0.020	0.03	0.46	--	0.65	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, log_e-transformed data
					Nitrogen, ammonia, dissolved (mg/L as N), 00608											
1	06467600	20	18	90.0	08/24/87 through 07/26/95	<0.015	0.003	0.030	0.05	0.09	0.13	0.47	0.07	0.08	0.0001	0.5912
2	06468170	45	40	88.9	08/24/87 through 08/29/95	<0.015	<0.015	0.020	0.05	0.23	0.48	1.60	0.18	0.19	0.0001	0.0009
3	06468190	3	3	100.0	04/06/88 through 04/10/89	0.040	--	--	0.06	--	--	0.09	--	--	--	--
4	06468250	38	33	86.8	08/25/87 through 08/29/95	<0.015	<0.015	0.030	0.06	0.36	1.00	2.50	0.29	0.29	0.0001	0.0017
5	06468300	5	4	80.0	08/25/87 through 05/16/89	<0.015	--	0.020	0.04	0.08	--	0.49	--	--	--	--
6	06468500	10	9	90.0	08/25/87 through 07/27/95	<0.015	0.003	0.020	0.02	0.04	0.39	0.57	--	--	--	--
9	06470000	64	59	92.2	08/25/87 through 08/31/95	<0.015	0.020	0.060	0.12	0.27	0.50	1.10	0.21	0.21	0.0001	0.1403
10	06470500	57	50	87.7	07/14/81 through 08/31/95	<0.015	<0.015	0.020	0.05	0.16	0.42	1.50	0.16	0.16	0.0001	0.0013
12	06470830	126	107	84.9	07/17/69 through 08/30/95	<0.015	<0.015	0.020	0.06	0.17	0.38	0.86	0.13	0.14	0.0001	0.0001
13	06470833	1	1	100	03/11/83 through 03/11/83	--	--	--	0.38	--	--	--	--	--	--	--
14	06470875	87	74	85.1	09/15/82 through 08/30/95	<0.015	<0.015	0.020	0.05	0.14	0.45	2.70	0.19	0.19	0.0001	0.0001
15	06470878	1	1	100	07/13/81 through 07/13/81	--	--	--	0.09	--	--	--	--	--	--	--
16	06470980	17	13	76.5	08/27/87 through 01/08/91	<0.015	<0.015	0.020	0.04	0.32	0.60	2.10	--	--	--	--
					Nitrogen, organic, total (mg/L as N), 00605											
1	06467600	7	7	100	08/24/87 through 07/26/95	0.970	--	1.200	1.30	1.50	--	1.70	--	--	--	--
2	06468170	14	14	100	08/24/87 through 07/31/95	1.100	1.100	1.300	1.65	1.90	2.50	2.80	--	--	--	--
3	06468190	3	3	100	04/06/88 through 04/10/89	0.770	--	--	0.84	--	--	1.70	--	--	--	--
4	06468250	19	19	100	08/25/87 through 07/31/95	0.970	1.100	1.200	1.40	1.70	1.90	2.90	--	--	--	--
5	06468300	5	5	100	08/25/87 through 05/16/89	0.780	--	0.960	0.98	2.10	--	2.40	--	--	--	--
6	06468500	8	8	100	08/25/87 through 07/27/95	1.000	--	1.250	1.55	2.50	--	2.90	--	--	--	--
9	06470000	25	25	100	08/25/87 through 07/27/95	0.450	0.630	0.880	1.00	1.30	1.80	2.50	1.12	1.12	0.0172	0.9521
10	06470500	24	24	100	08/26/87 through 08/01/95	0.580	0.880	1.100	1.40	1.80	2.00	2.10	1.43	1.43	0.6965	0.2090
12	06470830	23	23	100	08/26/87 through 08/02/95	0.700	0.880	1.100	1.30	1.60	1.70	2.60	1.36	1.36	0.0541	0.3277
14	06470875	20	20	100	08/27/87 through 08/02/95	0.870	0.980	1.150	1.35	1.70	2.05	2.20	1.42	1.42	0.2289	0.7451
16	06470980	7	7	100	08/27/87 through 05/23/90	0.970	--	0.970	1.40	1.60	--	3.20	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Nitrogen, organic, dissolved (mg/L as N), 00607											
1	06467600	14	14	100	08/24/87 through 07/26/95	0.570	0.610	0.780	1.03	1.20	1.30	1.40	--	--	--	--
2	06468170	29	29	100	08/24/87 through 06/28/95	0.460	0.780	0.940	1.20	1.60	2.00	2.50	1.28	1.28	0.0374	0.7147
3	06468190	3	3	100	04/06/88 through 04/10/89	0.640	--	--	0.66	--	--	1.20	--	--	--	--
4	06468250	33	33	100	08/25/87 through 06/29/95	0.580	0.860	0.950	1.10	1.40	1.60	2.20	1.19	1.19	0.0370	0.6635
5	06468300	5	5	100	08/25/87 through 05/16/89	0.420	--	0.660	0.98	1.20	--	1.60	--	--	--	--
6	06468500	10	10	100	08/25/87 through 07/27/95	0.660	0.665	0.800	1.04	1.20	1.20	1.20	--	--	--	--
9	06470000	58	58	100	08/25/87 through 07/27/95	0.110	0.310	0.440	0.64	0.86	1.10	1.50	0.66	0.66	0.1154	0.0167
10	06470500	48	48	100	05/24/88 through 06/27/95	0.270	0.370	0.570	0.68	0.88	1.00	1.30	0.72	0.72	0.5960	0.0321
12	06470830	47	47	100	08/26/87 through 08/30/95	0.380	0.440	0.730	0.85	0.99	1.30	3.70	0.93	0.93	0.0001	0.0137
14	06470875	44	44	100	08/27/87 through 08/02/95	0.350	0.580	0.770	0.88	1.25	1.60	2.60	1.01	1.01	0.0001	0.6559
16	06470980	15	15	100	08/27/87 through 01/08/91	0.580	0.610	0.850	0.98	1.90	2.60	3.20	--	--	--	--
					Nitrogen, ammonia plus organic, total (mg/L as N), 00625											
1	06467600	7	7	100	08/24/87 through 07/26/95	1.000	--	1.300	1.30	1.50	--	1.90	--	--	--	--
2	06468170	14	14	100	08/24/87 through 07/31/95	1.100	1.100	1.400	1.70	2.20	2.50	2.80	--	--	--	--
3	06468190	3	3	100	04/06/88 through 04/10/89	0.800	--	--	0.90	--	--	1.80	--	--	--	--
4	06468250	19	19	100	08/25/87 through 07/31/95	1.000	1.100	1.300	1.60	1.90	2.80	2.90	--	--	--	--
5	06468300	5	5	100	08/25/87 through 05/16/89	0.800	--	1.000	1.00	2.40	--	2.60	--	--	--	--
6	06468500	8	8	100	08/25/87 through 07/27/95	1.100	--	1.350	1.80	2.50	--	2.90	--	--	--	--
9	06470000	25	25	100	08/25/87 through 07/27/95	0.500	0.800	1.000	1.10	1.30	1.80	2.60	1.21	1.21	0.0178	0.7503
10	06470500	24	24	100	08/26/87 through 08/01/95	0.600	0.900	1.200	1.60	1.80	2.10	2.10	1.50	1.50	0.4187	0.0440
12	06470830	23	23	100	08/26/87 through 08/02/95	0.700	0.900	1.300	1.40	1.60	1.70	2.70	1.43	1.43	0.0128	0.0346
14	06470875	20	20	100	08/27/87 through 08/02/95	0.900	1.000	1.200	1.40	1.70	2.05	2.30	1.47	1.47	0.5338	0.9049
16	06470980	7	7	100	08/27/87 through 05/23/90	1.000	--	1.000	1.50	1.90	--	3.80	--	--	--	--
					Nitrogen, ammonia plus organic, dissolved (mg/L as N), 00623											
1	06467600	16	16	100	08/24/87 through 07/26/95	0.500	0.600	0.900	1.10	1.30	1.40	1.40	--	--	--	--
2	06468170	33	33	100	08/24/87 through 08/29/95	0.500	0.900	1.000	1.30	1.70	2.30	2.80	1.45	1.45	0.0509	0.7720
3	06468190	3	3	100	04/06/88 through 04/10/89	0.700	--	--	0.70	--	--	1.30	--	--	--	--
4	06468250	38	38	100	08/25/87 through 08/29/95	0.600	0.900	1.000	1.25	1.60	2.00	4.30	1.46	1.46	0.0001	0.0157
5	06468300	5	5	100	08/25/87 through 05/16/89	0.500	--	0.700	1.00	1.60	--	1.70	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Nitrogen, ammonia plus organic, dissolved (mg/L as N), 00623--Continued											
6	06468500	10	10	100	08/25/87 through 07/27/95	0.700	0.700	1.000	1.05	1.20	1.50	1.80	--	--	--	--
9	06470000	62	62	100	08/25/87 through 08/31/95	0.200	0.500	0.600	0.90	1.10	1.20	2.50	0.87	0.87	0.0005	0.0372
10	06470500	54	54	100	08/26/87 through 08/31/95	0.300	0.500	0.700	0.90	1.00	1.40	1.90	0.89	0.89	0.0026	0.2883
12	06470830	54	53	98.1	08/26/87 through 08/30/95	<0.200	0.500	0.800	0.90	1.10	1.60	3.70	1.01	1.02	0.0001	0.0101
14	06470875	51	51	100	08/27/87 through 08/30/95	0.400	0.600	0.800	0.90	1.40	1.70	3.60	1.16	1.16	0.0001	0.0447
16	06470980	17	17	100	08/27/87 through 01/08/91	0.400	0.600	0.800	1.00	2.20	3.30	4.00	--	--	--	--
					Nitrogen, total (mg/L as N), 00600											
1	06467600	7	7	100	08/24/87 through 07/26/95	1.000	--	1.300	1.50	2.10	--	3.20	--	--	--	--
2	06468170	14	14	100	08/24/87 through 07/31/95	1.100	1.100	1.700	2.10	2.60	3.00	4.20	--	--	--	--
3	06468190	3	3	100	04/06/88 through 04/10/89	0.800	--	--	0.90	--	--	1.80	--	--	--	--
4	06468250	19	19	100	08/25/87 through 07/31/95	1.000	1.100	1.400	1.60	2.30	3.10	4.10	--	--	--	--
5	06468300	5	5	100	08/25/87 through 05/16/89	0.800	--	1.000	1.00	2.40	--	3.30	--	--	--	--
6	06468500	8	8	100	08/25/87 through 07/27/95	1.100	--	1.550	2.25	2.80	--	3.60	--	--	--	--
9	06470000	25	25	100	08/25/87 through 07/27/95	0.500	0.800	1.100	1.40	1.70	1.90	2.70	1.40	1.40	0.6795	0.5165
10	06470500	24	24	100	08/26/87 through 08/01/95	0.600	0.900	1.350	1.80	2.05	2.10	2.40	1.65	1.65	0.2144	0.0061
12	06470830	23	23	100	08/26/87 through 08/02/95	0.700	0.900	1.300	1.60	1.70	2.00	2.70	1.53	1.53	0.2838	0.0862
14	06470875	20	20	100	08/27/87 through 08/02/95	0.960	1.000	1.250	1.45	1.95	2.15	2.30	1.57	1.57	0.2412	0.2779
16	06470980	7	7	100	08/27/87 through 05/23/90	1.000	--	1.000	1.50	2.50	--	3.80	--	--	--	--
					Phosphorus, total (mg/L as P), 00665											
1	06467600	14	14	100	03/27/86 through 07/26/95	0.130	0.140	0.230	0.28	0.43	0.48	0.62	--	--	--	--
2	06468170	24	24	100	04/24/86 through 07/31/95	0.110	0.130	0.150	0.20	0.33	0.36	0.43	0.24	0.24	0.0207	0.1175
3	06468190	4	4	100	04/06/87 through 04/10/89	0.070	--[*]	0.075	0.09	0.16	--	0.22	--	--	--	--
4	06468250	23	23	100	04/23/86 through 07/31/95	0.090	0.110	0.140	0.20	0.33	0.41	0.58	0.24	0.24	0.0179	0.6281
5	06468300	8	8	100	04/24/86 through 05/16/89	0.080	--	0.095	0.13	0.22	--	0.48	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, log_e-transformed data
					Phosphorus, total (mg/L as P), 00665--Continued											
6	06468500	13	13	100	03/26/86 through 07/27/95	0.080	0.130	0.150	0.26	0.33	0.38	0.46	--	--	--	--
9	06470000	29	29	100	03/26/86 through 07/27/95	0.060	0.100	0.110	0.19	0.28	0.35	0.71	0.21	0.21	0.0001	0.3706
10	06470500	30	30	100	09/24/84 through 08/01/95	0.090	0.160	0.230	0.30	0.35	0.43	0.50	0.30	0.30	0.9441	0.0175
12	06470830	75	75	100	07/17/69 through 08/02/95	0.080	0.150	0.230	0.32	0.40	0.55	1.40	0.34	0.34	0.0001	0.6394
14	06470875	25	25	100	04/01/86 through 08/02/95	0.110	0.150	0.170	0.21	0.27	0.37	0.59	0.24	0.24	0.0006	0.5703
16	06470980	11	10	90.9	04/01/86 through 05/23/90	<0.010	0.100	0.140	0.19	0.30	0.35	0.41	--	--	--	--
					Phosphorus, dissolved (mg/L as P), 00666											
1	06467600	32	32	100	02/25/85 through 07/26/95	0.020	0.080	0.110	0.23	0.39	0.43	0.84	0.27	0.27	--	--
2	06468170	56	56	100	03/18/85 through 08/29/95	0.010	0.040	0.100	0.18	0.28	0.36	0.69	0.20	0.20	0.0277	0.1919
3	06468190	6	6	100	03/27/86 through 04/10/89	0.020	--	0.040	0.06	0.07	--	0.18	--	--	0.0002	0.0473
4	06468250	50	50	100	06/26/85 through 08/29/95	0.020	0.030	0.070	0.11	0.22	0.37	1.00	0.18	0.18	--	--
5	06468300	9	9	100	03/26/86 through 05/16/89	0.020	--	0.040	0.07	0.10	--	0.41	--	--	0.0001	0.4943
6	06468500	54	53	98.1	10/05/78 through 07/27/95	<0.010	0.020	0.030	0.05	0.12	0.26	0.50	0.09	0.09	--	--
9	06470000	84	82	97.6	11/27/84 through 08/31/95	<0.010	0.020	0.030	0.06	0.15	0.22	0.56	0.10	0.10	0.0001	0.0001
10	06470500	187	183	97.9	10/01/69 through 08/31/95	<0.010	0.030	0.060	0.11	0.18	0.28	0.87	0.14	0.14	0.0001	0.0804
12	06470830	99	97	98.0	07/17/69 through 08/30/95	<0.010	0.030	0.060	0.10	0.18	0.27	0.58	0.13	0.13	0.0001	0.0001
13	06470833	66	54	81.8	09/16/71 through 03/11/83	<0.010	<0.010	0.010	0.02	0.04	0.11	1.40	0.06	0.06	0.0001	0.0186
14	06470875	86	85	98.8	09/15/82 through 08/30/95	<0.010	0.030	0.040	0.07	0.18	0.32	1.50	0.16	0.16	0.0001	0.0001
15	06470878	74	73	98.6	10/30/74 through 08/31/81	<0.010	0.020	0.060	0.13	0.25	0.70	3.00	0.26	0.26	0.0001	0.0609
16	06470980	34	33	97.1	11/28/84 through 01/08/91	<0.010	0.030	0.030	0.08	0.21	0.44	2.30	0.20	0.20	0.0001	0.2632
					Phosphorus, orthophosphate, total (mg/L as P), 70507											
1	06467600	8	8	100	03/27/86 through 03/11/92	0.063	--	0.097	0.20	0.30	--	0.38	--	--	--	--
2	06468170	16	15	93.8	04/24/86 through 07/09/92	<0.010	0.030	0.054	0.11	0.15	0.21	0.26	--	--	--	--
3	06468190	4	4	100	04/06/87 through 04/10/89	0.023	--	0.033	0.05	0.11	--	0.16	--	--	--	--
4	06468250	16	16	100	01/07/86 through 07/08/92	0.018	0.022	0.049	0.09	0.18	0.31	2.50	--	--	--	--
5	06468300	8	8	100	04/24/86 through 05/16/89	0.015	--	0.024	0.04	0.09	--	0.18	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Phosphorus, orthophosphate, total (mg/L as P), 70507--Continued											
6	06468500	8	8	100	03/26/86 through 05/17/88	0.019	--	0.027	0.06	0.11	--	0.19	--	--	--	--
9	06470000	21	20	95.2	12/30/85 through 07/06/92	<0.010	0.027	0.044	0.06	0.09	0.16	0.57	0.09	0.10	0.0001	0.0007
10	06470500	21	20	95.2	01/08/86 through 07/06/92	<0.010	0.042	0.056	0.12	0.19	0.24	0.26	0.12	0.13	0.1745	0.0001
12	06470830	17	16	94.1	01/07/86 through 07/07/92	<0.010	0.039	0.093	0.14	0.19	0.25	0.27	--	--	--	--
14	06470875	16	15	93.8	01/09/86 through 07/07/92	<0.010	0.024	0.049	0.07	0.12	0.26	0.90	--	--	--	--
16	06470980	11	11	100	01/08/86 through 05/23/90	0.028	0.045	0.060	0.10	0.26	0.29	0.51	--	--	--	--
					Phosphorus, orthophosphate, dissolved (mg/L as P), 00671											
1	06467600	32	30	93.8	04/20/72 through 07/26/95	<0.010	0.036	0.096	0.19	0.31	0.37	0.88	0.22	0.22	0.0008	0.0012
2	06468170	59	51	86.4	04/26/72 through 08/29/95	<0.010	<0.010	0.042	0.11	0.22	0.30	0.66	0.15	0.15	0.0001	0.0005
3	06468190	6	5	83.3	03/27/86 through 04/10/89	<0.010	--	0.015	0.03	0.05	--	0.15	--	--	--	--
4	06468250	49	43	87.8	10/30/85 through 08/29/95	<0.010	<0.010	0.040	0.09	0.19	0.37	0.97	0.16	0.16	0.0001	0.0066
5	06468300	9	7	77.8	03/26/86 through 05/16/89	<0.010	--	0.019	0.04	0.07	--	0.35	--	--	--	--
6	06468500	20	17	85.0	03/26/86 through 07/27/95	<0.010	<0.010	0.014	0.03	0.16	0.26	0.34	0.09	0.09	0.0002	0.4430
7	06469400	3	3	100	05/28/74 through 04/23/75	0.186	--	--	0.23	--	--	0.23	--	--	--	--
8	06469500	4	3	75.0	04/27/72 through 07/31/74	<0.010	--	0.023	0.09	0.20	--	0.26	--	--	--	--
9	06470000	82	76	92.7	06/27/72 through 08/31/95	<0.010	0.013	0.030	0.07	0.14	0.21	0.55	0.10	0.10	0.0001	0.0007
10	06470500	69	63	91.3	07/14/81 through 08/31/95	<0.010	0.010	0.045	0.11	0.18	0.27	0.41	0.12	0.12	0.0001	0.0001
12	06470830	98	95	96.9	09/26/72 through 08/30/95	<0.010	0.020	0.040	0.09	0.15	0.25	0.58	0.12	0.12	0.0001	0.1610
13	06470833	1	1	100	03/11/83 through 03/11/83	--	--	--	0.31	--	--	--	--	--	--	--
14	06470875	86	77	89.5	09/15/82 through 08/30/95	<0.010	<0.010	0.028	0.05	0.13	0.27	0.98	0.12	0.12	0.0001	0.3084
15	06470878	1	1	100	07/13/81 through 07/13/81	--	--	--	0.28	--	--	--	--	--	--	--
16	06470980	27	21	77.8	01/08/86 through 01/08/91	<0.010	<0.010	0.011	0.04	0.17	0.37	0.62	0.12	0.12	0.0001	0.5152
					Phosphorus, organic, total (mg/L as P), 00670											
1	06467600	13	13	100	03/27/86 through 07/18/94	0.030	0.030	0.050	0.07	0.13	0.29	0.48	--	--	--	--
2	06468170	23	23	100	04/24/86 through 04/05/95	0.010	0.030	0.050	0.08	0.14	0.21	0.43	0.11	0.11	0.0002	0.8309
3	06468190	4	4	100	04/06/87 through 04/10/89	0.030	--	0.040	0.05	0.06	--	0.06	--	--	--	--
4	06468250	22	22	100	04/23/86 through 07/31/95	0.010	0.030	0.050	0.08	0.10	0.23	0.58	0.12	0.12	0.0001	0.1278
5	06468300	8	8	100	04/24/86 through 05/16/89	0.040	--	0.065	0.08	0.08	--	0.44	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Phosphorus, organic, total (mg/L as P), 00670--Continued											
6	06468500	10	10	100	03/26/86 through 03/30/94	0.050	0.055	0.090	0.11	0.18	0.26	0.32	--	--	--	--
9	06470000	26	26	100	03/26/86 through 06/27/95	0.010	0.030	0.040	0.08	0.15	0.33	0.38	0.11	0.11	0.0001	0.8657
10	06470500	27	27	100	09/24/84 through 08/01/95	0.010	0.040	0.090	0.17	0.25	0.31	0.35	0.17	0.17	0.5375	0.0019
12	06470830	73	73	100	07/17/69 through 04/27/95	0.030	0.090	0.140	0.28	0.40	0.55	1.40	0.31	0.31	0.0001	0.0566
14	06470875	25	25	100	04/01/86 through 08/02/95	0.010	0.030	0.050	0.12	0.20	0.37	0.51	0.15	0.15	0.0032	0.2238
16	06470980	10	10	100	04/01/86 through 05/23/90	0.040	0.065	0.090	0.11	0.14	0.19	0.20	--	--	--	--
					Aluminum, total (µg/L as Al), 01105											
10	06470500	2	2	100	10/22/68 through 05/26/69	100.000	--	--	150.00	--	--	200.00	--	--	--	--
					Aluminum, dissolved (µg/L as Al), 01106											
6	06468500	24	13	54.2	10/05/78 through 09/09/93	<10.000	<10.000	<10.000	10.00	20.00	30.00	40.00	11.67	16.25	0.0001	0.0001
10	06470500	7	6	85.7	10/07/70 through 04/19/79	<10.000	--	10.000	20.00	40.00	--	200.00	--	--	--	--
13	06470833	9	6	66.7	04/30/74 through 04/17/79	<10.000	--	<10.000	10.00	20.00	--	30.00	--	--	--	--
15	06470878	9	5	55.6	05/29/75 through 04/24/79	<10.000	--	<10.000	10.00	30.00	--	30.00	--	--	--	--
					Arsenic, total (µg/L as As), 01002											
1	06467600	14	14	100	03/27/86 through 07/26/95	2.000	2.000	2.000	3.00	5.00	6.00	6.00	--	--	--	--
2	06468170	24	23	95.8	04/24/86 through 07/31/95	<1.000	2.000	2.000	3.00	4.00	6.00	6.00	3.17	3.21	0.0184	0.0550
3	06468190	4	4	100	04/06/87 through 04/10/89	1.000	--	1.000	1.00	1.50	--	2.00	--	--	--	--
4	06468250	24	24	100	01/07/86 through 07/31/95	1.000	2.000	2.000	2.00	4.00	5.00	7.00	3.04	3.04	0.0006	0.0059
5	06468300	7	7	100	04/24/86 through 05/16/89	1.000	--	2.000	2.00	3.00	--	7.00	--	--	--	--
6	06468500	15	15	100	03/26/86 through 07/27/95	1.000	1.000	2.000	2.00	5.00	8.00	8.00	--	--	--	--
9	06470000	28	28	100	03/26/86 through 07/27/95	1.000	2.000	2.000	3.00	4.00	5.00	8.00	3.18	3.18	0.0005	0.0451
10	06470500	29	29	100	01/08/86 through 08/01/95	1.000	1.000	2.000	3.00	5.00	6.00	11.00	3.66	3.66	0.0016	0.1822
12	06470830	26	26	100	01/07/86 through 08/02/95	1.000	2.000	2.000	3.00	4.00	5.00	9.00	3.35	3.35	0.0005	0.0151
14	06470875	25	25	100	01/09/86 through 08/02/95	1.000	1.000	2.000	2.00	4.00	4.00	10.00	2.88	2.88	0.0001	0.0416
16	06470980	11	11	100	01/08/86 through 05/23/90	1.000	1.000	2.000	3.00	3.00	4.00	6.00	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
						Arsenic, dissolved (µg/L as As), 01000										
1	06467600	34	34	100	04/12/82 through 07/26/95	1.000	2.000	2.000	3.00	5.00	6.00	7.00	3.65	3.65	0.0141	0.0089
2	06468170	61	59	96.7	04/13/82 through 08/29/95	<1.000	2.000	2.000	3.00	4.00	5.00	9.00	3.33	3.36	0.0001	0.0023
3	06468190	6	3	50.0	03/27/86 through 04/10/89	<1.000	--	<1.000	<1.00	1.00	--	4.00	--	--	--	--
4	06468250	50	50	100	01/07/86 through 08/29/95	1.000	1.500	2.000	2.50	4.00	5.00	9.00	3.00	3.00	0.0001	0.0017
5	06468300	9	9	100	03/26/86 through 05/16/89	2.000	--	2.000	2.00	3.00	--	8.00	--	--	--	--
6	06468500	41	40	97.6	10/05/78 through 07/27/95	<1.000	1.000	2.000	2.00	4.00	5.00	7.00	2.88	2.90	0.0001	0.0025
7	06469400	21	21	100	04/13/82 through 08/31/95	1.000	1.000	2.000	2.00	4.00	5.00	7.00	2.90	2.90	0.0190	0.0383
9	06470000	83	80	96.4	04/14/82 through 08/31/95	<1.000	1.000	2.000	2.00	3.00	4.00	5.00	2.45	2.48	0.0001	0.0001
10	06470500	81	74	91.4	05/26/69 through 08/31/95	<1.000	1.000	2.000	2.00	4.00	5.00	16.00	2.93	3.01	0.0001	0.0001
11	06470800	19	19	100	04/14/82 through 06/22/95	1.000	1.000	2.000	2.00	4.00	12.00	14.00	--	--	--	--
12	06470830	77	75	97.4	09/19/69 through 08/30/95	<1.000	1.000	2.000	3.00	4.00	8.00	20.00	3.90	3.92	0.0001	0.0001
13	06470833	9	9	100	04/30/74 through 04/17/79	4.000	--	5.000	7.00	8.00	--	10.00	--	--	--	--
14	06470875	65	63	96.9	01/09/86 through 08/30/95	<1.000	1.000	2.000	3.00	4.00	5.00	7.00	2.98	3.02	0.0001	0.0001
15	06470878	9	9	100	05/29/75 through 04/24/79	2.000	--	2.000	4.00	5.00	--	11.00	--	--	--	--
16	06470980	27	27	100	01/08/86 through 01/08/91	1.000	1.000	2.000	3.00	3.00	4.00	15.00	3.04	3.04	0.0001	0.0017
						Barium, total (µg/L as Ba), 01007										
1	06467600	3	2	66.7	03/27/86 through 05/11/87	<100.000	--	--	100.00	--	--	100.00	--	--	--	--
2	06468170	3	3	100	04/24/86 through 05/11/87	100.000	--	--	100.00	--	--	100.00	--	--	--	--
3	06468190	1	0	0	04/06/87 through 04/06/87	--	--	--	<100.00	--	--	--	--	--	--	--
4	06468250	5	4	80.0	01/07/86 through 05/13/87	<100.000	--	100.000	100.00	100.00	--	100.00	--	--	--	--
5	06468300	3	2	66.7	04/24/86 through 05/13/87	<100.000	--	--	100.00	--	--	100.00	--	--	--	--
6	06468500	5	2	40.0	03/26/86 through 05/12/87	<100.000	--	<100.000	<100.00	100.00	--	100.00	--	--	--	--
9	06470000	5	5	100	12/30/85 through 05/14/87	100.000	--	100.000	100.00	100.00	--	100.00	--	--	--	--
10	06470500	6	6	100	01/08/86 through 05/18/87	100.000	--	100.000	100.00	100.00	--	200.00	--	--	--	--
12	06470830	4	2	50.0	01/07/86 through 05/18/87	<100.000	--	<100.000	<100.00	100.00	--	100.00	--	--	--	--
14	06470875	6	5	83.3	01/09/86 through 05/19/87	<100.000	--	100.000	100.00	100.00	--	200.00	--	--	--	--
16	06470980	5	4	80.0	01/08/86 through 05/19/87	<100.000	--	100.000	100.00	100.00	--	100.00	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Barium, dissolved (µg/L as Ba), 01005											
1	06467600	7	1	14.3	03/27/86 through 07/06/87	<100.000	--	<100.000	<100.00	<100.00	--	100.00	--	--	--	--
2	06468170	8	1	12.5	03/27/86 through 05/11/87	<100.000	--	<100.000	<100.00	<100.00	--	120.00	--	--	--	--
3	06468190	3	0	0	03/27/86 through 04/06/87	--	--	--	<100.00	--	--	--	--	--	--	--
4	06468250	10	2	20.0	01/07/86 through 07/07/87	<100.000	<100.000	<100.000	<100.00	<100.00	125.00	130.00	--	--	--	--
5	06468300	4	0	0	03/26/86 through 07/07/87	--	--	--	<100.00	--	--	--	--	--	--	--
6	06468500	32	4	12.5	10/05/78 through 09/09/93	<100.000	<100.000	<100.000	<100.00	<100.00	100.00	200.00	18.75	106.25	0.0001	0.0847
9	06470000	12	0	0	12/30/85 through 07/07/87	--	--	--	<100.00	--	--	--	--	--	--	--
10	06470500	20	1	5.0	05/26/69 through 07/08/87	<100.000	<100.000	<100.000	<100.00	<100.00	<100.00	500.00	25.00	120.00	0.0001	0.0038
12	06470830	14	1	7.1	09/19/69 through 07/08/87	<100.000	<100.000	<100.000	<100.00	<100.00	<100.00	100.00	--	--	--	--
13	06470833	9	2	22.2	04/30/74 through 04/17/79	<100.000	--	<100.000	<100.00	<100.00	--	200.00	--	--	--	--
14	06470875	12	1	8.3	01/09/86 through 07/09/87	<100.000	<100.000	<100.000	<100.00	<100.00	<100.00	140.00	--	--	--	--
15	06470878	9	2	22.2	05/29/75 through 04/24/79	<100.000	--	<100.000	<100.00	<100.00	--	400.00	--	--	--	--
16	06470980	10	1	10.0	01/08/86 through 07/09/87	<100.000	<100.000	<100.000	<100.00	<100.00	20.00	140.00	--	--	--	--
					Beryllium, total (µg/L as Be), 01012											
1	06467600	3	0	0	03/27/86 through 05/11/87	--	--	--	<10.00	--	--	--	--	--	--	--
2	06468170	3	0	0	04/24/86 through 05/11/87	--	--	--	<10.00	--	--	--	--	--	--	--
3	06468190	1	0	0	04/06/87 through 04/06/87	--	--	--	<10.00	--	--	--	--	--	--	--
4	06468250	5	0	0	01/07/86 through 05/13/87	--	--	--	<10.00	--	--	--	--	--	--	--
5	06468300	3	0	0	04/24/86 through 05/13/87	--	--	--	<10.00	--	--	--	--	--	--	--
6	06468500	4	0	0	03/26/86 through 05/12/87	--	--	--	<10.00	--	--	--	--	--	--	--
9	06470000	5	0	0	12/30/85 through 05/14/87	--	--	--	<10.00	--	--	--	--	--	--	--
10	06470500	6	0	0	01/08/86 through 05/18/87	--	--	--	<10.00	--	--	--	--	--	--	--
12	06470830	4	0	0	01/07/86 through 05/18/87	--	--	--	<10.00	--	--	--	--	--	--	--
14	06470875	6	0	0	01/09/86 through 05/19/87	--	--	--	<10.00	--	--	--	--	--	--	--
16	06470980	5	0	0	01/08/86 through 05/19/87	--	--	--	<10.00	--	--	--	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Beryllium, dissolved (µg/L as Be), 01010											
1	06467600	7	0	0	03/27/86 through 07/06/87	--	--	--	<10.00	--	--	--	--	--	--	--
2	06468170	8	0	0	03/27/86 through 05/11/87	--	--	--	<10.00	--	--	--	--	--	--	--
3	06468190	3	0	0	03/27/86 through 04/06/87	--	--	--	<10.00	--	--	--	--	--	--	--
4	06468250	10	0	0	01/07/86 through 07/07/87	--	--	--	<10.00	--	--	--	--	--	--	--
5	06468300	4	0	0	03/26/86 through 07/07/87	--	--	--	<10.00	--	--	--	--	--	--	--
6	06468500	10	0	0	03/26/86 through 07/07/87	--	--	--	<10.00	--	--	--	--	--	--	--
9	06470000	12	0	0	12/30/85 through 07/07/87	--	--	--	<10.00	--	--	--	--	--	--	--
10	06470500	15	0	0	05/23/70 through 07/08/87	--	--	--	<10.00	--	--	--	--	--	--	--
12	06470830	20	1	5.0	03/24/70 through 07/08/87	<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	10.00	0.50	10.00	--	0.0001
13	06470833	6	1	16.7	04/30/74 through 05/04/77	<10.000	--	<10.000	<10.00	<10.00	--	10.00	--	--	--	--
14	06470875	12	0	0	01/09/86 through 07/09/87	--	--	--	<10.00	--	--	--	--	--	--	--
15	06470878	5	1	20.0	05/29/75 through 05/03/77	<10.000	--	<10.000	<10.00	<10.00	--	10.00	--	--	--	--
16	06470980	10	0	0	01/08/86 through 07/09/87	--	--	--	<10.00	--	--	--	--	--	--	--
					Boron, total (µg/L as B), 01022											
1	06467600	3	3	100	03/27/86 through 05/11/87	130.000	--	--	200.00	--	--	280.00	--	--	--	--
2	06468170	3	3	100	04/24/86 through 05/11/87	50.000	--	--	70.00	--	--	110.00	--	--	--	--
3	06468190	1	1	100	04/06/87 through 04/06/87	--	--	--	20.00	--	--	--	--	--	--	--
4	06468250	4	4	100	04/23/86 through 05/13/87	10.000	--	60.000	110.00	155.00	--	200.00	--	--	--	--
5	06468300	3	3	100	04/24/86 through 05/13/87	20.000	--	--	50.00	--	--	60.00	--	--	--	--
6	06468500	4	4	100	03/26/86 through 05/12/87	30.000	--	40.000	65.00	90.00	--	100.00	--	--	--	--
9	06470000	4	4	100	03/26/86 through 05/14/87	30.000	--	30.000	60.00	145.00	--	200.00	--	--	--	--
10	06470500	5	5	100	03/31/86 through 05/18/87	60.000	--	120.000	120.00	270.00	--	1200.00	--	--	--	--
12	06470830	3	3	100	04/01/86 through 05/18/87	80.000	--	--	90.00	--	--	100.00	--	--	--	--
14	06470875	5	5	100	04/01/86 through 05/19/87	40.000	--	110.000	140.00	290.00	--	720.00	--	--	--	--
16	06470980	4	4	100	04/01/86 through 05/19/87	40.000	--	60.000	120.00	200.00	--	240.00	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Boron, dissolved (µg/L as B), 01020											
1	06467600	65	64	98.5	06/07/59 through 07/26/95	<20.000	60.000	90.000	210.00	400.00	560.00	910.00	253.38	253.69	0.0001	0.0165
2	06468170	82	78	95.1	04/26/72 through 08/29/95	<20.000	40.000	70.000	140.00	220.00	330.00	2300.00	191.34	192.32	0.0001	0.1317
3	06468190	6	6	100	03/27/86 through 04/10/89	30.000	--	40.000	40.00	40.00	--	60.00	--	--	--	--
4	06468250	52	52	100	06/26/85 through 08/29/95	40.000	70.000	90.000	165.00	210.00	260.00	290.00	159.23	159.23	0.0204	0.0045
5	06468300	20	20	100	10/07/59 through 05/16/89	50.000	55.000	70.000	85.00	120.00	165.00	290.00	104.50	104.50	0.0002	0.3014
6	06468500	61	61	100	10/01/58 through 07/27/95	40.000	70.000	100.000	120.00	150.00	160.00	380.00	127.87	127.87	0.0001	0.0286
7	06469400	36	31	86.1	05/28/74 through 08/01/94	<20.000	<20.000	45.000	90.00	165.00	510.00	870.00	165.56	168.33	0.0001	0.5285
8	06469500	35	34	97.1	10/01/57 through 07/31/74	<20.000	30.000	60.000	130.00	230.00	340.00	600.00	166.00	166.57	0.0008	0.6088
9	06470000	167	160	95.8	04/13/50 through 08/31/95	<20.000	70.000	110.000	230.00	370.00	480.00	1000.00	257.31	258.14	0.0001	0.0001
10	06470500	259	258	99.6	09/30/57 through 08/31/95	<20.000	90.000	130.000	240.00	360.00	450.00	2600.00	266.51	266.58	0.0001	0.1879
11	06470800	36	34	94.4	04/05/77 through 06/27/94	<20.000	40.000	85.000	175.00	260.00	490.00	1000.00	225.56	226.67	0.0001	0.3110
12	06470830	101	101	100	09/19/69 through 08/30/95	50.000	100.000	120.000	210.00	360.00	510.00	1500.00	292.24	292.24	0.0001	0.0549
13	06470833	66	66	100	09/16/71 through 03/11/83	30.000	60.000	70.000	80.00	90.00	100.00	140.00	82.27	82.27	0.0785	0.0002
14	06470875	89	89	100	09/15/82 through 08/30/95	50.000	90.000	120.000	170.00	310.00	550.00	4200.00	287.30	287.30	0.0001	0.0020
15	06470878	74	74	100	10/30/74 through 08/31/81	50.000	120.000	150.000	220.00	370.00	570.00	1100.00	297.30	297.30	0.0001	0.5279
16	06470980	34	34	100	11/28/84 through 01/08/91	60.000	100.000	130.000	210.00	350.00	530.00	1200.00	289.71	289.71	0.0001	0.6599
					Cadmium, total (µg/L as Cd), 01027											
1	06467600	6	2	33.3	03/27/86 through 03/27/89	<1.000	--	<1.000	<1.00	1.00	--	2.00	--	--	--	--
2	06468170	10	2	20.0	04/24/86 through 08/13/90	<1.000	<1.000	<1.000	<1.00	<1.00	1.00	1.00	--	--	--	--
3	06468190	4	2	50.0	04/06/87 through 04/10/89	<1.000	--	<1.000	0	1.00	--	1.00	--	--	--	--
4	06468250	17	3	17.6	01/07/86 through 08/11/93	<1.000	<1.000	<1.000	<1.00	<1.00	1.00	2.00	--	--	--	--
5	06468300	7	1	14.3	04/24/86 through 05/16/89	<1.000	--	<1.000	<1.00	<1.00	--	1.00	--	--	--	--
6	06468500	9	3	33.3	03/26/86 through 09/09/93	<1.000	--	<1.000	<1.00	1.00	--	2.00	--	--	--	--
9	06470000	23	2	8.7	12/30/85 through 08/19/93	<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	2.00	0.13	1.04	0.0001	0.0001
10	06470500	27	4	14.8	01/08/86 through 07/21/94	<1.000	<1.000	<1.000	<1.00	<1.00	1.00	1.00	0.15	1.00	--	--
12	06470830	23	7	30.4	01/07/86 through 05/18/94	<1.000	<1.000	<1.000	<1.00	1.00	2.00	21.00	1.30	2.00	0.0001	0.0001
14	06470875	23	5	21.7	01/09/86 through 07/22/94	<1.000	<1.000	<1.000	<1.00	<1.00	2.00	3.00	0.39	1.17	0.0001	0.0001
16	06470980	12	4	33.3	01/08/86 through 05/23/90	<1.000	<1.000	<1.000	<1.00	1.00	1.00	5.00	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Cadmium, dissolved (µg/L as Cd), 01025											
1	06467600	13	0	0	03/27/86 through 03/27/89	--	--	--	<10.00	--	--	--	--	--	--	--
2	06468170	20	0	0	03/27/86 through 08/13/90	--	--	--	<10.00	--	--	--	--	<10.00	--	--
3	06468190	6	0	0	03/27/86 through 04/10/89	--	--	--	<10.00	--	--	--	--	--	--	--
4	06468250	34	0	0	01/07/86 through 09/09/93	--	--	--	<10.00	--	--	--	--	<10.00	--	--
5	06468300	9	0	0	03/26/86 through 05/16/89	--	--	--	<10.00	--	--	--	--	--	--	--
6	06468500	36	0	0	10/05/78 through 09/09/93	--	--	--	<10.00	--	--	--	--	<10.00	--	--
7	06469400	1	0	0	08/01/94 through 08/01/94	--	--	--	<10.00	--	--	--	--	--	--	--
9	06470000	61	1	1.6	12/30/85 through 09/09/93	<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	10.00	0.16	10.00	--	0.0001
10	06470500	74	1	1.4	05/26/69 through 11/30/94	<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	10.00	0.14	10.00	--	0.0001
11	06470800	1	0	0	06/27/94 through 06/27/94	--	--	--	<10.00	--	--	--	--	--	--	--
12	06470830	72	2	2.8	09/19/69 through 11/30/94	<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	60.00	0.97	10.69	0.0001	0.0001
13	06470833	9	0	0	04/30/74 through 04/17/79	--	--	--	<10.00	--	--	--	--	--	--	--
14	06470875	58	0	0	01/09/86 through 12/01/94	--	--	--	<10.00	--	--	--	--	<10.00	--	--
15	06470878	9	0	0	05/29/75 through 04/24/79	--	--	--	<10.00	--	--	--	--	--	--	--
16	06470980	27	0	0	01/08/86 through 01/08/91	--	--	--	<10.00	--	--	--	--	<10.00	--	--
					Chromium, total (µg/L as Cr), 01034											
4	06468250	1	1	100	01/07/86 through 01/07/86	--	--	--	5.00	--	--	--	--	--	--	--
9	06470000	1	1	100	12/30/85 through 12/30/85	--	--	--	9.00	--	--	--	--	--	--	--
10	06470500	1	1	100	01/08/86 through 01/08/86	--	--	--	7.00	--	--	--	--	--	--	--
12	06470830	5	1	20.0	12/05/69 through 01/07/86	<1.000	--	<1.000	<1.00	<1.00	--	10.00	--	--	--	--
14	06470875	1	1	100	01/09/86 through 01/09/86	--	--	--	6.00	--	--	--	--	--	--	--
16	06470980	1	1	100	01/08/86 through 01/08/86	--	--	--	4.00	--	--	--	--	--	--	--
					Chromium, dissolved (µg/L as Cr), 01030											
1	06467600	7	0	0	03/27/86 through 07/06/87	--	--	--	<20.00	--	--	--	--	--	--	--
2	06468170	8	0	0	03/27/86 through 05/11/87	--	--	--	<20.00	--	--	--	--	--	--	--
3	06468190	3	0	0	03/27/86 through 04/06/87	--	--	--	<20.00	--	--	--	--	--	--	--
4	06468250	10	0	0	01/07/86 through 07/07/87	--	--	--	<20.00	--	--	--	--	--	--	--
5	06468300	4	0	0	03/26/86 through 07/07/87	--	--	--	<20.00	--	--	--	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Chromium, dissolved (µg/L as Cr), 01030--Continued											
6	06468500	29	0	0	10/05/78 through 07/07/87	--	--	--	<20.00	--	--	--	--	<20.00	--	--
9	06470000	13	0	0	12/07/64 through 07/07/87	--	--	--	<20.00	--	--	--	--	--	--	--
10	06470500	22	0	0	05/26/69 through 11/17/87	--	--	--	<20.00	--	--	--	--	<20.00	--	--
12	06470830	22	0	0	09/19/69 through 07/08/87	--	--	--	<20.00	--	--	--	--	<20.00	--	--
13	06470833	9	0	0	04/30/74 through 04/17/79	--	--	--	<20.00	--	--	--	--	--	--	--
14	06470875	12	0	0	01/09/86 through 07/09/87	--	--	--	<20.00	--	--	--	--	--	--	--
15	06470878	9	0	0	05/29/75 through 04/24/79	--	--	--	<20.00	--	--	--	--	--	--	--
16	06470980	10	0	0	01/08/86 through 07/09/87	--	--	--	<20.00	--	--	--	--	--	--	--
					Cobalt, dissolved (µg/L as Co), 01035											
1	06467600	7	0	0	03/27/86 through 07/06/87	--	--	--	<3.00	--	--	--	--	--	--	--
2	06468170	8	0	0	03/27/86 through 05/11/87	--	--	--	<3.00	--	--	--	--	--	--	--
3	06468190	3	0	0	03/27/86 through 04/06/87	--	--	--	<3.00	--	--	--	--	--	--	--
4	06468250	9	0	0	04/23/86 through 07/07/87	--	--	--	<3.00	--	--	--	--	--	--	--
5	06468300	4	0	0	03/26/86 through 07/07/87	--	--	--	<3.00	--	--	--	--	--	--	--
6	06468500	32	1	3.1	10/05/78 through 09/09/93	<3.000	<3.000	<3.000	<3.00	<3.00	<3.00	4.00	0.13	3.03	0.0001	0.0001
9	06470000	11	0	0	03/26/86 through 07/07/87	--	--	--	<3.00	--	--	--	--	--	--	--
10	06470500	19	0	0	05/26/69 through 07/08/87	--	--	--	<3.00	--	--	--	--	--	--	--
12	06470830	13	0	0	09/19/69 through 07/08/87	--	--	--	<3.00	--	--	--	--	--	--	--
13	06470833	9	0	0	04/30/74 through 04/17/79	--	--	--	<3.00	--	--	--	--	--	--	--
14	06470875	11	0	0	04/22/86 through 07/09/87	--	--	--	<3.00	--	--	--	--	--	--	--
15	06470878	9	0	0	05/29/75 through 04/24/79	--	--	--	<3.00	--	--	--	--	--	--	--
16	06470980	9	0	0	04/22/86 through 07/09/87	--	--	--	<3.00	--	--	--	--	--	--	--
					Copper, dissolved (µg/L as Cu), 01040											
1	06467600	18	0	0	02/25/85 through 03/27/89	--	--	--	<10.00	--	--	--	--	--	--	--
2	06468170	23	0	0	03/18/85 through 08/13/90	--	--	--	<10.00	--	--	--	--	<10.00	--	--
3	06468190	6	0	0	03/27/86 through 04/10/89	--	--	--	<10.00	--	--	--	--	--	--	--
4	06468250	36	0	0	06/26/85 through 09/09/93	--	--	--	<10.00	--	--	--	--	<10.00	--	--
5	06468300	9	0	0	03/26/86 through 05/16/89	--	--	--	<10.00	--	--	--	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Copper, dissolved (µg/L as Cu), 01040--Continued											
6	06468500	39	0	0	10/05/78 through 09/09/93	--	--	--	<10.00	--	--	--	--	<10.00	--	--
9	06470000	70	0	0	11/27/84 through 09/09/93	--	--	--	<10.00	--	--	--	--	<10.00	--	--
10	06470500	83	2	2.4	10/22/68 through 11/30/94	<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	30.00	0.72	10.48	0.0001	0.0001
12	06470830	77	4	5.2	09/19/69 through 11/30/94	<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	50.00	1.49	10.97	0.0001	0.0001
13	06470833	9	0	0	04/30/74 through 04/17/79	--	--	--	<10.00	--	--	--	--	--	--	--
14	06470875	64	0	0	11/29/84 through 12/01/94	--	--	--	<10.00	--	--	--	--	<10.00	--	--
15	06470878	9	0	0	05/29/75 through 04/24/79	--	--	--	<10.00	--	--	--	--	--	--	--
16	06470980	34	0	0	11/28/84 through 01/08/91	--	--	--	<10.00	--	--	--	--	<10.00	--	--
					Iron, total (µg/L as Fe), 01045											
1	06467600	5	5	100	06/07/59 through 03/27/89	80.000	--	180.000	210.00	280.00	--	590.00	--	--	--	--
2	06468170	8	8	100	08/24/87 through 08/13/90	60.000	--	100.000	175.00	675.00	--	1700.00	--	--	--	--
3	06468190	3	3	100	04/06/88 through 04/10/89	90.000	--	--	110.00	--	--	120.00	--	--	--	--
4	06468250	13	13	100	08/25/87 through 08/11/93	40.000	80.000	140.000	210.00	280.00	460.00	680.00	--	--	--	--
5	06468300	5	5	100	08/25/87 through 05/16/89	180.000	--	190.000	190.00	200.00	--	340.00	--	--	--	--
6	06468500	5	5	100	08/25/87 through 09/09/93	140.000	--	200.000	470.00	850.00	--	900.00	--	--	--	--
8	06469500	5	5	100	10/01/57 through 05/29/59	20.000	--	20.000	30.00	30.00	--	80.00	--	--	--	--
9	06470000	39	39	100	11/28/49 through 08/19/93	10.000	20.000	40.000	120.00	590.00	920.00	1400.00	336.15	336.15	0.0001	0.0014
10	06470500	32	32	100	09/30/57 through 07/21/94	10.000	20.000	60.000	905.00	1450.00	2700.00	4400.00	1035.63	1035.63	0.0002	0.0026
12	06470830	19	19	100	08/26/87 through 05/18/94	130.000	160.000	490.000	1500.00	2000.00	3600.00	3800.00	--	--	--	--
14	06470875	17	17	100	08/27/87 through 07/22/94	140.000	240.000	390.000	800.00	1200.00	1500.00	2000.00	--	--	--	--
16	06470980	7	7	100	08/27/87 through 05/23/90	260.000	--	300.000	950.00	1500.00	--	2000.00	--	--	--	--
					Iron, dissolved (µg/L as Fe), 01046											
1	06467600	52	52	100	04/20/72 through 07/26/95	10.000	30.000	45.000	80.50	150.00	290.00	1200.00	133.29	133.29	0.0001	0.9602
2	06468170	82	76	92.7	04/26/72 through 08/29/95	<10.000	10.000	19.000	37.50	85.00	140.00	330.00	60.78	61.51	0.0001	0.2122
3	06468190	6	6	100	03/27/86 through 04/10/89	19.000	--	70.000	74.50	89.00	--	130.00	--	--	--	--
4	06468250	52	46	88.5	06/26/85 through 08/29/95	<10.000	<10.000	15.500	27.00	52.00	98.00	280.00	46.13	47.29	0.0001	0.6092
5	06468300	9	9	100	03/26/86 through 05/16/89	11.000	--	11.000	17.00	64.00	--	190.00	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
						Iron, dissolved (µg/L as Fe), 01046--Continued										
6	06468500	44	23	52.3	10/05/78 through 07/27/95	<10.000	<10.000	<10.000	10.00	23.00	84.00	350.00	28.34	33.11	0.0001	0.0047
7	06469400	38	36	94.7	05/28/74 through 08/31/95	<10.000	20.000	40.000	70.00	130.00	310.00	510.00	111.84	112.37	0.0001	0.6883
8	06469500	4	4	100	04/27/72 through 07/31/74	40.000	--	70.000	100.00	150.00	--	200.00	--	--	--	--
9	06470000	112	90	80.4	06/27/72 through 08/31/95	<10.000	<10.000	12.000	23.00	67.00	130.00	480.00	51.44	53.40	0.0001	0.0032
10	06470500	116	75	64.7	10/22/68 through 08/31/95	<10.000	<10.000	<10.000	13.00	36.50	100.00	570.00	36.25	39.78	0.0001	0.0001
11	06470800	38	37	97.4	04/05/77 through 06/22/95	<10.000	20.000	40.000	80.00	140.00	320.00	430.00	115.26	115.53	0.0001	0.4567
12	06470830	92	48	52.2	09/19/69 through 08/30/95	<10.000	<10.000	<10.000	10.50	27.50	46.00	200.00	17.87	22.65	0.0001	0.0028
13	06470833	10	8	80.0	04/30/74 through 03/11/83	<10.000	<10.000	20.000	30.00	50.00	335.00	410.00	--	--	--	--
14	06470875	89	47	52.8	09/15/82 through 08/30/95	<10.000	<10.000	<10.000	10.00	23.00	40.00	310.00	19.83	24.55	0.0001	0.0006
15	06470878	9	8	88.9	05/29/75 through 04/24/79	<10.000	--	20.000	30.00	40.00	--	90.00	--	--	--	--
16	06470980	34	15	44.1	11/28/84 through 01/08/91	<10.000	<10.000	<10.000	<10.00	20.00	50.00	120.00	14.50	20.09	0.0001	0.0082
						Lead, dissolved (µg/L as Pb), 01049										
1	06467600	23	0	0	04/12/82 through 03/27/89	--	--	--	<10.00	--	--	--	--	<10.00	--	--
2	06468170	29	0	0	04/13/82 through 08/13/90	--	--	--	<10.00	--	--	--	--	<10.00	--	--
3	06468190	6	0	0	03/27/86 through 04/10/89	--	--	--	<10.00	--	--	--	--	--	--	--
4	06468250	36	0	0	06/26/85 through 09/09/93	--	--	--	<10.00	--	--	--	--	<10.00	--	--
5	06468300	9	0	0	03/26/86 through 05/16/89	--	--	--	<10.00	--	--	--	--	--	--	--
6	06468500	39	0	0	10/05/78 through 09/09/93	--	--	--	<10.00	--	--	--	--	<10.00	--	--
7	06469400	21	0	0	04/13/82 through 08/31/95	--	--	--	<10.00	--	--	--	--	<10.00	--	--
9	06470000	76	2	2.6	04/14/82 through 09/09/93	<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	10.00	0.26	10.00	--	0.0001
10	06470500	81	2	2.5	05/26/69 through 11/30/94	<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	16.00	0.33	10.09	0.0001	0.0001
11	06470800	19	0	0	04/14/82 through 06/22/95	--	--	--	<10.00	--	--	--	--	--	--	--
12	06470830	77	2	2.6	09/19/69 through 11/30/94	<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	12.00	0.29	10.03	0.0001	0.0001
13	06470833	9	0	0	04/30/74 through 04/17/79	--	--	--	<10.00	--	--	--	--	--	--	--
14	06470875	64	0	0	11/29/84 through 12/01/94	--	--	--	<10.00	--	--	--	--	<10.00	--	--
15	06470878	9	0	0	05/29/75 through 04/24/79	--	--	--	<10.00	--	--	--	--	--	--	--
16	06470980	34	0	0	11/28/84 through 01/08/91	--	--	--	<10.00	--	--	--	--	<10.00	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Lithium, dissolved (µg/L as Li), 01130											
1	06467600	5	5	100	04/12/82 through 03/26/84	7.000	--	14.000	24.00	52.00	--	60.00	--	--	--	--
2	06468170	6	6	100	04/13/82 through 04/03/90	8.000	--	16.000	29.50	45.00	--	64.00	--	--	--	--
6	06468500	24	23	95.8	10/05/78 through 09/09/93	<10.000	20.000	29.000	40.00	47.50	60.00	90.00	39.13	39.54	0.0937	0.1380
7	06469400	21	21	100	04/13/82 through 08/31/95	10.000	18.000	19.000	29.00	40.00	70.00	75.00	34.29	34.29	0.0038	0.2192
9	06470000	6	6	100	04/14/82 through 08/29/84	20.000	--	20.000	26.00	31.00	--	39.00	--	--	--	--
10	06470500	10	10	100	10/22/68 through 04/19/79	5.000	17.500	30.000	58.00	70.00	95.00	120.00	--	--	--	--
11	06470800	19	19	100	04/14/82 through 06/22/95	3.000	10.000	20.000	40.00	60.00	110.00	110.00	--	--	--	--
13	06470833	9	9	100	04/30/74 through 04/17/79	20.000	--	30.000	30.00	30.00	--	30.00	--	--	--	--
15	06470878	9	8	88.9	05/29/75 through 04/24/79	<10.000	--	30.000	50.00	70.00	--	200.00	--	--	--	--
					Manganese, total (µg/L as Mn), 01055											
1	06467600	9	7	77.8	04/27/60 through 03/27/89	<10.000	--	10.000	30.00	90.00	--	200.00	--	--	--	--
2	06468170	8	8	100	08/24/87 through 08/13/90	70.000	--	120.000	150.00	270.00	--	370.00	--	--	--	--
3	06468190	3	3	100	04/06/88 through 04/10/89	30.000	--	--	60.00	--	--	90.00	--	--	--	--
4	06468250	13	13	100	08/25/87 through 08/11/93	40.000	40.000	60.000	200.00	300.00	480.00	810.00	--	--	--	--
5	06468300	11	7	63.6	05/10/60 through 05/16/89	<10.000	<10.000	<10.000	80.00	220.00	230.00	530.00	--	--	--	--
6	06468500	6	5	83.3	05/11/60 through 09/09/93	<10.000	--	180.000	275.00	300.00	--	410.00	--	--	--	--
8	06469500	6	5	83.3	04/14/61 through 05/20/64	<10.000	--	10.000	80.00	80.00	--	280.00	--	--	--	--
9	06470000	28	28	100	07/12/61 through 08/19/93	10.000	190.000	365.000	515.00	830.00	890.00	1200.00	559.29	559.29	0.7522	0.0001
10	06470500	46	39	84.8	05/11/60 through 07/21/94	<10.000	<10.000	160.000	345.00	730.00	1500.00	2000.00	518.04	519.57	0.0001	0.0001
12	06470830	20	20	100	09/19/69 through 05/18/94	30.000	79.500	175.000	505.00	960.00	1250.00	1300.00	590.95	590.95	0.1006	0.0421
14	06470875	17	17	100	08/27/87 through 07/22/94	40.000	80.000	240.000	330.00	520.00	590.00	590.00	--	--	--	--
16	06470980	7	7	100	08/27/87 through 05/23/90	220.000	--	230.000	580.00	650.00	--	860.00	--	--	--	--
					Manganese, dissolved (µg/L as Mn), 01056											
1	06467600	52	48	92.3	04/20/72 through 07/26/95	<10.000	11.000	28.500	50.00	73.00	120.00	300.00	61.98	62.75	0.0001	0.1546
2	06468170	82	77	93.9	04/26/72 through 08/29/95	<10.000	10.000	21.000	41.00	86.00	210.00	1900.00	143.61	144.22	0.0001	0.0003
3	06468190	6	6	100	03/27/86 through 04/10/89	17.000	--	22.000	30.00	71.00	--	84.00	--	--	--	--
4	06468250	52	48	92.3	06/26/85 through 08/29/95	<10.000	13.000	25.000	72.50	210.00	600.00	4800.00	294.23	295.00	0.0001	0.8219
5	06468300	9	7	77.8	03/26/86 through 05/16/89	<10.000	--	10.000	13.00	120.00	--	440.00	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
						Manganese, dissolved (µg/L as Mn), 01056--Continued										
6	06468500	44	36	81.8	10/05/78 through 07/27/95	<10.000	<10.000	14.500	89.00	235.00	500.00	5500.00	301.93	303.75	0.0001	0.2166
7	06469400	37	37	100	05/28/74 through 08/31/95	10.000	30.000	50.000	80.00	160.00	200.00	980.00	122.43	122.43	0.0001	0.7372
8	06469500	4	4	100	04/27/72 through 07/31/74	50.000	--	90.000	165.00	220.00	--	240.00	--	--	--	--
9	06470000	112	111	99.1	06/27/72 through 08/31/95	<10.000	140.000	250.000	570.00	895.00	1400.00	2400.00	661.38	661.47	0.0001	0.0001
10	06470500	113	111	98.2	10/01/69 through 08/31/95	<10.000	41.000	100.000	284.00	560.00	950.00	4800.00	434.30	434.48	0.0001	0.1184
11	06470800	38	37	97.4	04/05/77 through 06/22/95	<10.000	40.000	90.000	175.00	400.00	550.00	5200.00	383.16	383.42	0.0001	0.8101
12	06470830	99	98	99.0	12/05/69 through 08/30/95	<10.000	24.000	51.000	130.00	310.00	790.00	2600.00	278.97	279.07	0.0001	0.2763
13	06470833	10	10	100	04/30/74 through 03/11/83	84.000	117.000	160.000	350.00	880.00	1050.00	1100.00	--	--	--	--
14	06470875	89	72	80.9	09/15/82 through 08/30/95	<10.000	<10.000	14.000	40.00	98.00	240.00	7800.00	304.36	306.27	0.0001	0.0053
15	06470878	9	7	77.8	05/29/75 through 04/24/79	<10.000	--	20.000	20.00	30.00	--	910.00	--	--	--	--
16	06470980	33	29	87.9	11/28/84 through 01/08/91	<10.000	<10.000	15.000	48.00	100.00	240.00	8500.00	367.30	368.52	0.0001	0.0261
						Mercury, dissolved (µg/L as Hg), 71890										
1	06467600	37	22	59.5	04/12/82 through 07/26/95	<0.100	<0.100	<0.100	0.10	0.20	0.60	1.30	0.20	0.24	0.0001	0.0001
2	06468170	64	31	48.4	04/13/82 through 08/29/95	<0.100	<0.100	<0.100	<0.10	0.25	0.50	1.50	0.18	0.23	0.0001	0.0001
3	06468190	6	6	100	03/27/86 through 04/10/89	0.100	--	0.100	0.20	0.30	--	0.40	--	--	--	--
4	06468250	51	24	47.1	06/26/85 through 08/29/95	<0.100	<0.100	<0.100	<0.10	0.20	0.30	0.70	0.12	0.18	0.0001	0.0001
5	06468300	9	8	88.9	03/26/86 through 05/16/89	<0.100	--	0.100	0.30	0.30	--	0.50	--	--	--	--
6	06468500	42	25	59.5	10/05/78 through 07/27/95	<0.100	<0.100	<0.100	0.10	0.20	0.50	4.10	0.24	0.28	0.0001	0.0001
7	06469400	21	15	71.4	04/13/82 through 08/31/95	<0.100	<0.100	<0.100	0.40	0.60	1.10	1.90	0.46	0.49	0.0003	0.0079
9	06470000	89	51	57.3	04/14/82 through 08/31/95	<0.100	<0.100	<0.100	0.10	0.30	0.50	5.00	0.27	0.31	0.0001	0.0001
10	06470500	86	44	51.2	01/04/77 through 08/31/95	<0.100	<0.100	<0.100	0.10	0.20	0.50	0.90	0.15	0.20	0.0001	0.0001
11	06470800	19	15	78.9	04/14/82 through 06/22/95	<0.100	<0.100	0.100	0.20	0.40	1.30	1.50	--	--	--	--
12	06470830	76	36	47.4	09/24/70 through 08/30/95	<0.100	<0.100	<0.100	<0.10	0.20	0.30	1.40	0.12	0.17	0.0001	0.0001
13	06470833	9	2	22.2	04/30/74 through 04/17/79	<0.100	--	<0.100	<0.10	<0.10	--	4.60	--	--	--	--
14	06470875	71	35	49.3	11/29/84 through 08/30/95	<0.100	<0.100	<0.100	<0.10	0.20	0.30	0.70	0.11	0.16	0.0001	0.0001
15	06470878	9	0	0	05/29/75 through 04/24/79	--	--	--	<0.10	--	--	--	--	--	--	--
16	06470980	34	31	91.2	11/28/84 through 01/08/91	<0.100	0.100	0.100	0.20	0.30	0.50	0.90	0.26	0.27	0.0001	0.0058

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
						Molybdenum, dissolved (µg/L as Mo), 01060										
1	06467600	5	0	0	04/12/82 through 03/26/84	--	--	--	<10.00	--	--	--	--	--	--	--
2	06468170	6	0	0	04/13/82 through 04/03/90	--	--	--	<10.00	--	--	--	--	--	--	--
6	06468500	25	2	8.0	10/05/78 through 09/09/93	<10.000	<10.000	<10.000	<10.00	<10.00	<10.00	15.00	1.00	10.20	0.0001	0.0001
7	06469400	21	0	0	04/13/82 through 08/31/95	--	--	--	<10.00	--	--	--	--	<10.00	--	--
9	06470000	4	0	0	03/15/83 through 10/31/85	--	--	--	<10.00	--	--	--	--	--	--	--
10	06470500	8	1	12.5	05/26/69 through 04/19/79	<10.000	--	<10.000	<10.00	<10.00	--	12.00	--	--	--	--
11	06470800	19	0	0	04/14/82 through 06/22/95	--	--	--	<10.00	--	--	--	--	--	--	--
12	06470830	12	2	16.7	09/19/69 through 06/27/72	<10.000	<10.000	<10.000	<10.00	<10.00	12.00	14.00	--	--	--	--
13	06470833	9	0	0	04/30/74 through 04/17/79	--	--	--	<10.00	--	--	--	--	--	--	--
15	06470878	9	0	0	05/29/75 through 04/24/79	--	--	--	<10.00	--	--	--	--	--	--	--
						Nickel, total (µg/L as Ni), 01067										
1	06467600	2	2	100	03/27/86 through 04/06/87	1.000	--	--	2.50	--	--	4.00	--	--	--	--
2	06468170	2	2	100	04/24/86 through 04/06/87	2.000	--	--	6.00	--	--	10.00	--	--	--	--
3	06468190	1	1	100	04/06/87 through 04/06/87	--	--	--	1.00	--	--	--	--	--	--	--
4	06468250	4	3	75.0	01/07/86 through 04/07/87	<1.000	--	0.500	3.50	6.50	--	8.00	--	--	--	--
5	06468300	2	2	100	04/24/86 through 04/07/87	2.000	--	--	6.00	--	--	10.00	--	--	--	--
6	06468500	4	4	100	03/26/86 through 05/12/87	1.000	--	1.500	2.50	3.00	--	3.00	--	--	--	--
9	06470000	4	4	100	12/30/85 through 04/07/87	1.000	--	2.500	4.00	6.50	--	9.00	--	--	--	--
10	06470500	6	6	100	01/08/86 through 05/18/87	2.000	--	3.000	5.00	8.00	--	9.00	--	--	--	--
12	06470830	4	4	100	01/07/86 through 05/18/87	4.000	--	4.000	5.00	7.50	--	9.00	--	--	--	--
14	06470875	6	6	100	01/09/86 through 05/19/87	2.000	--	4.000	5.00	7.00	--	12.00	--	--	--	--
16	06470980	5	5	100	01/08/86 through 05/19/87	2.000	--	3.000	3.00	4.00	--	15.00	--	--	--	--
						Nickel, dissolved (µg/L as Ni), 01065										
1	06467600	7	3	42.9	03/27/86 through 07/06/87	<2.000	--	<2.000	<2.00	4.00	--	5.00	--	--	--	--
2	06468170	8	4	50.0	03/27/86 through 05/11/87	<2.000	--	<2.000	0	2.50	--	3.00	--	--	--	--
3	06468190	3	1	33.3	03/27/86 through 04/06/87	<2.000	--	--	<2.00	--	--	2.00	--	--	--	--
4	06468250	9	6	66.7	04/23/86 through 07/07/87	<2.000	--	<2.000	2.00	2.00	--	3.00	--	--	--	--
5	06468300	4	0	0	03/26/86 through 07/07/87	--	--	--	<2.00	--	--	--	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, log_e-transformed data
						Nickel, dissolved (µg/L as Ni), 01065--Continued										
6	06468500	28	19	67.9	10/05/78 through 07/07/87	<2.000	<2.000	<2.000	2.00	3.50	5.00	7.00	2.21	2.86	0.0001	0.0047
9	06470000	12	9	75.0	10/31/85 through 07/07/87	<2.000	<2.000	0.000	2.00	4.00	5.00	6.00	--	--	--	--
10	06470500	20	11	55.0	05/26/69 through 07/08/87	<2.000	<2.000	<2.000	2.50	3.00	4.00	11.00	2.10	3.00	0.0001	0.0093
12	06470830	22	17	77.3	09/19/69 through 07/08/87	<2.000	<2.000	2.000	3.00	5.00	9.00	12.00	3.91	4.36	0.0003	0.1033
13	06470833	9	4	44.4	04/30/74 through 04/17/79	<2.000	--	<2.000	<2.00	3.00	--	4.00	--	--	--	--
14	06470875	12	9	75.0	01/09/86 through 07/09/87	<2.000	<2.000	0.000	2.00	3.50	4.00	5.00	--	--	--	--
15	06470878	9	6	66.7	05/29/75 through 04/24/79	<2.000	--	<2.000	3.00	4.00	--	7.00	--	--	--	--
16	06470980	9	8	88.9	04/22/86 through 07/09/87	<2.000	--	2.000	2.00	3.00	--	5.00	--	--	--	--
						Selenium, total (µg/L as Se), 01147										
1	06467600	14	0	0	03/27/86 through 07/26/95	--	--	--	<1.00	--	--	--	--	--	--	--
2	06468170	24	1	4.2	04/24/86 through 07/31/95	<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	6.00	0.25	1.21	0.0001	0.0001
3	06468190	4	0	0	04/06/87 through 04/10/89	--	--	--	<1.00	--	--	--	--	--	--	--
4	06468250	23	1	4.3	04/23/86 through 07/31/95	<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	1.00	0.04	1.00	--	--
5	06468300	7	0	0	04/24/86 through 05/16/89	--	--	--	<1.00	--	--	--	--	--	--	--
6	06468500	15	0	0	03/26/86 through 07/27/95	--	--	--	<1.00	--	--	--	--	--	--	--
9	06470000	29	1	3.4	12/30/85 through 07/27/95	<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	2.00	0.07	1.03	0.0001	0.0001
10	06470500	28	0	0	01/08/86 through 08/01/95	--	--	--	<1.00	--	--	--	--	<1.00	--	--
12	06470830	25	0	0	01/07/86 through 08/02/95	--	--	--	<1.00	--	--	--	--	<1.00	--	--
14	06470875	24	0	0	01/09/86 through 08/02/95	--	--	--	<1.00	--	--	--	--	<1.00	--	--
16	06470980	9	0	0	08/21/86 through 05/23/90	--	--	--	<1.00	--	--	--	--	--	--	--
						Selenium, dissolved (µg/L as Se), 01145										
1	06467600	39	1	2.6	04/12/82 through 07/26/95	<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	1.00	0.03	1.00	--	--
2	06468170	64	0	0	04/13/82 through 08/29/95	--	--	--	<1.00	--	--	--	--	<1.00	--	--
3	06468190	6	0	0	03/27/86 through 04/10/89	--	--	--	<1.00	--	--	--	--	--	--	--
4	06468250	52	0	0	06/26/85 through 08/29/95	--	--	--	<1.00	--	--	--	--	<1.00	--	--
5	06468300	9	0	0	03/26/86 through 05/16/89	--	--	--	<1.00	--	--	--	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Selenium, dissolved (µg/L as Se), 01145--Continued											
6	06468500	44	3	6.8	10/05/78 through 07/27/95	<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	1.00	0.07	1.00	--	--
7	06469400	21	4	19.0	04/13/82 through 08/31/95	<1.000	<1.000	<1.000	<1.00	<1.00	1.00	5.00	0.43	1.24	0.0001	0.0001
9	06470000	92	1	1.1	04/14/82 through 08/31/95	<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	1.00	0.01	1.00	--	0.0001
10	06470500	84	3	3.6	05/26/69 through 08/31/95	<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	18.00	0.35	1.31	0.0001	0.0001
11	06470800	19	6	31.6	04/14/82 through 06/22/95	<1.000	<1.000	<1.000	<1.00	1.00	1.00	2.00	--	--	--	--
12	06470830	78	6	7.7	09/24/70 through 08/30/95	<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	7.00	0.37	1.29	0.0001	0.0001
13	06470833	9	2	22.2	04/30/74 through 04/17/79	<1.000	--	<1.000	<1.00	<1.00	--	1.00	--	--	--	--
14	06470875	71	1	1.4	11/29/84 through 08/30/95	<1.000	<1.000	<1.000	<1.00	<1.00	<1.00	2.00	0.03	1.01	0.0001	0.0001
15	06470878	9	2	22.2	05/29/75 through 04/24/79	<1.000	--	<1.000	<1.00	<1.00	--	1.00	--	--	--	--
16	06470980	34	0	0	11/28/84 through 01/08/91	--	--	--	<1.00	--	--	--	--	<1.00	--	--
					Silver, total (µg/L as Ag), 01077											
1	06467600	2	0	0	03/27/86 through 04/06/87	--	--	--	<1.00	--	--	--	--	--	--	--
2	06468170	2	0	0	04/24/86 through 04/06/87	--	--	--	<1.00	--	--	--	--	--	--	--
3	06468190	1	0	0	04/06/87 through 04/06/87	--	--	--	<1.00	--	--	--	--	--	--	--
4	06468250	4	1	25.0	01/07/86 through 04/07/87	<1.000	--	<1.000	<1.00	0	--	1.00	--	--	--	--
5	06468300	2	0	0	04/24/86 through 04/07/87	--	--	--	<1.00	--	--	--	--	--	--	--
6	06468500	4	0	0	03/26/86 through 05/12/87	--	--	--	<1.00	--	--	--	--	--	--	--
9	06470000	4	1	25.0	12/30/85 through 04/07/87	<1.000	--	<1.000	<1.00	0	--	1.00	--	--	--	--
10	06470500	6	0	0	01/08/86 through 05/18/87	--	--	--	<1.00	--	--	--	--	--	--	--
12	06470830	4	0	0	01/07/86 through 05/18/87	--	--	--	<1.00	--	--	--	--	--	--	--
14	06470875	6	0	0	01/09/86 through 05/19/87	--	--	--	<1.00	--	--	--	--	--	--	--
16	06470980	5	0	0	01/08/86 through 05/19/87	--	--	--	<1.00	--	--	--	--	--	--	--
					Silver, dissolved (µg/L as Ag), 01075											
1	06467600	7	0	0	03/27/86 through 07/06/87	--	--	--	<1.00	--	--	--	--	--	--	--
2	06468170	8	0	0	03/27/86 through 05/11/87	--	--	--	<1.00	--	--	--	--	--	--	--
3	06468190	3	0	0	03/27/86 through 04/06/87	--	--	--	<1.00	--	--	--	--	--	--	--
4	06468250	10	0	0	01/07/86 through 07/07/87	--	--	--	<1.00	--	--	--	--	--	--	--
5	06468300	4	0	0	03/26/86 through 07/07/87	--	--	--	<1.00	--	--	--	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Silver, dissolved (µg/L as Ag), 01075--Continued											
6	06468500	10	0	0	03/26/86 through 07/07/87	--	--	--	<1.00	--	--	--	--	--	--	--
9	06470000	12	0	0	10/31/85 through 07/07/87	--	--	--	<1.00	--	--	--	--	--	--	--
10	06470500	13	0	0	01/04/77 through 07/08/87	--	--	--	<1.00	--	--	--	--	--	--	--
12	06470830	22	3	13.6	09/19/69 through 07/08/87	<1.000	<1.000	<1.000	<1.00	<1.00	1.00	1.00	0.14	1.00	--	--
13	06470833	6	0	0	04/30/74 through 05/04/77	--	--	--	<1.00	--	--	--	--	--	--	--
14	06470875	12	0	0	01/09/86 through 07/09/87	--	--	--	<1.00	--	--	--	--	--	--	--
15	06470878	5	0	0	05/29/75 through 05/03/77	--	--	--	<1.00	--	--	--	--	--	--	--
16	06470980	10	0	0	01/08/86 through 07/09/87	--	--	--	<1.00	--	--	--	--	--	--	--
					Strontium, dissolved (µg/L as Sr), 01080											
1	06467600	5	5	100	04/12/82 through 03/26/84	79.000	--	97.000	110.00	260.00	--	390.00	--	--	--	--
2	06468170	6	6	100	04/13/82 through 04/03/90	93.000	--	93.000	163.50	240.00	--	300.00	--	--	--	--
6	06468500	24	24	100	10/05/78 through 09/09/93	90.000	140.000	190.000	240.00	285.00	350.00	850.00	265.00	265.00	0.0001	0.0827
7	06469400	21	21	100	04/13/82 through 08/31/95	89.000	100.000	170.000	220.00	290.00	360.00	470.00	235.24	235.24	0.1886	0.2958
9	06470000	6	6	100	04/14/82 through 08/29/84	80.000	--	89.000	175.00	220.00	--	250.00	--	--	--	--
10	06470500	10	10	100	10/22/68 through 04/19/79	70.000	150.000	330.000	370.00	460.00	670.00	780.00	--	--	--	--
11	06470800	19	19	100	04/14/82 through 06/22/95	69.000	96.000	230.000	310.00	410.00	630.00	680.00	--	--	--	--
12	06470830	4	4	100	09/19/69 through 06/26/70	370.000	--	392.000	457.00	517.00	--	534.00	--	--	--	--
13	06470833	9	9	100	04/30/74 through 04/17/79	200.000	--	260.000	300.00	310.00	--	350.00	--	--	--	--
15	06470878	9	9	100	05/29/75 through 04/24/79	100.000	--	250.000	260.00	370.00	--	650.00	--	--	--	--
					Vanadium, dissolved (µg/L as V), 01085											
6	06468500	21	0	0	10/05/78 through 09/09/93	--	--	--	<6.00	--	--	--	--	<6.00	--	--
10	06470500	8	0	0	05/26/69 through 04/19/79	--	--	--	<6.00	--	--	--	--	--	--	--
12	06470830	4	0	0	09/19/69 through 06/26/70	--	--	--	<6.00	--	--	--	--	--	--	--
13	06470833	9	0	0	04/30/74 through 04/17/79	--	--	--	<6.00	--	--	--	--	--	--	--
15	06470878	9	0	0	05/29/75 through 04/24/79	--	--	--	<6.00	--	--	--	--	--	--	--

Table 3. Summary of water-quality data, by constituent, for selected water-quality-sampling sites in the James River Basin, North Dakota, 1949-95--Continued

[Values may not be rounded to significant figures; if the sample size is less than 20, the mean and the p-value for the Shapiro-Wilk test for normality are not shown; if the sample size is less than 10, the 10th- and 90th-percentile values are not shown; if the sample size ranges from 1 to 4, the 25th- and 75th-percentile values are not shown; if the sample size equals 1 or 2, the median is not shown; N, number of samples; ≥, greater than or equal to; RL, reporting limit; <, less than; µS/cm, microsiemens per centimeter; number following constituent is parameter code; --, not calculated; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Sample size	N ≥ RL	Percent detects	Period of record	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum	Mean, substitute 0 for <RL	Mean, substitute RL for <RL	p-value for test for normality, untransformed data	p-value for test for normality, $\log_e$-transformed data
					Zinc, dissolved (µg/L as Zn), 01090											
1	06467600	18	7	38.9	02/25/85 through 03/27/89	<10.000	<10.000	<10.000	<10.00	11.00	16.00	16.00	--	--	--	--
2	06468170	23	4	17.4	03/18/85 through 08/13/90	<10.000	<10.000	<10.000	<10.00	<10.00	11.00	14.00	2.13	10.39	0.0001	0.0558
3	06468190	6	1	16.7	03/27/86 through 04/10/89	<10.000	--	<10.000	<10.00	<10.00	--	11.00	--	--	--	--
4	06468250	36	4	11.1	06/26/85 through 09/09/93	<10.000	<10.000	<10.000	<10.00	<10.00	10.00	14.00	1.33	10.22	0.0001	0.0009
5	06468300	9	1	11.1	03/26/86 through 05/16/89	<10.000	--	<10.000	<10.00	<10.00	--	11.00	--	--	--	--
6	06468500	39	8	20.5	10/05/78 through 09/09/93	<10.000	<10.000	<10.000	<10.00	<10.00	13.00	20.00	2.77	10.72	0.0001	0.0001
9	06470000	70	14	20.0	11/27/84 through 09/09/93	<10.000	<10.000	<10.000	<10.00	<10.00	14.50	35.00	3.53	11.53	0.0001	0.0001
10	06470500	82	24	29.3	10/22/68 through 11/30/94	<10.000	<10.000	<10.000	<10.00	10.00	18.00	200.00	7.29	14.37	0.0001	0.0001
12	06470830	77	31	40.3	09/19/69 through 11/30/94	<10.000	<10.000	<10.000	<10.00	12.00	20.00	80.00	7.10	13.08	0.0001	0.0001
13	06470833	9	1	11.1	04/30/74 through 04/17/79	<10.000	--	<10.000	<10.00	<10.00	--	20.00	--	--	--	--
14	06470875	64	9	14.1	11/29/84 through 12/01/94	<10.000	<10.000	<10.000	<10.00	<10.00	10.00	29.00	2.39	10.98	0.0001	0.0001
15	06470878	9	1	11.1	05/29/75 through 04/24/79	<10.000	--	<10.000	<10.00	<10.00	--	20.00	--	--	--	--
16	06470980	34	16	47.1	11/28/84 through 01/08/91	<10.000	<10.000	<10.000	<10.00	15.00	22.00	33.00	8.35	13.65	0.0001	0.0010
					Sediment, suspended, concentration (mg/L), 80154											
1	06467600	31	31	100	05/13/85 through 07/26/95	0.700	3.000	4.000	11.00	22.00	47.20	92.00	18.96	18.96	0.0001	0.7378
2	06468170	54	54	100	05/14/85 through 08/29/95	2.000	4.000	6.000	10.70	31.00	76.00	243.00	27.56	27.56	0.0001	0.1541
3	06468190	6	6	100	03/27/86 through 04/10/89	1.000	--	3.600	5.70	8.80	--	9.50	--	--	--	--
4	06468250	50	50	100	06/26/85 through 08/29/95	2.000	5.900	9.000	16.00	35.00	73.20	264.00	32.92	32.92	0.0001	0.4254
5	06468300	10	10	100	03/26/86 through 05/16/89	3.000	3.350	4.100	8.10	12.30	20.35	23.90	--	--	--	--
6	06468500	25	25	100	11/27/84 through 07/27/95	2.000	4.000	7.800	22.30	46.50	86.00	461.00	48.35	48.35	0.0001	0.7985
9	06470000	79	79	100	01/09/85 through 08/31/95	7.900	13.000	23.500	39.00	64.90	110.00	154.00	49.85	49.85	0.0001	0.0944
10	06470500	136	136	100	10/05/76 through 08/31/95	2.800	15.000	30.000	64.75	93.05	148.00	402.00	73.57	73.57	0.0001	0.0012
12	06470830	61	61	100	01/08/85 through 08/30/95	2.000	14.000	48.000	89.00	132.00	211.00	544.00	113.40	113.40	0.0001	0.0006
14	06470875	66	66	100	01/08/85 through 08/30/95	4.500	14.000	25.200	44.50	71.00	93.00	233.00	52.20	52.20	0.0001	0.3700
16	06470980	32	32	100	01/08/85 through 01/08/91	8.800	14.000	24.900	38.85	60.95	98.00	144.00	48.05	48.05	0.0007	0.5787

Table 4. Results of regression analyses used to evaluate trends in specific conductance at water-quality-sampling sites 9 and 10 in the James River Basin, North Dakota

[Data for site 9 were collected during 1949-95, and data for site 10 were collected during 1957-95; --, not calculated]

Time period	Regression coefficient					Sample size	Number of outliers
	A (intercept)	*B* (for streamflow)	*C* (for seasonal term)	*D* (for seasonal term)	*E* (for time)		
Site 9, 0647000, James River at Jamestown, N. Dak.							
1949-95	1,197	-107.9	-2.93	[1]-19.3	102.9	313	4
1958-95	1,155	-105.7	[1]-1.45	[1]-15.5	109.8	292	5
1972-95	1,001	-93.4	3.63	[1]-7.3	112.3	241	6
1985-95	660	-66.1	12.41	[1]-47.8	116.3	97	1
1972-93	1,142	-110.2	-7.72	99.2	[1]-1.4	223	--
Site 10, 06470500, James River at LaMoure, N. Dak.							
1957-95	1,492	-150.6	2.47	[1]22.6	92.1	332	4
1972-95	1,338	-148.4	5.66	[1]-33.2	110.9	252	3
1985-95	831	-125.4	19.57	[1]-28.9	120.8	93	3
1972-93	1,496	-164.1	50.37	104.4	[1]0.4	230	--

[1]Coefficient not significant at significance level of 0.05.

Abbreviations, explanations, and symbols

N, Number of samples.

R^2, r-squared or fraction of variance explained by regression model.

A through *E*, regression coefficients from equations 1 and 2.

p-value, smallest level of significance at which null hypothesis is rejected. If the p-value is small (less than 0.05), the coefficient is significant.

$\log_e$, natural (base-*e*) logarithm.

Q, streamflow, in cubic feet per second.

Sin, trigonometric sine function.

π, 3.14159.

t, time, in years, since January 1, 1960.

Cos, trigonometric cosine function.

Spec, test of constant variance of residuals from regression model. If the p-value is greater than 0.05, the variance of the residuals is considered constant.

Resnor, Shapiro-Wilks test for normality of residuals from regression model. If the p-value is greater than 0.05, the residuals are considered normally distributed.

Judgment, indicates good, fair, or poor regression model. If the p-values for both Spec and Resnor are greater than 0.05, the model is good; if the p-value for Spec is less than 0.05 and the p-value for Resnor is greater than 0.05, the model is fair; if the p-value for Resnor is less than 0.05, the model is poor.

Magnitude, magnitude of seasonal trend.

Month, month when flow-adjusted seasonal peak value should occur.

µS/cm, microsiemens per centimeter.

mg/L, milligrams per liter.

µg/L, micrograms per liter.

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	*A* (intercept)	p-value for intercept	*B* [$\log_e(Q)$]	p-value for *B*	*C* [sin ($2\pi t$)]	p-value for *C*	*D* [cos ($2\pi t$)]	p-value for *D*	*E* (*t*)	p-value for *E*	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
									Specific conductance (µS/cm at 25 degrees Celsius), 00095										
1	06467600	$\log_e$	118	0.709	6.39	0.0001	-0.160	0.0001	-0.191	0.0013	-0.246	0.0001	0.0134	0.0224	0.0656	0.2237	Good	0.311	August
1	06467600	Value	118	0.746	749.16	0.0001	-87.189	0.0001	-135.013	0.0001	-133.878	0.0001	5.5532	0.0696	0.4080	0.2474	Good	190.136	August
2	06468170	$\log_e$	171	0.801	6.83	0.0001	-0.159	0.0001	-0.109	0.0011	0.080	0.0168	0.0087	0.0079	0.0847	0.5961	Good	0.135	November
2	06468170	Value	173	0.789	1135.72	0.0001	-141.018	0.0001	-66.686	0.0272	134.627	0.0001	4.4313	0.1316	0.0119	0.1847	Fair	150.238	December
4	06468250	$\log_e$	48	0.585	7.39	0.0001	-0.113	0.0001	-0.129	0.0761	0.069	0.3692	-0.0177	0.3401	0.5400	0.5001	Good	0.146	October
4	06468250	Value	47	0.589	1297.24	0.0010	-77.700	0.0001	-77.832	0.1182	95.470	0.0834	-10.6854	0.4030	0.4790	0.6566	Good	123.176	November
7	06469400	$\log_e$	118	0.589	6.58	0.0001	-0.122	0.0001	-0.187	0.0021	-0.019	0.7458	0.0111	0.0755	0.2227	0.1967	Good	0.188	September
7	06469400	Value	116	0.593	813.23	0.0001	-67.522	0.0001	-128.548	0.0003	48.038	0.1830	5.8276	0.1123	0.1137	0.0005	Poor	137.231	October
9	06470000	$\log_e$	223	0.695	7.09	0.0001	-0.143	0.0001	-0.013	0.4781	0.110	0.0001	-0.0030	0.1635	0.1018	0.0001	Poor	0.111	December
9	06470000	Value	223	0.718	1142.00	0.0001	-110.153	0.0001	-7.724	0.5753	99.195	0.0001	-1.4109	0.3852	0.0948	0.3335	Good	99.495	December
10	06470500	$\log_e$	230	0.750	7.52	0.0001	-0.240	0.0001	0.020	0.3851	0.071	0.0063	0.0045	0.0907	0.0556	0.0001	Poor	0.074	January
10	06470500	Value	230	0.693	1495.50	0.0001	-164.102	0.0001	50.368	0.0084	104.427	0.0001	0.4048	0.8535	0.0016	0.0033	Poor	115.939	January
11	06470800	$\log_e$	85	0.707	6.59	0.0001	-0.141	0.0001	-0.153	0.0136	-0.064	0.3537	0.0127	0.0405	0.3471	0.9938	Good	0.166	September
11	06470800	Value	85	0.717	787.77	0.0001	-83.954	0.0001	-192.731	0.0001	62.481	0.2099	11.9568	0.0078	0.2185	0.7075	Good	202.606	October
12	06470830	$\log_e$	44	0.776	7.88	0.0001	-0.346	0.0001	0.043	0.4266	0.025	0.6680	0.0135	0.0244	0.4954	0.1963	Good	0.05	March
12	06470830	Value	44	0.630	1715.16	0.0001	-262.194	0.0001	96.990	0.1286	72.083	0.2822	15.5477	0.0257	0.5325	0.1366	Good	120.843	February
13	06470833	$\log_e$	106	0.417	6.65	0.0001	0.021	0.0001	-0.049	0.0001	0.006	0.5869	-0.0070	0.0104	0.1468	0.1248	Good	0.049	October
13	06470833	Value	106	0.424	768.97	0.0001	15.001	0.0001	-31.988	0.0001	4.943	0.5088	-4.6634	0.0106	0.1264	0.6365	Good	32.368	October
14	06470875	$\log_e$	83	0.671	6.86	0.0001	-0.158	0.0001	-0.030	0.5590	0.190	0.0012	0.0192	0.0869	0.1395	0.1520	Good	0.192	December
14	06470875	Value	81	0.735	1092.38	0.0013	-197.974	0.0001	98.769	0.0567	179.332	0.0028	24.7240	0.0270	0.1127	0.1404	Good	204.732	February
									Oxygen, dissolved (mg/L), 00300										
2	06468170	$\log_e$	35	0.121	2.91	0.0001	-0.008	0.7080	0.041	0.6440	0.201	0.0811	-0.0199	0.3569	0.3760	0.9443	Good	0.205	January
2	06468170	Value	37	0.022	11.89	0.1033	0.109	0.6536	-0.354	0.7176	-0.691	0.5230	-0.0959	0.6844	0.4393	0.7692	Good	0.776	July
4	06468250	$\log_e$	33	0.207	1.60	0.0365	0.039	0.1599	0.108	0.3139	-0.084	0.4323	0.0103	0.6837	0.8376	0.2753	Good	0.137	May
4	06468250	Value	34	0.198	11.96	0.0267	0.096	0.6035	1.514	0.0398	-0.099	0.8966	-0.1597	0.3699	0.7028	0.3775	Good	1.517	April
9	06470000	$\log_e$	63	0.332	2.99	0.0001	0.067	0.0030	0.097	0.1291	0.186	0.0064	-0.0335	0.0614	0.3230	0.0297	Poor	0.21	January
9	06470000	Value	64	0.350	18.62	0.0001	0.593	0.0013	0.604	0.2391	1.226	0.0233	-0.3762	0.0081	0.4663	0.7415	Good	1.367	January
10	06470500	$\log_e$	128	0.288	2.14	0.0001	0.001	0.9626	0.057	0.1558	0.272	0.0001	0.0070	0.2156	0.4412	0.0001	Poor	0.278	January
10	06470500	Value	128	0.352	8.70	0.0001	0.041	0.8290	0.656	0.0983	3.137	0.0001	0.0808	0.1459	0.0674	0.0005	Poor	3.205	January
14	06470875	$\log_e$	68	0.398	2.80	0.0001	-0.001	0.9737	0.197	0.0025	0.357	0.0001	-0.0137	0.3234	0.5734	0.0001	Poor	0.408	February
14	06470875	Value	66	0.540	16.91	0.0001	-0.018	0.9318	2.357	0.0004	4.967	0.0001	-0.1619	0.2465	0.0712	0.1098	Good	5.498	January

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	*A* (intercept)	p-value for intercept	*B* [$\log_e(Q)$]	p-value for *B*	*C* [sin ($2\pi t$)]	p-value for *C*	*D* [cos ($2\pi t$)]	p-value for *D*	*E* (*t*)	p-value for *E*	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
Hardness, total (mg/L as $CaCO_3$), 00900																			
1	06467600	$\log_e$	42	0.693	5.03	0.0001	-0.125	0.0001	-0.103	0.2050	-0.318	0.0075	0.0154	0.0966	0.4358	0.8587	Good	0.334	July
1	06467600	Value	41	0.762	174.85	0.0001	-23.984	0.0001	-19.515	0.1315	-53.124	0.0052	2.8898	0.0510	0.2969	0.7938	Good	56.595	July
2	06468170	$\log_e$	65	0.292	5.55	0.0001	-0.052	0.0030	-0.146	0.0323	0.045	0.5759	-0.0058	0.4464	0.5920	0.3095	Good	0.153	October
2	06468170	Value	63	0.238	231.02	0.0001	-5.533	0.0693	-28.943	0.0155	-8.802	0.5690	-0.7125	0.5906	0.4615	0.0096	Poor	30.252	September
4	06468250	$\log_e$	36	0.518	6.73	0.0001	-0.082	0.0014	-0.097	0.2617	0.135	0.1136	-0.0354	0.1171	0.4907	0.0627	Good	0.166	November
4	06468250	Value	36	0.535	572.26	0.0015	-18.765	0.0037	-10.241	0.6403	66.772	0.0036	-8.7101	0.1318	0.3837	0.5485	Good	67.553	December
7	06469400	$\log_e$	31	0.733	5.17	0.0001	-0.057	0.0008	-0.141	0.0924	-0.319	0.0397	0.0113	0.1194	0.5104	0.6338	Good	0.349	July
7	06469400	Value	32	0.721	177.83	0.0006	-13.372	0.0004	-36.108	0.0598	-55.850	0.1061	3.2298	0.0532	0.2763	0.8582	Good	66.506	August
9	06470000	$\log_e$	92	0.712	5.87	0.0001	-0.108	0.0001	-0.022	0.4095	0.152	0.0001	0.0007	0.8526	0.2381	0.0101	Poor	0.154	December
9	06470000	Value	95	0.684	377.70	0.0001	-29.223	0.0001	-3.371	0.6678	50.972	0.0001	-0.6192	0.5823	0.1198	0.3898	Good	51.083	December
10	06470500	$\log_e$	160	0.681	6.46	0.0001	-0.194	0.0001	0.074	0.0096	0.125	0.0001	-0.0027	0.4271	0.1832	0.0001	Poor	0.145	February
10	06470500	Value	159	0.648	530.31	0.0001	-51.366	0.0001	30.116	0.0007	51.889	0.0001	-1.1693	0.2723	0.0092	0.1212	Fair	59.995	February
11	06470800	$\log_e$	33	0.730	5.94	0.0001	-0.160	0.0001	0.029	0.7746	-0.321	0.0226	-0.0152	0.1592	0.5561	0.7423	Good	0.322	June
11	06470800	Value	32	0.611	434.50	0.0001	-32.709	0.0001	-13.990	0.6483	-0.747	0.9848	-4.7517	0.1326	0.8069	0.0119	Poor	14.01	September
12	06470830	$\log_e$	40	0.772	6.60	0.0001	-0.307	0.0001	0.044	0.4223	0.106	0.0680	0.0166	0.0059	0.6689	0.9196	Good	0.115	January
12	06470830	Value	40	0.768	585.23	0.0001	-95.883	0.0001	43.295	0.0294	64.349	0.0024	6.5393	0.0022	0.2753	0.8417	Good	77.558	February
13	06470833	$\log_e$	83	0.420	5.72	0.0001	0.029	0.0001	-0.013	0.1824	0.025	0.0153	0.0080	0.0014	0.3803	0.0003	Poor	0.028	December
13	06470833	Value	83	0.429	304.67	0.0001	9.693	0.0001	-4.592	0.1641	8.371	0.0137	2.7818	0.0010	0.3700	0.0032	Poor	9.548	December
14	06470875	$\log_e$	70	0.597	5.81	0.0001	-0.105	0.0001	0.060	0.2757	0.264	0.0001	0.0098	0.3949	0.2973	0.1012	Good	0.271	January
14	06470875	Value	70	0.607	287.63	0.0299	-40.238	0.0001	40.710	0.0496	93.641	0.0001	6.6578	0.1284	0.2103	0.1154	Good	102.107	January
Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L), 70300																			
1	06467600	$\log_e$	42	0.750	5.92	0.0001	-0.165	0.0001	-0.086	0.2866	-0.234	0.0429	0.0132	0.1483	0.3097	0.9025	Good	0.249	July
1	06467600	Value	42	0.775	454.32	0.0001	-68.479	0.0001	-28.522	0.3461	-91.247	0.0367	4.8248	0.1620	0.1043	0.3562	Good	95.601	July
2	06468170	$\log_e$	64	0.805	6.52	0.0001	-0.181	0.0001	-0.079	0.1592	0.086	0.2013	0.0042	0.5078	0.2585	0.1171	Good	0.117	November
2	06468170	Value	64	0.653	782.92	0.0001	-101.658	0.0001	-12.307	0.7912	164.184	0.0044	3.2367	0.5395	0.8706	0.0001	Poor	164.645	December
4	06468250	$\log_e$	36	0.598	7.48	0.0001	-0.098	0.0001	-0.080	0.2981	0.087	0.2500	-0.0356	0.0790	0.4955	0.6192	Good	0.118	November
4	06468250	Value	36	0.574	1178.62	0.0007	-46.262	0.0003	-12.429	0.7658	107.725	0.0122	-17.5578	0.1117	0.6792	0.6911	Good	108.44	December
7	06469400	$\log_e$	31	0.778	5.79	0.0001	-0.075	0.0001	-0.123	0.1403	-0.342	0.0291	0.0121	0.0984	0.1606	0.3255	Good	0.363	July
7	06469400	Value	32	0.763	340.22	0.0005	-32.222	0.0001	-50.762	0.1545	-122.670	0.0619	5.9821	0.0572	0.5644	0.7468	Good	132.758	July

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	*A* (intercept)	p-value for intercept	*B* [$\log_e(Q)$]	p-value for *B*	*C* [sin $(2\pi t)$]	p-value for *C*	*D* [cos $(2\pi t)$]	p-value for *D*	*E* (*t*)	p-value for *E*	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
								Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L), 70300--Continued											
9	06470000	$\log_e$	93	0.657	6.43	0.0001	-0.116	0.0001	-0.013	0.6716	0.135	0.0003	0.0028	0.5392	0.0497	0.0005	Poor	0.136	December
9	06470000	Value	94	0.673	688.74	0.0001	-58.054	0.0001	-0.441	0.9770	83.228	0.0001	-0.4271	0.8456	0.0164	0.1405	Fair	83.229	January
10	06470500	$\log_e$	160	0.710	7.11	0.0001	-0.219	0.0001	0.044	0.1268	0.098	0.0014	0.0005	0.8795	0.3345	0.0068	Poor	0.107	January
10	06470500	Value	160	0.636	1018.18	0.0001	-103.629	0.0001	44.280	0.0096	79.647	0.0001	-1.9140	0.3557	0.0346	0.1004	Fair	91.128	February
11	06470800	$\log_e$	32	0.831	6.26	0.0001	-0.172	0.0001	-0.070	0.4065	-0.421	0.0007	0.0033	0.7156	0.5415	0.5275	Good	0.427	July
11	06470800	Value	33	0.623	779.13	0.0001	-56.978	0.0003	-115.415	0.0581	14.988	0.8326	-3.8416	0.5404	0.3281	0.6871	Good	116.384	October
12	06470830	$\log_e$	40	0.797	7.51	0.0001	-0.337	0.0001	0.006	0.9046	0.021	0.7054	0.0106	0.0641	0.7979	0.6398	Good	0.022	January
12	06470830	Value	39	0.762	1230.47	0.0001	-198.019	0.0001	49.054	0.1685	44.132	0.2330	10.2917	0.0075	0.4396	0.9760	Good	65.984	February
13	06470833	$\log_e$	84	0.390	6.07	0.0001	0.031	0.0001	-0.017	0.1123	0.017	0.1297	0.0022	0.4015	0.7722	0.0001	Poor	0.024	November
13	06470833	Value	84	0.402	434.35	0.0001	13.471	0.0001	-7.369	0.1156	7.760	0.1015	1.0728	0.3496	0.7125	0.0003	Poor	10.701	November
14	06470875	$\log_e$	54	0.631	6.06	0.0001	-0.140	0.0001	0.012	0.8708	0.281	0.0006	0.0297	0.1108	0.4217	0.2271	Good	0.281	January
14	06470875	Value	54	0.648	125.91	0.7757	-105.460	0.0001	102.147	0.0998	264.729	0.0001	32.9999	0.0294	0.1492	0.9363	Good	283.752	January
								Solids, sum of constituents, dissolved (mg/L), 70301											
1	06467600	$\log_e$	40	0.749	5.86	0.0001	-0.171	0.0001	-0.104	0.2360	-0.279	0.0299	0.0127	0.1978	0.3911	0.9519	Good	0.298	July
1	06467600	Value	40	0.777	431.61	0.0001	-65.917	0.0001	-31.994	0.2907	-100.847	0.0241	4.5570	0.1834	0.1609	0.7626	Good	105.8	July
2	06468170	$\log_e$	59	0.867	6.40	0.0001	-0.178	0.0001	-0.070	0.1187	0.007	0.9051	0.0051	0.3206	0.4823	0.2388	Good	0.07	October
2	06468170	Value	60	0.834	695.99	0.0001	-91.121	0.0001	-14.880	0.5568	56.472	0.1281	2.9734	0.2982	0.1130	0.8191	Good	58.399	December
4	06468250	$\log_e$	33	0.609	7.47	0.0001	-0.104	0.0001	-0.096	0.2407	0.053	0.5360	-0.0375	0.0882	0.5429	0.7268	Good	0.11	November
4	06468250	Value	32	0.604	834.82	0.0050	-46.303	0.0001	-30.624	0.3680	38.347	0.3184	-8.0603	0.3872	0.6652	0.9876	Good	49.075	November
7	06469400	$\log_e$	31	0.780	5.73	0.0001	-0.078	0.0001	-0.136	0.1146	-0.337	0.0355	0.0134	0.0762	0.5634	0.5377	Good	0.363	July
7	06469400	Value	32	0.774	327.83	0.0004	-31.629	0.0001	-52.430	0.1241	-117.636	0.0604	5.8961	0.0498	0.3898	0.8910	Good	128.791	July
9	06470000	$\log_e$	90	0.684	6.49	0.0001	-0.121	0.0001	-0.024	0.4448	0.146	0.0001	0.0003	0.9438	0.1147	0.0001	Poor	0.148	December
9	06470000	Value	90	0.715	707.48	0.0001	-56.523	0.0001	-3.972	0.7794	94.438	0.0001	-1.7957	0.3723	0.1283	0.0243	Poor	94.521	December
10	06470500	$\log_e$	160	0.728	7.14	0.0001	-0.226	0.0001	0.053	0.0634	0.108	0.0004	-0.0005	0.8807	0.3197	0.0037	Poor	0.12	January
10	06470500	Value	160	0.665	1015.46	0.0001	-104.498	0.0001	48.349	0.0033	86.867	0.0001	-2.1636	0.2778	0.0670	0.2062	Good	99.416	February
11	06470800	$\log_e$	33	0.778	6.40	0.0001	-0.165	0.0001	-0.155	0.1023	-0.254	0.0348	0.0001	0.9910	0.2899	0.9990	Good	0.298	August
11	06470800	Value	33	0.634	754.18	0.0001	-54.821	0.0002	-111.409	0.0526	19.479	0.7707	-3.8093	0.5196	0.3478	0.7213	Good	113.099	October
13	06470833	$\log_e$	63	0.466	6.00	0.0001	0.033	0.0001	-0.012	0.3315	0.027	0.0394	0.0063	0.1073	0.5543	0.0001	Poor	0.03	December
13	06470833	Value	63	0.473	400.03	0.0001	14.323	0.0001	-5.238	0.3418	11.959	0.0344	2.9867	0.0759	0.5587	0.0005	Poor	13.056	December
14	06470875	$\log_e$	69	0.681	6.20	0.0001	-0.132	0.0001	0.054	0.3357	0.289	0.0001	0.0232	0.0498	0.3779	0.2314	Good	0.294	January
14	06470875	Value	69	0.678	441.73	0.1107	-103.421	0.0001	79.213	0.0731	212.141	0.0001	21.2449	0.0229	0.1341	0.5625	Good	226.448	January

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	*A* (intercept)	p-value for intercept	*B* [$\log_e(Q)$]	p-value for *B*	*C* [$\sin(2\pi t)$]	p-value for *C*	*D* [$\cos(2\pi t)$]	p-value for *D*	*E* (*t*)	p-value for *E*	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
									Calcium, dissolved (mg/L as Ca), 00915										
1	06467600	$\log_e$	41	0.752	3.33	0.0001	-0.118	0.0001	-0.087	0.1818	-0.237	0.0119	0.0209	0.0080	0.5776	0.9802	Good	0.252	July
1	06467600	Value	42	0.753	36.34	0.0001	-4.823	0.0001	-3.763	0.1328	-7.390	0.0388	0.5956	0.0381	0.3734	0.3699	Good	8.293	July
2	06468170	$\log_e$	65	0.070	3.53	0.0001	-0.014	0.4873	-0.070	0.3652	0.126	0.1810	0.0022	0.8016	0.5047	0.1200	Good	0.144	December
2	06468170	Value	64	0.057	33.63	0.0001	-0.213	0.7335	-2.936	0.2340	2.203	0.4773	0.1369	0.6234	0.3734	0.0128	Poor	3.671	November
4	06468250	$\log_e$	36	0.385	4.71	0.0001	-0.065	0.0177	-0.040	0.6712	0.192	0.0444	-0.0252	0.3076	0.1368	0.0737	Good	0.196	December
4	06468250	Value	36	0.444	93.49	0.0081	-2.891	0.0228	-0.119	0.9785	13.616	0.0033	-1.2257	0.2886	0.3556	0.0679	Good	13.617	January
7	06469400	$\log_e$	31	0.707	3.61	0.0001	-0.082	0.0001	-0.089	0.3330	-0.249	0.1457	0.0118	0.1473	0.5220	0.2443	Good	0.264	July
7	06469400	Value	31	0.704	40.12	0.0002	-3.273	0.0001	-2.512	0.5070	-12.727	0.0738	0.4345	0.1914	0.0668	0.5704	Good	12.973	July
9	06470000	$\log_e$	92	0.779	4.47	0.0001	-0.132	0.0001	0.007	0.7961	0.181	0.0001	0.0002	0.9549	0.4042	0.2913	Good	0.181	January
9	06470000	Value	95	0.729	90.57	0.0001	-8.224	0.0001	1.124	0.5673	13.966	0.0001	-0.1237	0.6601	0.1552	0.8267	Good	14.011	January
10	06470500	$\log_e$	161	0.698	5.04	0.0001	-0.198	0.0001	0.090	0.0019	0.155	0.0001	-0.0045	0.1906	0.1356	0.0001	Poor	0.179	February
10	06470500	Value	159	0.654	124.20	0.0001	-11.996	0.0001	8.820	0.0001	14.769	0.0001	-0.3253	0.2119	0.0037	0.1862	Fair	17.202	February
11	06470800	$\log_e$	33	0.698	4.44	0.0001	-0.151	0.0001	0.095	0.3425	-0.244	0.0720	-0.0188	0.0789	0.6370	0.9899	Good	0.262	June
11	06470800	Value	32	0.573	93.99	0.0001	-6.770	0.0001	1.336	0.8382	3.365	0.6879	-1.2050	0.0769	0.6418	0.0245	Poor	3.621	January
12	06470830	$\log_e$	40	0.752	5.02	0.0001	-0.287	0.0001	0.061	0.2864	0.138	0.0233	0.0156	0.0115	0.7008	0.8512	Good	0.151	January
12	06470830	Value	40	0.736	126.50	0.0001	-20.445	0.0001	10.688	0.0267	16.224	0.0017	1.4005	0.0061	0.1449	0.9702	Good	19.428	February
13	06470833	$\log_e$	82	0.418	4.23	0.0001	0.028	0.0001	-0.013	0.2587	0.048	0.0001	0.0146	0.0001	0.3251	0.0097	Poor	0.05	December
13	06470833	Value	82	0.432	67.29	0.0001	2.365	0.0001	-1.144	0.2421	3.934	0.0001	1.2552	0.0001	0.3281	0.0459	Poor	4.097	December
14	06470875	$\log_e$	71	0.497	4.55	0.0001	-0.091	0.0001	0.071	0.2147	0.232	0.0003	-0.0044	0.7116	0.2025	0.3830	Good	0.243	January
14	06470875	Value	70	0.525	75.39	0.0036	-6.348	0.0001	8.487	0.0338	16.651	0.0002	0.4470	0.5929	0.1800	0.1701	Good	18.689	January
									Magnesium, dissolved (mg/L as Mg), 00925										
1	06467600	$\log_e$	42	0.642	2.90	0.0001	-0.128	0.0001	-0.105	0.2734	-0.379	0.0070	0.0146	0.1791	0.4829	0.3366	Good	0.393	July
1	06467600	Value	40	0.792	24.86	0.0001	-3.413	0.0001	-2.095	0.1839	-8.845	0.0003	0.2141	0.2379	0.6970	0.1805	Good	9.09	July
2	06468170	$\log_e$	65	0.467	3.70	0.0001	-0.083	0.0001	-0.196	0.0059	0.004	0.9658	-0.0105	0.1823	0.2752	0.4980	Good	0.196	October
2	06468170	Value	64	0.399	38.50	0.0001	-1.526	0.0006	-4.931	0.0041	-0.138	0.9470	-0.2746	0.1469	0.5197	0.0339	Poor	4.933	September
4	06468250	$\log_e$	36	0.605	5.04	0.0001	-0.099	0.0002	-0.146	0.0954	0.092	0.2763	-0.0469	0.0418	0.3710	0.0218	Poor	0.173	November
4	06468250	Value	36	0.597	84.02	0.0003	-2.816	0.0009	-2.487	0.3760	7.976	0.0061	-1.4294	0.0554	0.5015	0.9576	Good	8.355	December
7	06469400	$\log_e$	31	0.736	3.01	0.0001	-0.052	0.0057	-0.219	0.0248	-0.375	0.0351	0.0122	0.1406	0.6988	0.6126	Good	0.434	August
7	06469400	Value	31	0.800	20.94	0.0008	-1.892	0.0001	-4.877	0.0440	-10.326	0.0182	0.4290	0.0351	0.5756	0.3718	Good	11.42	July

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	*A* (intercept)	p-value for intercept	*B* [$\log_e(Q)$]	p-value for *B*	*C* [sin ($2\pi t$)]	p-value for *C*	*D* [cos ($2\pi t$)]	p-value for *D*	*E* (*t*)	p-value for *E*	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
									Magnesium, dissolved (mg/L as Mg), 00925--Continued										
9	06470000	$\log_e$	95	0.456	3.58	0.0001	-0.071	0.0001	-0.053	0.0947	0.118	0.0011	-0.0023	0.6188	0.2473	0.0003	Poor	0.129	December
9	06470000	Value	95	0.524	35.76	0.0001	-1.954	0.0001	-1.046	0.1977	4.154	0.0001	-0.0514	0.6583	0.1064	0.3551	Good	4.284	December
10	06470500	$\log_e$	160	0.627	4.16	0.0001	-0.192	0.0001	0.041	0.1761	0.081	0.0113	-0.0017	0.6298	0.2332	0.0001	Poor	0.091	January
10	06470500	Value	159	0.604	53.24	0.0001	-5.136	0.0001	1.908	0.0351	3.803	0.0001	-0.0885	0.4187	0.0254	0.1183	Fair	4.255	January
11	06470800	$\log_e$	33	0.734	3.69	0.0001	-0.170	0.0001	-0.033	0.7646	-0.398	0.0110	-0.0105	0.3688	0.4529	0.7866	Good	0.399	July
11	06470800	Value	32	0.629	48.39	0.0001	-3.822	0.0001	-4.193	0.2633	-2.312	0.6260	-0.4208	0.2664	0.3510	0.0568	Good	4.788	September
12	06470830	$\log_e$	39	0.768	4.32	0.0001	-0.296	0.0001	0.038	0.4635	0.090	0.0978	0.0191	0.0010	0.8685	0.8454	Good	0.098	January
12	06470830	Value	39	0.790	65.08	0.0001	-10.255	0.0001	3.535	0.0526	4.958	0.0106	0.6009	0.0033	0.4464	0.5145	Good	6.089	February
13	06470833	$\log_e$	84	0.378	3.52	0.0001	0.023	0.0001	-0.023	0.0416	-0.020	0.0852	-0.0037	0.1780	0.6022	0.1550	Good	0.03	August
13	06470833	Value	84	0.382	33.83	0.0001	0.707	0.0001	-0.712	0.0404	-0.602	0.0851	-0.1274	0.1338	0.6247	0.5297	Good	0.932	August
14	06470875	$\log_e$	70	0.644	3.46	0.0001	-0.127	0.0001	0.030	0.6049	0.282	0.0001	0.0207	0.0924	0.2327	0.0581	Good	0.284	January
14	06470875	Value	69	0.657	37.19	0.0227	-5.876	0.0001	3.630	0.1568	12.180	0.0001	0.8539	0.1154	0.1820	0.2410	Good	12.709	January
									Sodium, dissolved (mg/L as Na), 00930										
1	06467600	$\log_e$	42	0.766	4.12	0.0001	-0.272	0.0001	-0.129	0.2898	-0.311	0.0741	0.0113	0.4095	0.4919	0.4625	Good	0.337	July
1	06467600	Value	41	0.845	93.04	0.0001	-15.812	0.0001	-9.085	0.1058	-12.331	0.1184	0.3311	0.5934	0.4355	0.2589	Good	15.316	August
2	06468170	$\log_e$	63	0.895	5.11	0.0001	-0.327	0.0001	-0.061	0.3625	0.191	0.0212	0.0007	0.9257	0.3423	0.6053	Good	0.201	December
2	06468170	Value	63	0.816	179.23	0.0001	-32.397	0.0001	3.418	0.7096	35.239	0.0038	0.9949	0.3370	0.1186	0.3531	Good	35.404	January
4	06468250	$\log_e$	35	0.633	5.97	0.0001	-0.153	0.0001	0.023	0.8228	0.091	0.3511	-0.0465	0.0763	0.8085	0.9233	Good	0.094	January
4	06468250	Value	35	0.596	191.82	0.0035	-10.337	0.0001	3.956	0.6282	22.176	0.0095	-2.9628	0.1650	0.6881	0.6722	Good	22.526	January
7	06469400	$\log_e$	32	0.810	3.67	0.0001	-0.144	0.0001	-0.233	0.0766	-0.402	0.0917	0.0160	0.1574	0.3647	0.9160	Good	0.465	August
7	06469400	Value	32	0.822	52.91	0.0005	-6.345	0.0001	-8.697	0.1184	-20.270	0.0483	0.5461	0.2541	0.3511	0.1629	Good	22.057	July
9	06470000	$\log_e$	93	0.642	4.80	0.0001	-0.163	0.0001	-0.029	0.4965	0.128	0.0070	-0.0087	0.1614	0.2163	0.0001	Poor	0.131	December
9	06470000	Value	94	0.707	97.46	0.0001	-10.376	0.0001	-1.949	0.4208	10.711	0.0001	-0.0632	0.8594	0.1135	0.5836	Good	10.887	December
10	06470500	$\log_e$	156	0.773	5.46	0.0001	-0.327	0.0001	0.024	0.4826	0.054	0.1405	0.0008	0.8406	0.5593	0.0830	Good	0.059	January
10	06470500	Value	159	0.665	153.55	0.0001	-19.001	0.0001	5.719	0.0361	8.546	0.0037	-0.1100	0.7398	0.0540	0.6154	Good	10.283	February
11	06470800	$\log_e$	33	0.813	3.95	0.0001	-0.177	0.0001	-0.320	0.0034	-0.436	0.0016	0.0170	0.1385	0.4693	0.1839	Good	0.541	August
11	06470800	Value	33	0.802	68.96	0.0002	-9.251	0.0001	-24.220	0.0005	-27.376	0.0012	0.9414	0.1785	0.0769	0.4649	Good	36.552	August
13	06470833	$\log_e$	83	0.597	2.79	0.0001	0.041	0.0001	-0.093	0.0001	0.000	0.9737	0.0056	0.1163	0.6621	0.4652	Good	0.093	October
13	06470833	Value	83	0.607	16.18	0.0001	0.684	0.0001	-1.623	0.0001	0.045	0.8503	0.1135	0.0559	0.6996	0.5460	Good	1.624	October
14	06470875	$\log_e$	70	0.743	3.81	0.0001	-0.182	0.0001	0.045	0.4669	0.309	0.0001	0.0457	0.0008	0.4382	0.5473	Good	0.312	January
14	06470875	Value	71	0.707	7.97	0.8761	-21.198	0.0001	14.233	0.0825	36.554	0.0001	6.1979	0.0005	0.1562	0.3037	Good	39.227	January

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	A (intercept)	p-value for intercept	B [$\log_e(Q)$]	p-value for B	C [sin ($2\pi t$)]	p-value for C	D [cos ($2\pi t$)]	p-value for D	E (t)	p-value for E	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
									Potassium, dissolved (mg/L as K), 00935										
1	06467600	$\log_e$	41	0.183	1.91	0.0001	-0.002	0.9457	-0.067	0.3941	0.100	0.3515	0.0205	0.0255	0.4051	0.2417	Good	0.12	November
1	06467600	Value	40	0.177	6.86	0.0072	-0.089	0.7079	-0.919	0.2620	0.578	0.6080	0.1836	0.0506	0.2350	0.0106	Poor	1.086	November
2	06468170	$\log_e$	64	0.340	2.11	0.0001	-0.031	0.0179	-0.092	0.0736	0.000	0.9939	0.0156	0.0085	0.2924	0.7220	Good	0.092	October
2	06468170	Value	63	0.296	9.21	0.0001	-0.253	0.0786	-1.237	0.0293	0.386	0.5745	0.1361	0.0354	0.4009	0.2952	Good	1.296	October
4	06468250	$\log_e$	35	0.395	3.29	0.0001	-0.023	0.2146	-0.095	0.1790	0.141	0.0281	-0.0231	0.1869	0.7675	0.5008	Good	0.17	November
4	06468250	Value	35	0.479	30.73	0.0001	-0.332	0.1272	-0.624	0.4206	1.564	0.0480	-0.5873	0.0062	0.6005	0.6551	Good	1.684	December
7	06469400	$\log_e$	31	0.680	1.85	0.0001	0.033	0.0080	-0.223	0.0018	0.250	0.0436	0.0255	0.0001	0.6172	0.6193	Good	0.335	November
7	06469400	Value	31	0.629	5.86	0.0037	0.269	0.0504	-2.272	0.0048	2.997	0.0356	0.2726	0.0002	0.5047	0.8070	Good	3.761	November
9	06470000	$\log_e$	94	0.453	1.59	0.0001	0.097	0.0001	-0.127	0.0001	0.050	0.1341	0.0193	0.0001	0.1144	0.2194	Good	0.136	October
9	06470000	Value	94	0.468	3.00	0.0355	1.060	0.0001	-1.358	0.0001	0.467	0.1782	0.1959	0.0001	0.1023	0.6601	Good	1.436	October
10	06470500	$\log_e$	163	0.096	2.35	0.0001	-0.015	0.2008	-0.061	0.0097	0.008	0.7346	0.0058	0.0397	0.0595	0.2523	Good	0.062	October
10	06470500	Value	161	0.077	10.62	0.0001	-0.070	0.5694	-0.737	0.0029	-0.062	0.8122	0.0432	0.1529	0.0325	0.5019	Fair	0.74	September
11	06470800	$\log_e$	34	0.574	2.31	0.0001	-0.048	0.0012	-0.142	0.0209	-0.007	0.9248	0.0159	0.0183	0.7587	0.1418	Good	0.142	September
11	06470800	Value	34	0.544	10.33	0.0001	-0.598	0.0030	-1.971	0.0197	0.202	0.8412	0.2084	0.0241	0.2839	0.4153	Good	1.981	October
13	06470833	$\log_e$	84	0.559	1.66	0.0001	0.066	0.0001	0.003	0.8616	-0.003	0.8487	0.0063	0.1124	0.5106	0.6783	Good	0.004	May
13	06470833	Value	85	0.453	5.34	0.0001	0.336	0.0001	0.063	0.5291	0.018	0.8604	0.0355	0.1553	0.3777	0.0012	Poor	0.066	March
14	06470875	$\log_e$	70	0.318	2.83	0.0001	-0.056	0.0004	-0.044	0.3545	0.095	0.0586	0.0017	0.8658	0.2468	0.5272	Good	0.105	December
14	06470875	Value	69	0.434	16.57	0.0002	-1.197	0.0001	0.526	0.4340	1.128	0.1239	0.0966	0.4964	0.0629	0.4631	Good	1.245	January
									Sulfate, dissolved (mg/L as SO_4), 00945										
1	06467600	$\log_e$	40	0.682	4.20	0.0001	-0.217	0.0001	0.062	0.5539	-0.076	0.6058	0.0235	0.0623	0.3391	0.7808	Good	0.098	May
1	06467600	Value	40	0.614	89.73	0.0041	-17.854	0.0001	8.558	0.3777	-13.426	0.3254	1.4186	0.1968	0.4845	0.1774	Good	15.922	May
2	06468170	$\log_e$	64	0.775	5.25	0.0001	-0.209	0.0001	0.017	0.7987	0.060	0.4468	-0.0025	0.7375	0.2577	0.5329	Good	0.062	January
2	06468170	Value	62	0.741	190.84	0.0001	-24.363	0.0001	6.449	0.4435	15.150	0.1599	0.1840	0.8446	0.3257	0.3325	Good	16.465	January
4	06468250	$\log_e$	36	0.691	7.38	0.0001	-0.120	0.0001	-0.004	0.9568	0.104	0.2063	-0.0821	0.0006	0.4892	0.8603	Good	0.104	December
4	06468250	Value	35	0.621	369.55	0.0001	-12.217	0.0001	0.728	0.9413	20.208	0.0511	-7.3812	0.0077	0.6243	0.8807	Good	20.221	January
7	06469400	$\log_e$	32	0.709	4.20	0.0001	-0.133	0.0001	0.051	0.6974	-0.452	0.0676	0.0223	0.0601	0.8054	0.2513	Good	0.455	June
7	06469400	Value	32	0.706	69.18	0.0580	-14.215	0.0001	21.282	0.1424	-67.062	0.0142	2.0895	0.0993	0.1302	0.5904	Good	70.358	June
9	06470000	$\log_e$	95	0.506	5.26	0.0001	-0.119	0.0001	0.016	0.7116	0.136	0.0049	-0.0021	0.7391	0.1856	0.0001	Poor	0.137	January
9	06470000	Value	94	0.558	192.28	0.0001	-15.944	0.0001	2.512	0.6371	22.611	0.0003	-0.2374	0.7554	0.1080	0.4538	Good	22.75	January
10	06470500	$\log_e$	164	0.701	5.81	0.0001	-0.232	0.0001	0.091	0.0034	0.122	0.0003	0.0018	0.6400	0.2877	0.0007	Poor	0.152	February
10	06470500	Value	164	0.644	274.10	0.0001	-29.118	0.0001	16.786	0.0005	27.626	0.0001	-0.2989	0.6111	0.0115	0.2531	Fair	32.326	February

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	A (intercept)	p-value for intercept	B [$\log_e(Q)$]	p-value for B	C [$\sin(2\pi t)$]	p-value for C	D [$\cos(2\pi t)$]	p-value for D	E (t)	p-value for E	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
									Sulfate, dissolved (mg/L as SO_4), 00945--Continued										
11	06470800	$\log_e$	33	0.772	5.49	0.0001	-0.223	0.0001	-0.004	0.9723	-0.320	0.0331	-0.0091	0.4810	0.1018	0.9892	Good	0.32	July
11	06470800	Value	33	0.536	327.76	0.0001	-27.590	0.0002	-3.394	0.9027	17.607	0.5987	-4.1640	0.1647	0.1532	0.4910	Good	17.931	December
12	06470830	$\log_e$	40	0.774	6.23	0.0001	-0.393	0.0001	0.072	0.2639	0.010	0.8835	0.0192	0.0062	0.4229	0.2379	Good	0.073	March
12	06470830	Value	39	0.812	358.46	0.0001	-72.800	0.0001	34.277	0.0026	7.301	0.5233	5.6993	0.0001	0.2926	0.2609	Good	35.046	March
13	06470833	$\log_e$	62	0.650	3.69	0.0001	0.069	0.0001	-0.071	0.0205	-0.045	0.1301	0.0508	0.0001	0.4704	0.5087	Good	0.084	August
13	06470833	Value	64	0.560	26.74	0.0845	4.960	0.0001	-9.237	0.0017	-4.170	0.1549	4.0509	0.0001	0.5114	0.1704	Good	10.135	September
14	06470875	$\log_e$	70	0.660	4.92	0.0001	-0.155	0.0001	0.064	0.3307	0.300	0.0001	0.0283	0.0425	0.4077	0.5869	Good	0.307	January
14	06470875	Value	70	0.673	119.34	0.2006	-35.857	0.0001	26.315	0.0789	65.740	0.0001	7.6398	0.0159	0.1954	0.5827	Good	70.811	January
									Chloride, dissolved (mg/L as Cl), 00940										
1	06467600	$\log_e$	41	0.645	2.55	0.0001	-0.162	0.0001	-0.175	0.1038	-0.156	0.3040	-0.0083	0.4999	0.7233	0.3337	Good	0.234	August
1	06467600	Value	41	0.674	13.32	0.0001	-1.437	0.0001	-1.065	0.1847	0.211	0.8462	-0.0582	0.5087	0.7837	0.5035	Good	1.086	October
2	06468170	$\log_e$	64	0.870	3.85	0.0001	-0.387	0.0001	0.002	0.9860	0.201	0.0641	0.0034	0.7475	0.7185	0.1745	Good	0.201	January
2	06468170	Value	64	0.755	49.88	0.0003	-11.691	0.0001	1.809	0.6492	9.494	0.0608	0.6402	0.1585	0.1211	0.1478	Good	9.665	January
4	06468250	$\log_e$	34	0.670	3.51	0.0001	-0.173	0.0001	0.191	0.0581	0.219	0.0268	-0.0073	0.7680	0.6946	0.3153	Good	0.291	February
4	06468250	Value	35	0.542	19.56	0.3372	-3.491	0.0001	3.712	0.1759	7.418	0.0088	0.3400	0.6255	0.7241	0.3543	Good	8.295	January
7	06469400	$\log_e$	31	0.765	1.89	0.0001	-0.131	0.0001	-0.178	0.1066	-0.050	0.7998	0.0279	0.0070	0.8941	0.0170	Poor	0.185	September
7	06469400	Value	31	0.754	6.17	0.0085	-0.931	0.0001	0.674	0.4725	-3.707	0.0289	0.1814	0.0201	0.5319	0.1735	Good	3.768	June
9	06470000	$\log_e$	95	0.753	3.73	0.0001	-0.252	0.0001	0.020	0.6841	0.211	0.0003	-0.0002	0.9817	0.1993	0.3354	Good	0.212	January
9	06470000	Value	94	0.668	38.91	0.0001	-4.929	0.0001	0.573	0.6602	6.161	0.0001	-0.0101	0.9563	0.1064	0.2869	Good	6.188	January
10	06470500	$\log_e$	163	0.828	4.97	0.0001	-0.450	0.0001	0.115	0.0023	0.016	0.6847	0.0049	0.2797	0.6610	0.6175	Good	0.116	March
10	06470500	Value	163	0.648	73.50	0.0001	-11.353	0.0001	4.557	0.0044	2.740	0.1095	0.2601	0.1836	0.0037	0.7519	Fair	5.317	March
11	06470800	$\log_e$	33	0.778	3.14	0.0001	-0.163	0.0001	-0.265	0.0146	-0.459	0.0012	0.0266	0.0269	0.4943	0.8847	Good	0.53	August
11	06470800	Value	33	0.754	24.69	0.0246	-5.134	0.0001	-12.645	0.0034	-18.663	0.0007	1.1004	0.0186	0.4538	0.7216	Good	22.543	August
12	06470830	$\log_e$	40	0.853	5.45	0.0001	-0.553	0.0001	0.078	0.2746	-0.039	0.5940	0.0118	0.1125	0.1117	0.7752	Good	0.087	April
12	06470830	Value	38	0.764	100.40	0.0001	-17.269	0.0001	7.671	0.0169	3.494	0.2899	0.3905	0.2441	0.3526	0.8834	Good	8.429	March
13	06470833	$\log_e$	63	0.026	2.60	0.0001	-0.001	0.9689	-0.034	0.2952	-0.020	0.5436	-0.0032	0.7464	0.2319	0.5657	Good	0.039	September
13	06470833	Value	64	0.076	14.44	0.0001	-0.051	0.7743	-0.832	0.0520	-0.166	0.7068	-0.1026	0.4338	0.2077	0.1420	Good	0.848	September
14	06470875	$\log_e$	71	0.770	2.02	0.0001	-0.213	0.0001	0.153	0.0437	0.417	0.0001	0.0836	0.0001	0.4127	0.5954	Good	0.444	January
14	06470875	Value	69	0.709	-26.44	0.3655	-11.565	0.0001	8.472	0.0693	20.895	0.0001	4.2445	0.0001	0.1973	0.1561	Good	22.547	January

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	A (intercept)	p-value for intercept	B [$\log_e(Q)$]	p-value for B	C [sin (2πt)]	p-value for C	D [cos (2πt)]	p-value for D	E (t)	p-value for E	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
Fluoride, dissolved (mg/L as F), 00950																			
2	06468170	$\log_e$	41	0.615	-1.72	0.0001	-0.093	0.0001	-0.222	0.0102	0.108	0.3342	0.0097	0.2563	0.6133	0.0047	Poor	0.247	October
2	06468170	Value	41	0.417	0.26	0.0028	-0.020	0.0033	-0.043	0.1221	0.073	0.0563	0.0009	0.7509	0.8966	0.0001	Poor	0.085	December
7	06469400	$\log_e$	31	0.567	-2.18	0.0001	-0.024	0.1137	-0.266	0.0027	-0.005	0.9725	0.0104	0.1556	0.4164	0.1609	Good	0.266	October
7	06469400	Value	31	0.567	0.12	0.0005	-0.003	0.1137	-0.038	0.0027	-0.001	0.9725	0.0015	0.1556	0.4164	0.1609	Good	0.038	September
9	06470000	$\log_e$	48	0.552	-2.11	0.0001	-0.058	0.0069	-0.165	0.0043	0.036	0.6204	0.0196	0.0049	0.3741	0.1203	Good	0.169	October
9	06470000	Value	48	0.518	0.14	0.0003	-0.010	0.0088	-0.028	0.0057	0.010	0.4207	0.0028	0.0202	0.2417	0.3551	Good	0.03	October
10	06470500	$\log_e$	163	0.436	-0.61	0.0001	-0.199	0.0001	-0.008	0.8410	0.004	0.9338	-0.0058	0.2570	0.4519	0.3436	Good	0.009	October
10	06470500	Value	162	0.357	0.45	0.0001	-0.044	0.0001	0.005	0.6376	0.009	0.4455	-0.0015	0.2680	0.0694	0.0001	Poor	0.01	February
11	06470800	$\log_e$	33	0.726	-2.69	0.0001	-0.028	0.1509	-0.350	0.0002	-0.357	0.0008	0.0434	0.0001	0.3347	0.0602	Good	0.5	August
11	06470800	Value	33	0.725	-0.01	0.7802	-0.005	0.2432	-0.073	0.0002	-0.084	0.0003	0.0094	0.0001	0.6515	0.0224	Poor	0.111	August
13	06470833	$\log_e$	61	0.048	-1.42	0.0001	0.017	0.3067	0.007	0.8717	-0.038	0.3619	-0.0030	0.8115	0.0552	0.0001	Poor	0.039	June
13	06470833	Value	63	0.057	0.25	0.0001	0.003	0.4857	-0.006	0.6120	-0.015	0.1856	-0.0008	0.8125	0.2777	0.0001	Poor	0.016	July
14	06470875	$\log_e$	71	0.507	-1.61	0.0001	-0.072	0.0001	-0.061	0.2055	0.189	0.0004	0.0137	0.1814	0.1792	0.0397	Poor	0.199	December
14	06470875	Value	70	0.552	0.19	0.0033	-0.016	0.0001	-0.012	0.2313	0.040	0.0003	0.0036	0.0939	0.5212	0.2286	Good	0.042	December
Silica, dissolved (mg/L as SiO_2), 00955																			
1	06467600	$\log_e$	30	0.347	1.66	0.0010	-0.017	0.6590	-0.196	0.1882	-0.207	0.2941	0.0380	0.0502	0.5680	0.6195	Good	0.285	August
1	06467600	Value	30	0.316	6.14	0.2896	0.012	0.9801	-2.722	0.1520	-4.177	0.1016	0.3010	0.2122	0.1924	0.2920	Good	4.986	August
2	06468170	$\log_e$	35	0.347	1.44	0.0143	0.058	0.2023	-0.143	0.4307	0.612	0.0152	0.0339	0.1463	0.5277	0.6726	Good	0.628	December
2	06468170	Value	33	0.395	2.65	0.4678	0.254	0.4066	-1.834	0.1198	4.230	0.0242	0.3586	0.0217	0.2760	0.4159	Good	4.61	December
7	06469400	$\log_e$	32	0.243	1.43	0.0312	0.085	0.0715	-0.290	0.2614	0.129	0.7810	0.0328	0.1470	0.1778	0.7736	Good	0.317	October
7	06469400	Value	32	0.334	-4.10	0.5473	0.908	0.0711	-3.052	0.2700	-2.744	0.5819	0.6068	0.0158	0.1325	0.6360	Good	4.104	August
9	06470000	$\log_e$	46	0.589	2.23	0.0001	-0.169	0.0001	-0.026	0.6909	0.062	0.4588	0.0372	0.0015	0.5409	0.7044	Good	0.067	December
9	06470000	Value	46	0.625	9.33	0.0081	-1.887	0.0001	-0.673	0.3985	2.123	0.0429	0.4582	0.0018	0.4321	0.3421	Good	2.227	December
10	06470500	$\log_e$	117	0.250	3.38	0.0001	-0.184	0.0001	0.024	0.7119	-0.013	0.8564	-0.0030	0.7937	0.1046	0.0001	Poor	0.027	April
10	06470500	Value	118	0.228	25.71	0.0001	-2.352	0.0001	-0.013	0.9883	-0.502	0.6099	-0.0947	0.5445	0.0140	0.4782	Fair	0.502	July
11	06470800	$\log_e$	34	0.300	1.69	0.0001	0.074	0.0295	-0.362	0.0155	0.347	0.0581	0.0295	0.0656	0.4389	0.3083	Good	0.501	November
11	06470800	Value	33	0.209	7.14	0.0599	0.322	0.3310	-2.622	0.0737	3.454	0.0476	0.2012	0.2028	0.2883	0.5165	Good	4.336	November
13	06470833	$\log_e$	62	0.359	3.17	0.0001	-0.018	0.0672	-0.094	0.0001	0.056	0.0171	0.0045	0.5274	0.3763	0.0112	Poor	0.109	November
13	06470833	Value	62	0.381	23.55	0.0001	-0.454	0.0480	-2.263	0.0001	1.437	0.0104	0.1420	0.4023	0.2807	0.5253	Good	2.681	November
14	06470875	$\log_e$	34	0.344	-5.18	0.0327	0.027	0.7802	-0.437	0.0444	0.210	0.3630	0.2923	0.0028	0.2670	0.4430	Good	0.485	October
14	06470875	Value	34	0.269	-45.01	0.0448	-0.363	0.6723	-1.854	0.3176	2.101	0.3248	2.3088	0.0097	0.7103	0.0011	Poor	2.802	November

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	*A* (intercept)	p-value for intercept	*B* [$\log_e(Q)$]	p-value for *B*	*C* [sin $(2\pi t)$]	p-value for *C*	*D* [cos $(2\pi t)$]	p-value for *D*	*E* (*t*)	p-value for *E*	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
									Nitrogen, nitrate, dissolved (mg/L as N), 00618										
9	06470000	$\log_e$	43	0.480	-0.07	0.8585	0.114	0.0286	0.213	0.0725	0.143	0.3726	-0.0658	0.0001	0.4662	0.6809	Good	0.257	February
9	06470000	Value	42	0.328	0.62	0.0001	0.016	0.2769	0.043	0.2143	0.006	0.8976	-0.0156	0.0011	0.5035	0.0804	Good	0.043	March
									Nitrogen, nitrate, dissolved (mg/L as NO_3), 71851										
9	06470000	$\log_e$	43	0.469	1.41	0.0009	0.106	0.0401	0.207	0.0745	0.121	0.4525	-0.0652	0.0001	0.4700	0.6201	Good	0.24	March
9	06470000	Value	42	0.325	2.66	0.0001	0.045	0.4662	0.161	0.2556	-0.052	0.7941	-0.0643	0.0015	0.5224	0.0209	Poor	0.169	April
									Nitrogen, nitrite plus nitrate, dissolved (mg/L as N), 00631										
2	06468170	$\log_e$	39	0.298	-0.37	0.7073	0.073	0.0439	0.043	0.7547	0.100	0.4331	-0.0686	0.0440	0.6307	0.0001	Poor	0.109	January
2	06468170	Value	39	0.183	0.03	0.8465	0.009	0.0863	0.022	0.2976	0.014	0.4597	0.0031	0.5430	0.3255	0.0001	Poor	0.026	February
4	06468250	$\log_e$	34	0.392	-2.16	0.0145	0.120	0.0004	-0.025	0.8249	0.221	0.0383	-0.0071	0.8047	0.3854	0.8214	Good	0.222	December
4	06468250	Value	34	0.487	-0.15	0.1562	0.013	0.0012	0.006	0.6968	0.025	0.0524	0.0090	0.0162	0.2675	0.0089	Poor	0.026	January
9	06470000	$\log_e$	68	0.336	-0.83	0.3345	0.156	0.0001	0.020	0.8474	0.127	0.2046	-0.0521	0.0689	0.0351	0.2375	Fair	0.129	January
9	06470000	Value	67	0.305	0.06	0.6151	0.026	0.0001	0.010	0.5295	0.025	0.0956	0.0018	0.6728	0.1781	0.0048	Poor	0.027	January
10	06470500	$\log_e$	152	0.391	-3.47	0.0001	0.351	0.0001	0.353	0.0009	0.705	0.0001	0.0098	0.4428	0.4334	0.0083	Poor	0.788	January
10	06470500	Value	158	0.328	0.03	0.7470	0.066	0.0001	0.066	0.0015	0.108	0.0001	-0.0017	0.5019	0.0128	0.0001	Poor	0.127	February
12	06470830	$\log_e$	40	0.340	-4.06	0.0001	0.284	0.1065	0.631	0.0261	0.711	0.0158	0.0326	0.2555	0.1418	0.4399	Good	0.951	February
12	06470830	Value	39	0.541	0.01	0.9220	0.097	0.0001	0.135	0.0007	0.111	0.0045	-0.0091	0.0189	0.7030	0.7793	Good	0.175	February
13	06470833	$\log_e$	64	0.566	-0.52	0.3786	-0.308	0.0001	0.062	0.5620	0.277	0.0158	0.0084	0.8019	0.1113	0.6389	Good	0.284	January
13	06470833	Value	63	0.696	1.56	0.0145	-0.426	0.0001	0.262	0.0265	0.227	0.0629	-0.0362	0.3113	0.1528	0.6900	Good	0.347	February
14	06470875	$\log_e$	65	0.312	-0.79	0.0311	-0.005	0.7996	-0.028	0.6094	-0.019	0.7329	-0.0564	0.0001	0.1552	0.0001	Poor	0.034	August
14	06470875	Value	65	0.046	0.14	0.0026	0.000	0.9279	-0.003	0.6972	-0.008	0.2429	-0.0012	0.4232	0.9960	0.0001	Poor	0.009	July
									Nitrogen, ammonia, dissolved (mg/L as N), 00608										
9	06470000	$\log_e$	47	0.366	-1.77	0.4712	-0.028	0.6977	0.567	0.0097	0.757	0.0005	-0.0087	0.9122	0.8572	0.0189	Poor	0.946	February
9	06470000	Value	47	0.430	0.19	0.6298	-0.014	0.1990	0.081	0.0165	0.146	0.0001	0.0010	0.9391	0.4100	0.4779	Good	0.167	February
10	06470500	$\log_e$	43	0.299	0.26	0.9197	0.164	0.2677	0.286	0.3243	0.977	0.0010	-0.1131	0.1775	0.3726	0.6502	Good	1.018	January
10	06470500	Value	42	0.247	0.60	0.1211	0.014	0.5220	0.047	0.2820	0.119	0.0055	-0.0162	0.1956	0.5133	0.0001	Poor	0.128	January
14	06470875	$\log_e$	69	0.186	2.25	0.1387	-0.149	0.0459	0.139	0.5436	0.178	0.4506	-0.1637	0.0018	0.4086	0.0313	Poor	0.226	February
14	06470875	Value	67	0.130	0.62	0.0042	-0.023	0.0304	0.007	0.8339	0.014	0.6706	-0.0150	0.0351	0.3094	0.0001	Poor	0.016	January

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	*A* (intercept)	p-value for intercept	*B* [$\log_e(Q)$]	p-value for *B*	*C* [sin $(2\pi t)$]	p-value for *C*	*D* [cos $(2\pi t)$]	p-value for *D*	*E* (*t*)	p-value for *E*	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
Nitrogen, organic, dissolved (mg/L as N), 00607																			
9	06470000	$\log_e$	42	0.400	-2.03	0.0253	0.124	0.0001	0.001	0.9946	0.041	0.5800	0.0404	0.1597	0.3702	0.4523	Good	0.041	January
9	06470000	Value	43	0.469	-0.37	0.4817	0.088	0.0001	-0.003	0.9513	0.034	0.4469	0.0271	0.1214	0.3464	0.6882	Good	0.034	December
10	06470500	$\log_e$	36	0.008	-0.71	0.6075	0.023	0.6957	-0.030	0.7927	0.006	0.9553	0.0072	0.8762	0.6430	0.3858	Good	0.031	October
10	06470500	Value	36	0.009	0.72	0.4256	0.015	0.6982	0.008	0.9186	0.025	0.7146	-0.0020	0.9473	0.6648	0.5533	Good	0.026	January
Nitrogen, ammonia plus organic, dissolved (mg/L as N), 00623																			
9	06470000	$\log_e$	45	0.355	-1.74	0.0582	0.069	0.0118	0.050	0.5243	0.262	0.0009	0.0448	0.1296	0.3896	0.4390	Good	0.267	January
9	06470000	Value	46	0.325	-0.42	0.5677	0.054	0.0161	0.039	0.5376	0.201	0.0018	0.0380	0.1193	0.3882	0.4025	Good	0.205	January
10	06470500	$\log_e$	39	0.144	-0.99	0.4198	0.007	0.8953	0.139	0.1809	0.130	0.1751	0.0249	0.5343	0.6947	0.7044	Good	0.19	February
10	06470500	Value	39	0.138	-0.04	0.9694	0.013	0.7680	0.104	0.2289	0.107	0.1987	0.0275	0.4238	0.4611	0.8692	Good	0.149	February
14	06470875	$\log_e$	33	0.420	-1.22	0.3546	-0.086	0.0198	0.029	0.8270	0.304	0.0156	0.0500	0.2516	0.2664	0.6220	Good	0.305	January
14	06470875	Value	33	0.361	-0.90	0.6110	-0.062	0.1532	-0.081	0.6399	0.460	0.0055	0.0733	0.2094	0.2532	0.1052	Good	0.467	December
Phosphorus, dissolved (mg/L as P), 00666																			
2	06468170	$\log_e$	39	0.385	-1.30	0.3353	0.147	0.0030	-0.043	0.8177	-0.487	0.0108	-0.0378	0.3942	0.7227	0.9919	Good	0.489	July
2	06468170	Value	39	0.240	0.22	0.2236	0.017	0.0115	-0.010	0.6852	-0.035	0.1650	-0.0032	0.5972	0.5264	0.0033	Poor	0.036	July
4	06468250	$\log_e$	35	0.256	-5.76	0.0013	0.057	0.3428	0.153	0.5020	-0.133	0.5097	0.1112	0.0549	0.2150	0.2034	Good	0.203	May
4	06468250	Value	34	0.248	-0.21	0.2412	0.006	0.3511	0.020	0.4668	-0.002	0.9094	0.0109	0.0853	0.6036	0.1233	Good	0.02	April
9	06470000	$\log_e$	67	0.400	-7.28	0.0001	0.238	0.0001	0.013	0.9149	0.152	0.1880	0.1341	0.0001	0.3097	0.9220	Good	0.153	January
9	06470000	Value	66	0.424	-0.29	0.0002	0.018	0.0001	0.004	0.6846	0.012	0.1545	0.0111	0.0001	0.0559	0.0254	Poor	0.013	January
10	06470500	$\log_e$	158	0.072	-2.47	0.0001	0.104	0.0411	-0.046	0.6497	-0.146	0.1704	-0.0082	0.5028	0.0151	0.1801	Fair	0.153	July
10	06470500	Value	156	0.025	0.08	0.0441	0.006	0.2464	0.009	0.3907	-0.003	0.7676	0.0009	0.4974	0.0565	0.0001	Poor	0.009	April
13	06470833	$\log_e$	63	0.017	-4.19	0.0001	0.034	0.6531	0.099	0.5851	-0.064	0.7334	0.0184	0.7465	0.4266	0.0001	Poor	0.118	May
13	06470833	Value	63	0.029	0.05	0.3799	0.003	0.5006	0.001	0.9137	-0.009	0.4081	-0.0007	0.8260	0.7255	0.0001	Poor	0.009	June
14	06470875	$\log_e$	69	0.321	-5.50	0.0001	-0.072	0.2058	0.095	0.5912	0.535	0.0042	0.1161	0.0040	0.2622	0.0641	Good	0.543	January
14	06470875	Value	67	0.280	-0.22	0.2873	-0.020	0.0516	0.022	0.4807	0.070	0.0311	0.0152	0.0291	0.3256	0.0001	Poor	0.073	January
Phosphorus, orthophosphate, dissolved (mg/L as P), 00671																			
2	06468170	$\log_e$	41	0.288	-4.05	0.0001	0.191	0.0028	-0.048	0.8505	-0.458	0.0872	0.0329	0.2543	0.2479	0.9301	Good	0.461	July
2	06468170	Value	42	0.257	-0.02	0.7768	0.013	0.0045	-0.003	0.8553	-0.026	0.1767	0.0033	0.0946	0.6833	0.0001	Poor	0.026	July
4	06468250	$\log_e$	34	0.199	-8.47	0.0095	0.026	0.8103	0.411	0.3251	-0.110	0.7705	0.1822	0.0919	0.4955	0.0066	Poor	0.425	April
4	06468250	Value	33	0.280	-0.24	0.1694	0.007	0.2675	0.019	0.4512	0.003	0.8871	0.0111	0.0717	0.6676	0.4470	Good	0.019	March

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	A (intercept)	p-value for intercept	B [$\log_e(Q)$]	p-value for B	C [sin ($2\pi t$)]	p-value for C	D [cos ($2\pi t$)]	p-value for D	E (t)	p-value for E	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
Phosphorus, orthophosphate, dissolved (mg/L as P), 00671--Continued																			
9	06470000	$\log_e$	63	0.202	-3.91	0.0001	0.239	0.0008	0.046	0.8162	0.150	0.4377	0.0119	0.6881	0.1907	0.7609	Good	0.157	January
9	06470000	Value	64	0.153	-0.01	0.8050	0.012	0.0075	0.007	0.5616	0.013	0.2823	0.0021	0.2318	0.2079	0.0001	Poor	0.015	January
10	06470500	$\log_e$	55	0.216	-8.04	0.0002	0.374	0.0019	-0.461	0.0629	0.159	0.4843	0.1413	0.0273	0.2181	0.6809	Good	0.488	October
10	06470500	Value	53	0.144	-0.25	0.1155	0.020	0.0262	-0.022	0.2584	0.004	0.8337	0.0097	0.0505	0.7298	0.0001	Poor	0.022	October
14	06470875	$\log_e$	66	0.301	-7.24	0.0001	-0.017	0.7992	0.021	0.9194	0.588	0.0073	0.1577	0.0007	0.6644	0.8868	Good	0.588	January
14	06470875	Value	65	0.237	-0.23	0.0354	-0.005	0.3711	0.001	0.9355	0.027	0.1111	0.0119	0.0017	0.0293	0.0001	Poor	0.027	January
Boron, dissolved (µg/L as B), 01020																			
1	06467600	$\log_e$	41	0.417	4.75	0.0001	-0.168	0.0020	-0.135	0.4224	-0.106	0.6565	0.0268	0.1706	0.5529	0.4376	Good	0.172	August
1	06467600	Value	41	0.425	160.56	0.1060	-29.473	0.0037	-31.961	0.3152	-42.242	0.3477	4.4922	0.2211	0.2537	0.7520	Good	52.971	August
2	06468170	$\log_e$	61	0.678	5.41	0.0001	-0.230	0.0001	-0.083	0.3941	0.105	0.3685	0.0002	0.9881	0.2980	0.1840	Good	0.134	November
2	06468170	Value	64	0.574	201.78	0.0007	-32.562	0.0001	1.113	0.9495	37.111	0.0817	2.2306	0.2623	0.5888	0.0002	Poor	37.128	January
4	06468250	$\log_e$	35	0.677	5.89	0.0001	-0.140	0.0001	-0.074	0.3509	-0.083	0.2722	-0.0209	0.2976	0.3874	0.5966	Good	0.111	August
4	06468250	Value	35	0.649	272.25	0.0043	-20.633	0.0001	-5.466	0.6454	-0.103	0.9930	-2.4067	0.4328	0.8152	0.6418	Good	5.467	October
7	06469400	$\log_e$	31	0.063	5.22	0.0001	-0.054	0.4912	0.053	0.9024	-0.173	0.8278	-0.0259	0.4959	0.0940	0.0912	Good	0.181	June
7	06469400	Value	31	0.090	300.66	0.0867	-0.705	0.9563	31.288	0.6616	-69.356	0.5858	-7.8469	0.1965	0.2366	0.0004	Poor	76.087	June
9	06470000	$\log_e$	92	0.502	5.85	0.0001	-0.243	0.0001	-0.011	0.8978	0.143	0.1312	-0.0006	0.9639	0.3480	0.0001	Poor	0.143	December
9	06470000	Value	94	0.547	397.49	0.0001	-47.887	0.0001	10.596	0.4592	19.847	0.2100	-1.8868	0.3597	0.2861	0.0256	Poor	22.498	January
10	06470500	$\log_e$	160	0.757	6.83	0.0001	-0.343	0.0001	0.030	0.4067	0.006	0.8656	-0.0057	0.1875	0.3639	0.2938	Good	0.031	March
10	06470500	Value	160	0.631	534.61	0.0001	-68.253	0.0001	13.361	0.1666	6.062	0.5595	-0.9511	0.4223	0.0880	0.0497	Poor	14.672	March
Phosphorus, orthophosphate, dissolved (mg/L as P), 00671																			
11	06470800	$\log_e$	34	0.105	5.57	0.0001	-0.104	0.1133	0.241	0.3898	0.004	0.9917	-0.0215	0.4823	0.4473	0.3593	Good	0.241	April
11	06470800	Value	32	0.262	339.20	0.0013	-19.338	0.0258	23.861	0.4961	-42.606	0.3544	-6.6137	0.1101	0.0827	0.1945	Good	48.833	June
13	06470833	$\log_e$	62	0.302	4.57	0.0001	0.001	0.9403	-0.109	0.0003	0.068	0.0222	-0.0089	0.3248	0.5812	0.8299	Good	0.128	November
13	06470833	Value	62	0.297	97.70	0.0001	0.111	0.9093	-8.712	0.0004	5.385	0.0263	-0.8106	0.2684	0.7491	0.3086	Good	10.242	November
Phosphorus, orthophosphate, dissolved (mg/L as P), 00671																			
14	06470875	$\log_e$	71	0.658	4.37	0.0001	-0.163	0.0001	-0.048	0.4916	0.244	0.0016	0.0560	0.0003	0.2688	0.6075	Good	0.249	December
14	06470875	Value	71	0.628	-117.39	0.3868	-41.279	0.0001	8.157	0.7027	83.429	0.0005	18.8457	0.0001	0.1291	0.7285	Good	83.827	January
Iron, dissolved (µg/L as Fe), 01046																			
1	06467600	$\log_e$	41	0.503	5.27	0.0001	0.190	0.0015	0.157	0.3746	0.342	0.1743	-0.0417	0.0462	0.5371	0.9639	Good	0.376	January
1	06467600	Value	41	0.327	270.95	0.0008	6.846	0.3595	21.791	0.3680	78.623	0.0276	-5.6125	0.0522	0.6355	0.0001	Poor	81.587	January
2	06468170	$\log_e$	65	0.370	4.57	0.0001	0.108	0.0054	0.192	0.1991	0.522	0.0047	-0.0369	0.0313	0.3143	0.7166	Good	0.556	January
2	06468170	Value	63	0.384	136.15	0.0001	5.765	0.0124	9.065	0.3049	30.038	0.0070	-3.1786	0.0024	0.1175	0.0137	Poor	31.376	January

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	*A* (intercept)	p-value for intercept	*B* [$\log_e(Q)$]	p-value for *B*	*C* [$\sin(2\pi t)$]	p-value for *C*	*D* [$\cos(2\pi t)$]	p-value for *D*	*E* (*t*)	p-value for *E*	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
								Iron, dissolved (µg/L as Fe), 01046--Continued											
4	06468250	$\log_e$	36	0.499	0.48	0.6919	0.076	0.0931	0.294	0.0752	0.651	0.0002	0.0945	0.0297	0.6742	0.8903	Good	0.714	January
4	06468250	Value	35	0.518	-53.53	0.1924	4.364	0.0058	7.616	0.1616	18.882	0.0012	2.8559	0.0481	0.6856	0.0893	Good	20.36	January
7	06469400	$\log_e$	32	0.411	5.82	0.0001	0.128	0.0182	-0.274	0.3477	0.977	0.0714	-0.0551	0.0354	0.3718	0.4763	Good	1.015	December
7	06469400	Value	31	0.323	278.26	0.0014	8.978	0.1187	-3.806	0.9039	64.343	0.2714	-7.0717	0.0150	0.8265	0.0008	Poor	64.455	December
9	06470000	$\log_e$	96	0.399	5.36	0.0001	-0.031	0.4987	0.547	0.0001	0.704	0.0001	-0.0682	0.0002	0.2487	0.1811	Good	0.892	February
9	06470000	Value	94	0.311	130.60	0.0001	-1.130	0.6400	24.832	0.0003	31.945	0.0001	-2.8477	0.0044	0.1257	0.0001	Poor	40.461	February
10	06470500	$\log_e$	86	0.436	3.29	0.0001	0.174	0.0058	0.445	0.0005	0.398	0.0022	-0.0489	0.0003	0.5968	0.0071	Poor	0.597	February
10	06470500	Value	84	0.269	15.12	0.2964	6.601	0.0012	8.612	0.0315	8.500	0.0352	-0.5541	0.1849	0.5816	0.0001	Poor	12.1	February
11	06470800	$\log_e$	34	0.322	5.90	0.0001	0.145	0.0116	-0.192	0.4167	0.239	0.4190	-0.0660	0.0151	0.4179	0.9186	Good	0.307	November
11	06470800	Value	33	0.266	286.83	0.0003	10.674	0.0898	-6.479	0.8082	-0.599	0.9860	-7.8232	0.0122	0.2839	0.0271	Poor	6.507	September
14	06470875	$\log_e$	71	0.197	2.30	0.0150	0.056	0.2490	0.547	0.0004	0.179	0.2513	-0.0038	0.9012	0.2585	0.3037	Good	0.576	March
14	06470875	Value	70	0.220	5.04	0.7716	2.016	0.0322	9.891	0.0006	4.155	0.1554	0.1900	0.7433	0.5926	0.0001	Poor	10.728	March
								Manganese, dissolved (µg/L as Mn), 01056											
1	06467600	$\log_e$	42	0.302	5.06	0.0001	-0.096	0.1100	-0.254	0.2019	-0.244	0.3807	-0.0424	0.0633	0.7359	0.9024	Good	0.352	August
1	06467600	Value	41	0.234	108.75	0.0037	-2.651	0.4488	-19.072	0.1093	-15.898	0.3425	-1.6670	0.2108	0.9133	0.0001	Poor	24.829	August
2	06468170	$\log_e$	65	0.319	3.67	0.0001	-0.079	0.1007	0.367	0.0556	0.963	0.0001	0.0232	0.2798	0.8137	0.2077	Good	1.031	January
2	06468170	Value	63	0.280	58.01	0.3336	-8.873	0.0566	36.387	0.0478	83.033	0.0009	2.1518	0.2955	0.5490	0.0001	Poor	90.656	January
4	06468250	$\log_e$	35	0.264	4.62	0.0920	-0.223	0.0338	0.606	0.1096	0.712	0.0416	-0.0042	0.9634	0.4992	0.1049	Good	0.935	February
4	06468250	Value	34	0.297	355.34	0.2704	-24.388	0.0462	82.177	0.0676	102.114	0.0186	-6.2955	0.5654	0.1046	0.0016	Poor	131.074	February
7	06469400	$\log_e$	31	0.256	5.69	0.0001	-0.127	0.0226	-0.186	0.5261	1.100	0.0477	-0.0234	0.3593	0.7292	0.8287	Good	1.116	December
7	06469400	Value	30	0.133	133.62	0.0339	-4.938	0.2875	-15.479	0.5095	78.150	0.0820	0.2622	0.8978	0.4383	0.0156	Poor	79.668	December
9	06470000	$\log_e$	94	0.556	7.45	0.0001	-0.277	0.0001	0.390	0.0001	0.373	0.0005	-0.0223	0.1026	0.1498	0.0131	Poor	0.54	February
9	06470000	Value	94	0.472	1299.05	0.0001	-130.483	0.0001	188.091	0.0006	215.309	0.0004	-12.5886	0.0979	0.0528	0.2585	Good	285.895	February
10	06470500	$\log_e$	84	0.449	7.29	0.0001	-0.415	0.0001	0.912	0.0001	-0.369	0.0126	-0.0124	0.3941	0.7206	0.8007	Good	0.984	April
10	06470500	Value	87	0.256	931.56	0.0001	-118.369	0.0001	227.386	0.0001	-109.405	0.0605	-5.2069	0.3644	0.3501	0.0001	Poor	252.337	April
11	06470800	$\log_e$	34	0.281	6.07	0.0001	-0.069	0.3127	-0.539	0.0754	0.472	0.2059	-0.0260	0.4243	0.9057	0.0120	Poor	0.716	November
11	06470800	Value	33	0.288	528.86	0.0044	-4.252	0.7764	-137.258	0.0388	185.890	0.0397	-8.1320	0.2507	0.9382	0.0004	Poor	231.073	November
14	06470875	$\log_e$	70	0.239	1.03	0.4770	0.003	0.9674	0.674	0.0042	0.617	0.0131	0.0823	0.0923	0.8505	0.6863	Good	0.914	February
14	06470875	Value	69	0.079	-3.39	0.9862	-5.321	0.6025	24.290	0.4328	56.609	0.0885	3.3777	0.6096	0.9831	0.0001	Poor	61.6	January

Table 5. Results of regression analyses used to evaluate water quality in the James River Basin, North Dakota, 1972-93--Continued

Site number	Station identification number	Dependent variable	N	R^2	*A* (intercept)	p-value for intercept	*B* [$\log_e(Q)$]	p-value for *B*	*C* [sin $(2\pi t)$]	p-value for *C*	*D* [cos $(2\pi t)$]	p-value for *D*	*E* (*t*)	p-value for *E*	p-value for Spec	p-value for Resnor	Judgment	Magnitude	Peak month
									Sediment, suspended, concentration (mg/L), 80154										
2	06468170	$\log_e$	37	0.380	5.11	0.0075	-0.082	0.2197	-0.309	0.2301	0.866	0.0013	-0.0713	0.2397	0.9317	0.8534	Good	0.919	December
2	06468170	Value	35	0.603	71.32	0.0351	-3.609	0.0049	1.991	0.6776	27.994	0.0001	-1.3093	0.2282	0.5590	0.5579	Good	28.065	January
4	06468250	$\log_e$	35	0.593	8.18	0.0001	-0.044	0.4013	-0.538	0.0120	0.549	0.0053	-0.1688	0.0013	0.4604	0.8656	Good	0.769	November
4	06468250	Value	35	0.417	133.50	0.0063	-0.458	0.7932	-12.862	0.0607	14.532	0.0273	-3.4254	0.0357	0.8739	0.0060	Poor	19.406	November
9	06470000	$\log_e$	63	0.223	4.49	0.0001	-0.072	0.0833	-0.205	0.0960	0.301	0.0175	-0.0211	0.5375	0.3927	0.0522	Good	0.364	November
9	06470000	Value	63	0.315	24.95	0.5930	-3.764	0.0464	-5.962	0.2864	20.140	0.0006	1.1295	0.4667	0.2184	0.4233	Good	21.004	December
10	06470500	$\log_e$	119	0.114	3.50	0.0001	-0.034	0.5028	0.087	0.4156	-0.349	0.0021	0.0230	0.1113	0.0573	0.0477	Poor	0.36	June
10	06470500	Value	118	0.145	51.94	0.0299	-5.082	0.0757	6.080	0.2851	-21.884	0.0004	1.2160	0.1165	0.1738	0.0001	Poor	22.713	June
14	06470875	$\log_e$	52	0.143	5.39	0.0001	-0.084	0.0349	0.031	0.8220	-0.289	0.0477	-0.0476	0.2084	0.3121	0.8233	Good	0.291	June
14	06470875	Value	51	0.141	96.24	0.0258	-2.328	0.1247	0.657	0.9022	-13.617	0.0155	-1.4395	0.3073	0.2152	0.0128	Poor	13.633	June

Table 6. Summary of significant relations of water-quality constituents to streamflow, season, and time, James River Basin, North Dakota, 1972-93

[µS/cm, microsiemens per centimeter; number following constituent is parameter code; $\log_e$, natural (base-*e*) logarithm; -1, indicates a significant negative relation; Y, indicates a significant relation to the sine term, the cosine term, or both terms; 1, indicates a significant positive relation; 0, indicates no significant relation; mg/L, milligrams per liter; µg/L, micrograms per liter]

Site number	Station identification number	Dependent variable	Streamflow	Season	Time	Judgment of regression model
			Specific conductance (µS/cm at 25 degrees Celsius), 00095			
1	06467600	$\log_e$	-1	Y	1	Good
1	06467600	Value	-1	Y	0	Good
2	06468170	$\log_e$	-1	Y	1	Good
2	06468170	Value	-1	Y	0	Fair
4	06468250	$\log_e$	-1	0	0	Good
4	06468250	Value	-1	0	0	Good
7	06469400	$\log_e$	-1	Y	0	Good
7	06469400	Value	-1	Y	0	Poor
9	06470000	$\log_e$	-1	Y	0	Poor
9	06470000	Value	-1	Y	0	Good
10	06470500	$\log_e$	-1	Y	0	Poor
10	06470500	Value	-1	Y	0	Poor
11	06470800	$\log_e$	-1	Y	1	Good
11	06470800	Value	-1	Y	1	Good
12	06470830	$\log_e$	-1	0	1	Good
12	06470830	Value	-1	0	1	Good
13	06470833	$\log_e$	1	Y	-1	Good
13	06470833	Value	1	Y	-1	Good
14	06470875	$\log_e$	-1	Y	0	Good
14	06470875	Value	-1	Y	1	Good
			Oxygen, dissolved (mg/L), 00300			
2	06468170	$\log_e$	0	0	0	Good
2	06468170	Value	0	0	0	Good
4	06468250	$\log_e$	0	0	0	Good
4	06468250	Value	0	Y	0	Good
9	06470000	$\log_e$	1	Y	0	Poor
9	06470000	Value	1	Y	-1	Good
10	06470500	$\log_e$	0	Y	0	Poor
10	06470500	Value	0	Y	0	Poor
14	06470875	$\log_e$	0	Y	0	Poor
14	06470875	Value	0	Y	0	Good
			Hardness, total (mg/L as $CaCO_3$), 00900			
1	06467600	$\log_e$	-1	Y	0	Good
1	06467600	Value	-1	Y	0	Good
2	06468170	$\log_e$	-1	Y	0	Good
2	06468170	Value	0	Y	0	Poor
4	06468250	$\log_e$	-1	0	0	Good
4	06468250	Value	-1	Y	0	Good
7	06469400	$\log_e$	-1	Y	0	Good
7	06469400	Value	-1	0	0	Good

Table 6. Summary of significant relations of water-quality constituents to streamflow, season, and time, James River Basin, North Dakota, 1972-93--Continued

[µS/cm, microsiemens per centimeter; number following constituent is parameter code; $\log_e$, natural (base-*e*) logarithm; -1, indicates a significant negative relation; Y, indicates a significant relation to the sine term, the cosine term, or both terms; 1, indicates a significant positive relation; 0, indicates no significant relation; mg/L, milligrams per liter; µg/L; micrograms per liter]

Site number	Station identification number	Dependent variable	Streamflow	Season	Time	Judgment of regression model
			Hardness, total (mg/L as $CaCO_3$), 00900--Continued			
9	06470000	$\log_e$	-1	Y	0	Poor
9	06470000	Value	-1	Y	0	Good
10	06470500	$\log_e$	-1	Y	0	Poor
10	06470500	Value	-1	Y	0	Fair
11	06470800	$\log_e$	-1	Y	0	Good
11	06470800	Value	-1	0	0	Poor
12	06470830	$\log_e$	-1	0	1	Good
			Hardness, total (mg/L as $CaCO_3$), 00900--Continued			
12	06470830	Value	-1	Y	1	Good
13	06470833	$\log_e$	1	Y	1	Poor
13	06470833	Value	1	Y	1	Poor
14	06470875	$\log_e$	-1	Y	0	Good
14	06470875	Value	-1	Y	0	Good
			Solids, residue on evaporation at 180 degrees Celsius, dissolved (mg/L), 70300			
1	06467600	$\log_e$	-1	Y	0	Good
1	06467600	Value	-1	Y	0	Good
2	06468170	$\log_e$	-1	0	0	Good
2	06468170	Value	-1	Y	0	Poor
4	06468250	$\log_e$	-1	0	0	Good
4	06468250	Value	-1	Y	0	Good
7	06469400	$\log_e$	-1	Y	0	Good
7	06469400	Value	-1	0	0	Good
9	06470000	$\log_e$	-1	Y	0	Poor
9	06470000	Value	-1	Y	0	Fair
10	06470500	$\log_e$	-1	Y	0	Poor
10	06470500	Value	-1	Y	0	Fair
11	06470800	$\log_e$	-1	Y	0	Good
11	06470800	Value	-1	0	0	Good
12	06470830	$\log_e$	-1	0	0	Good
12	06470830	Value	-1	0	1	Good
13	06470833	$\log_e$	1	0	0	Poor
13	06470833	Value	1	0	0	Poor
14	06470875	$\log_e$	-1	Y	0	Good
14	06470875	Value	-1	Y	1	Good
			Solids, sum of constituents, dissolved (mg/L), 70301			
1	06467600	$\log_e$	-1	Y	0	Good
1	06467600	Value	-1	Y	0	Good
2	06468170	$\log_e$	-1	0	0	Good
2	06468170	Value	-1	0	0	Good
4	06468250	$\log_e$	-1	0	0	Good
4	06468250	Value	-1	0	0	Good
7	06469400	$\log_e$	-1	Y	0	Good
7	06469400	Value	-1	0	1	Good

Table 6. Summary of significant relations of water-quality constituents to streamflow, season, and time, James River Basin, North Dakota, 1972-93--Continued

[µS/cm, microsiemens per centimeter; number following constituent is parameter code; $\log_e$, natural (base-*e*) logarithm; -1, indicates a significant negative relation; Y, indicates a significant relation to the sine term, the cosine term, or both terms; 1, indicates a significant positive relation; 0, indicates no significant relation; mg/L, milligrams per liter; µg/L; micrograms per liter]

Site number	Station identification number	Dependent variable	Streamflow	Season	Time	Judgment of regression model
			Solids, sum of constituents, dissolved (mg/L), 70301--Continued			
9	06470000	$\log_e$	-1	Y	0	Poor
9	06470000	Value	-1	Y	0	Poor
10	06470500	$\log_e$	-1	Y	0	Poor
10	06470500	Value	-1	Y	0	Good
11	06470800	$\log_e$	-1	Y	0	Good
11	06470800	Value	-1	0	0	Good
13	06470833	$\log_e$	1	Y	0	Poor
13	06470833	Value	1	Y	0	Poor
14	06470875	$\log_e$	-1	Y	1	Good
14	06470875	Value	-1	Y	1	Good
			Calcium, dissolved (mg/L as Ca), 00915			
1	06467600	$\log_e$	-1	Y	1	Good
1	06467600	Value	-1	Y	1	Good
2	06468170	$\log_e$	0	0	0	Good
2	06468170	Value	0	0	0	Poor
4	06468250	$\log_e$	-1	Y	0	Good
4	06468250	Value	-1	Y	0	Good
7	06469400	$\log_e$	-1	0	0	Good
7	06469400	Value	-1	0	0	Good
9	06470000	$\log_e$	-1	Y	0	Good
9	06470000	Value	-1	Y	0	Good
10	06470500	$\log_e$	-1	Y	0	Poor
10	06470500	Value	-1	Y	0	Fair
11	06470800	$\log_e$	-1	0	0	Good
11	06470800	Value	-1	0	0	Poor
12	06470830	$\log_e$	-1	Y	1	Good
12	06470830	Value	-1	Y	1	Good
13	06470833	$\log_e$	1	Y	1	Poor
13	06470833	Value	1	Y	1	Poor
14	06470875	$\log_e$	-1	Y	0	Good
14	06470875	Value	-1	Y	0	Good
			Magnesium, dissolved (mg/L as Mg), 00925			
1	06467600	$\log_e$	-1	Y	0	Good
1	06467600	Value	-1	Y	0	Good
2	06468170	$\log_e$	-1	Y	0	Good
2	06468170	Value	-1	Y	0	Poor
4	06468250	$\log_e$	-1	0	-1	Poor
4	06468250	Value	-1	Y	0	Good
7	06469400	$\log_e$	-1	Y	0	Good
7	06469400	Value	-1	Y	1	Good

Table 6. Summary of significant relations of water-quality constituents to streamflow, season, and time, James River Basin, North Dakota, 1972-93--Continued

[µS/cm, microsiemens per centimeter; number following constituent is parameter code; $\log_e$, natural (base-*e*) logarithm; -1, indicates a significant negative relation; Y, indicates a significant relation to the sine term, the cosine term, or both terms; 1, indicates a significant positive relation; 0, indicates no significant relation; mg/L, milligrams per liter; µg/L; micrograms per liter]

Site number	Station identification number	Dependent variable	Streamflow	Season	Time	Judgment of regression model
			Magnesium, dissolved (mg/L as Mg), 00925--Continued			
9	06470000	$\log_e$	-1	Y	0	Poor
9	06470000	Value	-1	Y	0	Good
10	06470500	$\log_e$	-1	Y	0	Poor
10	06470500	Value	-1	Y	0	Fair
11	06470800	$\log_e$	-1	Y	0	Good
11	06470800	Value	-1	0	0	Good
12	06470830	$\log_e$	-1	0	1	Good
12	06470830	Value	-1	Y	1	Good
13	06470833	$\log_e$	1	Y	0	Good
13	06470833	Value	1	Y	0	Good
14	06470875	$\log_e$	-1	Y	0	Good
14	06470875	Value	-1	Y	0	Good
			Sodium, dissolved (mg/L as Na), 00930			
1	06467600	$\log_e$	-1	0	0	Good
1	06467600	Value	-1	0	0	Good
2	06468170	$\log_e$	-1	Y	0	Good
2	06468170	Value	-1	Y	0	Good
4	06468250	$\log_e$	-1	0	0	Good
4	06468250	Value	-1	Y	0	Good
7	06469400	$\log_e$	-1	0	0	Good
7	06469400	Value	-1	Y	0	Good
9	06470000	$\log_e$	-1	Y	0	Poor
9	06470000	Value	-1	Y	0	Good
10	06470500	$\log_e$	-1	0	0	Good
10	06470500	Value	-1	Y	0	Good
11	06470800	$\log_e$	-1	Y	0	Good
11	06470800	Value	-1	Y	0	Good
13	06470833	$\log_e$	1	Y	0	Good
13	06470833	Value	1	Y	0	Good
14	06470875	$\log_e$	-1	Y	1	Good
14	06470875	Value	-1	Y	1	Good
			Potassium, dissolved (mg/L as K), 00935			
1	06467600	$\log_e$	0	0	1	Good
1	06467600	Value	0	0	0	Poor
2	06468170	$\log_e$	-1	0	1	Good
2	06468170	Value	0	Y	1	Good
4	06468250	$\log_e$	0	Y	0	Good
4	06468250	Value	0	Y	-1	Good
7	06469400	$\log_e$	1	Y	1	Good
7	06469400	Value	0	Y	1	Good

Table 6. Summary of significant relations of water-quality constituents to streamflow, season, and time, James River Basin, North Dakota, 1972-93--Continued

[µS/cm, microsiemens per centimeter; number following constituent is parameter code; $\log_e$, natural (base-*e*) logarithm; -1, indicates a significant negative relation; Y, indicates a significant relation to the sine term, the cosine term, or both terms; 1, indicates a significant positive relation; 0, indicates no significant relation; mg/L, milligrams per liter; µg/L; micrograms per liter]

Site number	Station identification number	Dependent variable	Streamflow	Season	Time	Judgment of regression model
			Potassium, dissolved (mg/L as K), 00935--Continued			
9	06470000	$\log_e$	1	Y	1	Good
9	06470000	Value	1	Y	1	Good
10	06470500	$\log_e$	0	Y	1	Good
10	06470500	Value	0	Y	0	Fair
11	06470800	$\log_e$	-1	Y	1	Good
11	06470800	Value	-1	Y	1	Good
13	06470833	$\log_e$	1	0	0	Good
13	06470833	Value	1	0	0	Poor
14	06470875	$\log_e$	-1	0	0	Good
14	06470875	Value	-1	0	0	Good
			Sulfate, dissolved (mg/L as SO_4), 00945			
1	06467600	$\log_e$	-1	0	0	Good
1	06467600	Value	-1	0	0	Good
2	06468170	$\log_e$	-1	0	0	Good
2	06468170	Value	-1	0	0	Good
4	06468250	$\log_e$	-1	0	-1	Good
4	06468250	Value	-1	0	-1	Good
7	06469400	$\log_e$	-1	0	0	Good
7	06469400	Value	-1	Y	0	Good
9	06470000	$\log_e$	-1	Y	0	Poor
9	06470000	Value	-1	Y	0	Good
10	06470500	$\log_e$	-1	Y	0	Poor
10	06470500	Value	-1	Y	0	Fair
11	06470800	$\log_e$	-1	Y	0	Good
11	06470800	Value	-1	0	0	Good
12	06470830	$\log_e$	-1	0	1	Good
12	06470830	Value	-1	Y	1	Good
13	06470833	$\log_e$	1	Y	1	Good
13	06470833	Value	1	Y	1	Good
14	06470875	$\log_e$	-1	Y	1	Good
14	06470875	Value	-1	Y	1	Good
			Chloride, dissolved (mg/L as Cl), 00940			
1	06467600	$\log_e$	-1	0	0	Good
1	06467600	Value	-1	0	0	Good
2	06468170	$\log_e$	-1	0	0	Good
2	06468170	Value	-1	0	0	Good
4	06468250	$\log_e$	-1	Y	0	Good
4	06468250	Value	-1	Y	0	Good
7	06469400	$\log_e$	-1	0	1	Poor
7	06469400	Value	-1	Y	1	Good

Table 6. Summary of significant relations of water-quality constituents to streamflow, season, and time, James River Basin, North Dakota, 1972-93--Continued

[µS/cm, microsiemens per centimeter; number following constituent is parameter code; $\log_e$, natural (base-*e*) logarithm; -1, indicates a significant negative relation; Y, indicates a significant relation to the sine term, the cosine term, or both terms; 1, indicates a significant positive relation; 0, indicates no significant relation; mg/L, milligrams per liter; µg/L; micrograms per liter]

Site number	Station identification number	Dependent variable	Streamflow	Season	Time	Judgment of regression model
			Chloride, dissolved (mg/L as Cl), 00940--Continued			
9	06470000	$\log_e$	-1	Y	0	Good
9	06470000	Value	-1	Y	0	Good
10	06470500	$\log_e$	-1	Y	0	Good
10	06470500	Value	-1	Y	0	Fair
11	06470800	$\log_e$	-1	Y	1	Good
11	06470800	Value	-1	Y	1	Good
12	06470830	$\log_e$	-1	0	0	Good
12	06470830	Value	-1	Y	0	Good
13	06470833	$\log_e$	0	0	0	Good
13	06470833	Value	0	0	0	Good
14	06470875	$\log_e$	-1	Y	1	Good
14	06470875	Value	-1	Y	1	Good
			Fluoride, dissolved (mg/L as F), 00950			
2	06468170	$\log_e$	-1	Y	0	Poor
2	06468170	Value	-1	0	0	Poor
7	06469400	$\log_e$	0	Y	0	Good
7	06469400	Value	0	Y	0	Good
9	06470000	$\log_e$	-1	Y	1	Good
9	06470000	Value	-1	Y	1	Good
10	06470500	$\log_e$	-1	0	0	Good
10	06470500	Value	-1	0	0	Poor
11	06470800	$\log_e$	0	Y	1	Good
11	06470800	Value	0	Y	1	Poor
13	06470833	$\log_e$	0	0	0	Poor
13	06470833	Value	0	0	0	Poor
14	06470875	$\log_e$	-1	Y	0	Poor
14	06470875	Value	-1	Y	0	Good
			Silica, dissolved (mg/L as SiO_2), 00955			
1	06467600	$\log_e$	0	0	0	Good
1	06467600	Value	0	0	0	Good
2	06468170	$\log_e$	0	Y	0	Good
2	06468170	Value	0	Y	1	Good
7	06469400	$\log_e$	0	0	0	Good
7	06469400	Value	0	0	1	Good
9	06470000	$\log_e$	-1	0	1	Good
9	06470000	Value	-1	Y	1	Good
10	06470500	$\log_e$	-1	0	0	Poor
10	06470500	Value	-1	0	0	Fair
11	06470800	$\log_e$	1	Y	0	Good
11	06470800	Value	0	Y	0	Good

Table 6. Summary of significant relations of water-quality constituents to streamflow, season, and time, James River Basin, North Dakota, 1972-93--Continued

[µS/cm, microsiemens per centimeter; number following constituent is parameter code; $\log_e$, natural (base-*e*) logarithm; -1, indicates a significant negative relation; Y, indicates a significant relation to the sine term, the cosine term, or both terms; 1, indicates a significant positive relation; 0, indicates no significant relation; mg/L, milligrams per liter; µg/L; micrograms per liter]

Site number	Station identification number	Dependent variable	Streamflow	Season	Time	Judgment of regression model
			Silica, dissolved (mg/L as SiO_2), 00955--Continued			
13	06470833	$\log_e$	0	Y	0	Poor
13	06470833	Value	-1	Y	0	Good
14	06470875	$\log_e$	0	Y	1	Good
14	06470875	Value	0	0	1	Poor
			Nitrogen, nitrate, dissolved (mg/L as N), 00618			
9	06470000	$\log_e$	1	0	-1	Good
9	06470000	Value	0	0	-1	Good
			Nitrogen, nitrate, dissolved (mg/L as NO_3), 71851			
9	06470000	$\log_e$	1	0	-1	Good
9	06470000	Value	0	0	-1	Poor
			Nitrogen, nitrite plus nitrate, dissolved (mg/L as N), 00631			
2	06468170	$\log_e$	1	0	-1	Poor
2	06468170	Value	0	0	0	Poor
4	06468250	$\log_e$	1	Y	0	Good
4	06468250	Value	1	0	1	Poor
9	06470000	$\log_e$	1	0	0	Fair
9	06470000	Value	1	0	0	Poor
10	06470500	$\log_e$	1	Y	0	Poor
10	06470500	Value	1	Y	0	Poor
12	06470830	$\log_e$	0	Y	0	Good
12	06470830	Value	1	Y	-1	Good
13	06470833	$\log_e$	-1	Y	0	Good
13	06470833	Value	-1	Y	0	Good
14	06470875	$\log_e$	0	0	-1	Poor
14	06470875	Value	0	0	0	Poor
			Nitrogen, ammonia, dissolved (mg/L as N), 00608			
9	06470000	$\log_e$	0	Y	0	Poor
9	06470000	Value	0	Y	0	Good
10	06470500	$\log_e$	0	Y	0	Good
10	06470500	Value	0	Y	0	Poor
14	06470875	$\log_e$	-1	0	-1	Poor
14	06470875	Value	-1	0	-1	Poor
			Nitrogen, organic, total (mg/L as N), 00605			
9	06470000	$\log_e$	1	0	0	Good
9	06470000	Value	1	0	0	Good
10	06470500	$\log_e$	0	0	0	Good
10	06470500	Value	0	0	0	Good

Table 6. Summary of significant relations of water-quality constituents to streamflow, season, and time, James River Basin, North Dakota, 1972-93--Continued

[µS/cm, microsiemens per centimeter; number following constituent is parameter code; $\log_e$, natural (base-*e*) logarithm; -1, indicates a significant negative relation; Y, indicates a significant relation to the sine term, the cosine term, or both terms; 1, indicates a significant positive relation; 0, indicates no significant relation; mg/L, milligrams per liter; µg/L; micrograms per liter]

Site number	Station identification number	Dependent variable	Streamflow	Season	Time	Judgment of regression model
			Nitrogen, ammonia plus organic, dissolved (mg/L as N), 00623			
9	06470000	$\log_e$	1	Y	0	Good
9	06470000	Value	1	Y	0	Good
10	06470500	$\log_e$	0	0	0	Good
10	06470500	Value	0	0	0	Good
14	06470875	$\log_e$	-1	Y	0	Good
14	06470875	Value	0	Y	0	Good
			Phosphorus, dissolved (mg/L as P), 00666			
2	06468170	$\log_e$	1	Y	0	Good
2	06468170	Value	1	0	0	Poor
4	06468250	$\log_e$	0	0	0	Good
4	06468250	Value	0	0	0	Good
9	06470000	$\log_e$	1	0	1	Good
9	06470000	Value	1	0	1	Poor
10	06470500	$\log_e$	1	0	0	Fair
10	06470500	Value	0	0	0	Poor
13	06470833	$\log_e$	0	0	0	Poor
13	06470833	Value	0	0	0	Poor
14	06470875	$\log_e$	0	Y	1	Good
14	06470875	Value	0	Y	1	Poor
			Phosphorus, orthophosphate, dissolved (mg/L as P), 00671			
2	06468170	$\log_e$	1	0	0	Good
2	06468170	Value	1	0	0	Poor
4	06468250	$\log_e$	0	0	0	Poor
4	06468250	Value	0	0	0	Good
9	06470000	$\log_e$	1	0	0	Good
9	06470000	Value	1	0	0	Poor
10	06470500	$\log_e$	1	0	1	Good
10	06470500	Value	1	0	0	Poor
14	06470875	$\log_e$	0	Y	1	Good
14	06470875	Value	0	0	1	Poor
			Boron, dissolved (µg/L as B), 01020			
7	06467600	$\log_e$	-1	0	0	Good
7	06467600	Value	-1	0	0	Good
2	06468170	$\log_e$	-1	0	0	Good
2	06468170	Value	-1	0	0	Poor
4	06468250	$\log_e$	-1	0	0	Good
4	06468250	Value	-1	0	0	Good
7	06469400	$\log_e$	0	0	0	Good
7	06469400	Value	0	0	0	Poor

Table 6. Summary of significant relations of water-quality constituents to streamflow, season, and time, James River Basin, North Dakota, 1972-93--Continued

[µS/cm, microsiemens per centimeter; number following constituent is parameter code; $\log_e$, natural (base-*e*) logarithm; -1, indicates a significant negative relation; Y, indicates a significant relation to the sine term, the cosine term, or both terms; 1, indicates a significant positive relation; 0, indicates no significant relation; mg/L, milligrams per liter; µg/L; micrograms per liter]

Site number	Station identification number	Dependent variable	Streamflow	Season	Time	Judgment of regression model
			Boron, dissolved (µg/L as B), 01020--Continued			
9	06470000	$\log_e$	-1	0	0	Poor
9	06470000	Value	-1	0	0	Poor
10	06470500	$\log_e$	-1	0	0	Good
10	06470500	Value	-1	0	0	Poor
11	06470800	$\log_e$	0	0	0	Good
11	06470800	Value	-1	0	0	Good
13	06470833	$\log_e$	0	Y	0	Good
13	06470833	Value	0	Y	0	Good
14	06470875	$\log_e$	-1	Y	1	Good
14	06470875	Value	-1	Y	1	Good
			Iron, dissolved (µg/L as Fe), 01046			
1	06467600	$\log_e$	1	0	-1	Good
1	06467600	Value	0	Y	0	Poor
2	06468170	$\log_e$	1	Y	-1	Good
2	06468170	Value	1	Y	-1	Poor
4	06468250	$\log_e$	0	Y	1	Good
4	06468250	Value	1	Y	1	Good
7	06469400	$\log_e$	1	0	-1	Good
7	06469400	Value	0	0	-1	Poor
9	06470000	$\log_e$	0	Y	-1	Good
9	06470000	Value	0	Y	-1	Poor
10	06470500	$\log_e$	1	Y	-1	Poor
10	06470500	Value	1	Y	0	Poor
11	06470800	$\log_e$	1	0	-1	Good
11	06470800	Value	0	0	-1	Poor
14	06470875	$\log_e$	0	Y	0	Good
14	06470875	Value	1	Y	0	Poor
			Manganese, total (µg/L as Mn), 01055			
1	06467600	$\log_e$	0	0	0	Good
1	06467600	Value	0	0	0	Poor
2	06468170	$\log_e$	0	Y	0	Good
2	06468170	Value	0	Y	0	Poor
4	06468250	$\log_e$	-1	Y	0	Good
4	06468250	Value	-1	Y	0	Poor
7	06469400	$\log_e$	-1	Y	0	Good
7	06469400	Value	0	0	0	Poor
9	06470000	$\log_e$	-1	Y	0	Poor
9	06470000	Value	-1	Y	0	Good
10	06470500	$\log_e$	-1	Y	0	Good
10	06470500	Value	-1	Y	0	Poor
11	06470800	$\log_e$	0	0	0	Poor
11	06470800	Value	0	Y	0	Poor
14	06470875	$\log_e$	0	Y	0	Good
14	06470875	Value	0	0	0	Poor

Table 6. Summary of significant relations of water-quality constituents to streamflow, season, and time, James River Basin, North Dakota, 1972-93--Continued

[µS/cm, microsiemens per centimeter; number following constituent is parameter code; $\log_e$, natural (base-*e*) logarithm; -1, indicates a significant negative relation; Y, indicates a significant relation to the sine term, the cosine term, or both terms; 1, indicates a significant positive relation; 0, indicates no significant relation; mg/L, milligrams per liter; µg/L; micrograms per liter]

Site number	Station identification number	Dependent variable	Streamflow	Season	Time	Judgment of regression model
			Sediment, suspended, concentration (mg/L), 80154			
2	06468170	$\log_e$	0	Y	0	Good
2	06468170	Value	-1	Y	0	Good
4	06468250	$\log_e$	0	Y	-1	Good
4	06468250	Value	0	Y	-1	Poor
9	06470000	$\log_e$	0	Y	0	Good
9	06470000	Value	-1	Y	0	Good
10	06470500	$\log_e$	0	Y	0	Poor
10	06470500	Value	0	Y	0	Poor
14	06470875	$\log_e$	-1	Y	0	Good
14	06470875	Value	0	Y	0	Poor

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