Water Quality Report

Keystone Lake
Oklahoma
1996

US Army Corps of Engineers
Southwestern Division
Tulsa District
Planning, Environmental, and Regulatory Division

May 2001

EXECUTIVE SUMMARY

Water quality data were collected from eleven lake, and one tailwater location at Keystone Lake, Oklahoma, between April and October 1996. The purposes of the study were to collect sufficient water quality data to define existing limnological conditions and to provide a basis for future water quality investigations.

Waters impounded by the reservoir are too highly mineralized to be suitable for municipal and industrial uses without extensive treatment. Keystone Lake presents an unusual situation in that the Cimarron River carries significantly higher dissolved salts to the lake than the Arkansas River. Higher specific conductance and chloride levels were consistently observed at depth at lacustrine stations. The water in Keystone Lake was classified as very hard, and total dissolved solids levels in the lake exceed levels acceptable for domestic uses.

Thermal stratification was observed in early summer at all lacustrine stations. Dissolved oxygen values below <2 mg/l in the hypolimnion were common between June and September at lacustrine stations.

Trophic classification of Keystone Lake using epilimnetic total phosphorus concentrations resulted in a classification of hyper-eutrophic. Because phosphorus has a high affinity to sorb to suspended particulates this trophic state classification may be an overestimate given the short retention time (42 days) and relatively high turbidity of the reservoir. More than one-third of all turbidity observations during the study exceeded the Oklahoma Water Quality Standard of 25 NTUs. Based on chlorophyll *a* concentrations, trophic classification of Keystone Lake would fall into a meso-eutrophic category. The lower index values are indicative of the effects of inorganic turbidity limiting algal productivity.

Iron and manganese were also found in relatively high concentrations. During times of oxygen depletion in the hypolimnion, water users would experience staining problems. Analysis of other metals indicated no need for concern at this time.

Keystone Lake is regionally important as a flood control, power generation, and recreational facility and it is not presently used as a municipal or industrial water supply source. Results of this study indicate that overall, the water in Keystone Lake is of a reasonably good water quality when considering its primary uses.

Water Quality Study
Keystone Lake, Oklahoma
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INTRODUCTION

Personnel from the U. S. Army Corps of Engineers, Tulsa District collected water quality data at Keystone Lake, Oklahoma in 1996. The purposes of the investigation were to collect sufficient water quality data to define existing limnological conditions, provide a basis for future water quality investigations, and to support operational and environmental missions of the Tulsa District.

DESCRIPTION OF STUDY AREA

The Keystone Lake dam is on the Arkansas River at river mile 538.8, about 15 miles west of Tulsa in Tulsa County, Oklahoma. The lake extends into portions of Osage, Pawnee, and Creek Counties, Oklahoma. There are two major arms of the reservoir. The Arkansas River arm of the lake extends northwest north of Cleveland in Pawnee County, and the Cimarron River arm of the lake extends southwest near Oilton in Creek County. Arkansas River discharge contributes about 70% of the total inflow to the lake and Cimarron River discharge about 20% (Blazs et al., 1997). A third, smaller arm of the lake (Salt Creek), reaches south to just below the city of Mannford in Creek County.

The lake is located in the Eastern Sandstone Cuesta Plains geomorphic province consisting of west-dipping Pennsylvanian sandstones forming cuestas (a ridge with a gentle slope on one side and a cliff on the other) that overlook broad shale plains (Johnson et al., 1979). The dominant soil association in preimpoundment floodplain areas is Port-Yahola-Dale-Brewer and range from clays to clay loams and from silt loams to sandy loams. Sandy and mixed alluvial soils lie near old stream channels. Other soil associations in the project area include Dougherty-Eufaula (sandy areas), Norge-Teller-Vanoss (silty areas), and Darnell-Talihina-Stephenville (forested uplands) (Galloway, 1959). Land uses in the extensive drainage area are dominated by crop (42%) and rangeland (41%, Alexander et al., 1997).

The construction of the lake was authorized by the Flood Control Act approved 17 May 1950, and its purposes include flood control, water supply, hydroelectric power, navigation, and fish and wildlife. Construction began in January 1957 and the project was placed in flood control operation in September 1964. The conservation pool was filled in November 1964. Power generating unit number 2 became operational 2 May 1968 and generating unit number 1 became operational 21 May 1968. The embankment is constructed of rolled earth filled material. The total length of the dam, including a 1,600-foot concrete section, is 4,600 feet. The maximum height is about 121 feet above the streambed. The concrete section consists of a spillway 856 feet wide, a non-overflow section, and a power intake structure. Highway 151 crosses the dam to connect U.S. Highway 51 on the south with U.S. Highway (64) 412 on the north (USACE, 1993).

The spillway is a gated, concrete, ogee-weir with a net width of 720 feet, surmounted by eighteen 40- by 35-foot tainter gates. Spillway capacity at the top of maximum pool (elevation 766.0 ft.) is 939,000 cfs and at the top of the flood control pool (elevation 754.0 ft.) is 565,000 cfs. The spillway is equipped with nine 5.67- by 10-foot sluices located between alternate intermediate piers. Channel capacity of the Arkansas River below Tulsa, Oklahoma is about 90,000 cfs. The powerhouse and power intake structure are located between the spillway and the left non-overflow sections and include two penstocks, each 27 feet in diameter, controlled by two 14- by 30-foot gates (USACE, 1993).

Conservation storage at 723.0 feet MSL for Keystone Lake is 505,381 acre-feet, which includes 287,122 acre-feet power storage and 20,000 acre-feet (20 mgd) for water supply. Sediment reserve is 508,600 acre-feet. The only present contract for water supply from the lake is with Public Service Company of Oklahoma. Waters impounded by the lake are highly mineralized and unsuitable for most industrial or municipal uses without extensive treatment (USACE, 1989). Descriptive characteristics of Keystone Lake, Oklahoma at conservation pool elevation are listed in Table 1.

Table 1. **Descriptive characteristics of Keystone Lake at conservation pool elevation (723.0 feet, MSL).**

Lake Elevation (Conservation Pool)	723.0 feet MSL	220 meters MSL
Lake Surface Area	22,420 acres	9,073.4 hectares
Lake Volume	505,381 acre-feet	$623.6*10^6$ m^3
Contributing Drainage Area	22,351 mi^2	57,889 km^2
Total Drainage Area	74,506 mi^2	192,971 km^2
Mean Depth	22.5 ft	6.9 meters
Maximum Depth	75 feet	22.9 meters
Shoreline Length	330 miles	531 km
Shore Development Index	15.7	15.7
Total Annual Inflow (1996)	4,417,136 acre-feet	$5,450.7*10^6$ m^3
Hydraulic Residence Time	42 days	0.115 years

Lake data based on 1988 sedimentation survey.

MATERIALS AND METHODS

Data were collected between 0900 and 1500 hours at 11 sites in the lake and one site below the dam on eight dates ranging from 17 April through 30 October 1996 (Figure 1). Table 2 lists the sampling station identification numbers and brief verbal descriptions of the locations.

Table 2. **Keystone Lake, Oklahoma 1996 sampling location identification numbers and verbal descriptions of locations.**

[1]Station ID Number	Location
OKN0036	Cimarron Arm at old State Highway 51 bridge near Oilton
OKN0037	Cimarron Arm at State Highway 48 bridge
OKN0043	Cimarron Arm at mouth of Salt Creek
OKN0044	Cimarron Arm at mouth of Little Salt Creek
OKN0046	Main Lake area at mouth of Bakers Branch
OKN0047	Main Lake at junction of Cimarron and Arkansas channels
OKN0048	Main Lake near outlet works at dam
OKN0049	Arkansas Arm near Washington Irving Cove – South
OKN0052	Arkansas Arm near old Prue
OKN0054	Arkansas Arm in Cowskin Bay at U.S. Highway 64 bridge
OKN0059	Arkansas Arm at State Highway 99 bridge
OKN0095	Below dam - stilling basin

[1] Primary station code identification number for U. S. EPA STORET and CESWT DASLER water quality database management systems

Figure 1. **Map of Keystone Lake, Oklahoma area with 1996 lake sampling stations.**

Field measured parameters collected at each sampling station included depth profiles of water temperature (°C), dissolved oxygen (DO, mg/l), pH (standard units), and specific conductance (SC, µS/cm), Secchi depth (m), and turbidity (NTU). Depth profiles were measured and recorded with a Hydrolab Surveyor III at one-meter intervals. Secchi disk transparency was measured using standard procedures (Lind, 1985) and field turbidity with an Orbeco-Hellige portable turbidimeter.

Water samples for laboratory analysis were collected in 1-liter, clear polyethylene bottles and immediately placed on ice. Samples collected for laboratory analyses were collected from the surface (0.5 meter depth) at all stations on all dates, and from 1 meter above the bottom at stations OKN0043, -44, -46, -47, -48, -49, and -52. Hach Chemical

Company reagents were used in the analysis of total alkalinity, total hardness, chloride, and sulfate. Hach standard solution was used in standard curve preparation for sulfate. Persulfate digestion was used in preparation of samples for analysis of total phosphorus. Total phosphorus was determined by the ascorbic acid method and analyses were performed with a Sequoia-Turner Model 390 spectrophotometer equipped to hold a 1-cm cuvette.

Chlorophyll *a* concentrations were determined fluorometrically. Surface sample aliquots of 100 ml were filtered on Gelman Metricel GA-6 0.45-µm membrane filters that were frozen for storage. Filters were macerated in a motorized tissue grinder and pigments were extracted in 90% aqueous acetone. The homogenate was stored for 24 hours under dark refrigeration and then centrifuged for clarification. Fluorescence of the extract was measured on a Turner Model 112 fluorometer equipped with a blue light source, a blue excitation filter, and a red emission filter. Purified chlorophyll *a* (Sigma Chemical Company) was used in standards preparation. Values were not corrected for phaeopigments.

Table 3 lists laboratory analyzed water quality parameters and references to methods for analysis. Tulsa District personnel performed total alkalinity, chloride, chlorophyll *a*, total hardness, total phosphorus, and sulfate analyses. The remaining laboratory parameters were analyzed by Reclamation Services Inc. of Central City, KY.

Table 3. **List of laboratory analyzed water quality parameters and associated analysis methods (1996 Keystone Lake water quality survey).**

Parameter	Units	[3]Method	[4]Parameter Number
[1]Alkalinity, Total	mg/l as $CaCO_3$	SM 2320 B	00410
[2]Arsenic, Total	µg/l	EPA 206.3	01002
[2]Cadmium, Total	µg/l	EPA 213.1	01027
[2]Carbon, Organic, Total	mg/l	SM 5310 C	00680
[1]Chloride	mg/l	EPA 325.3	00940
[1]Chlorophyll *a*	µg/l	SM 10200 H3	32217
[2]Chromium, Total	µg/l	EPA 218.1	01034
[2]Copper, Total	µg/l	EPA 220.1	01042
[1]Hardness, Total	mg/l as $CaCO_3$	EPA 130.2	00900
[2]Iron, Total	µg/l	EPA 236.1	01045
[2]Lead, Total	µg/l	EPA 239.1	01051
[2]Manganese, Total	µg/l	EPA 243.1	01055
[2]Mercury, Total	µg/l	EPA 245.1	71900
[2]Nickel, Total	µg/l	EPA 249.1	01067
[2]Nitrogen, Ammonia	mg/l as N	EPA 350.3	00610
[2]Nitrogen, Nitrate	mg/l as N	EPA 353.3	00620
[2]Nitrogen, Nitrite	mg/l as N	EPA 354.1	00615
[2]Nitrogen, Organic, Total	mg/l as N	EPA 351.4	00625
[1]Phosphorus, Total	mg/l as P	EPA 365.2	00665
[2]Selenium, Total	µg/l	EPA 270.1	01147
[2]Solids, Dissolved, Total	mg/l	EPA 160.1	70300
[2]Solids, Suspended, Total	mg/l	EPA 160.2	00530
[1]Sulfate	mg/l	EPA 375.4	00945
[2]Zinc, Total	µg/l	EPA 289.1	01092

[1] Analyses performed by Tulsa District Personnel
[2] Analyses performed by Reclamation Services Inc., Central City, KY
[3] Analysis methods described in Standard Methods (SM) for the Examination of Water and Wastewater (APHA, 1992), and Methods for the Analysis of Water and Wastes (EPA, U.S. EPA, 1979)
[4] U. S. EPA STORET parameter codes

RESULTS

Lake elevations relative to sampling events and daily basin precipitation are illustrated in Figure 2, and monthly charts of pertinent reservoir data (e.g. lake elevation, inflow, releases, rainfall, etc.) are provided in Appendix A. Depth-time isopleths for temperature, dissolved oxygen, pH, and specific conductance were prepared for all stations where vertical profiles were taken and are available in Appendix B. Vertical profiles were also graphed by sampling date at each station (Appendix C). Box-and-whisker plots of water quality data are included in Appendix D. Raw data, collected in the 1996 Keystone Lake water quality study, is available in Appendix E. A 1979 water quality study on Keystone Lake (Kincannon, 1979) is included in Appendix F.

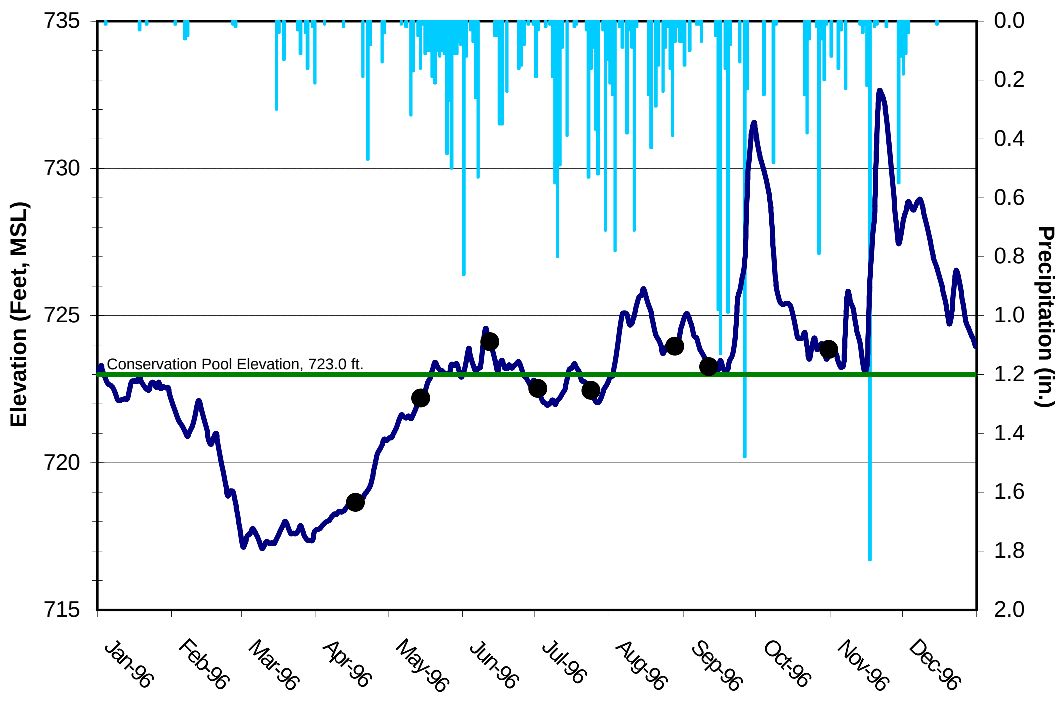

Figure 2. Daily lake elevation (feet, MSL at 0800 hours) and daily basin precipitation (inches), Keystone Lake, Oklahoma, 1996 (dots represent individual sampling dates).

Data from individual stations, sampling dates, or depths are frequently represented throughout this report in box-and-whisker diagrams. Figure 3 is an example that identifies meanings of each portion of the diagram. Whiskers extending from the top and bottom of the 'box' represent maximum and minimum values. The upper and lower lines of the 'box' represent 75^{th} and 25^{th} percentile values. The horizontal line in the 'box' represents the median, or middle value in the data. Notches in the vertical lines on the sides of the 'box' indicate a 95% confidence interval about the median. The mean of the data is represented as a black diamond.

Included in Table 4 are descriptive statistics of water quality parameters measured in the study of Keystone Lake, Oklahoma, 17 April through 30 October 1996. When all observations of a particular parameter were below the analysis detection limit, mean and median values could not be calculated. For parameters having greater than one observation above the detection limit, means and medians were calculated only from those values above the detection limit. Physicochemical data were analyzed for statistical differences using MINITAB 13 (Minitab, Inc., 2000). Differences were considered statistically significant at alpha = 0.05. Analysis of Variance (ANOVA, for means) and Mood's Median Test were used to determine spatial (among stations) and temporal (among sampling dates) differences. When differences between the means or medians were detected, Tukey's multiple comparison test was utilized to determine which means/medians were different. The two-sample t-test and Mann-Whitney test were used for comparisons between surface and bottom parameter concentrations.

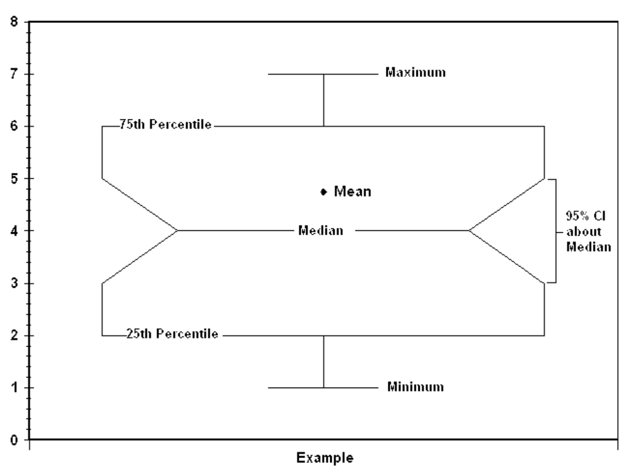

Figure 3. Example box-and-whisker diagram.

Table 4. **Descriptive statistics for Keystone Lake, Oklahoma water quality parameters, all lake sites and depths, 1996.**

Parameter	Units	[1]Mean	[1]Median	Min.	Max.	No. Obs.	[2]No. Obs. BDL
Alkalinity, Total	mg/l as $CaCO_3$	160	128	104	380	121	0
Arsenic, Total	µg/l	*	*	<10	<10	104	104
Cadmium, Total	µg/l	*	*	<10	<10	104	104
Carbon, Organic, Total	mg/l	5.0	4	2.4	38	103	0
Chloride	mg/l	638	490	120	2,780	101	0
Chlorophyll *a*	µg/l	17.26	16.87	1.45	75.12	76	0
Chromium, Total	µg/l	*	*	<10	30	104	103
Copper, Total	µg/l	*	*	<10	30	104	103
Hardness, Total	mg/l as $CaCO_3$	322	270	140	2,180	121	0
Iron, Total	µg/l	497	220	<10	6,590	104	17
Lead, Total	µg/l	*	*	<10	<10	104	104
Manganese, Total	µg/l	215	90	<10	1,710	104	39
Mercury, Total	µg/l	*	*	<2	<2	104	104
Nickel, Total	µg/l	*	*	<10	<10	104	104
Nitrogen, Ammonia	mg/l as N	0.145	0.081	0.005	0.913	104	0
Nitrogen, Nitrate	mg/l as N	0.81	0.58	0.14	4.60	104	0
Nitrogen, Nitrite	mg/l as N	0.025	0.020	<0.005	0.125	104	12
Nitrogen, Organic, Total	mg/l as N	0.621	0.550	0.020	4.590	104	0
Phosphorus, Total	mg/l as P	0.158	0.109	0.023	0.687	103	0
Secchi Depth	m	0.89	0.95	0.30	1.40	56	0
Selenium, Total	µg/l	*	*	<10	<10	104	104
Solids, Dissolved, Total	mg/l	1,412	1,115	490	5,910	104	0
Solids, Suspended, Total	mg/l	44	16	2	708	103	0
Sulfate	mg/l	221	168	87	923	112	0
Turbidity	NTU	41.0	17.1	3.4	594.0	113	0
Zinc, Total	µg/l	44	40	<10	80	104	94

[1]Mean and median values were calculated from values above detection limit
[2]BDL = below detection limit

Temperature

Chemical and metabolic reactions are strongly influenced by water temperature and temperature differences between surface and bottom waters can contribute to stratification of water layers due to density differences. Vertical temperature profiles of Keystone Lake during this study were typical of other reservoirs in the region. Thermal gradients were observed to some extent at all stations and temporary thermal stratification (a change in water temperature of greater than 1° C per meter) was evident in July at sites near the dam (OKN0046, OKN0047, and OKN0048). Across all sampling stations and dates, surface temperatures ranged from a minimum of 11.85 °C (OKN0046 on 17 April) to a maximum of 32.88 °C (OKN0052 on 2 July). Mean surface water temperature through the sampling period was 23.90 °C. Spatial and temporal temperature dynamics observed through the study at OKN0048 (Figure 4) are generally representative of vertical water temperature distribution through the main body of the reservoir. Water temperatures exhibited low variability between surface and bottom in the spring and fall indicating total mixing of the water column with respect to temperature.

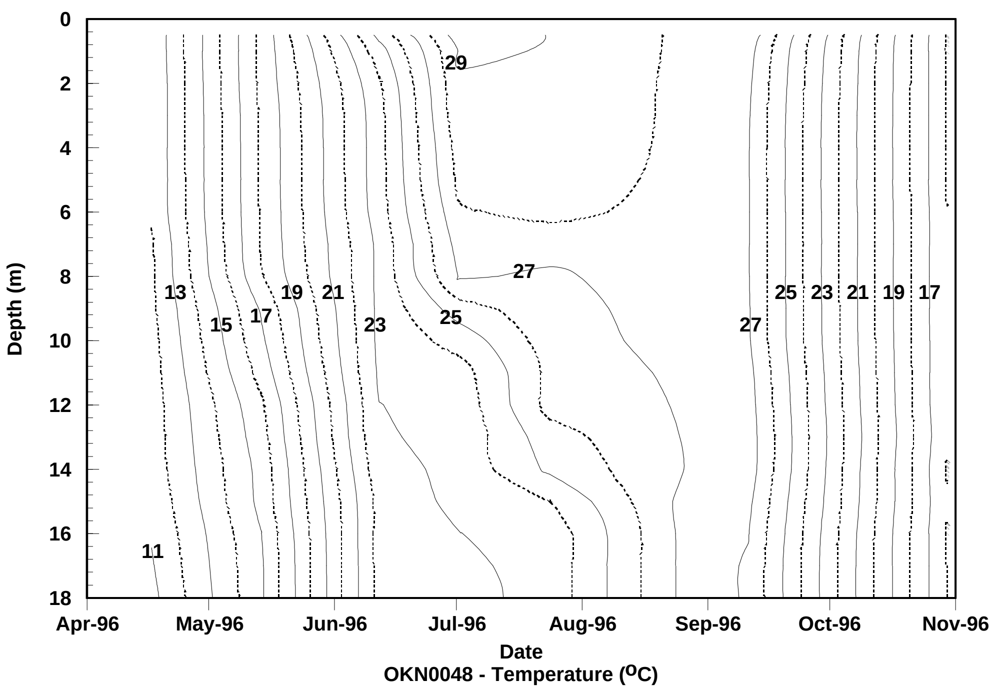

Figure 4. Depth-time diagram of temperature (°C) isopleths at station OKN0048, 17 April through 30 October 1996, Keystone Lake, Oklahoma.

Dissolved Oxygen

Dissolved oxygen is essential to the respiratory metabolism of most aquatic organisms, and the dynamics of oxygen distribution in lakes are governed by a balance between inputs from the atmosphere and photosynthesis and losses due to chemical and biotic oxidation (Wetzel, 1983). Solubility of oxygen in water decreases as temperature increases, and decreases as salt content increases.

During this study, surface concentrations of dissolved oxygen ranged from 3.94 mg/l (OKN0036 on 24 July) to 15.2 mg/l (OKN0052 on 12 June) with an average of 8.62 mg/l. Dissolved oxygen concentrations at depth (approximately one meter above the bottom) ranged from 0.15 mg/l (OKN0048 on 11 September) to 11.10 mg/l (OKN0044 on 17 April) with an average of 3.16 mg/l. The depth-time isopleth of dissolved oxygen concentrations at station OKN0048 (Figure 5) is typical of dissolved oxygen dynamics observed during the summer months of the study in the main body of the lake. Stations in the lower portion of the lake (OKN0043, 46, 47, 48, and 49) were found to have bottom dissolved oxygen concentrations below 2 mg/l from late May or early June through late September or early October. Riverine stations (OKN0044 and OKN0052) were observed to have low dissolved oxygen levels at depth with less consistency through the same period. The spatial and temporal changes in dissolved oxygen concentrations can affect the distribution of fish and macroinvertebrates in the water column.

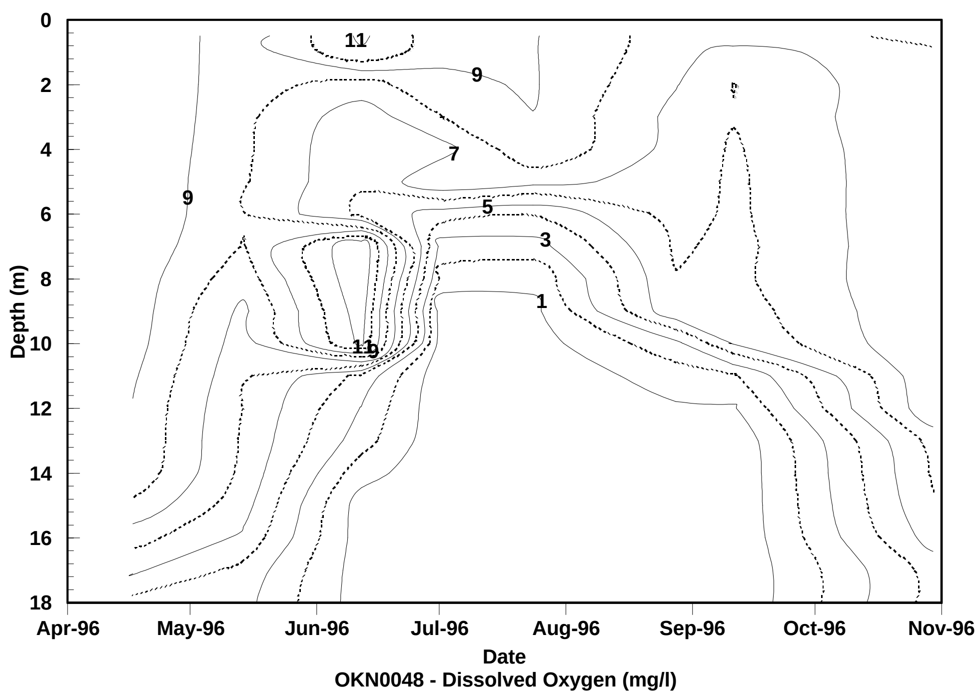

Figure 5. Depth-time diagram of dissolved oxygen (mg/l) isopleths at station OKN0048, 17 April through 30 October 1996, Keystone Lake, Oklahoma.

Figure 6 shows the vertical profile of dissolved oxygen and temperature at station OKN0048 on 24 July 1996. The clinograde dissolved oxygen curve is typical of a temperate region eutrophic lake.

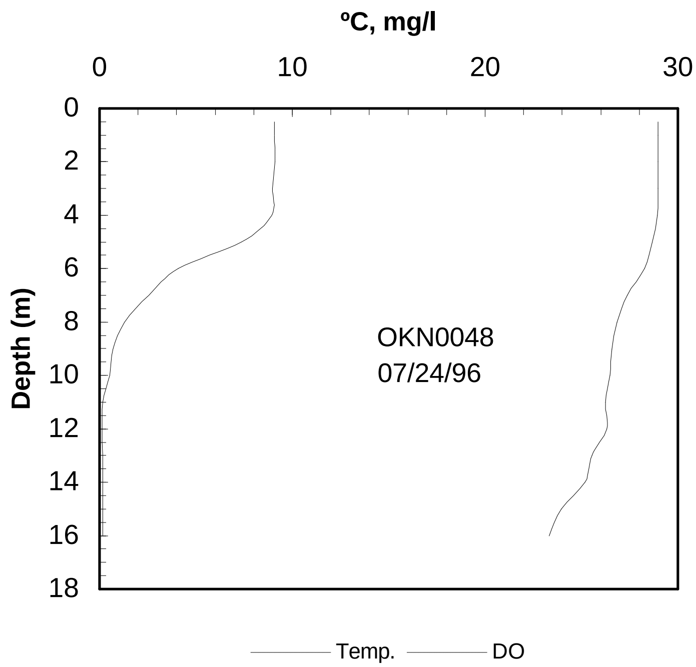

Figure 6. **Vertical profiles of temperature and dissolved oxygen at station OKN0048 on 24 July 1996, Keystone Lake, Oklahoma.**

Specific Conductance and Salinity

Specific conductance is a measure of the resistance of a solution to electrical flow and is directly affected by increases in ionic content. Specific conductance and total dissolved solids are often used as surrogate measures for salinity, but these parameters do not by themselves adequately describe which specific ions are responsible for the salinity in a given water body. Salinity and total dissolved solids in fresh water is attributed to four major cations (Ca^{++}, Mg^{++}, Na^{+}, and K^{+}) and four major anions (HCO_3^{-}, $CO_3^{=}$, SO_4^{-}, and Cl^{-}) (Wetzel, 1983). Additional surrogate measures used to assess the salinity of a water body are hardness, an indirect measure of Ca^{++} and Mg^{++}, and alkalinity, an indirect measure of HCO_3^{-} and $CO_3^{=}$, both of which are important measures of the buffering capacity of aquatic systems.

Sulfur and chlorine are both important micronutrients in aquatic systems. Sulfur is important in protein structure and cell division, but rarely limits the growth or distribution of aquatic biota (Horne and Goldman, 1994). In aquatic systems sulfate (SO_4^{-}) is the predominant form of sulfur. Its predominance is a result of bacterial oxidation of hydrogen sulfide (H_2S) released from highly organic anoxic sediments. Nearly all assimilation of sulfur in aquatic systems is as sulfate. Chlorine is the most abundant halogen. The chloride ion is required in photosynthesis, ATP formation, and other phosphorylation reactions. Because chloride is easy to measure, it is used to identify water bodies being affected by chlorinated wastes, some of which are toxic. Chloride levels are relatively conservative in a watershed.

Through this study, specific conductance values in Keystone Lake ranged from 1,244 to 10,284 µS/cm with a mean of 2,398 µS/cm. Arkansas River waters are naturally high in calcium, magnesium, sulfate, and chloride. The Cimarron River flows through natural salt and gypsum deposits in the Permian redbeds of western Oklahoman and has chloride concentrations three to four times greater than the Arkansas River. Figure 7 shows the differences in mean and median specific conductance measured at lake stations. OKN0036 and OKN0037 are riverine stations in the Cimarron River arm of the lake that had mean values of 7,252 and 6,791 µS/cm, respectively. In contrast, stations OKN0059 and OKN0052, located in the Arkansas River arm of the lake had mean values of 1,524 and 1,726 µS/cm, respectively. One-way ANOVA demonstrated a significant difference in mean station specific conductance levels, and Mood's Median Test showed significantly different station median specific conductance levels.

Total dissolved solids levels showed a similar pattern in the lake (Figure 8). Measured values ranged from 5,910 (OKN0037, 19 September) to 490 mg/l (OKN0044, 2 July) with a lake-wide mean value of 1,412 mg/l. Highest mean levels were measured in the Cimarron River arm of the lake and lowest mean values in the Arkansas River arm. One-way ANOVA demonstrated a significant difference in mean station total dissolved solids levels, and Mood's Median Test showed significantly different station median total dissolved solids levels. A comparison of surface and bottom levels of total dissolved solids (Figure 9) shows a general trend of higher total dissolved solids levels at depth for most stations, however, no statistically significant differences were found in total dissolved solids levels across sampling dates, or between surface and bottom samples.

Mean lake-wide chloride concentration in Keystone Lake through the study period was 638 mg/l. The minimum observation, 120 mg/l, was made at station OKN0043 on 30 October, and the maximum observation at station OKN0036 on 2 July. One–way ANOVA indicated significantly different station mean chloride levels with the Cimarron River arm stations, OKN0036 and OKN0037, having mean concentrations more than two times higher than all other lake stations. Statistical analyses did not determine differences in lake-wide chloride levels among sampling dates. Lowest lake-wide means occurred on sampling dates following significant rainfall events indicating a dilution effect. No statistically significant differences were found between chloride concentration means or medians of surface and bottom samples, but graphically (Figure 10), stations OKN0046, OKN0047, OKN0048, and OKN0049 did show consistently higher bottom concentrations.

Similarly, for sulfate concentrations in Keystone Lake through the study period, the mean lake-wide mean concentration was 221 mg/l with a minimum observation of 87 mg/l (OKN0044, 24 July) and a maximum observation of 923 mg/l (OKN0037, 11 September). Again, stations in the Cimarron River arm of the lake had statistically different (more than two times higher) mean and median sulfate concentrations. Both one-way ANOVA and Mood's Median Test indicated significant differences in lake-wide sulfate mean and median concentrations between sampling dates. Highest sulfate levels were observed in April and September of the sampling period (Figure 11). No statistically significant differences in were detected between surface and bottom sulfate concentrations.

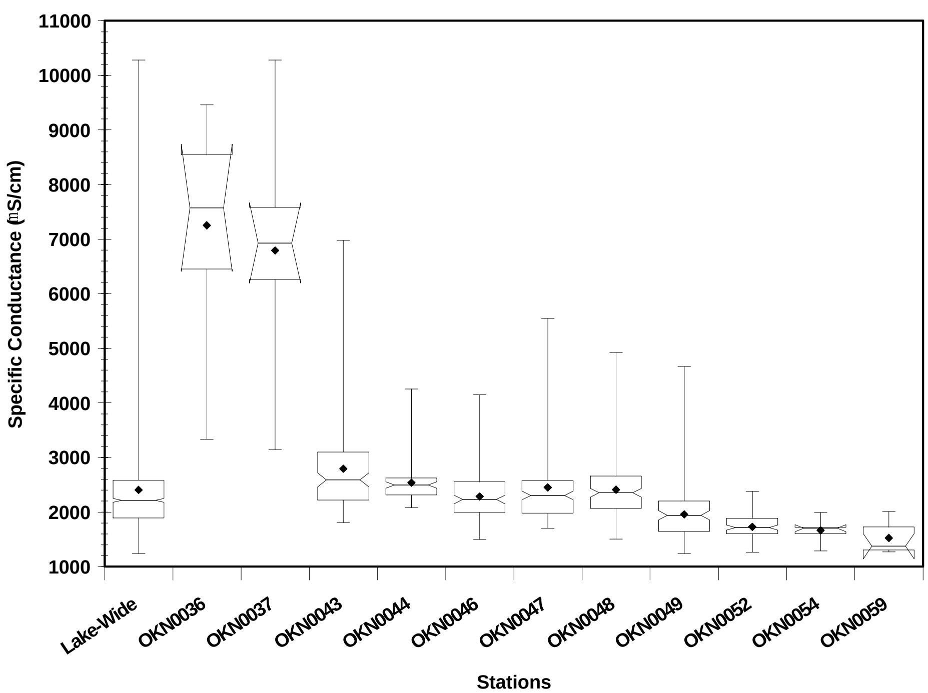

Figure 7. **Box-and-whisker plots of specific conductance measured at Keystone Lake, Oklahoma, by station, 17 April through 30 October 1996.**

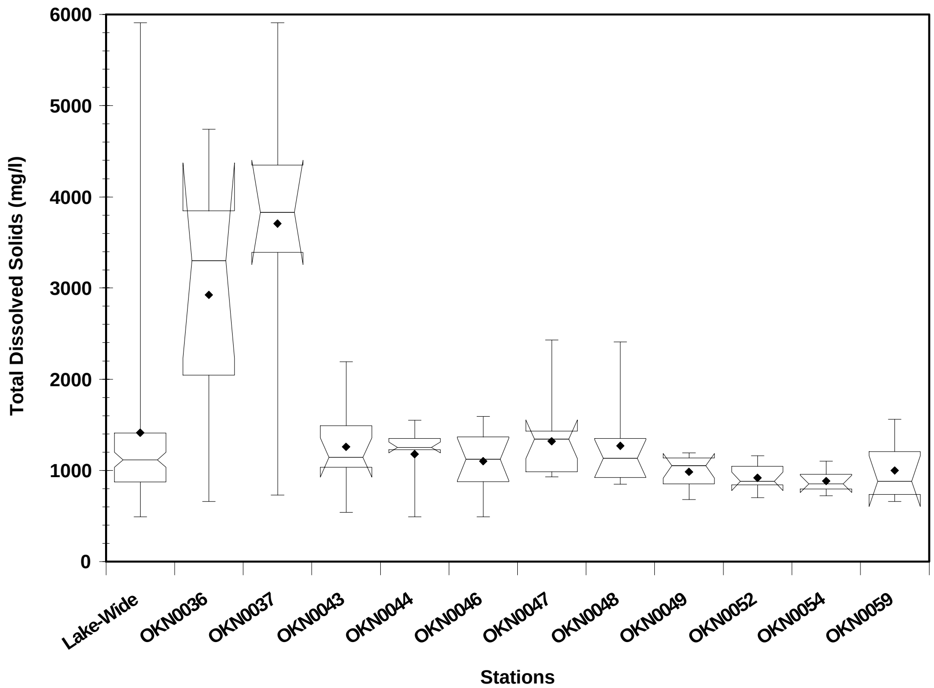

Figure 8. **Box-and-whisker plots of total dissolved solids measured at Keystone Lake, Oklahoma, by station, 17 April through 30 October 1996.**

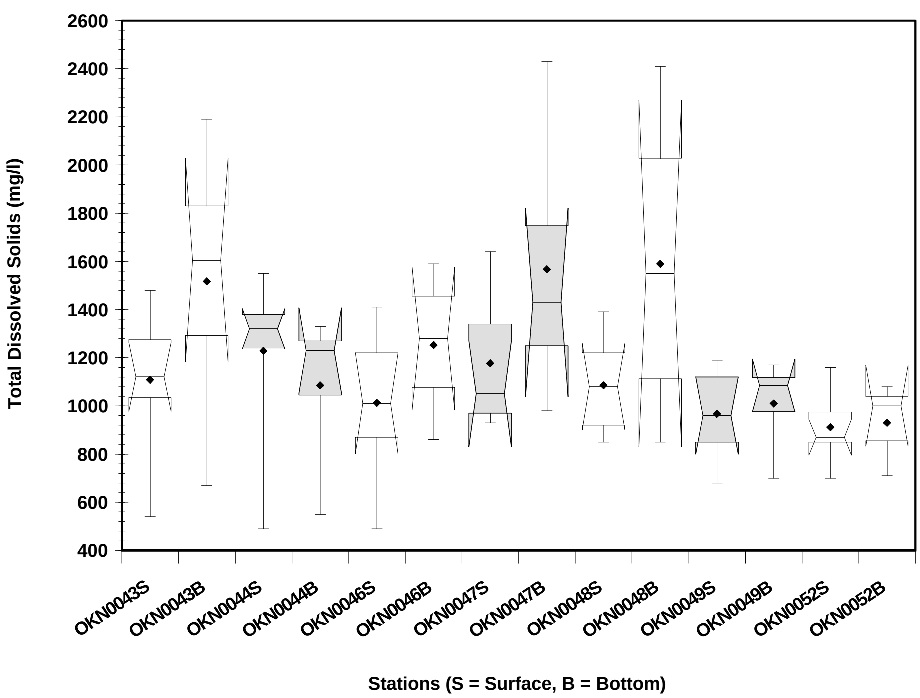

Figure 9. **Box-and-whisker plots of total dissolved solids measured at Keystone Lake, Oklahoma, comparing surface (S) and bottom (B) measurements, by station, 17 April through 30 October 1996.**

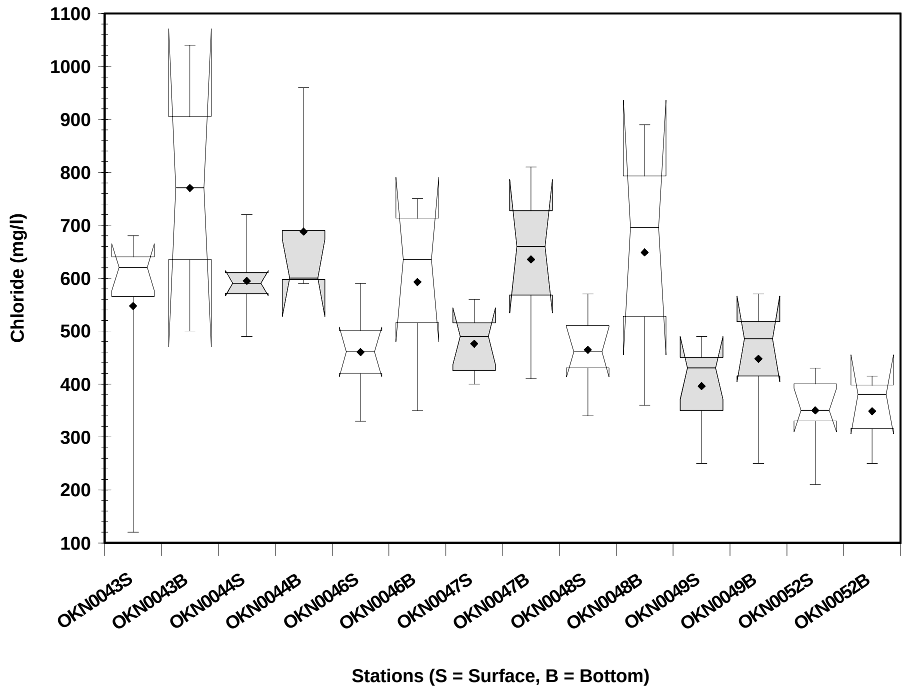

Figure 10. **Box-and-whisker diagram of surface (S) and bottom (B) chloride concentrations at water quality monitoring stations in Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

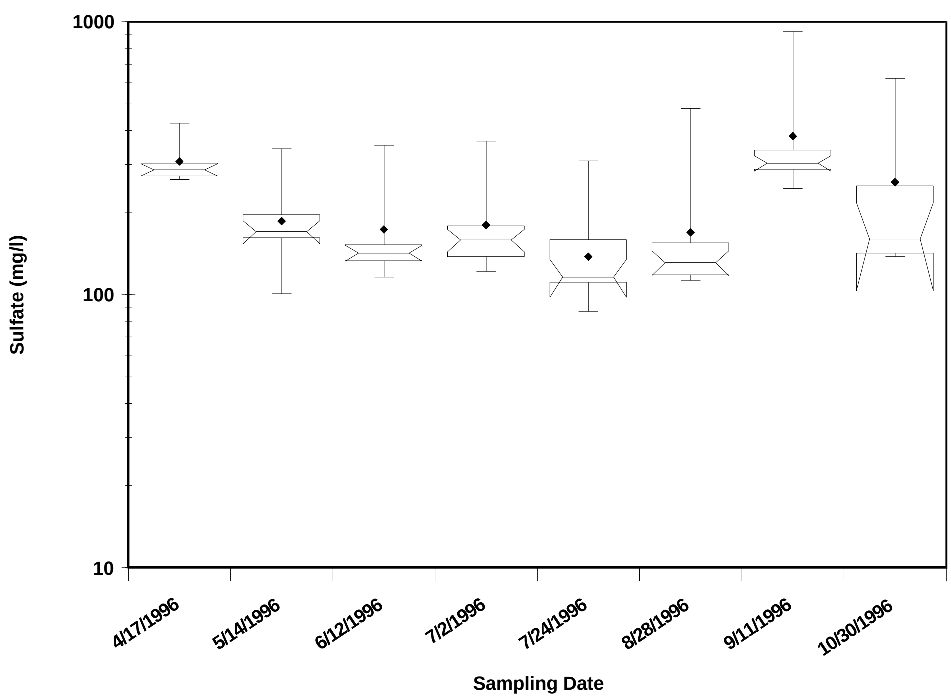

Figure 11. **Box-and-whisker representation of lake-wide sulfate concentrations in Keystone Lake, Oklahoma, on sampling dates in the study period.**

Alkalinity, pH, and Hardness

Alkalinity is a measure of the capacity of water to neutralize acids. The measurement refers to the carbon dioxide (CO_2) – bicarbonate (HCO_3^-) – carbonate ($CO_3^=$) equilibrium system and is used to quantify those compounds that can resist changes in pH (hydrogen ion concentration) (Cole, 1994 and Wetzel, 1983). Alkalinity is important for several reasons: 1) it buffers pH (hydrogen ion concentration) changes that occur naturally as a result of photosynthetic activity, which can affect aquatic life, 2) it is used in the interpretation and control of water and wastewater treatment, and 3) it is used to determine the suitability of a water for irrigation. In addition, components of alkalinity will form a complex with some toxic metals and significantly reduce their toxicity. When total alkalinity is at or below 20 mg/l as $CaCO_3$, water is poorly buffered (USEPA, 1986).

Total alkalinity values in Keystone Lake ranged from a minimum of 104 mg/l (OKN0059, 2 July) to a maximum of 380 mg/l (OKN0054, 17 April) with a lake-wide mean of 159.7 mg/l. Figure 12 shows ranges of total alkalinity values measured at Keystone Lake stations during the study. Slightly higher mean values are evident in the upper arms of the lake in the two major tributaries. No statistically significant differences were found between mean or median station total alkalinity levels. Parametric and nonparametric statistical tests detected a significant difference between lake-wide mean and median total alkalinity across sampling dates with highest observations occurring in the early part of the sampling period. A two-sample t-test detected a significant difference between surface and bottom samples. Mean surface total alkalinity was 167.4 mg/l and mean bottom total alkalinity was 139.2 mg/l. Keystone Lake waters are well buffered against sudden pH changes.

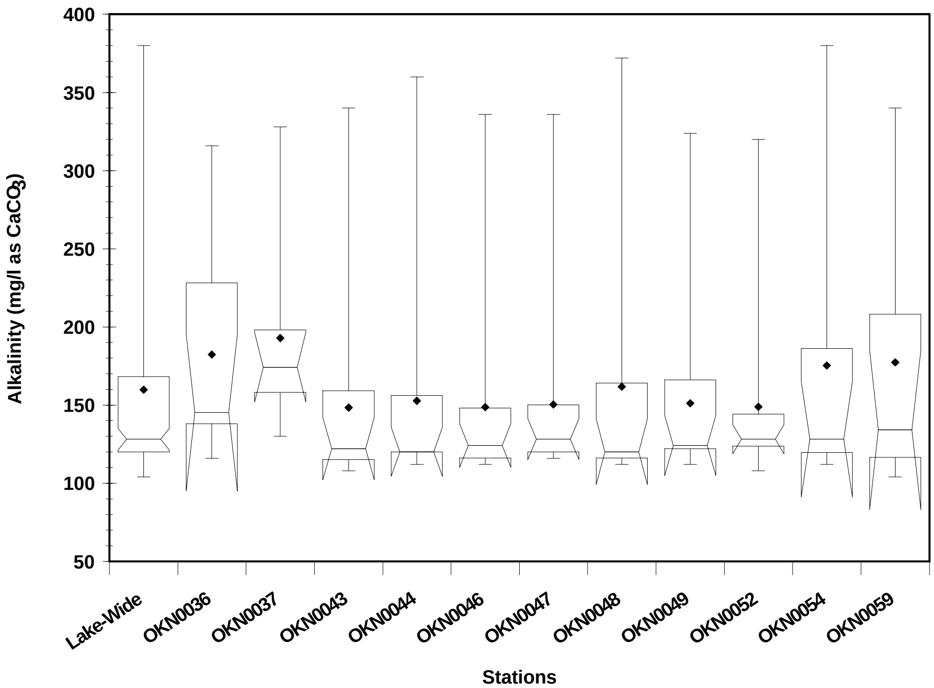

Figure 12. **Box-and-whisker representation of total alkalinity measured in Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

The pH is a measure of hydrogen ion activity. A pH of 7 is neutral, less than 7 acidic, and greater than 7 basic. Wetzel (1983) identifies the pH range for most lakes to be between 6 and 9. The pH values in Keystone Lake through the study period ranged from 7.08 standard units (OKN0043, 2 July, at 15 and 16 meters depth) to 9.45 standard units (OKN0054, 30 October, surface), with a median of 8.23 standard units. The pH range in Keystone Lake is reflective of the alkaline nature of prairie soils and is typical of other turbid reservoirs in the Tulsa District.

Hardness in water is a function of divalent, or polyvalent, cations present in the water column and is directly affected by the geologic characteristics of the watershed. Natural sources of hardness are sedimentary rocks and limestone. The two components of total hardness are described as temporary hardness and permanent hardness. Temporary hardness is governed by the content of calcium and magnesium salts combined with bicarbonate and carbonate and is equal to the total alkalinity. Permanent hardness is governed by the content of calcium and magnesium salts combined with sulfates, chlorides, and other anions of mineral acids and is equal to the amount of hardness in excess of temporary hardness (alkalinity) (Wetzel, 1983). The permanent, or non-carbonate, hardness is responsible for the scale deposits on cookware and other household items associated with hard water. Like alkalinity, components of hardness will form a complex with some toxic metals and significantly reduce their toxicity.

Minimum (140 mg/l, OKN0052, 30 October) and maximum (2,180 mg/l, OKN0037, 30 October) total hardness levels through the study were measured on the same day in different portions of the lake. Lake-wide mean total hardness was 322 mg/l. Highest mean and median values were measured in the Cimarron River arm of the lake (Figure 13). Significantly different station mean and median total hardness levels were detected. No statistically significant differences were found among lake-wide mean and median total hardness levels across sampling dates. A two-sample t-test did indicate a significant difference between mean surface (340 mg/l) and bottom (274 mg/l) hardness levels.

Water hardness has been classified by the U.S. EPA into the following four categories (USEPA, 1986):

Concentration (mg/l as $CaCO_3$)	Description
0 – 75	Soft
75 – 150	Moderately Hard
150 – 300	Hard
300 and up	Very Hard

Hardness values present in the reservoir during this study indicate that water from Keystone Lake is best classified as very hard water based upon the above classification. Hardness values did not exceed the accepted industrial harness levels for raw water sources of 5000 mg/l as $CaCO_3$ for electric utilities, and only Cimarron River arm stations exceeded the 900 mg/l as $CaCO_3$ hardness standard for petroleum refining (USEPA, 1986).

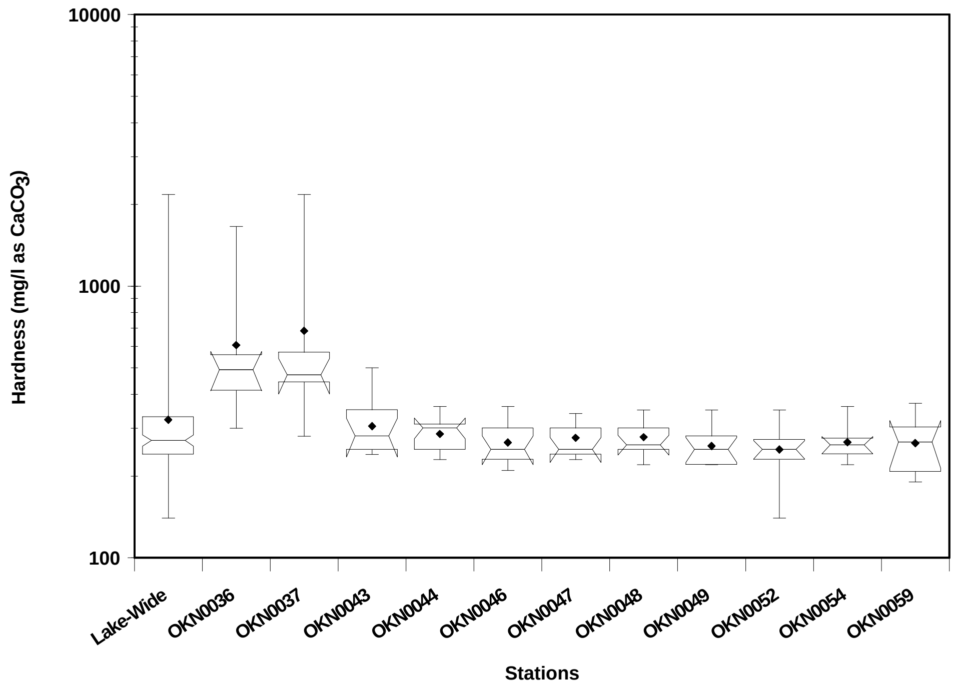

Figure 13. **Box-and-whisker representation of total hardness levels measured at stations in Keystone Lake, 17 April through 30 October 1996.**

Water Clarity

Two measures directly associated with water clarity include Secchi disk transparency (meters) and turbidity (NTU). A third measure correlated with water clarity is total suspended solids (mg/l). Secchi disk transparency is the mean depth of the point where a weighted black and white disk, 20 cm in diameter, disappears when viewed from the shaded side of a vessel, and that point where it reappears upon raising it after it has been lowered beyond visibility. It has been calculated that the disk disappears at approximately the region of transmission of 21% full sunlight. Three times the Secchi disk depth roughly approximates the photosynthetic, or euphotic, zone of the lake where light levels are greater than 1% of full sunlight (Cole, 1994).

Secchi depths measured during this study ranged from 0.30 meters (OKN0048 and OKN0052, 30 October) to 1.40 meters (OKN0047, 24 July) with a lake-wide mean value of 0.89 meters. A graphic summary of Secchi depths measured through the study is presented in Figure 14. No statistically significant differences in station mean Secchi depths were found, although Mood's Median test did indicate significant differences in station median

Secchi depths. Mean and median lake-wide Secchi depths were found to differ significantly across sampling dates with extremely low values measured 30 October 1996.

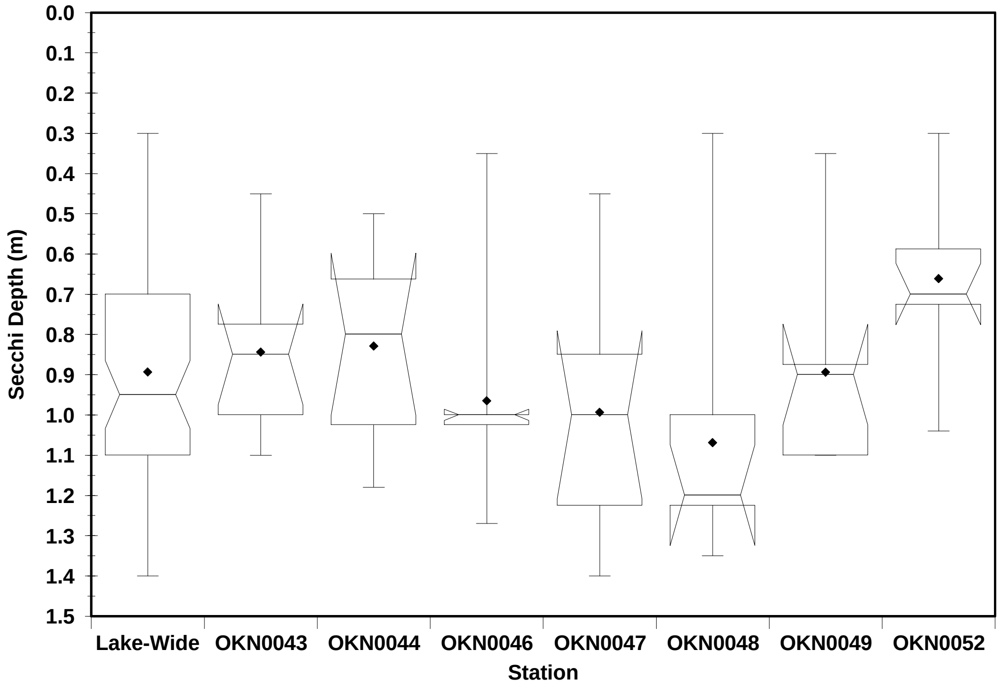

Figure 14. **Box-and-whisker representation of measured Secchi depths at Keystone Lake stations, 17 April through 30 October 1996.**

Turbidity, measured in Nephelometric Turbidity Units (NTU), can be viewed as a qualitative measure of water clarity that describes the opaqueness produced in water by suspended particulate mater (e.g. clay, silt, and plankton). Higher turbidity values indicate water that is less transparent and more turbid. Turbidity ranged from a minimum of 3.40 NTU (OKN0048, 2 July) to a maximum of 594 NTU (OKN0036, 30 October) with a lake-wide mean value of 41.04 NTU. Turbidity measured in Keystone Lake through the study period is graphically represented in Figure 15. Highest station mean and median turbidity were found in the tributary arms of the reservoir, and statistically significant differences among stations were found (one-way ANOVA and Mood's Median Test). No statistically significant differences were found across lake-wide mean turbidity levels and sampling dates, or between lake-wide surface and bottom mean turbidity levels. Lake-wide surface sample mean turbidity tended to be higher (45.7 NTU) than bottom sample mean (25.3 NTU). Turbidity exceeded the State of Oklahoma lake water quality standard of 25 NTU in 41 of 113 observations (36%).

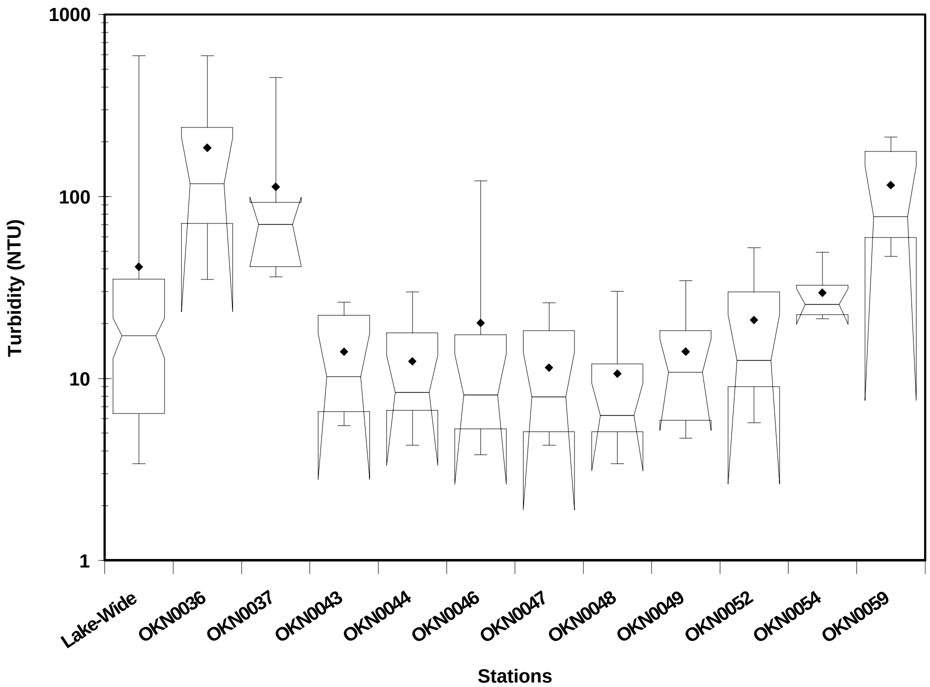

Figure 15. **Box-and-whisker representation of measured turbidity in Keystone Lake, 17 April through 30 October 1996.**

In contrast, total suspended solids are a quantitative measure of suspended particulate matter and are reported in mg/l. The loadings of total suspended solids into a reservoir can impact aquatic organisms in many ways. Because soluble forms of nitrogen and phosphorus have a high affinity to sorb to suspended particles (primarily clays), nutrient availability within a reservoir can be potentially impacted. Increases in turbidity and suspended solids can decrease the euphotic zone of the reservoir potentially impacting food availability to zooplankton and planktivorous fish. Additional impacts on fish can include growth rate reductions, decreased resistance to disease, modification of natural movements, and prevention of the successful development of fish eggs and larvae, with similar impacts identified for macroinvertebrate populations (USEPA, 1986). Total suspended solids observations varied widely from a minimum of 2.0 mg/l (OKN0043, 2 July; and OKN0046, 11 September) to a maximum of 708 mg/l (OKN0059, 30 October) with a lake-wide mean of 44.19 mg/l. Highest mean and median observations were in the tributary arms of the reservoir (Figure 16). Statistically significant differences among station mean and median total suspended solids levels were found. Lake-wide mean total suspended solids did not differ significantly across sampling dates. A two-sample t-test did indicate a significant difference between lake-wide mean surface (53.0 mg/l) and bottom (20.4 mg/l) total suspended solids levels.

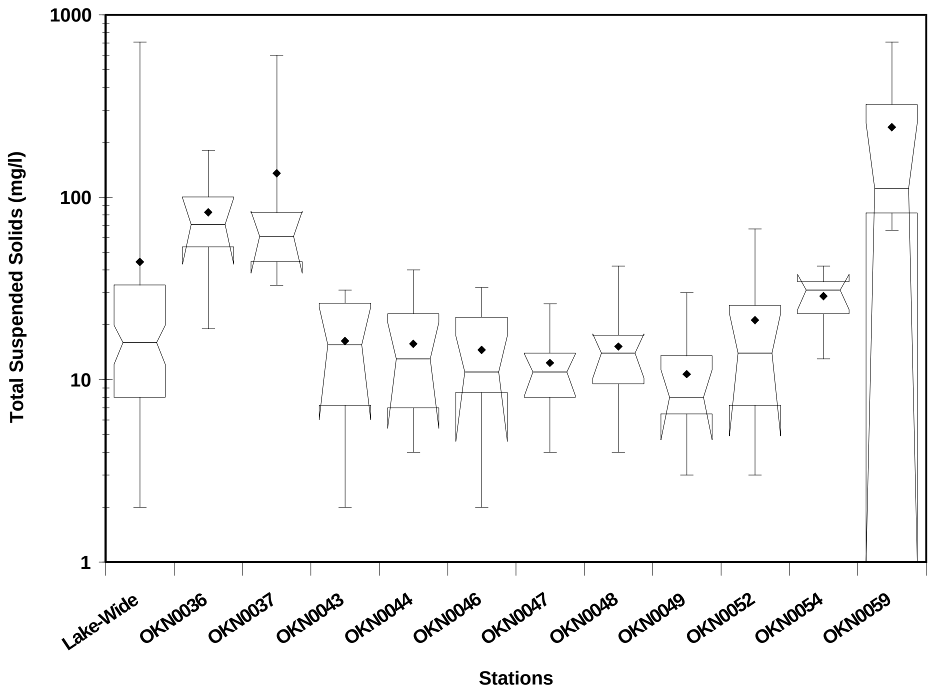

Figure 16. Box-and-whisker representation of total suspended solids observations in Keystone Lake, 17 April through 30 October 1996.

Macronutrients

Nitrogen and phosphorus are essential nutrients for growth and development and are often the primary factors that determine algal production (biomass) (USEPA, 2000). Water samples in this study were analyzed for the following nutrients: ammonia nitrogen, nitrite, nitrate, organic nitrogen, and total phosphorus. In fresh waters, nitrogen is found primarily in two gaseous forms (nitrogen and nitrous oxide) and four combined non-gaseous forms (amino and amide groups, ammonia, nitrite, and nitrate).

Nitrogen Series

Ammonia (NH_4^+) is released in water as a decomposition product of organic material, or urea. Plants easily and rapidly take up ammonia. It is also converted to nitrate, via nitrite, by soil and water bacteria. The levels of ammonia in unpolluted surface waters generally range from 0 to 5 mg/l (Wetzel, 1983). Observations in Keystone Lake ranged from 0.01 mg/l (OKN0059, 30 October) to 0.91 mg/l (OKN0052, 2 July) with a lake-wide mean of 0.15 mg/l. No statistically significant differences were found among station means or medians.

One-way ANOVA and Mood's Median Test did identify significant differences in mean and median lake-wide ammonia levels among sampling dates with lowest mean and median ammonia levels 12 June (0.048 and 0.041, respectively), although a temporal pattern or trend was not evident. Surface and bottom ammonia levels were not found to differ significantly.

Nitrite (NO_2) is usually in very low concentrations in fresh waters because it is quickly oxidized to nitrate. Nitrite concentrations are extremely low in unpolluted surface waters and generally range from 0 to 0.01 mg/l. Nitrite concentrations ranged from twelve observations below the analysis detection limit of 0.005 mg/l (at several stations and on several dates) to a maximum of 0.135 mg/l (OKN0059, 11 September). One-way ANOVA revealed significant differences among station means with higher means in tributary arms. Lake-wide mean concentrations across sampling dates were not significantly different. A two-sample T-test did not reveal significant differences between surface and bottom sample means, but a Mann-Whitney Test did indicate a significant difference in lake-wide median surface (0.022 mg/l) and bottom (0.010 mg/l) concentrations of nitrite.

Nitrate (NO_3) also occurs in small concentrations in unpolluted fresh waters. Under normal conditions, nitrate in solution at any given time is determined by metabolic processes within the waterbody (i.e. production and decomposition of organic matter). Nitrate is easily taken up by green plants, including algae, as a nitrogen source and is extremely important as a nutrient in supplying nitrogen for protein synthesis. In unpolluted fresh waters, nitrate concentrations can range from 0 to 10 mg/l (Wetzel, 1983). The overall mean nitrate concentration in Keystone Lake through the study period was 0.81 mg/l. The minimum recorded concentration was 0.14 mg/l (OKN0059, 17 April) and the maximum was 4.60 mg/l (OKN0036, 2 July). Significant differences were found between mean and median nitrate concentrations among sampling stations with highest concentrations occurring at Cimarron River arm stations (OKN0036 and OKN0037, Figure 17). Lake-wide mean and median concentrations tended to be lowest in spring and late fall with highest levels in early and midsummer. Bottom nitrate concentrations tended to be higher than surface concentrations. Median surface (0.55 mg/l) and bottom (0.86 mg/l) concentrations were found to differ with statistical significance (Mann-Whitney Test).

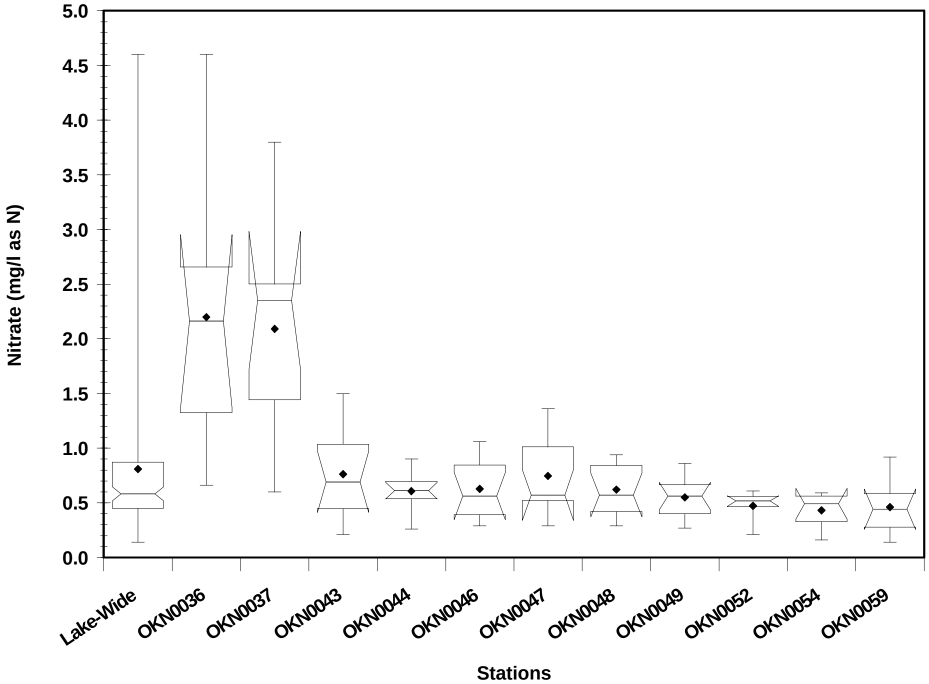

Figure 17. Box-and-whisker representation of nitrate concentrations measured at water quality sampling stations in Keystone Lake, Oklahoma, 17 April through 30 October 1996.

The synthesis of inorganic substances into plant and animal tissues and the metabolic processes of protoplasm produce various compounds containing nitrogen (organic nitrogen compounds) (Reid, 1965). Examples include animal and plant protein, urea, uric acid, polypeptides, and amino compounds. Total organic nitrogen is calculated from the mass of total nitrogen minus the dissolved fractions of nitrate and ammonia. The mean total organic nitrogen concentration for Keystone Lake through this study was 0.62 mg/l. A minimum concentration of 0.02 mg/l was observed at station OKN0054 on 2 July, and a maximum of 4.59 mg/l was recorded at station OKN0059 on 30 October. Statistically significant differences were found among station mean and median concentrations with highest concentrations in tributary arms of the reservoir. Sampling date means or medians were not significantly different, but mean and median lake-wide surface and bottom concentrations were significantly different with higher surface concentrations.

Phosphorus

While phosphorus, in its inorganic state is most commonly present as orthophosphate, more than 90 % of the phosphorus present in fresh waters occurs as organic phosphates and cellular constituents in the biota that are adsorbed to either inorganic or particulate organic matter (Wetzel, 1983). Phosphorus has a major role in the metabolism of plants and animals and is a key nutrient stimulating plant growth in lakes. Because phosphorus is less abundant than carbon, nitrogen, oxygen, and sulfur (other nutritional and structural components), it can often limit biological productivity of aquatic ecosystems (Wetzel, 1983), and epilimnetic concentrations can be used to indicate a lake's general trophic status (level of productivity).

The concentrations of total phosphorus encountered in unpolluted surface waters generally ranges from 10 to 50 μg/l (0.01 to 0.05 mg/l). Concentrations of total phosphorus found in Keystone Lake ranged from a minimum of 0.02 mg/l (OKN0046, 2 July) to a maximum of 0.69 mg/l (OKN0044, 24 July). Station means and medians were found to differ significantly with highest concentrations in tributary arms of the reservoir. Mean and median concentrations also differed significantly by date with a general trend of increasing concentrations through the sampling period. Surface mean and median total phosphorus concentrations were significantly different from bottom concentrations (Figure 18). The lake-wide mean surface concentration was 0.127 mg/l while the mean bottom concentration was 0.251 mg/l.

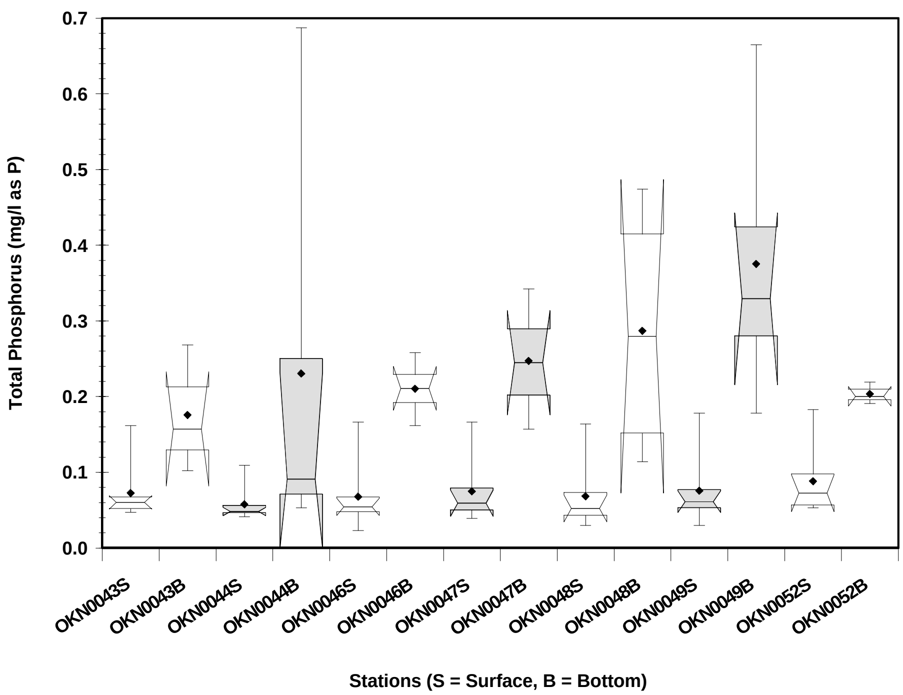

Figure 18. **Box-and-whisker representation of surface (S) and bottom (B) total phosphorus concentrations at water quality sampling stations in Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

The epilimnetic concentration of total phosphorus is often used to estimate lake productivity, or trophic state. Vollenweider showed that the amount of total phosphorus generally increased with lake productivity (Wetzel, 1983). The general relationship of lake productivity to average concentrations (µg/l) of epilimnetic total phosphorus is as follows:

Ultra-oligotrophic	< 5
Oligo-mesotrophic	5 – 10
Meso-eutrophic	10 – 30
Eutrophic	30 – 100
Hyper-eutrophic	> 100

Using Vollenwieder's relationship and the mean sampling period surface concentration of 0.127 mg/l (127 µg/l), Keystone Lake would be classified as hyper-eutrophic. The relative trophic status of Keystone Lake was also assessed using Carlson's Trophic State Index (Carlson, 1977) and surface total phosphorus concentrations. Mean and median index values for the lake as a whole through the period of study were 69.8 and 67 indicating eutrophic conditions in the lake. The index calculated for each sampling station indicates higher productivity potential in the riverine arms of the reservoir (Figure 19).

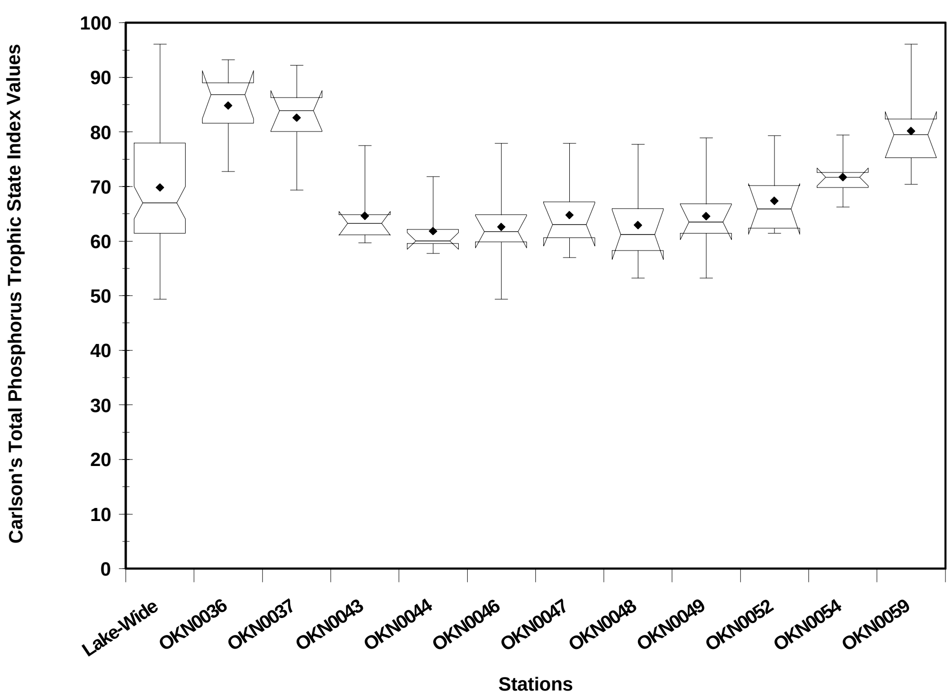

Figure 19. **Box-and-whisker representation of Carlson's Trophic State Index values by water quality monitoring station for Keystone Lake, Oklahoma, 17 April through 30 October 1996. Calculated values are based on surface total phosphorus concentrations only.**

The ratio of total nitrogen to total phosphorus is helpful in exploring nutrient limitation of the phytoplankton in a lake. This ratio is insightful if it is assumed that total phytoplankton production in the spring and summer are limited by a macronutrient. Generally, when the ratio is less than 10, nitrogen is the limiting of the two nutrients. When the ratio is greater than 20, phosphorus is limiting. During the study period, Keystone Lake N:P ratios ranged from a minimum of 2.75 to a maximum of 54.67 with a mean ratio of 15.20. No significant differences were found among mean or median N:P ratios and sampling stations. There were statistically significant differences among mean and median lake-wide N:P ratios and sampling dates. Highest N:P ratios were observed from mid-May through July, and then there was a decrease to the minimum date mean and median in October (Figure 20). N:P ratios observed in Keystone Lake through the study period would indicate phosphorus-limiting conditions for phytoplankton through much of the year. The relatively low mean N:P ratio observed 30 October may be related to high inflows to the reservoir in that month carrying large nonpoint sources of phosphorus into the lake.

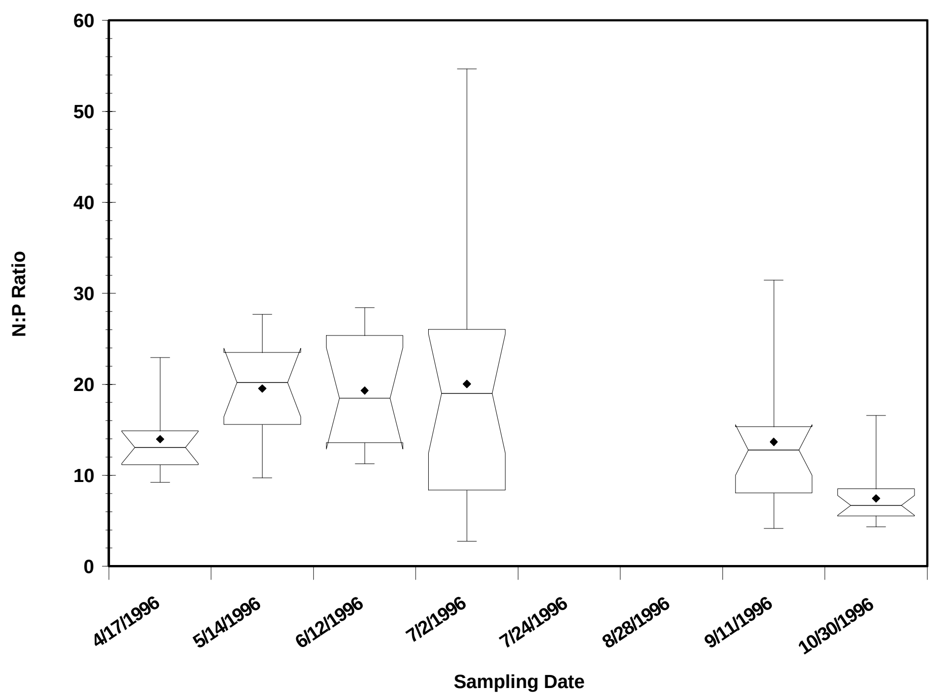

Figure 20. Box-and-whisker representation of N:P ratios in Keystone Lake, Oklahoma, by sampling date, 17 April through 30 October 1996. Nitrogen series was not analyzed 24 July, and total phosphorus was not sampled 28 August.

Chlorophyll *a*

Chlorophyll *a* concentrations in Keystone Lake ranged from a minimum of 1.45 µg/l (OKN0047, 30 October) to 75.12 µg/l (OKN0037, 30 October). The lake-wide mean concentration was 17.26 µg/l. No statistically significant differences were found among station mean or median concentrations (Figure 21), although a pattern of higher concentrations in the riverine arms of the lake was evident. One-way ANOVA and Mood's Median Test identified significant differences in lake-wide mean and median concentrations of chlorophyll a by sampling date. Highest concentrations were observed in April (mean = 17.46 µg/l), and late July through October (mean = 22.78 µg/l). Average lake-wide concentrations were less than 10 µg/l on 12 June and 2 July. Trophic status of Keystone Lake was also assessed using chlorophyll *a* concentrations and Carlson's Trophic State Index (Carlson, 1977; Figure 22). This result corresponds reasonably well with the index values calculated from total phosphorus concentrations, although lake-wide and sampling station mean and median index values are consistently lower. Based on chlorophyll *a* concentrations, the lake-wide mean and median index values of 55.3 and 58.3, respectively, classification of Keystone Lake would fall into a meso-eutrophic category. The lower index values are indicative of the effects of inorganic turbidity limiting algal productivity.

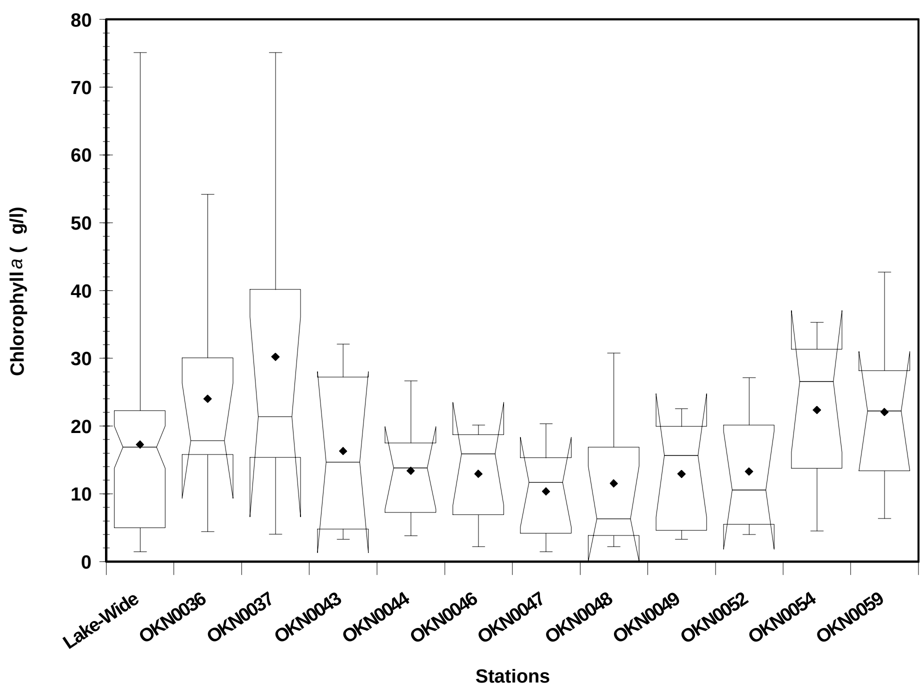

Figure 21. **Box-and-whisker representation of chlorophyll *a* concentrations at water quality monitoring stations in Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

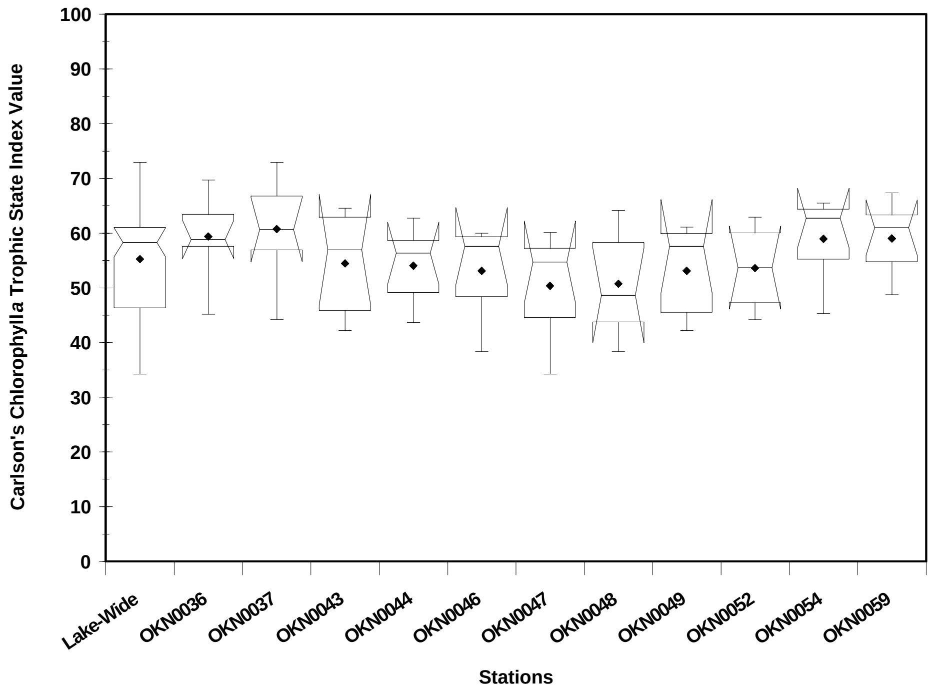

Figure 22. **Box-and-whisker representation of Carlson's chlorophyll *a* trophic state index by station in Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

Metals

Water samples were analyzed for total concentrations of the 11 metals listed in Table 3. Descriptive statistics are given in Table 4. These metals were selected for analysis because they are important micronutrients, could be potentially toxic to aquatic organisms or humans, or could affect water supply users. Arsenic, cadmium, lead, mercury, nickel, and selenium exceeded neither the detection limit, nor the State of Oklahoma water quality numeric criteria, in any sample collected during this study. Metals present in concentrations above the detection limit included chromium (1 of 104 samples), copper (1 of 104 samples), iron (87 of 104 samples), manganese (65 of 104 samples), and zinc (10 of 104 samples).

There were single occurrences of chromium (OKN0047, 30 µg/l, 17 April) and copper (OKN0052, 30 µg/l, 12 June) concentrations above detection limits. The chromium III) concentration was below the recommended EPA Freshwater Aquatic Life Criterion Maximum Concentration of 14 mg/l at 300 mg/l hardness (USEPA, 1999). The recommended EPA Freshwater Aquatic Life Criterion Maximum Concentration for copper of 41 µg/l at 300 mg/l hardness was not exceeded (USEPA, 1999).

Iron is an essential micronutrient of freshwater plants and animals. The typical range of total iron found in oxygenated surface waters of pH 5 to 8 is from 50 µg/l to 200 µg/l (0.05 mg/l to 0.2 mg/l) (Wetzel, 1983). High concentrations of iron do not necessarily pose a health threat, however two criteria concerning iron were repeatedly exceeded during this study and include the EPA human health value (300 µg/l) and the EPA aquatic life criterion (1000 µg/l) (USEPA, 1986). The EPA human health value, based on human health criteria that assume a lifetime of exposure to these waters via consumption of drinking water and eating contaminated aquatic organisms, was exceeded in 50 of 104 samples. The EPA aquatic life criterion, based on acute and chronic levels present in the water column, was exceeded in 11 of 104 samples. Iron concentrations ranged from <10 µg/l to a maximum of 6,590 µg/l, with the mean of observations above the detection limit of 497 µg/l. One-way ANOVA detected statistically significant differences in station mean iron concentrations with highest means in tributary arms of the lake. The highest station mean concentration was 2,452 µg/l at OKN0059 in the Arkansas River arm of the lake. Significant temporal differences in mean iron concentrations were not found. Lake-wide surface mean iron concentration (621 µg/l) was significantly higher than the mean bottom iron concentration (221 µg/l).

Manganese, like iron, is an essential micronutrient for plants and animals. It is necessary for photosynthesis in plants and as a catalyst in enzyme systems of animals. Total manganese in lake surface water typically ranges from 10 µg/l to 850 µg/l, with an average of approximately 35 µg/l (Wetzel, 1983). Manganese was detected in 65 of 104 samples from Keystone Lake with values ranging from less than the detection limit of 10 µg/l to a maximum of 1,710 µg/l. The mean of the observations above the detection limit was 215 µg/l. The EPA criterion of 50 µg/l (USEPA, 1986) is based on objectionable qualities at higher concentrations and not health risks and this value was exceeded in 49 of 104 samples. Mean manganese levels at each station were not significantly different, but statistically significant temporal mean differences were noted with highest mean concentrations observed 2 July (452 µg/l) while mean concentrations on all other dates ranged from 83 to 208 µg/l. Lake-wide surface mean manganese concentration (131 µg/l) was significantly lower than the mean bottom concentration (474 µg/l).

Zinc is also an essential micronutrient required for the nutrition of plants and animals. Zinc is found in surface waters at an average concentration of 10 µg/l (Wetzel, 1983). Detectable levels of zinc were found in 10 of 104 samples with a maximum of 80 µg/l and the mean of detectable observations was 44 µg/l. Recommended water quality criteria for zinc include a freshwater criteria maximum concentration of 120 µg/l in the dissolved form, and an organoleptic (taste and odor) effect criterion of 5000 µg/l (USEPA, 1999). These levels were not exceeded in any samples from Keystone Lake during the study.

Stilling Basin

Water samples were collected from one site below the Keystone Dam (OKN0095) on seven dates through the sampling period. No samples were collected 24 July. A summary of data collected at OKN0095 is presented in Table 5. Water quality was very similar to that in the lake. Metals data for station OKN0095 are also similar to lake data. Chromium was found in one of seven samples at a concentration of 50 µg/l. Iron was detected in six of seven samples with concentrations ranging from <10 µg/l to 300 µg/l. Manganese was detected in five of seven samples with concentrations ranging from <10 µg/l to 670 µg/l. Zinc was detected in only one sample at a concentration of 50 µg/l.

Table 5. **Descriptive statistics for station OKN0095, Stilling Basin below Keystone Dam, 17 April through 30 October 1996.**

Parameter	Units	Mean	Median	Min.	Max.	No. Obs.	No. Obs. BDL
Alkalinity, Total	mg/l as $CaCO_3$	193.7	152	108	344	7	0
Arsenic, Total	µg/l	*	*	<10	<10	7	7
Cadmium, Total	µg/l	*	*	<10	<10	7	7
Carbon, Organic, Total	mg/l	4.5	3.9	3.5	8.3	7	0
Chloride	mg/l	555	570	450	670	6	0
Chromium, Total	µg/l	*	*	<10	50	7	6
Copper, Total	µg/l	*	*	<10	<10	7	7
Hardness, Total	mg/l as $CaCO_3$	295.1	300	230	360	7	0
Iron, Total	µg/l	170	140	<10	300	7	1
Lead, Total	µg/l	*	*	<10	<10	7	7
Manganese, Total	µg/l	280	170	<10	670	7	2
Mercury, Total	µg/l	*	*	<10	<10	7	7
Nickel, Total	µg/l	*	*	<10	<10	7	7
Nitrogen, Ammonia	mg/l	0.145	0.118	0.05	0.288	7	0
Nitrogen, Nitrate	mg/l	0.766	0.86	0.26	0.92	7	0
Nitrogen, Nitrite	mg/l	0.019	0.01	<0.005	0.04	7	2
Nitrogen, Organic, Total	mg/l	0.575	0.625	<0.10	0.78	7	1
Phosphorus, Total	mg/l	0.113	0.104	0.049	0.183	6	0
Selenium, Total	µg/l	*	*	<10	<10	7	7
Solids, Dissolved, Total	mg/l	1,562.9	1,350	340	4,400	7	0
Solids, Suspended, Total	mg/l	14.4	15	0.9	30	7	0
Sulfates	mg/l	198.7	167	140	306.2	7	0
Turbidity	NTU	13.8	12	5.08	28.2	7	0
Zinc, Total	µg/l	*	*	<10	50	7	6

DISCUSSION

Keystone Lake is regionally important as a flood control, power generation, and recreational facility. It is not presently used as a municipal or industrial water supply source. Results of this study indicate that overall, the water in Keystone Lake is of a reasonably good water quality when considering its primary uses (Table 6). Waters impounded by the reservoir are too highly mineralized to be suitable for municipal and industrial uses without extensive treatment. Keystone Lake presents an unusual situation in that the Cimarron River carries significantly higher dissolved salts to the lake than the Arkansas River. Water density (and quality) differences of these two major tributary sources likely have a significant impact on vertical mixing of waters in the lake. Higher specific conductance and chloride levels were consistently observed at depth at lacustrine stations. Total alkalinity and pH values suggest that the lake did not experience drastic changes in pH during the study, and the lake should be well buffered. The water in Keystone Lake was classified as very hard, and total hardness did not exceed criteria for municipal or industrial uses (USEPA, 1986). Total dissolved solids levels in the lake exceed levels acceptable for domestic uses.

Thermal stratification was observed at all lacustrine stations on 2 July (eight to nine meters depth) and at several lacustrine stations in June at shallower depths (two to four meters). Dissolved oxygen values below <2 mg/l in the hypolimnion at lacustrine stations (OKN0043, OKN0046, OKN0047, OKN0048, and OKN0049) were common between June and September. In transition zone portions of the lake, OKN0044 and OKN0052, hypolimnetic anoxia was transient.

Two factors that directly influence primary productivity in Keystone Lake are nutrient concentrations and light availability. Nutrient concentrations in the reservoir were at times high, and seasonally variable. Trophic classification of Keystone Lake based on epilimnetic concentrations of total phosphorus indicates the system is hyper-eutrophic. Turbidity values and total suspended solids concentrations exhibited a relatively high degree of variability both spatially and temporally. Turbidity exceeded the Oklahoma Water Quality Standard of 25 NTU in 36% of observations. Mean Secchi depth values indicate that on average the depth of the euphotic zone (i.e. the portion of the water column where active photosynthesis can take place) was no greater than 1.5 meters. Chlorophyll *a* concentrations in Keystone Lake through the study period (mean of 17.26 µg/l) likely indicate the dampening effect of high inorganic turbidity on algal productivity. Given its highly turbid nature, the high concentrations of total phosphorus in Keystone Lake are the result of phosphorus adsorption to suspended solids (external loading) and phosphorus releases from anoxic sediment during periods of hypolimnetic anoxia (internal loading). Both nitrate and total phosphorus concentrations were higher at depth. The relatively short hydraulic residence time of Keystone Lake (42 days) suggests that both internal and external nutrient loadings are minimized in Keystone Lake due to advective transport of nutrients through the system.

Trace metal concentrations in Keystone Lake do not warrant concern at this time, however concentrations of total iron and total manganese merit some awareness. As discussed in the results section, concentrations of total iron, at times, exceeded EPA water quality criteria for aquatic life and human health. Total manganese concentrations in Keystone Lake did not present an aquatic life or human health risk. Concentrations of both iron and manganese were high enough to be of objectionable qualities due to the potential for porcelain and laundry staining and possible bad taste in beverages. The spatial distribution (horizontal and vertical) of iron in Keystone Lake suggests that loadings are primarily external. Highest mean concentrations of iron occurred in tributary arms of the lake and surface concentrations were higher than bottom concentrations. Internal loadings of these metals can occur as a result releases from anoxic sediments. There is evidence of internal loading of manganese as bottom concentrations were significantly higher than those at the surface, and highest concentrations temporally were observed during the period of thermal stratification. Single observations of other metals (chromium and copper) above the detection limit are not cause for concern, but rather an awareness of potential sources.

Table 6. Summary of Keystone Lake, Oklahoma, water quality study, 1996.

PARAMETERS	NO CONCERN	AWARENESS	CONCERN
Temperature and Dissolved Oxygen		X	
Alkalinity, pH, and Hardness		X	
Salinity		X	
Water Clarity		X	
Nutrients		X	
Trace Metals (excluding Iron and Manganese)	X		
Iron and Manganese		X	

LITERATURE CITED

American Public Health Association (APHA). 1992. Standard Methods for the Examination of Water and Wastewater, 18^{th} Ed. American Public Health Association, Washington, D.C.

Alexander, R. B., J. R. Slack, A. S. Ludtke, K. K. Fitzgerald, and T. L. Schertz. 1997. Data from Selected U.S. Geological Survey National Stream Water-Quality Monitoring Networks (WQN). USGS Digital Data Series DDS-37. U. S. Geological Survey, Open-File Report 96-337.

Blazs, R. L., D. M. Walters, T. E. Coffey, D. K. White, D. L. Boyle, and J. F. Kerestes. 1997. Water Resources Data – Oklahoma, Water Year 1996. Volume 1. Arkansas River Basin. U. S. Geological Survey Water-Data Report OK-96-1. U. S. Geological Survey – Water Resources Division, Oklahoma City, Oklahoma.

Carlson, R. E. 1977. A trophic state index for lakes. Limnology and Oceanography. 22(2): 361 – 369.

Cole, Gerald A. 1994. Textbook of Limnology. Waveland Press, Inc., Prospect Heights, Illinois.

Galloway, H. M. 1959. Soil Survey of Pawnee County, Oklahoma. Series 1952, No. 4. U. S. Department of Agriculture – Soil Conservation Service in cooperation with Oklahoma Agricultural Experiment Station. U. S. Government Printing Office, Washington, D. C.

Johnson, K. S., C. C. Branson, N. M. Curtis Jr., W. E. Ham, W. E. Harrison, M. V. Marcher, and J. F. Roberts. 1979. Geology and Earth Resources of Oklahoma: An Atlas of Maps and Cross Sections. Oklahoma Geological Survey, Educational Publication 1.

Kincannon, D. F. 1979. A Water Quality Study on Lake Keystone, Arkansas and Cimarron River, Oklahoma: Arkansas-Red River Basin Chloride Control. Final Report. Environmental Engineering Consultants, Inc. US Army Corps of Engineers, Tulsa District.

Lind, O. T. 1985. Handbook of Common Methods in Limnology. Second Edition. Kendal/Hunt Publishing Company, Dubuque, IA. 199 p.

Minitab, Inc. 2000. Minitab Statistical Software: Release 13. Minitab Inc.

Reid, G. K. 1965. Ecology of Inland Waters and Estuaries. Reinhold Publishing Corporation, New York, N.Y.

U. S. Army Corps Engineers (USACE). 1989. Keystone Lake, Arkansas River, Oklahoma: Water Control Manual. Department of the Army, Tulsa District, U. S. Army Corps of Engineers, Oklahoma.

______. 1993. Tulsa District - Civil Works Projects: Pertinent Data. U. S. Army Corps of Engineers, Tulsa District. September 1993. 146 p.

United States Environmental Protection Agency (USEPA). 1979. Methods for the Analysis of Water and Wastes. Environmental Protection Agency, Washington, D.C. EPA 600/4-79-020.

______. 1986. Quality Criteria for Water. Office of Water Regulation and Standards, Washington, D.C. EPA 440/5-86-001.

______. 1999. National Recommended Water Quality Criteria - Correction. Office of Water, Washington, D.C. EPA 822-Z-99-001.

______. 2000. Nutrient Criteria Technical Guidance Manual: Lakes and Reservoirs. Office of Water, Washington, D.C. EPA 822-B00-001.

Wetzel, R. G. 1983. Limnology. Second Edition. Saunders College Publishing, Philadelphia, PA. 767 p.

APPENDIX A

Keystone Lake
Monthly
Reservoir Data
1996

KEYSTONE LAKE
MONTHLY LAKE REPORT
JAN 96

DAY	POOL ELEVATIONS FT-NGVD 0800	2400	STORAGE 2400HR AC-FT	RELEASES DSF POWER	TOTAL	EVAP INCHES 8A TO 8A	INFLOW ADJ DSF	RAINFALL INCHES 7A TO DAM	7A BSN
PRIOR MONTH		723.03	506073						
1	723.11	723.20	509991	738	738	0.100	2300	0.00	0.00
2	723.30	723.08	507225	3158	3158	0.100	2000	0.00	0.00
3	723.06	722.84	501876	3746	3746	0.100	1800	0.04	0.00
4	722.84	722.68	498370	3753	3753	0.100	1800	0.00	0.01
5	722.67	722.58	496180	3079	3079	0.100	1800	0.00	0.00
6	722.63	722.56	495741	1985	1985	0.100	1800	0.00	0.00
7	722.56	722.43	492893	2400	2400	0.100	1000	0.00	0.00
8	722.38	722.15	486759	3955	3955	0.100	1000	0.00	0.00
9	722.13	722.09	485444	2708	2708	0.100	2100	0.00	0.00
10	722.10	722.13	486320	2025	2025	0.100	2500	0.00	0.00
11	722.16	722.16	486977	1925	1925	0.100	2300	0.00	0.00
12	722.17	722.08	485225	2747	2747	0.100	2000	0.00	0.00
13	722.18	722.44	493112	993	993	0.100	5000	0.00	0.00
14	722.54	722.71	499028	0	0	0.100	3000	0.00	0.00
15	722.76	722.76	500123	1238	1238	0.100	2000	0.00	0.00
16	722.78	722.78	500562	1709	1709	0.100	2000	0.00	0.00
17	722.76	722.95	504286	1899	1899	0.100	3000	0.00	0.00
18	722.97	722.84	501876	2143	2143	0.100	1000	0.44	0.03
19	722.75	722.60	496617	2600	2600	0.100	1000	0.00	0.00
20	722.60	722.48	493988	2231	2231	0.100	1000	0.00	0.00
21	722.49	722.50	494427	981	981	0.100	1000	0.00	0.01
22	722.48	722.58	496180	1012	1012	0.100	2000	0.00	0.00
23	722.70	722.77	500342	0	0	0.100	2000	0.00	0.00
24	722.72	722.67	498151	2226	2226	0.100	1400	0.00	0.00
25	722.57	722.57	495960	3546	3546	0.100	2500	0.00	0.00
26	722.75	722.53	495084	5289	5289	0.100	4000	0.00	0.00
27	722.53	722.57	495960	2948	2948	0.100	3500	0.00	0.00
28	722.58	722.54	495302	3437	3437	0.100	3200	0.00	0.00
29	722.55	722.55	495522	3294	3294	0.100	3200	0.00	0.00
30	722.54	722.37	491578	4791	4791	0.100	3100	0.00	0.00
31	722.25	722.04	484348	4849	4849	0.100	2500	0.00	0.00
TOTAL				77405	77405	3.100	68800	0.48	0.05
AVERAGE	722.56			2497	2497		2219	NORMAL=	0.93

MAXIMUM	723.34	513219	DATE= 2	TOP CONSERVATION POOL	723.00
MINIMUM	722.01	483691	DATE= 9	TOP FLOOD POOL	754.00

INFLOW VOLUME= 136463 AC-FT

EVAPORATION ESTIMATED FOR THE MONTH.

REPORT IS SUBJECT TO CHANGE AND/OR REVISION

KEYSTONE LAKE
MONTHLY LAKE REPORT
FEB 96

DAY	POOL ELEVATIONS FT-NGVD 0800	POOL ELEVATIONS FT-NGVD 2400	STORAGE 2400HR AC-FT	RELEASES DSF POWER	RELEASES DSF TOTAL	EVAP INCHES 8A TO 8A	INFLOW ADJ DSF	RAINFALL INCHES 7A TO DAM	RAINFALL INCHES 7A BSN
PRIOR MONTH		722.04	484348						
1	721.98	721.76	478467	4712	4712	0.100	3500	0.00	0.00
2	721.74	721.48	472627	4861	4861	0.100	3000	0.30	0.01
3	721.49	721.35	469916	3483	3483	0.100	2500	0.00	0.00
4	721.38	721.30	468873	2015	2015	0.100	800	0.00	0.00
5	721.23	721.10	464702	2797	2797	0.100	800	0.00	0.00
6	721.06	720.96	461820	2525	2525	0.100	1000	0.00	0.06
7	720.90	720.99	462417	1778	1778	0.100	1500	0.00	0.05
8	721.04	721.19	466580	746	765	0.100	2000	0.00	0.00
9	721.21	721.36	470125	1753	1753	0.100	3600	0.00	0.00
10	721.52	721.88	480970	0	0	0.100	4600	0.00	0.00
11	721.95	722.09	485444	495	495	0.100	2800	0.00	0.00
12	722.10	721.78	478885	5065	5065	0.100	2000	0.00	0.00
13	721.78	721.46	472211	5274	5274	0.100	2000	0.00	0.00
14	721.46	721.18	466371	5112	5112	0.100	2200	0.00	0.00
15	721.15	720.88	460225	5247	5247	0.100	2200	0.00	0.00
16	720.77	720.48	452249	5119	5119	0.100	1200	0.00	0.00
17	720.64	720.77	458032	0	0	0.100	3000	0.00	0.00
18	720.87	721.04	463451	496	496	0.100	3000	0.00	0.00
19	721.00	720.58	454244	5673	5673	0.100	1400	0.00	0.00
20	720.57	720.10	444673	6104	6104	0.100	1400	0.00	0.00
21	720.09	719.69	436729	5279	5279	0.100	1400	0.00	0.00
22	719.67	719.25	428282	5643	5643	0.100	1400	0.00	0.00
23	719.22	718.79	419603	5416	5416	0.100	1100	0.00	0.00
24	718.86	718.99	423298	0	0	0.100	1900	0.00	0.00
25	719.05	719.08	425019	992	992	0.100	1900	0.00	0.00
26	719.03	718.74	418679	5628	5628	0.100	1900	0.00	0.01
27	718.64	718.34	411290	5296	5296	0.100	1900	0.01	0.02
28	718.26	717.77	400910	7018	7018	0.100	1900	0.00	0.00
29	717.65	717.16	390040	7091	7091	0.100	1900	0.00	0.00
TOTAL				105618	105637	2.900	59800	0.31	0.15
AVERAGE	720.40			3642	3643		2062	NORMAL=	1.16

MAXIMUM	722.10	485662	DATE=12	TOP CONSERVATION POOL	723.00
MINIMUM	717.16	390040	DATE=29	TOP FLOOD POOL	754.00

INFLOW VOLUME= 118612 AC-FT

BEGAN POOL DRAWDOWN FOR TAINTER GATE MAINTENANCE ON 12 FEB.
EVAPORATION ESTIMATED FOR THE MONTH.

REPORT IS SUBJECT TO CHANGE AND/OR REVISION

KEYSTONE LAKE
MONTHLY LAKE REPORT
MAR 96

DAY	POOL ELEVATIONS FT-NGVD 0800	2400	STORAGE 2400HR AC-FT	RELEASES DSF POWER	TOTAL	EVAP INCHES 8A TO 8A	INFLOW ADJ DSF	RAINFALL INCHES 7A TO DAM	7A BSN
PRIOR MONTH		717.16	390040						
1	717.16	717.23	391287	1362	1362	0.100	1900	0.00	0.00
2	717.31	717.44	395029	0	0	0.100	1900	0.00	0.00
3	717.52	717.65	398772	0	0	0.100	1900	0.00	0.00
4	717.58	717.61	398058	1612	1612	0.100	1600	0.00	0.00
5	717.76	717.68	399306	1474	1474	0.100	1600	0.00	0.00
6	717.66	717.56	397168	2600	2600	0.100	1600	0.00	0.00
7	717.53	717.35	393425	2864	2864	0.100	1200	0.00	0.00
8	717.30	717.03	387724	3832	3832	0.100	1200	0.00	0.00
9	717.09	717.15	389862	524	524	0.100	1600	0.00	0.00
10	717.21	717.35	393425	0	0	0.100	1600	0.00	0.00
11	717.32	717.21	390931	2680	2680	0.100	1600	0.00	0.00
12	717.27	717.24	391465	1082	1082	0.100	1600	0.00	0.00
13	717.28	717.20	390753	1837	1837	0.180	1600	0.00	0.00
14	717.26	717.32	392891	803	803	0.210	1600	0.00	0.00
15	717.39	717.50	396099	0	0	0.050	1600	0.03	0.30
16	717.57	717.72	400018	0	0	0.120	1600	0.00	0.04
17	717.76	717.86	402513	0	0	0.160	2000	0.00	0.00
18	717.94	717.95	404117	1027	1027	0.170	1500	0.88	0.13
19	717.99	717.82	401801	2100	2100	0.170	1200	0.00	0.00
20	717.78	717.63	398415	2088	2088	0.100	1000	0.00	0.00
21	717.58	717.59	397703	1300	1300	0.100	1000	0.00	0.00
22	717.60	717.53	396634	1501	1501	0.190	1000	0.00	0.00
23	717.58	717.67	399127	0	0	0.240	1000	0.00	0.00
24	717.68	717.97	404473	0	0	0.240	1800	0.00	0.03
25	717.88	717.72	400018	1806	1806	0.100	1000	0.20	0.11
26	717.65	717.52	396455	2366	2366	0.100	800	0.00	0.00
27	717.47	717.33	393070	2664	2664	0.100	1000	0.06	0.04
28	717.38	717.30	392534	1406	1406	0.120	1100	0.64	0.16
29	717.38	717.33	393070	1066	1066	0.030	1400	0.00	0.00
30	717.38	717.63	398415	0	0	0.100	2500	0.00	0.02
31	717.67	717.72	400018	0	0	0.090	1000	0.00	0.21
TOTAL				37994	37994	3.770	45000	1.81	1.04
AVERAGE	717.51			1226	1226		1452	NORMAL=	2.01

MAXIMUM	718.02	405378	DATE=19	TOP CONSERVATION POOL	723.00
MINIMUM	717.03	387724	DATE= 8	TOP FLOOD POOL	754.00

INFLOW VOLUME= 89256 AC-FT

EVAPORATION ESTIMATED FOR THE MONTH.

REPORT IS SUBJECT TO CHANGE AND/OR REVISION

KEYSTONE LAKE
MONTHLY LAKE REPORT
APR 96

DAY	POOL ELEVATIONS FT-NGVD 0800	2400	STORAGE 2400HR AC-FT	RELEASES DSF POWER	TOTAL	EVAP INCHES 8A TO 8A	INFLOW ADJ DSF	RAINFALL INCHES 7A TO DAM	7A BSN
PRIOR MONTH		717.72	400018						
1	717.73	717.72	400018	1016	1016	0.190	1100	0.00	0.00
2	717.76	717.85	402335	0	0	0.220	1400	0.00	0.00
3	717.86	717.90	403227	1008	1008	0.330	1400	0.00	0.00
4	717.96	718.02	405378	0	0	0.200	1200	0.13	0.01
5	718.00	718.01	405193	1033	1033	0.220	1200	0.00	0.00
6	718.05	718.12	407225	0	0	0.100	1200	0.00	0.00
7	718.17	718.27	409997	0	0	0.150	1200	0.00	0.00
8	718.26	718.26	409812	1037	1037	0.160	1200	0.00	0.00
9	718.25	718.31	410735	517	517	0.170	1200	0.00	0.00
10	718.35	718.29	410365	1179	1179	0.210	1100	0.00	0.00
11	718.33	718.36	411659	434	434	0.290	1100	0.00	0.00
12	718.38	718.42	412767	508	508	0.370	1100	0.00	0.02
13	718.45	718.51	414430	0	0	0.130	1100	0.00	0.00
14	718.57	718.70	417941	451	451	0.230	1100	0.00	0.00
15	718.63	718.58	415724	1110	1110	0.300	1100	0.00	0.00
16	718.61	718.67	417386	0	0	0.230	1100	0.00	0.00
17	718.66	718.67	417386	990	990	0.390	1200	0.00	0.00
18	718.73	718.82	420158	0	0	0.350	1500	0.00	0.00
19	718.83	718.84	420528	1259	1259	0.330	1500	0.00	0.00
20	718.82	718.91	421820	0	0	0.390	1200	0.00	0.19
21	718.95	719.07	424827	0	0	0.100	1600	0.00	0.00
22	719.06	719.16	426554	757	757	0.240	1700	0.50	0.47
23	719.22	719.45	432122	183	183	0.070	3100	0.45	0.08
24	719.55	719.69	436729	1273	1273	0.190	3800	0.00	0.00
25	719.90	720.22	447066	0	0	0.370	5400	0.00	0.00
26	720.31	720.35	449657	1429	1429	0.330	3000	0.00	0.00
27	720.45	720.53	453247	0	0	0.320	2000	0.00	0.00
28	720.64	720.84	459428	0	0	0.240	1600	0.01	0.14
29	720.81	720.74	457433	988	988	0.080	1500	0.06	0.04
30	720.77	720.85	459626	0	0	0.100	1300	0.00	0.00
TOTAL				15172	15172	7.000	49200	1.15	0.95
AVERAGE	718.94			506	506		1640	NORMAL=	2.78

MAXIMUM	720.85	459626	DATE=30	TOP CONSERVATION POOL	723.00
MINIMUM	717.72	400018	DATE= 1	TOP FLOOD POOL	754.00

INFLOW VOLUME= 97587 AC-FT

REPORT IS SUBJECT TO CHANGE AND/OR REVISION

KEYSTONE LAKE
MONTHLY LAKE REPORT
MAY 96

DAY	POOL ELEVATIONS FT-NGVD 0800	2400	STORAGE 2400HR AC-FT	RELEASES DSF POWER	TOTAL	EVAP INCHES 8A TO 8A	INFLOW ADJ DSF	RAINFALL INCHES 7A TO DAM	7A BSN
PRIOR MONTH		720.85	459626						
1	720.85	720.83	459228	1077	1077	0.290	1000	0.00	0.00
2	720.87	720.98	462218	0	0	0.240	1500	0.00	0.00
3	721.03	721.13	465328	1015	1015	0.130	2700	0.00	0.00
4	721.20	721.39	470751	0	0	0.110	2900	0.00	0.00
5	721.46	721.59	474922	0	0	0.190	2200	0.00	0.00
6	721.62	721.52	473462	2204	2204	0.200	1500	0.32	0.01
7	721.56	721.48	472627	1644	1644	0.230	1500	0.00	0.00
8	721.53	721.51	473253	998	998	0.200	1500	0.00	0.02
9	721.58	721.41	471167	2502	2502	0.320	1600	0.00	0.00
10	721.50	721.54	473878	1247	1247	0.180	2700	0.00	0.32
11	721.62	721.74	478050	0	0	0.100	2400	0.50	0.17
12	721.82	721.98	483055	0	0	0.160	2400	0.00	0.00
13	722.08	722.10	485662	1238	1292	0.180	2700	0.10	0.05
14	722.19	722.20	487854	1726	1726	0.100	2900	0.06	0.16
15	722.30	722.37	491578	992	992	0.150	3000	0.00	0.01
16	722.46	722.65	497713	0	0	0.230	3200	0.00	0.11
17	722.73	722.79	500780	988	988	0.300	2800	0.00	0.10
18	722.90	723.01	505612	0	0	0.360	2700	0.00	0.10
19	723.16	723.35	513448	0	0	0.380	4100	0.00	0.19
20	723.41	723.21	510222	4094	4094	0.240	2700	0.00	0.21
21	723.27	723.06	506764	3521	3521	0.270	2000	0.00	0.10
22	723.16	723.02	505842	2009	2009	0.310	1700	0.24	0.12
23	723.12	722.97	504723	1986	1986	0.270	1700	0.00	0.10
24	723.04	722.95	504286	1957	1957	0.380	1700	0.00	0.11
25	723.00	723.11	507916	0	0	0.300	2100	0.00	0.45
26	723.07	723.25	511144	0	0	0.330	1700	0.00	0.27
27	723.35	723.27	511605	1708	1708	0.100	2200	1.70	0.50
28	723.30	723.34	513219	0	28	0.250	1000	0.00	0.11
29	723.36	723.08	507225	3104	3546	0.260	800	0.00	0.11
30	723.11	722.89	502971	3004	3074	0.250	1000	0.00	0.07
31	722.91	722.73	499465	3154	3224	0.110	1500	0.05	0.08
TOTAL				40168	40832	7.120	65400	2.97	3.47
AVERAGE	722.34			1296	1317		2110	NORMAL=	4.42

MAXIMUM	723.41	514831	DATE=20	TOP CONSERVATION POOL	723.00
MINIMUM	720.83	459228	DATE= 1	TOP FLOOD POOL	754.00

INFLOW VOLUME= 129719 AC-FT

REPORT IS SUBJECT TO CHANGE AND/OR REVISION

KEYSTONE LAKE
MONTHLY LAKE REPORT
JUN 96

DAY	POOL ELEVATIONS FT-NGVD 0800	2400	STORAGE 2400HR AC-FT	RELEASES DSF POWER	TOTAL	EVAP INCHES 8A TO 8A	INFLOW ADJ DSF	RAINFALL INCHES 7A TO DAM	7A BSN
PRIOR MONTH		722.73	499465						
1	723.07	723.33	512988	0	70	0.100	7000	2.10	0.86
2	723.46	723.72	521977	0	70	0.100	4800	0.10	0.12
3	723.89	723.50	516907	5353	5423	0.280	3000	0.00	0.00
4	723.59	723.21	510222	5648	5718	0.280	2800	0.00	0.03
5	723.30	722.95	504286	6505	6575	0.210	3500	0.00	0.07
6	723.11	723.00	505381	5593	5663	0.260	6300	0.03	0.26
7	723.21	723.03	506073	6216	6286	0.190	6800	0.28	0.53
8	723.24	723.71	521748	0	70	0.290	8100	0.00	0.00
9	723.96	724.44	539046	0	70	0.170	8900	0.00	0.00
10	724.56	724.28	535187	9233	9303	0.190	7500	0.00	0.00
11	724.24	724.02	528915	9345	9415	0.230	6500	0.00	0.00
12	724.10	723.78	523361	8566	8636	0.300	6000	0.00	0.00
13	723.82	723.48	516445	8740	8810	0.220	5500	0.00	0.00
14	723.48	723.02	505842	8862	8932	0.250	3800	0.00	0.05
15	723.10	723.26	511375	0	70	0.310	3000	0.00	0.05
16	723.35	723.51	517137	0	70	0.230	3200	0.00	0.35
17	723.48	723.06	506764	7642	7712	0.270	2600	0.07	0.35
18	723.22	723.13	508378	5036	5106	0.240	6200	0.00	0.00
19	723.19	723.20	509991	2644	2714	0.460	3800	0.52	0.24
20	723.32	723.09	507456	4867	4937	0.310	3800	0.00	0.00
21	723.22	723.20	509991	2203	2273	0.360	3800	0.00	0.00
22	723.30	723.28	511836	2325	2395	0.490	3500	0.00	0.00
23	723.37	723.36	513679	1975	2045	0.260	3400	0.00	0.00
24	723.43	723.17	509299	4894	4964	0.410	2900	0.00	0.16
25	723.22	722.91	503409	4295	4365	0.250	1800	0.67	0.15
26	722.96	722.83	501657	2266	2336	0.240	1600	0.00	0.08
27	722.89	722.71	499028	2850	2920	0.270	1550	0.00	0.00
28	722.77	722.53	495084	3213	3283	0.220	1500	0.00	0.01
29	722.61	722.73	499465	0	70	0.310	2500	0.00	0.00
30	722.80	722.68	498370	2455	2525	0.320	2200	0.00	0.01
TOTAL				120726	122826	8.020	127850	3.77	3.32
AVERAGE	723.27			4024	4094		4262	NORMAL=	4.12

MAXIMUM	724.56	541941	DATE=10	TOP CONSERVATION POOL	723.00
MINIMUM	722.53	495084	DATE=28	TOP FLOOD POOL	754.00

INFLOW VOLUME= 253587 AC-FT

REPORT IS SUBJECT TO CHANGE AND/OR REVISION

KEYSTONE LAKE
MONTHLY LAKE REPORT
JUL 96

DAY	POOL ELEVATIONS FT-NGVD 0800	2400	STORAGE 2400HR AC-FT	RELEASES DSF POWER	TOTAL	EVAP INCHES 8A TO 8A	INFLOW ADJ DSF	RAINFALL INCHES 7A TO DAM	7A BSN
PRIOR MONTH		722.68	498370						
1	722.72	722.49	494207	3238	3308	0.350	1400	0.00	0.19
2	722.53	722.23	488511	3717	3787	0.280	1100	0.00	0.03
3	722.27	722.04	484348	2986	3056	0.270	1100	0.00	0.00
4	722.06	721.99	483263	1187	1257	0.320	900	0.00	0.00
5	722.03	721.89	481178	2104	2174	0.250	1400	0.00	0.02
6	721.95	721.96	482638	496	566	0.400	1600	0.00	0.00
7	722.02	722.07	485006	0	70	0.470	1400	0.00	0.01
8	722.14	721.91	481595	2730	2800	0.240	1200	0.08	0.19
9	721.97	722.08	485225	0	70	0.220	1900	0.05	0.55
10	722.11	722.12	486101	1097	1167	0.050	1600	0.63	0.80
11	722.19	722.29	489825	0	70	0.030	2000	0.60	0.49
12	722.35	722.38	491798	1124	1222	0.030	2250	0.03	0.09
13	722.48	722.68	498370	0	141	0.070	2500	0.00	0.00
14	722.78	723.05	506533	0	141	0.170	3000	0.26	0.39
15	723.18	723.14	508608	284	426	0.250	2300	0.00	0.00
16	723.22	723.32	512758	0	140	0.270	2000	0.00	0.00
17	723.37	723.18	509530	3206	3309	0.310	2000	0.00	0.02
18	723.25	723.06	506764	3173	3279	0.360	2000	0.00	0.01
19	723.10	722.75	499904	4441	4606	0.330	2000	0.00	0.00
20	722.81	722.69	498589	1717	1880	0.200	2000	0.00	0.00
21	722.76	722.67	498151	1471	1634	0.480	1800	0.00	0.00
22	722.71	722.55	495522	2717	2879	0.390	1800	0.06	0.03
23	722.60	722.40	492236	2708	2868	0.390	1700	0.97	0.53
24	722.45	722.25	488949	2750	2910	0.250	1600	0.00	0.16
25	722.29	722.06	484787	2772	2932	0.060	1500	0.02	0.09
26	722.09	722.01	483691	1509	1665	0.260	1500	0.00	0.37
27	722.05	722.12	486101	0	156	0.180	1500	0.00	0.52
28	722.17	722.31	490264	0	156	0.160	2000	0.00	0.00
29	722.41	722.46	493551	2244	2397	0.280	4150	0.00	0.03
30	722.56	722.57	495960	2728	2888	0.100	4193	1.96	0.71
31	722.72	722.84	501876	2498	2660	0.120	5800	0.00	0.13
TOTAL				52897	56614	7.540	63193	4.66	5.36
AVERAGE	722.44			1706	1826		2038	NORMAL=	2.99

MAXIMUM	723.40	514602	DATE=17	TOP CONSERVATION POOL	723.00
MINIMUM	721.89	481178	DATE= 5	TOP FLOOD POOL	754.00

INFLOW VOLUME= 125341 AC-FT

REPORT IS SUBJECT TO CHANGE AND/OR REVISION

KEYSTONE LAKE
MONTHLY LAKE REPORT
AUG 96

DAY	POOL ELEVATIONS FT-NGVD 0800	2400	STORAGE 2400HR AC-FT	RELEASES DSF POWER	TOTAL	EVAP INCHES 8A TO 8A	INFLOW ADJ DSF	RAINFALL INCHES 7A TO DAM	7A BSN
PRIOR MONTH		722.84	501876						
1	722.94	722.72	499246	6023	6183	0.240	4900	0.00	0.21
2	722.95	723.07	506995	4473	4638	0.110	6500	0.00	0.25
3	723.34	723.74	522439	0	170	0.250	8000	0.02	0.78
4	723.92	724.14	531810	1571	1746	0.240	9100	0.00	0.00
5	724.56	724.98	552072	7090	7272	0.350	17750	0.00	0.02
6	725.07	725.09	554801	11803	11987	0.350	13500	0.00	0.09
7	725.08	725.08	554551	11725	11909	0.280	12000	0.00	0.00
8	725.04	724.80	547730	11768	11952	0.250	8700	0.48	0.38
9	724.70	724.65	544113	9842	10022	0.270	8300	0.00	0.03
10	724.74	724.78	547249	9046	9227	0.140	10900	0.00	0.09
11	724.96	725.04	553552	9242	9425	0.100	12650	1.15	0.71
12	725.34	725.54	566024	9280	9785	0.100	16200	0.25	0.02
13	725.63	725.69	569766	11668	12114	0.170	14400	0.00	0.00
14	725.70	725.88	574506	11647	11833	0.210	14150	0.00	0.00
15	725.91	725.71	570266	11658	12355	0.210	10240	0.00	0.00
16	725.63	725.45	563780	11696	12490	0.060	9450	0.00	0.00
17	725.34	725.20	557544	11670	11857	0.310	8760	0.19	0.25
18	725.10	724.88	549660	11705	11888	0.070	8030	0.00	0.43
19	724.75	724.50	540494	11707	12168	0.160	7730	0.00	0.00
20	724.34	724.08	530362	10332	10721	0.260	5820	0.00	0.29
21	724.20	723.87	525435	7608	7780	0.290	5655	0.00	0.15
22	724.01	723.81	524052	7263	7433	0.520	6850	0.00	0.00
23	723.72	723.63	519903	9910	10084	0.160	8130	0.11	0.24
24	723.85	723.74	522439	6152	6325	0.200	7750	0.00	0.09
25	723.99	723.90	526127	6338	6512	0.220	8510	0.00	0.02
26	724.03	723.86	525205	9383	9553	0.190	9265	0.00	0.16
27	723.80	723.88	525666	9850	10020	0.260	10295	1.70	0.39
28	723.95	723.84	524744	10037	10212	0.060	9855	0.31	0.07
29	724.01	724.23	533980	10090	10265	0.160	15060	0.00	0.02
30	724.39	724.45	539288	8836	9011	0.200	11830	0.00	0.07
31	724.67	724.76	546766	4912	5087	0.200	9005	0.00	0.07
TOTAL				274325	282024	6.590	309285	4.21	4.83
AVERAGE	724.48			8849	9098		9977	NORMAL=	2.93

MAXIMUM 725.91 575253 DATE=15 TOP CONSERVATION POOL 723.00
MINIMUM 722.72 499246 DATE= 1 TOP FLOOD POOL 754.00

INFLOW VOLUME= 613458 AC-FT

REPORT IS SUBJECT TO CHANGE AND/OR REVISION

KEYSTONE LAKE
MONTHLY LAKE REPORT
SEP 96

DAY	POOL ELEVATIONS FT-NGVD 0800	2400	STORAGE 2400HR AC-FT	RELEASES DSF POWER	TOTAL	EVAP INCHES 8A TO 8A	INFLOW ADJ DSF	RAINFALL INCHES 7A TO DAM	7A BSN
PRIOR MONTH		724.76	546766						
1	724.95	724.97	551831	4622	4797	0.210	7480	0.00	0.15
2	725.06	724.83	548455	7949	8124	0.180	6565	0.00	0.00
3	724.88	724.60	542905	7924	8104	0.200	5340	0.00	0.10
4	724.68	724.55	541699	8044	8219	0.050	7725	0.00	0.00
5	724.30	724.24	534221	6644	6819	0.160	3195	0.00	0.00
6	724.25	724.09	530604	7856	8032	0.210	6355	0.00	0.01
7	723.94	723.66	520594	6502	6675	0.210	1700	0.00	0.01
8	723.79	723.54	517828	4795	4967	0.100	3710	0.02	0.07
9	723.62	723.36	513679	5684	5859	0.200	3900	0.00	0.00
10	723.46	723.19	509761	5305	5473	0.200	3620	0.00	0.00
11	723.27	723.05	506533	4690	4851	0.180	3400	0.00	0.00
12	723.14	722.98	504942	3657	3701	0.280	3035	0.00	0.00
13	723.07	722.95	504286	2880	2880	0.190	2670	0.00	0.00
14	723.03	723.05	506533	1878	1878	0.180	3080	0.00	0.05
15	723.18	723.39	514371	1718	1718	0.100	5720	1.50	0.98
16	723.48	723.31	512527	4129	4129	0.080	3235	1.34	1.13
17	723.25	723.14	508608	5835	5835	0.050	3890	0.00	0.00
18	723.06	723.06	506764	5849	5849	0.050	4975	0.00	0.16
19	723.19	723.43	515293	5823	5823	0.080	10210	0.20	0.99
20	723.50	723.64	520134	5810	5810	0.130	8365	0.30	0.08
21	723.68	723.86	525205	5825	5825	0.170	8430	0.00	0.00
22	724.22	725.18	557045	5850	5850	0.070	22060	0.00	0.00
23	725.61	725.86	574007	5840	12176	0.220	20805	0.00	0.00
24	725.81	725.97	576750	5881	18042	0.110	19515	0.20	0.14
25	726.29	726.39	587597	5917	22995	0.120	28540	0.00	0.00
26	726.79	728.32	639388	5915	15063	0.100	41215	1.96	1.48
27	729.32	730.04	688889	5830	15098	0.050	40105	0.50	0.23
28	730.28	730.95	716393	6097	31004	0.060	45020	0.00	0.00
29	731.24	731.57	735688	6075	31898	0.170	41765	0.00	0.00
30	731.57	731.23	725079	6054	31877	0.150	26675	0.00	0.00
TOTAL				166878	299371	4.260	392300	6.02	5.58
AVERAGE	725.08			5563	9979		13077	NORMAL=	3.38

MAXIMUM	731.57	735688	DATE=30	TOP CONSERVATION POOL	723.00
MINIMUM	722.95	504286	DATE=13	TOP FLOOD POOL	754.00

INFLOW VOLUME= 778115 AC-FT

REPORT IS SUBJECT TO CHANGE AND/OR REVISION

KEYSTONE LAKE
MONTHLY LAKE REPORT
OCT 96

DAY	POOL ELEVATIONS FT-NGVD 0800	2400	STORAGE 2400HR AC-FT	RELEASES DSF POWER	TOTAL	EVAP INCHES 8A TO 8A	INFLOW ADJ DSF	RAINFALL INCHES 7A TO DAM	7A BSN
PRIOR MONTH		731.23	725079						
1	730.95	730.55	704303	5968	26825	0.160	16490	0.00	0.00
2	730.50	730.31	697050	5836	16851	0.160	13345	0.00	0.00
3	730.25	730.05	689192	5839	15134	0.170	11270	0.00	0.00
4	729.93	729.69	678635	5850	15011	0.110	9760	0.00	0.25
5	729.58	729.28	666671	5888	14897	0.080	8930	0.00	0.00
6	729.15	728.84	654003	5925	14764	0.080	8540	0.00	0.00
7	728.68	727.74	623373	6000	22379	0.190	6995	0.00	0.00
8	727.21	726.35	586561	6096	24710	0.070	6265	0.07	0.48
9	726.02	725.70	570016	6032	16189	0.150	7990	0.00	0.01
10	725.64	725.51	565277	5954	11980	0.190	9700	0.00	0.00
11	725.44	725.32	560537	8817	12117	0.150	9825	0.00	0.00
12	725.38	725.35	561285	9651	9651	0.130	10125	0.00	0.00
13	725.42	725.39	562284	8904	8904	0.130	9560	0.00	0.00
14	725.42	725.31	560288	9367	9367	0.210	8520	0.00	0.00
15	725.35	725.10	555049	9950	9950	0.220	7390	0.00	0.00
16	725.06	724.72	545800	10468	10468	0.110	5925	0.00	0.00
17	724.66	724.36	537116	9562	9562	0.170	5355	0.00	0.00
18	724.25	724.06	529879	7795	7795	0.240	4205	0.00	0.00
19	724.22	724.17	532533	3749	3749	0.080	5225	0.00	0.00
20	724.25	724.30	535669	4602	4602	0.200	6345	0.00	0.00
21	724.41	723.99	528201	8382	8382	0.230	4630	0.81	0.25
22	723.84	723.38	514141	10857	10857	0.020	3835	0.38	0.38
23	723.52	723.82	524283	0	0	0.100	5170	0.15	0.06
24	723.93	724.18	532774	0	0	0.080	4450	0.00	0.00
25	724.24	723.78	523361	7475	7475	0.250	2800	0.00	0.00
26	723.84	723.73	522208	3938	3938	0.070	3400	0.00	0.02
27	723.95	723.93	526818	5112	5112	0.090	7500	0.95	0.79
28	724.04	723.67	520825	7119	7119	0.140	4000	0.14	0.06
29	723.72	723.45	515754	7408	7408	0.020	5000	0.11	0.20
30	723.53	723.52	517368	7955	7955	0.180	9000	0.03	0.01
31	723.85	723.85	524974	7745	7934	0.130	11800	0.00	0.00
TOTAL				208244	331085	4.310	233345	2.64	2.51
AVERAGE	725.59			6718	10680		7527	NORMAL=	3.63

MAXIMUM	731.23	725079	DATE= 1	TOP CONSERVATION POOL	723.00
MINIMUM	723.38	514141	DATE=22	TOP FLOOD POOL	754.00

INFLOW VOLUME= 462833 AC-FT

REPORT IS SUBJECT TO CHANGE AND/OR REVISION

Keystone Lake
MONTHLY LAKE REPORT
NOV 96

DAY	POOL ELEVATIONS FT-NGVD 0800	2400	STORAGE 2400HR AC-FT	RELEASES DSF POWER	TOTAL	EVAP INCHES 8A TO 8A	INFLOW ADJ DSF	RAINFALL INCHES 7A TO DAM	7A BSN
PRIOR MONTH		723.85	524974						
1	723.97	723.80	523822	9137	9137	0.040	8600	0.30	0.12
2	723.85	723.58	518751	8431	8431	0.050	6000	0.00	0.00
3	723.68	723.32	512758	7967	7967	0.120	5000	0.00	0.00
4	723.41	723.10	507686	8634	8634	0.130	6100	0.35	0.16
5	723.24	723.15	508839	4565	4565	0.060	5200	0.13	0.03
6	723.31	724.63	543630	2476	2476	0.090	20000	0.00	0.00
7	725.15	725.69	569766	0	0	0.100	13300	3.12	0.23
8	725.82	725.40	562533	8818	8818	0.150	5250	0.00	0.00
9	725.46	725.16	556545	5821	5821	0.110	3000	0.00	0.00
10	725.24	724.91	550383	6525	6525	0.240	3450	0.00	0.00
11	724.70	724.32	536152	11068	11068	0.050	3950	0.00	0.00
12	724.36	724.04	529396	6956	6956	0.050	3550	0.00	0.00
13	724.05	723.52	517368	8872	8872	0.010	3500	0.00	0.01
14	723.39	722.90	503191	9085	9085	0.010	2000	0.04	0.04
15	723.04	723.25	511144	0	0	0.010	4050	0.02	0.01
16	723.32	724.81	547972	0	0	0.050	17900	0.02	0.22
17	725.95	727.17	607981	6688	6688	0.050	37000	2.10	1.83
18	727.52	728.32	639388	12453	17048	0.050	32900	0.00	0.00
19	728.72	730.16	692516	12581	26162	0.050	53000	0.00	0.02
20	731.12	732.44	763232	12285	30104	0.050	65800	0.00	0.01
21	732.62	732.57	767407	12173	35670	0.050	37800	0.00	0.00
22	732.51	732.34	760022	11910	32543	0.050	28900	0.00	0.00
23	732.22	731.97	748166	11907	30065	0.100	24150	0.00	0.00
24	731.72	731.13	721960	12067	29833	0.100	16700	0.00	0.02
25	730.85	730.22	694329	12125	29166	0.100	15300	0.25	0.00
26	729.91	729.26	666087	12093	28453	0.100	14700	0.00	0.00
27	729.00	728.47	643603	12157	27854	0.100	16600	0.00	0.00
28	728.19	727.64	620673	12215	27262	0.100	15500	0.00	0.00
29	727.45	727.62	620133	12148	20647	0.100	20450	0.63	0.55
30	727.79	728.18	635453	12165	15413	0.100	23200	0.32	0.12
TOTAL				263322	455263	2.370	512850	7.28	3.37
AVERAGE	726.77			8777	15175		17095	NORMAL=	2.39

MAXIMUM	732.62	769012	DATE=21	TOP CONSERVATION POOL	723.00
MINIMUM	722.90	503191	DATE=14	TOP FLOOD POOL	754.00

INFLOW VOLUME= 1017223 AC-FT

REPORT IS SUBJECT TO CHANGE AND/OR REVISION

Keystone Lake
MONTHLY LAKE REPORT
DEC 96

DAY	POOL ELEVATIONS FT-NGVD 0800	2400	STORAGE 2400HR AC-FT	RELEASES DSF POWER	TOTAL	EVAP INCHES 8A TO 8A	INFLOW ADJ DSF	RAINFALL INCHES 7A TO DAM	7A BSN
PRIOR MONTH		728.18	635453						
1	728.30	728.47	643603	12163	15484	0.100	19700	0.20	0.18
2	728.51	728.79	652596	12028	15392	0.100	20000	0.00	0.11
3	728.86	728.79	652596	12185	18676	0.100	18700	0.00	0.04
4	728.72	728.66	648943	12292	20427	0.100	19000	0.00	0.00
5	728.59	728.64	648382	12258	18030	0.100	17500	0.00	0.00
6	728.70	728.83	653722	12339	15135	0.100	17900	0.00	0.00
7	728.90	728.97	657655	12294	14284	0.100	16400	0.00	0.00
8	728.94	728.76	651754	12234	14232	0.100	11300	0.00	0.00
9	728.66	728.44	642760	12348	14307	0.100	9900	0.00	0.00
10	728.32	728.10	633204	12298	14225	0.100	9500	0.00	0.00
11	727.98	727.75	623643	12188	13811	0.100	9100	0.00	0.00
12	727.59	727.31	611762	12275	14308	0.100	8400	0.00	0.00
13	727.13	726.95	602097	12096	13161	0.100	8400	0.00	0.00
14	726.84	726.72	596141	11813	11813	0.100	8800	0.00	0.00
15	726.61	726.41	588114	11679	11679	0.100	7700	0.00	0.01
16	726.31	726.11	580347	11671	11671	0.100	7700	0.00	0.00
17	726.00	725.79	572260	11642	11642	0.050	7700	0.00	0.00
18	725.67	725.41	562781	11642	11642	0.100	7000	0.00	0.00
19	725.29	724.91	550383	11765	11765	0.100	5500	0.00	0.00
20	724.71	724.83	548455	5874	5874	0.100	5000	0.00	0.00
21	725.02	725.59	567273	0	0	0.100	9600	0.00	0.00
22	725.85	726.26	584231	0	0	0.100	8600	0.00	0.00
23	726.52	726.44	588892	5853	5853	0.100	8250	0.00	0.00
24	726.26	725.97	576750	11746	11746	0.050	5700	0.00	0.00
25	725.81	725.53	565776	11667	11667	0.100	6200	0.00	0.00
26	725.36	725.00	552555	11706	11706	0.100	5100	0.00	0.00
27	724.80	724.54	541458	9819	9819	0.100	4500	0.00	0.00
28	724.59	724.39	537840	6273	6273	0.100	4500	0.00	0.00
29	724.37	724.27	534946	6023	6023	0.100	4500	0.00	0.00
30	724.23	723.84	524744	8900	8900	0.100	3850	0.00	0.00
31	723.95	723.44	515524	8536	8536	0.100	3950	0.00	0.00
TOTAL				315607	358081	3.000	299950	0.20	0.34
AVERAGE	726.58			10181	11551		9676	NORMAL=	2.26
MAXIMUM	728.97		657655	DATE= 7	TOP CONSERVATION POOL				723.00
MINIMUM	723.44		515524	DATE=31	TOP FLOOD POOL				754.00

INFLOW VOLUME= 594942 AC-FT

REPORT IS SUBJECT TO CHANGE AND/OR REVISION

APPENDIX B

Depth-Time Isopleths of Temperature, Dissolved Oxygen, pH, and Specific Conductance, Keystone Lake, 1996

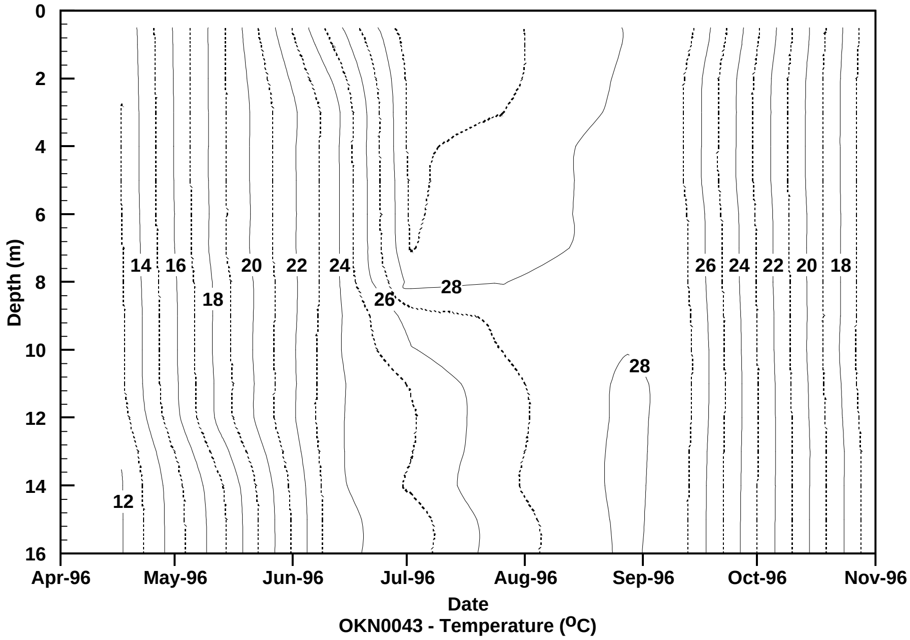

Figure 23. Depth-time diagram of temperature (°C) isopleths at station OKN0043, 17 April through 30 October 1996, Keystone Lake, Oklahoma.

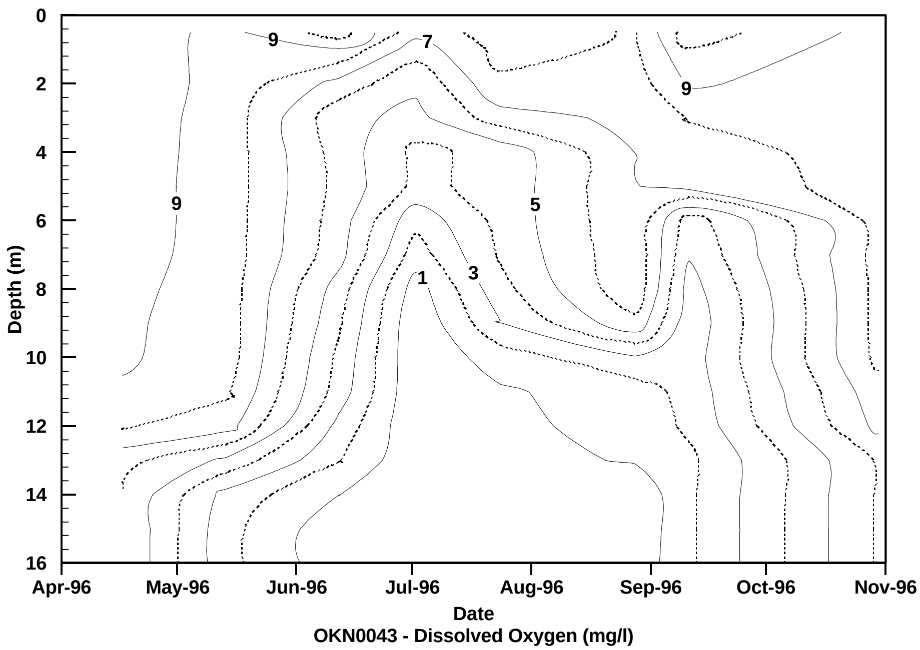

Figure 24. Depth-time diagram of dissolved oxygen (mg/l) isopleths at station OKN0043, 17 April through 30 October 1996, Keystone Lake, Oklahoma.

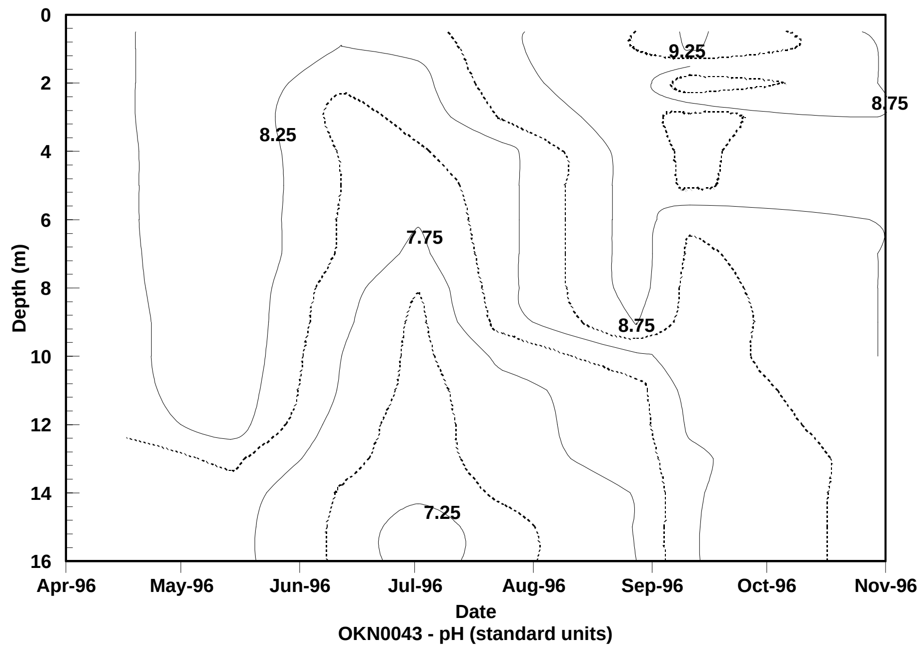

Figure 25. **Depth-time diagram of pH (standard units) isopleths at station OKN0043, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

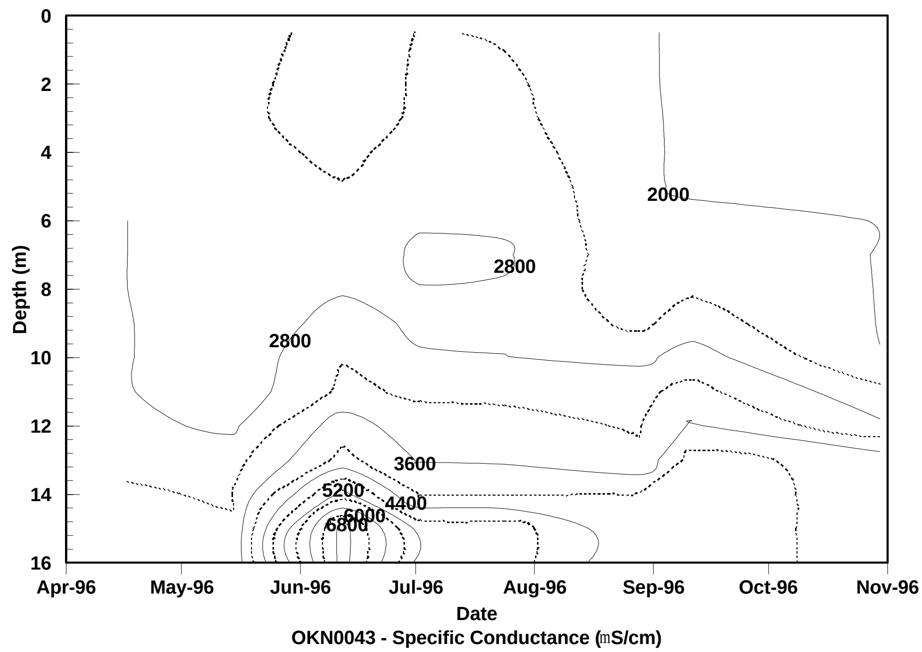

Figure 26. **Depth-time diagram of specific conductance (µS/cm) isopleths at station OKN0043, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

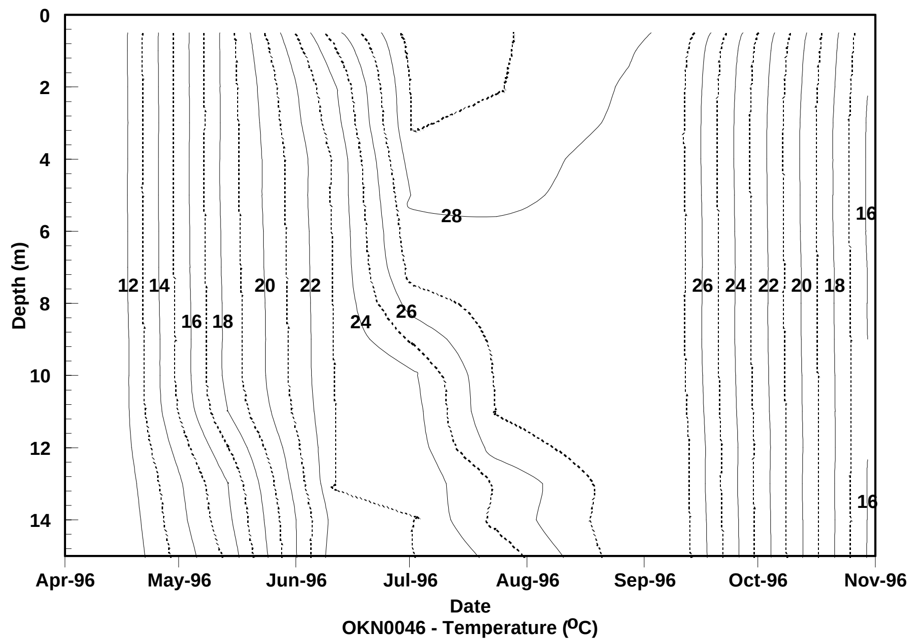

Figure 27. **Depth-time diagram of temperature (°C) isopleths at station OKN0046, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

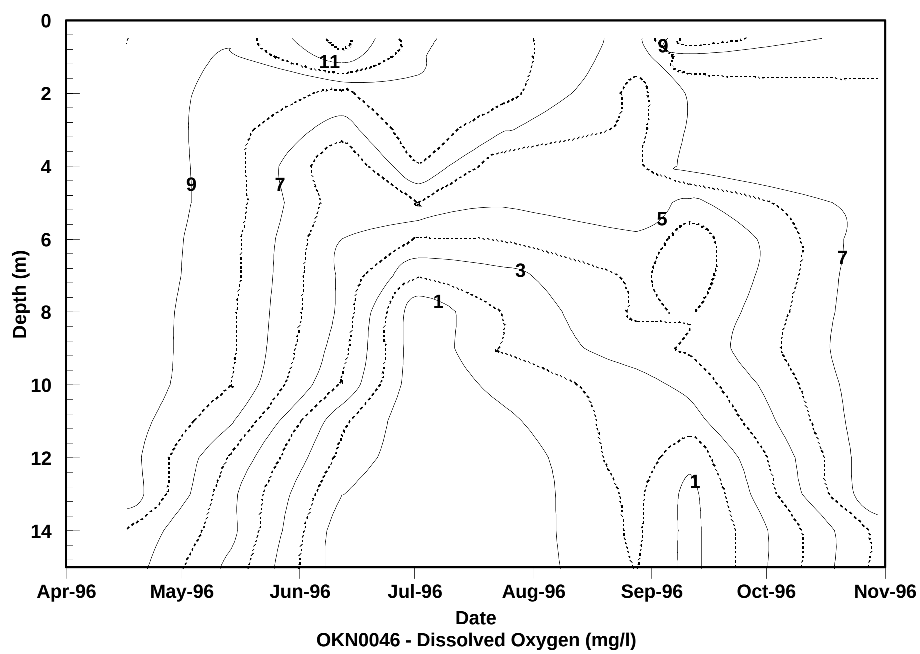

Figure 28. **Depth-time diagram of dissolved oxygen (mg/l) isopleths at station OKN0046, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

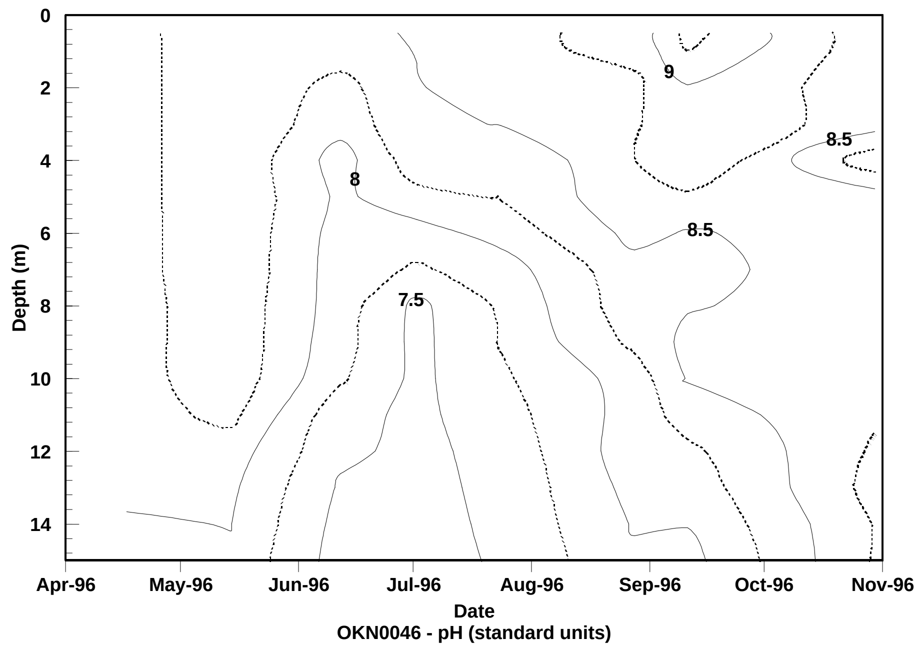

Figure 29. **Depth-time diagram of pH (standard units) isopleths at station OKN0046, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

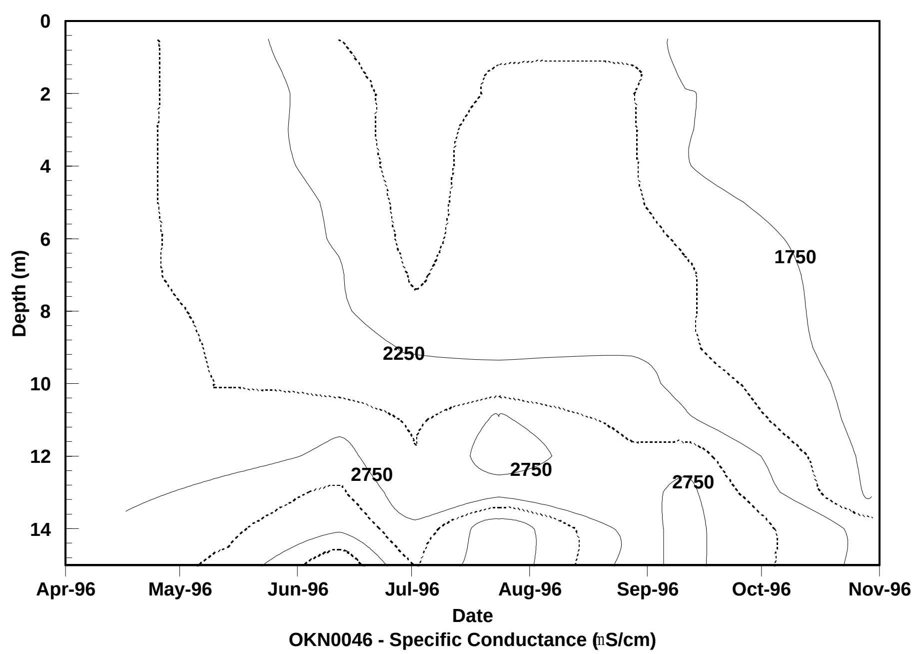

Figure 30. **Depth-time diagram of specific conductance (µS/cm) isopleths at station OKN0046, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

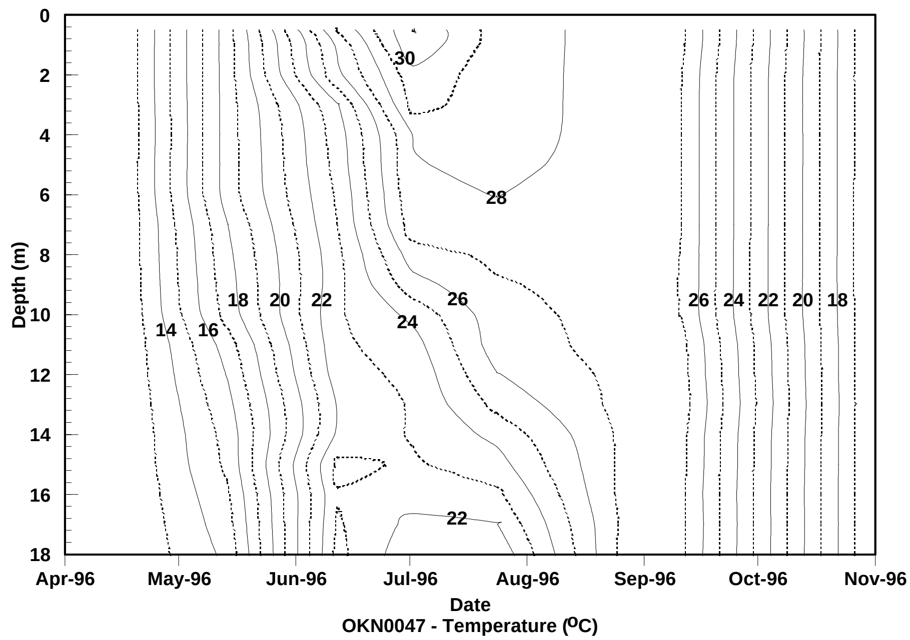

Figure 31. **Depth-time diagram of temperature (°C) isopleths at station OKN0047, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

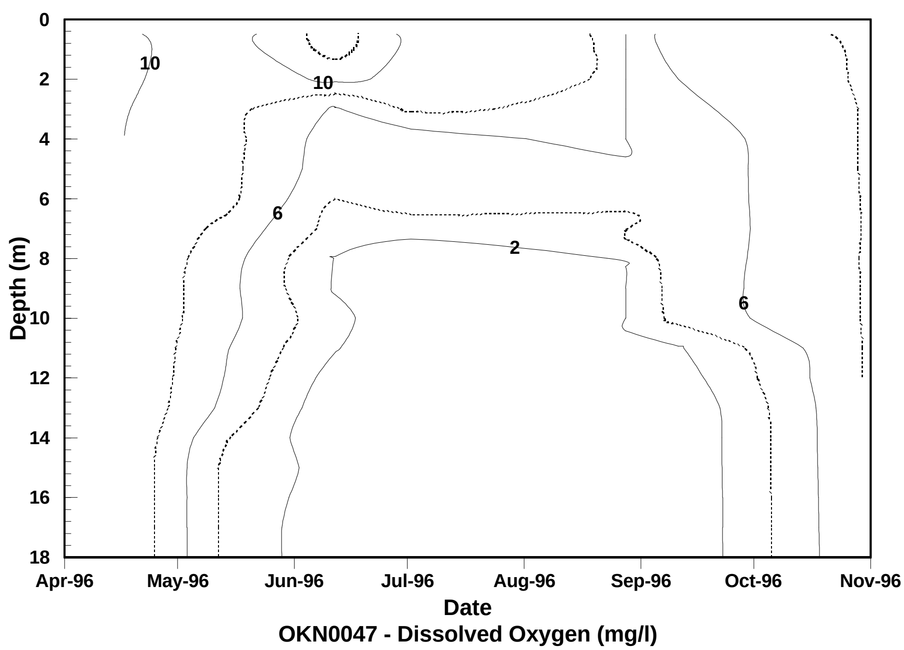

Figure 32. **Depth-time diagram of dissolved oxygen (mg/l) isopleths at station OKN0047, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

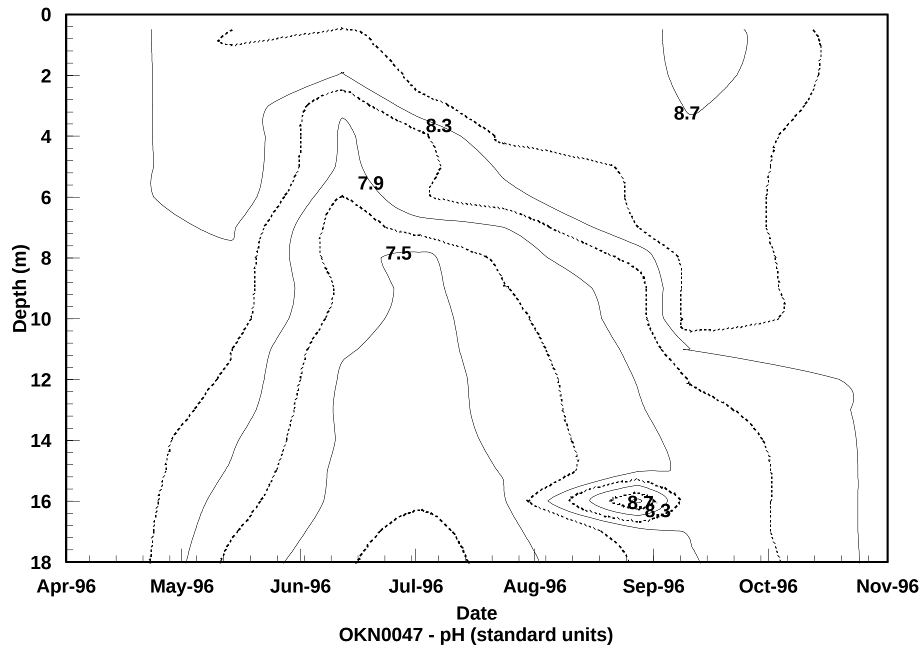

Figure 33. **Depth-time diagram of pH (standard units) isopleths at station OKN0047, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

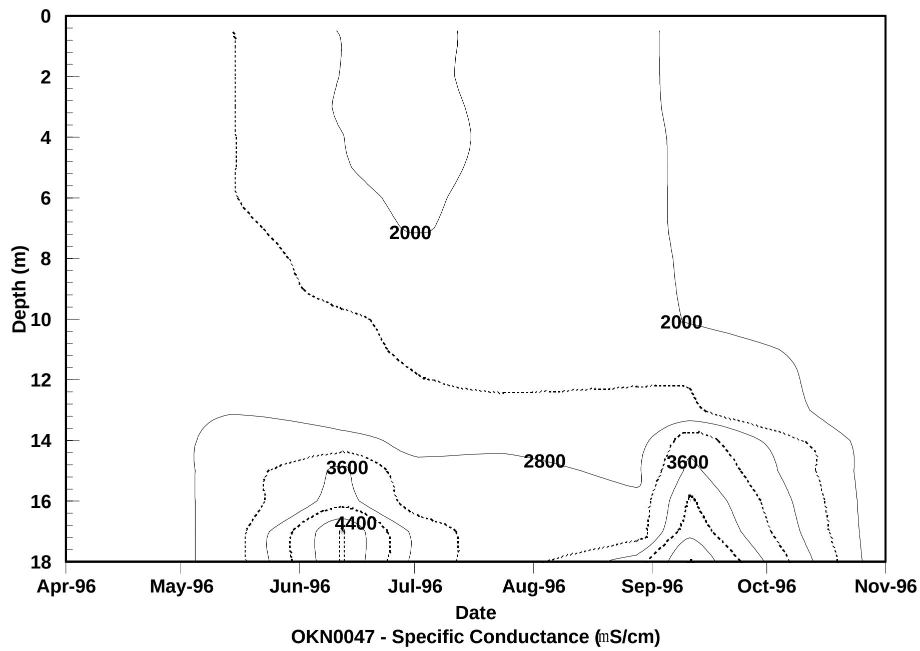

Figure 34. **Depth-time diagram of specific conductance (µS/cm) isopleths at station OKN0047, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

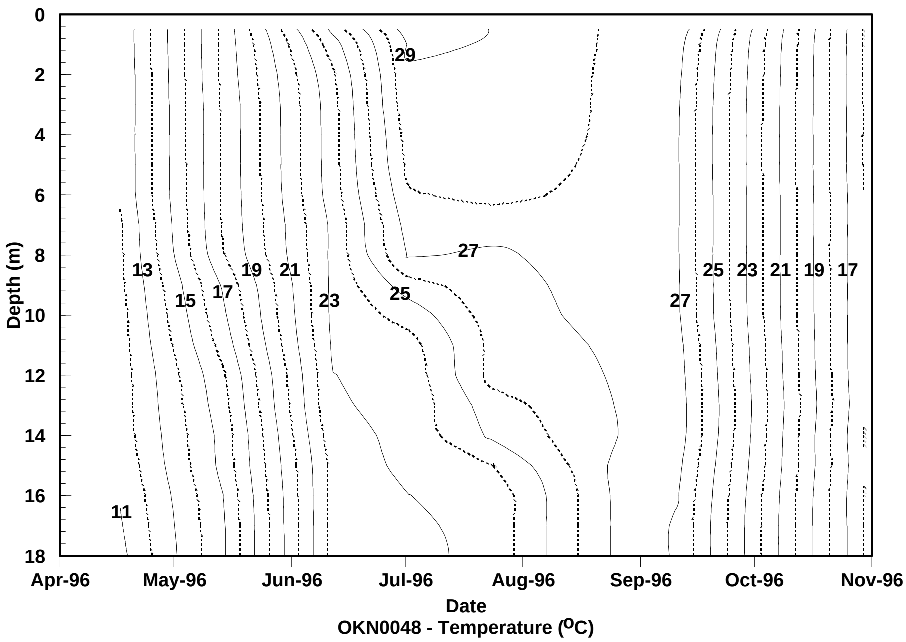

Figure 35. **Depth-time diagram of temperature (°C) isopleths at station OKN0048, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

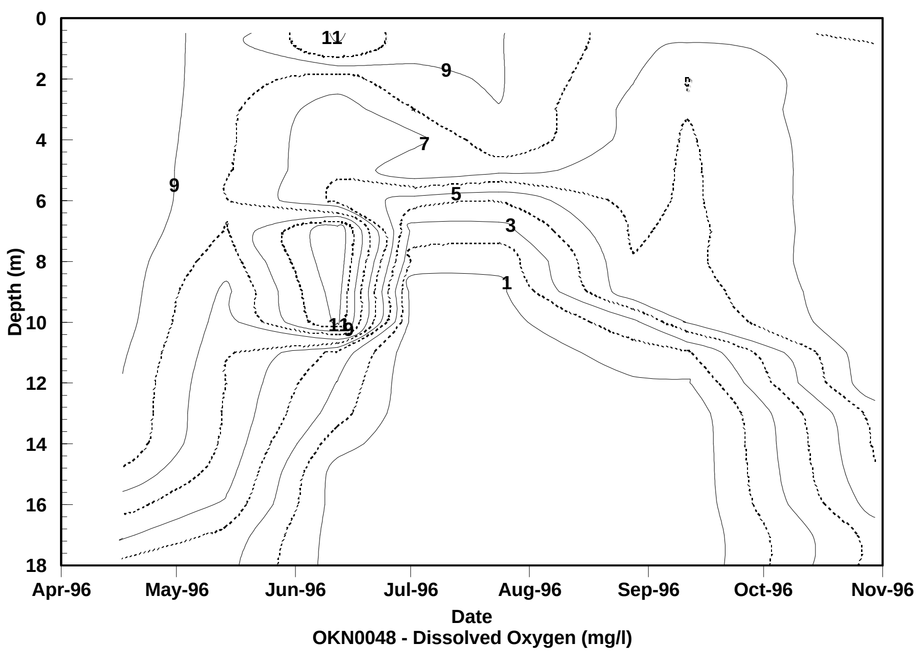

Figure 36. **Depth-time diagram of dissolved oxygen (mg/l) isopleths at station OKN0048, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

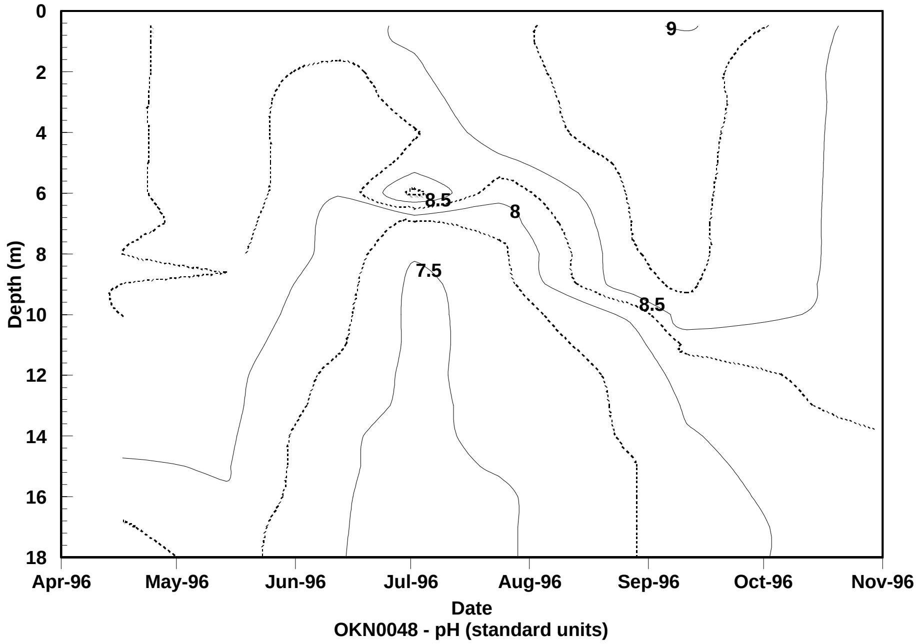

Figure 37. **Depth-time diagram of pH (standard units) isopleths at station OKN0048, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

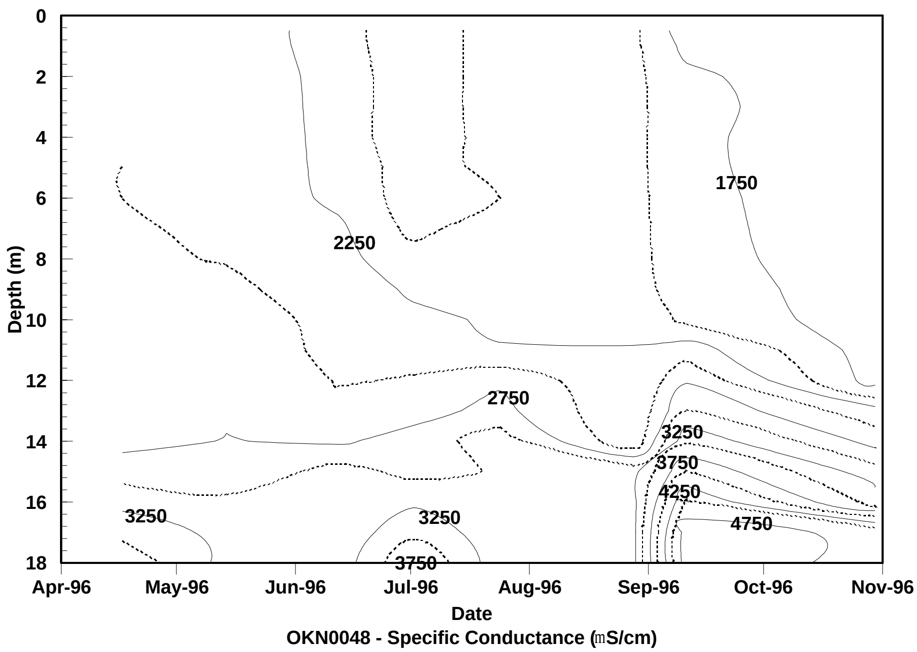

Figure 38. **Depth-time diagram of specific conductance (µS/cm) isopleths at station OKN0048, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

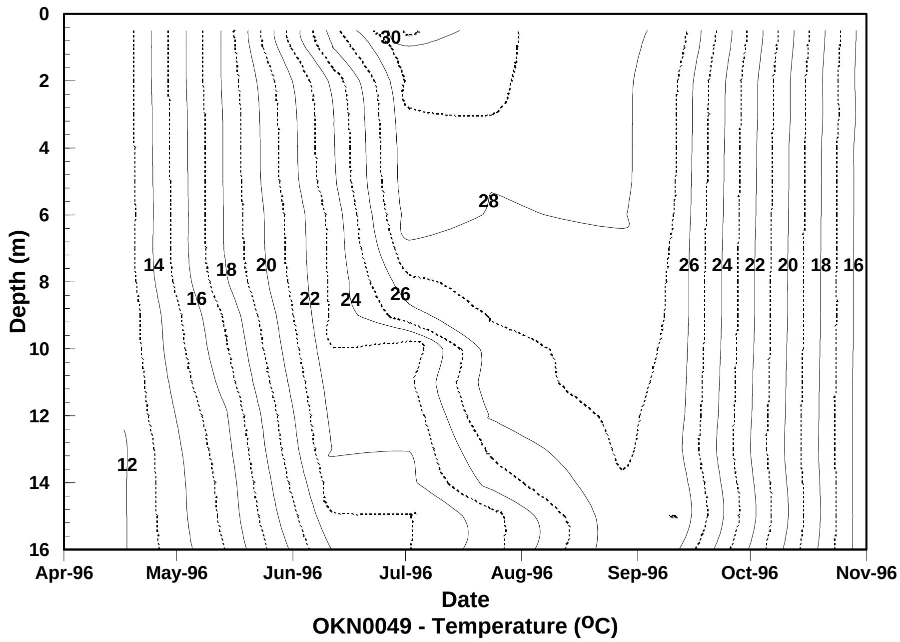

Figure 39. **Depth-time diagram of temperature (°C) isopleths at station OKN0049, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

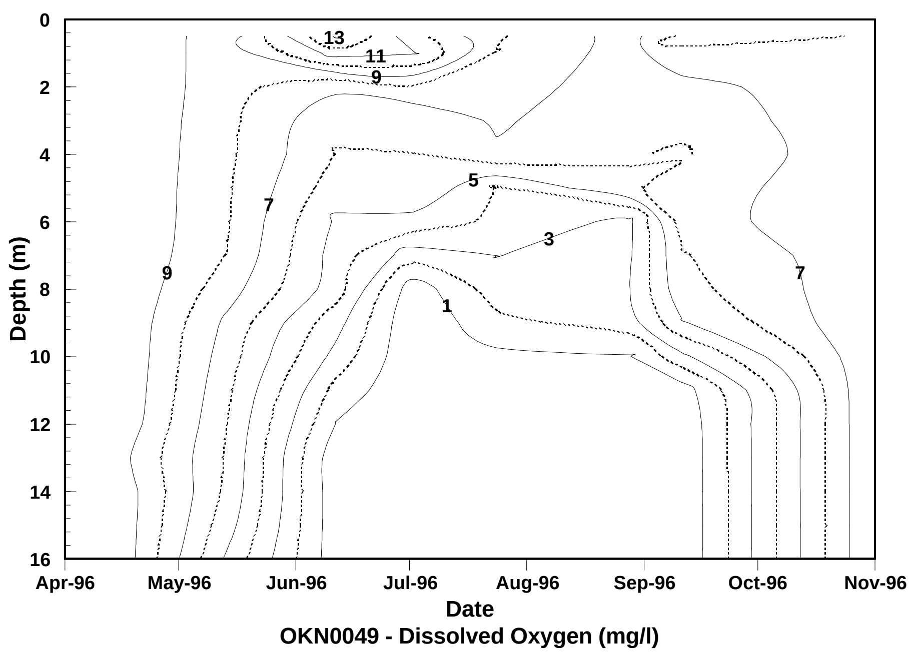

Figure 40. **Depth-time diagram of dissolved oxygen (mg/l) isopleths at station OKN0049, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

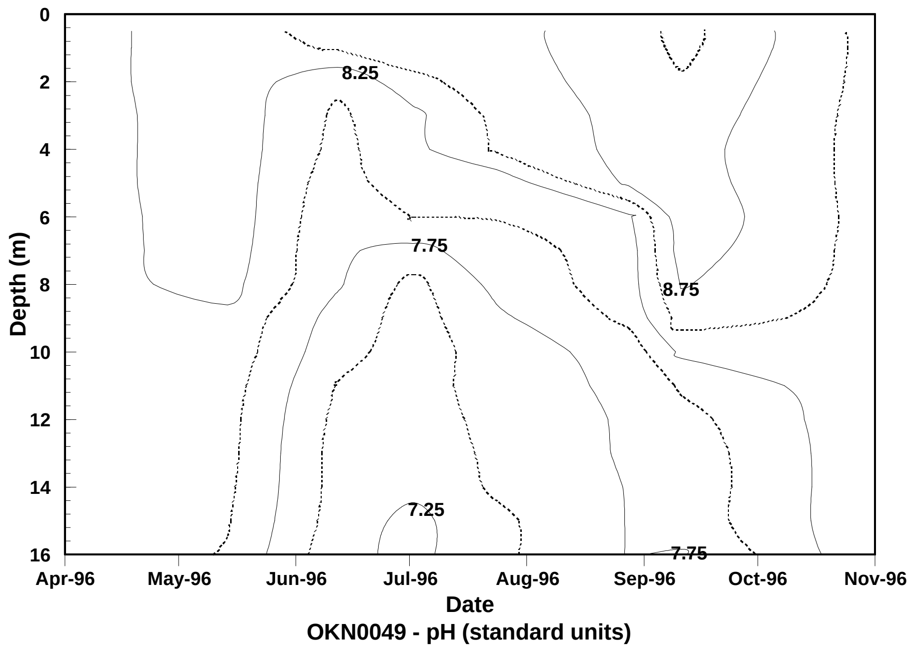

Figure 41. Depth-time diagram of pH (standard units) isopleths at station OKN0049, 17 April through 30 October 1996, Keystone Lake, Oklahoma.

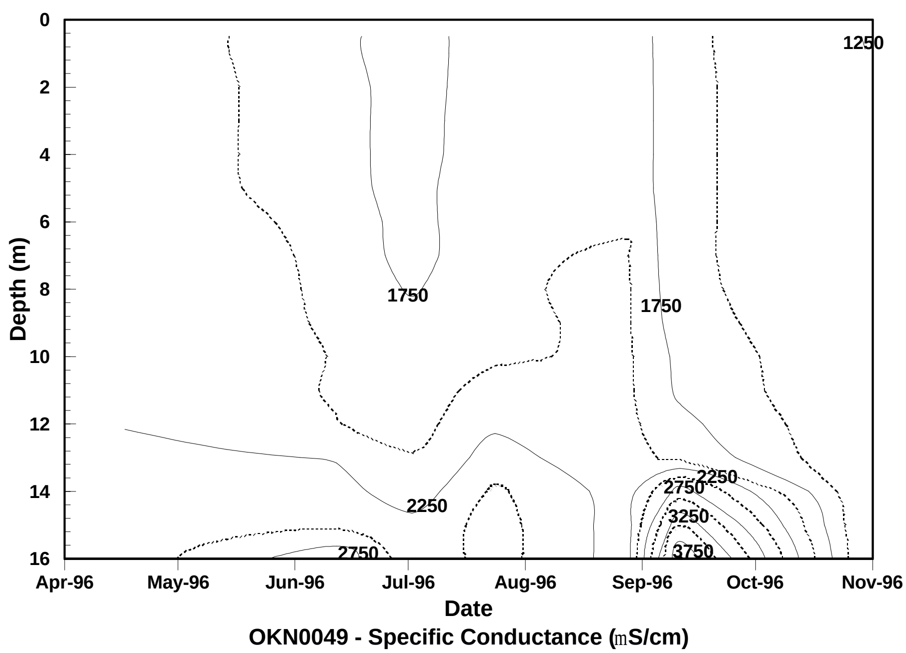

Figure 42. Depth-time diagram of specific conductance (µS/cm) isopleths at station OKN0049, 17 April through 30 October 1996, Keystone Lake, Oklahoma.

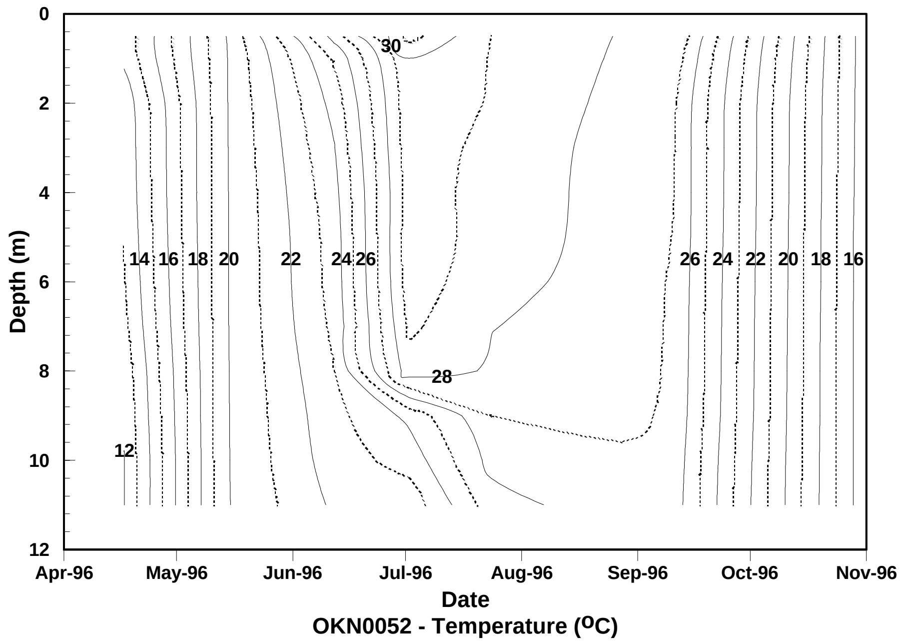

Figure 43. **Depth-time diagram of temperature (°C) isopleths at station OKN0052, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

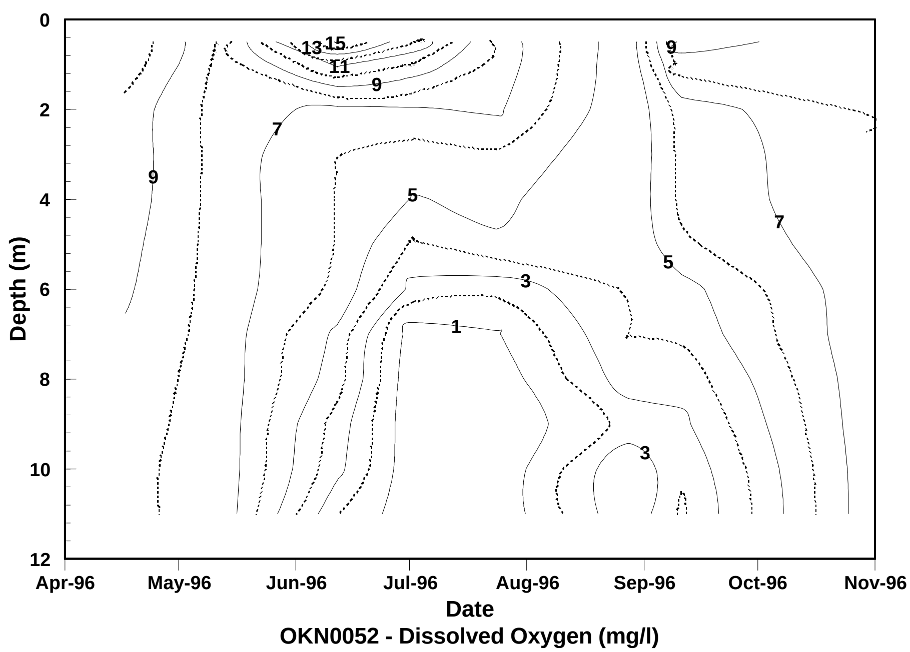

Figure 44. **Depth-time diagram of dissolved oxygen (mg/l) isopleths at station OKN0052, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

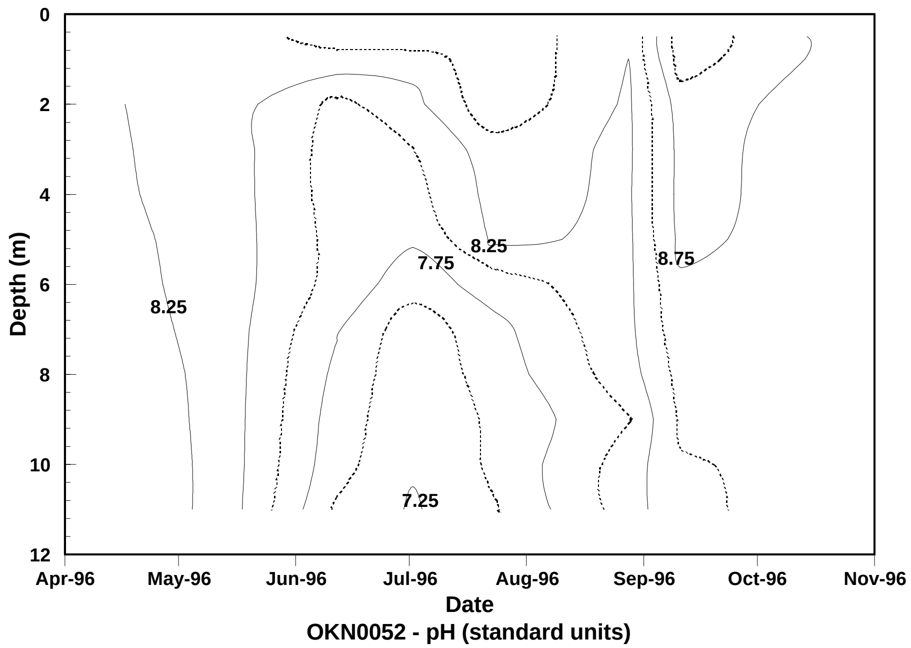

Figure 45. **Depth-time diagram of pH (standard units) isopleths at station OKN0052, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

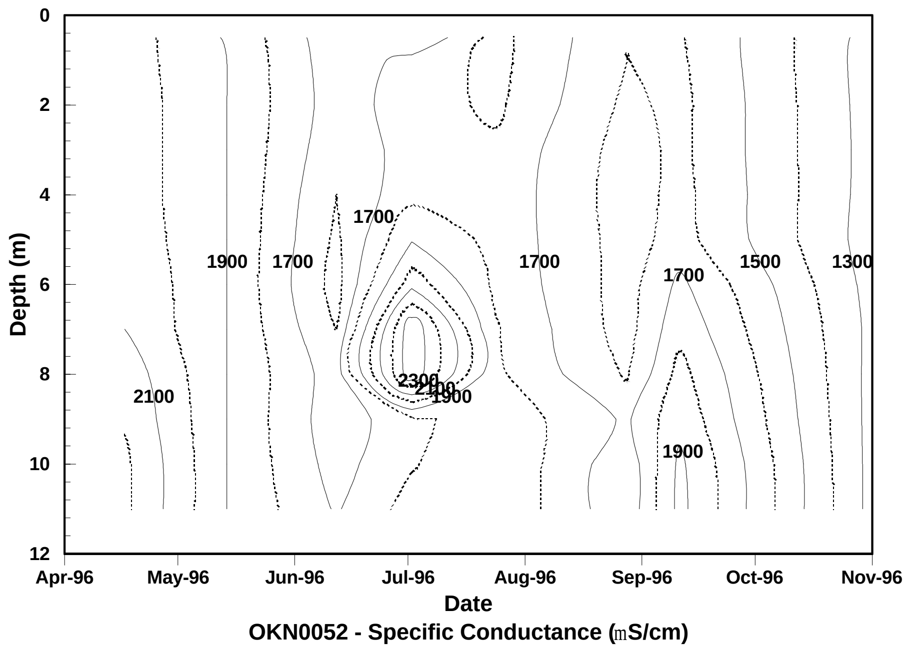

Figure 46. **Depth-time diagram of specific conductance (µS/cm) isopleths at station OKN0052, 17 April through 30 October 1996, Keystone Lake, Oklahoma.**

APPENDIX C

Vertical Profiles of Temperature,
Dissolved Oxygen, pH,
And Specific Conductance
By Sampling Date,
Keystone Lake, 1996

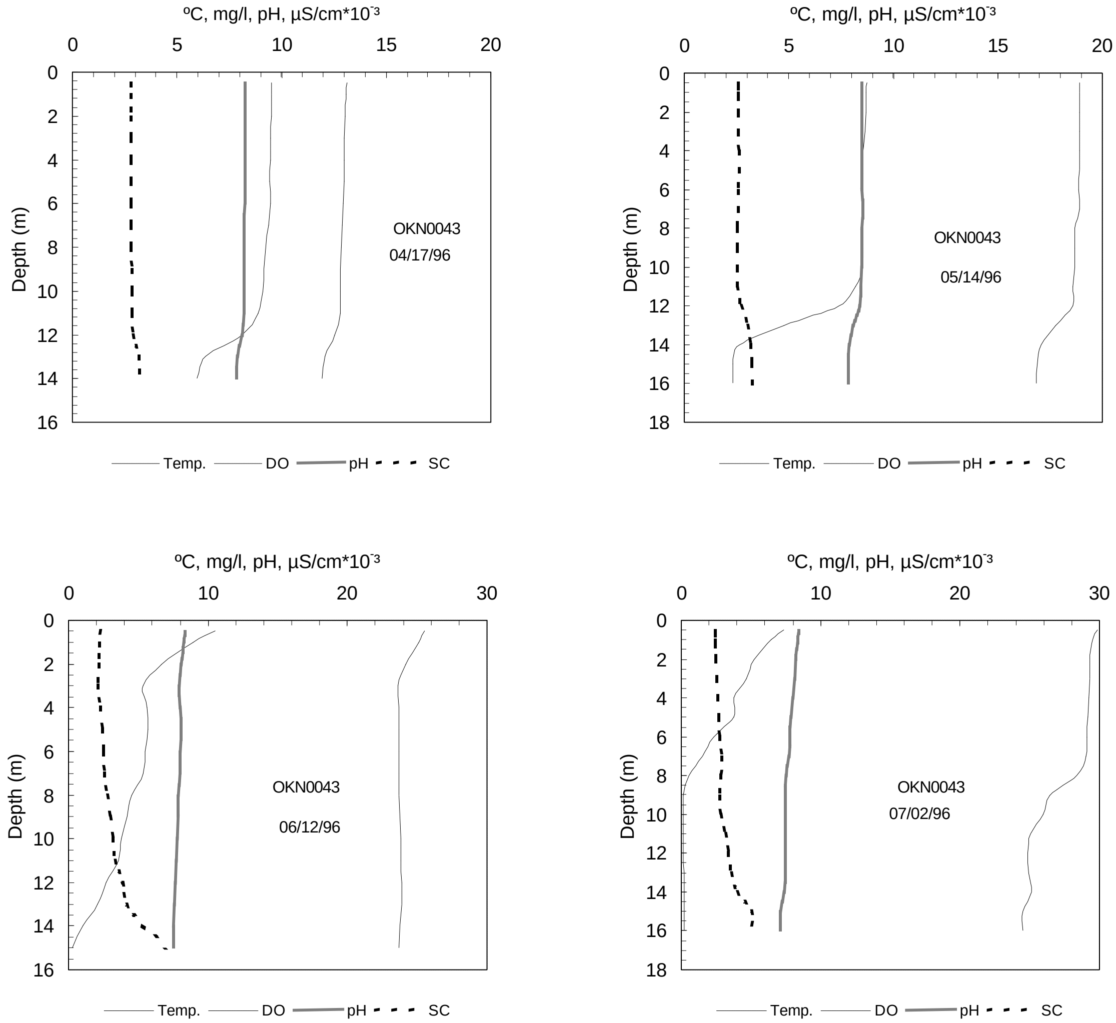

Figure 47. **Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0043 on 17 April, 14 May, 12 June, and 2 July, 1996.**

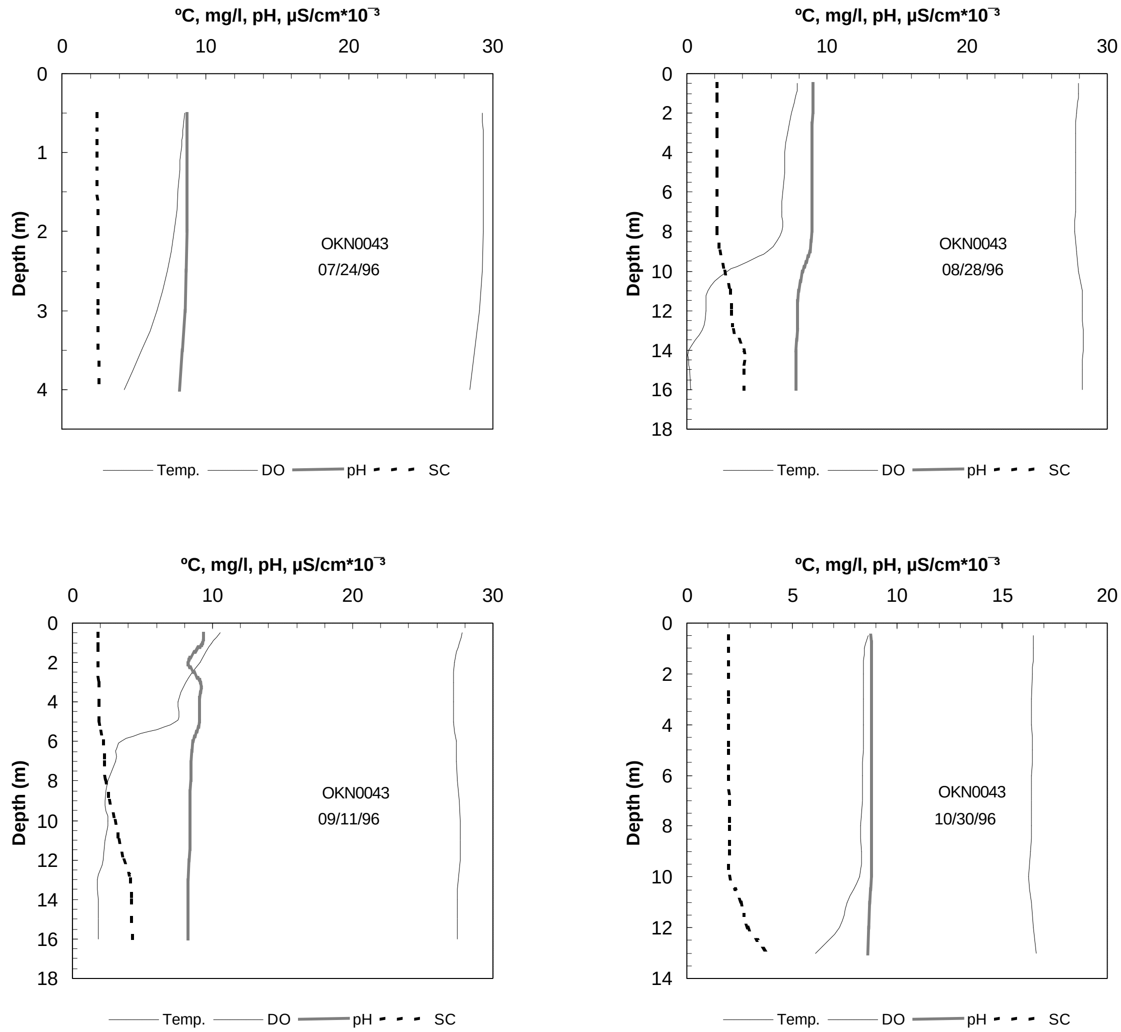

Figure 48. **Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0043 on 24 July, 28 August, 11 September, and 30 October, 1996.**

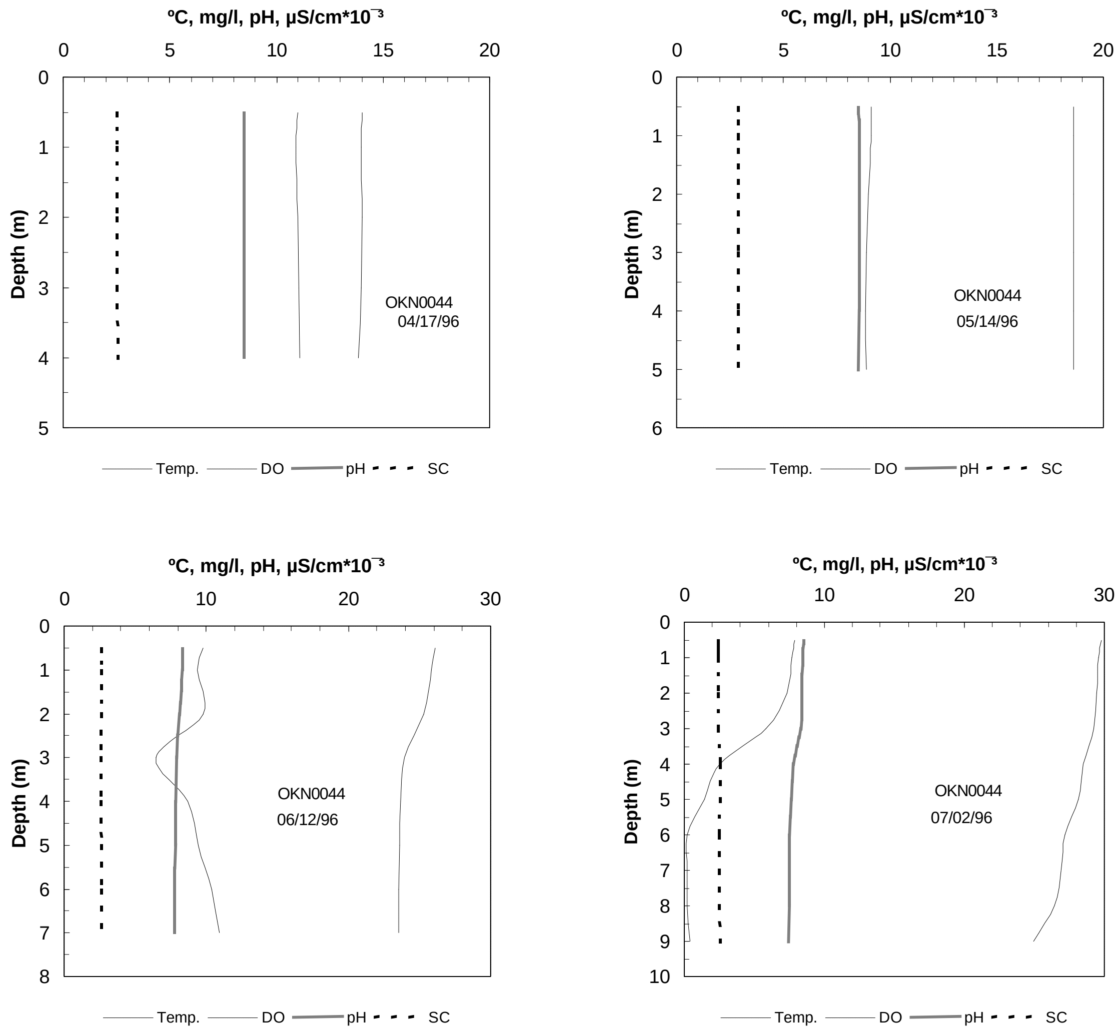

Figure 49. **Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0044 on 17 April, 14 May, 12 June, and 2 July, 1996.**

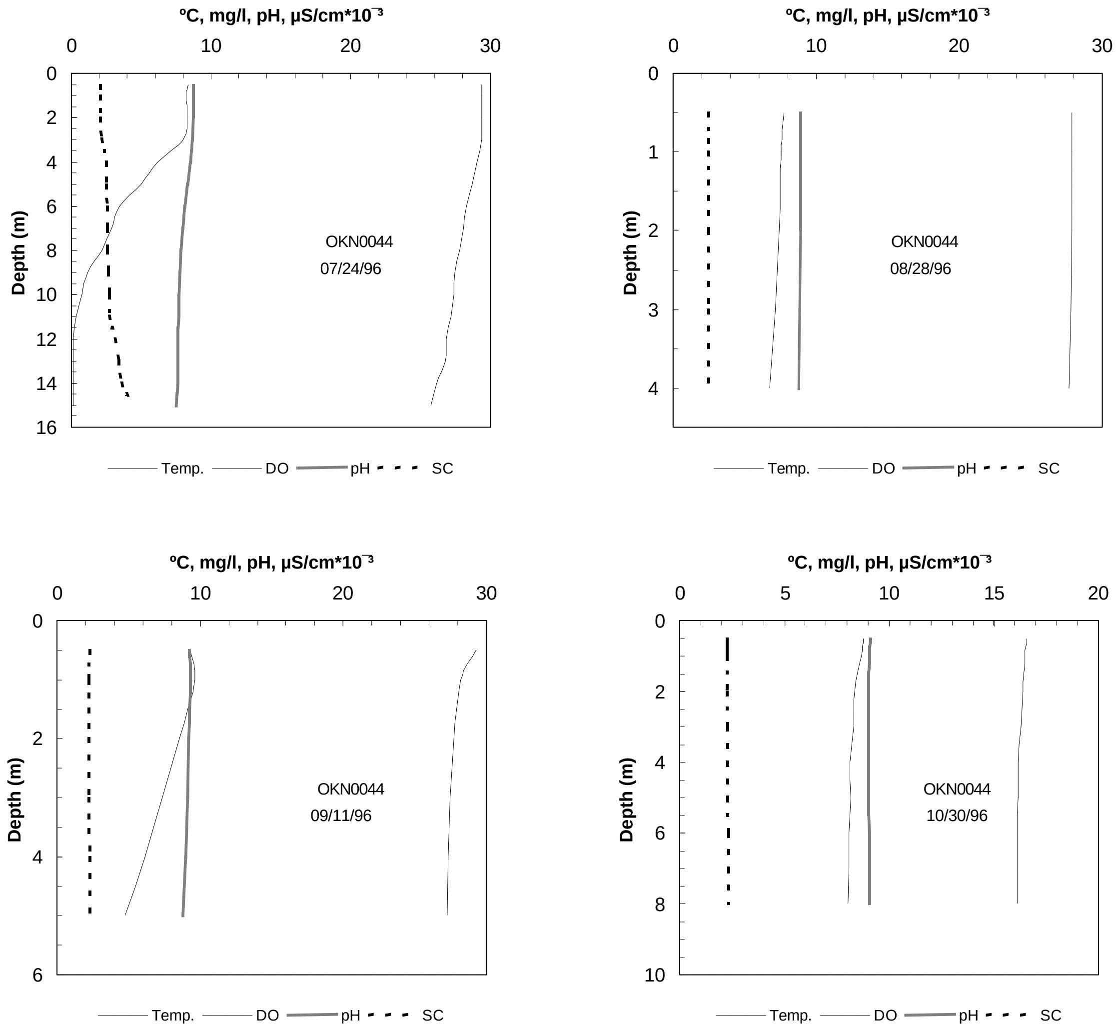

Figure 50. **Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0044 on 24 July, 28 August, 11 September, and 30 October, 1996.**

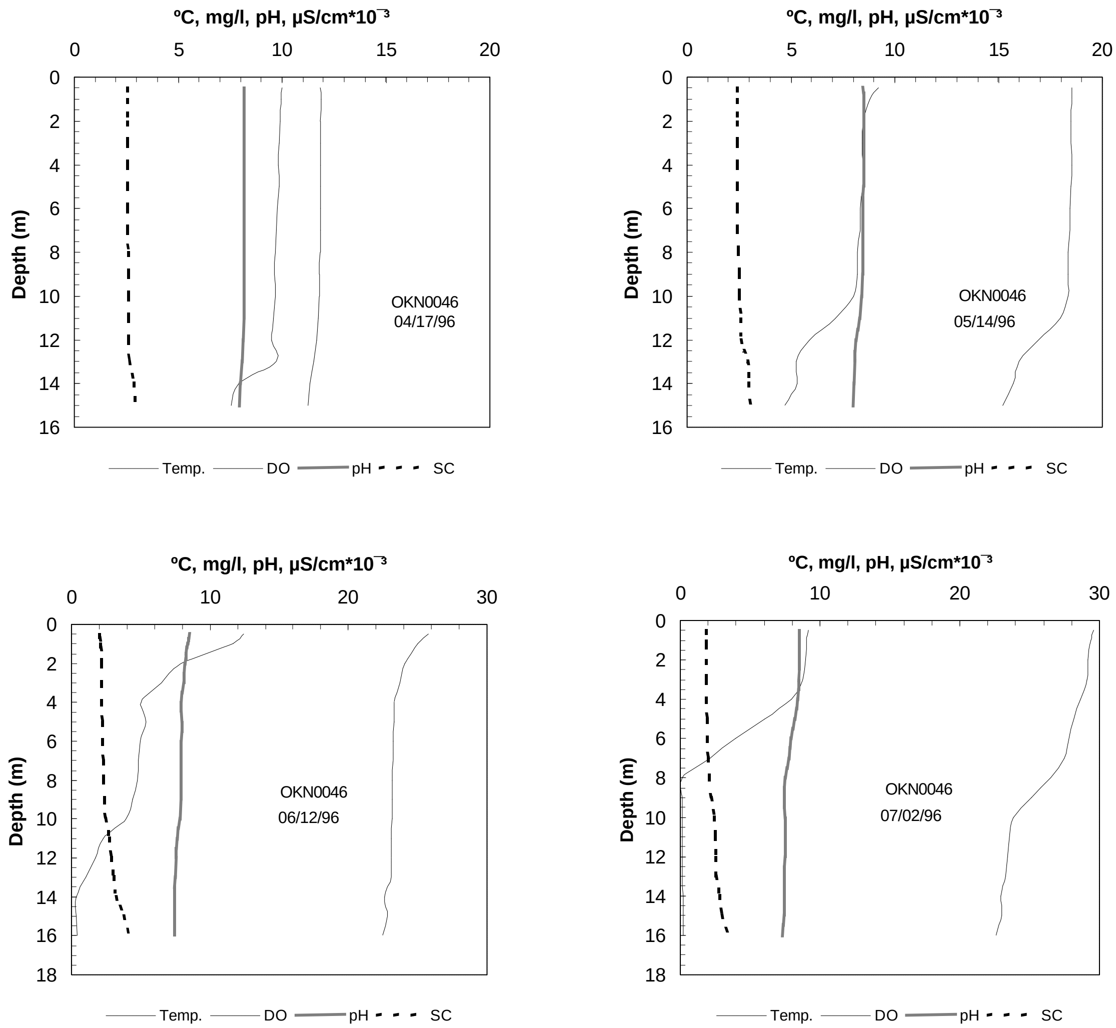

Figure 51. Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0046 on 17 April, 14 May, 12 June, and 2 July, 1996.

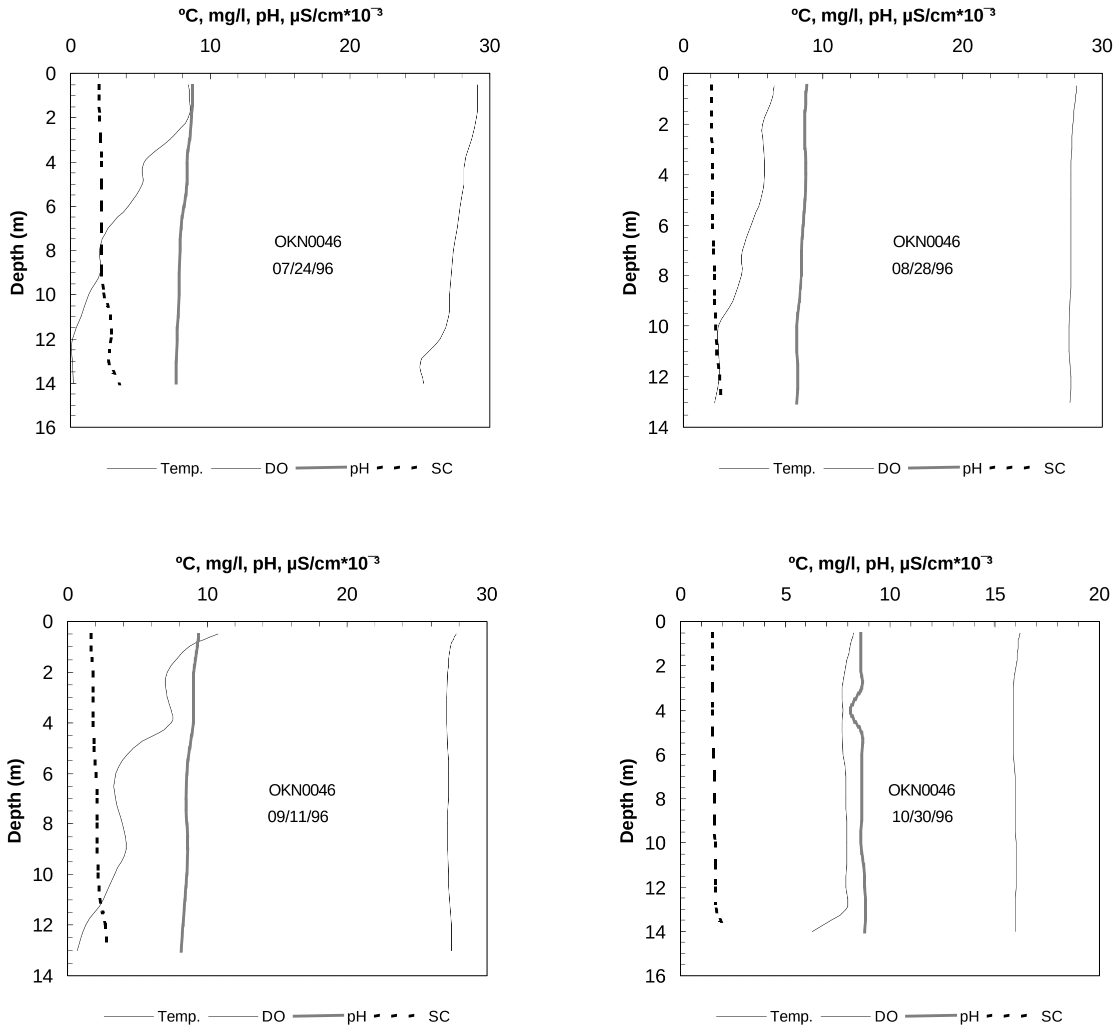

Figure 52. **Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0046 on 24 July, 28 August, 11 September, and 30 October, 1996.**

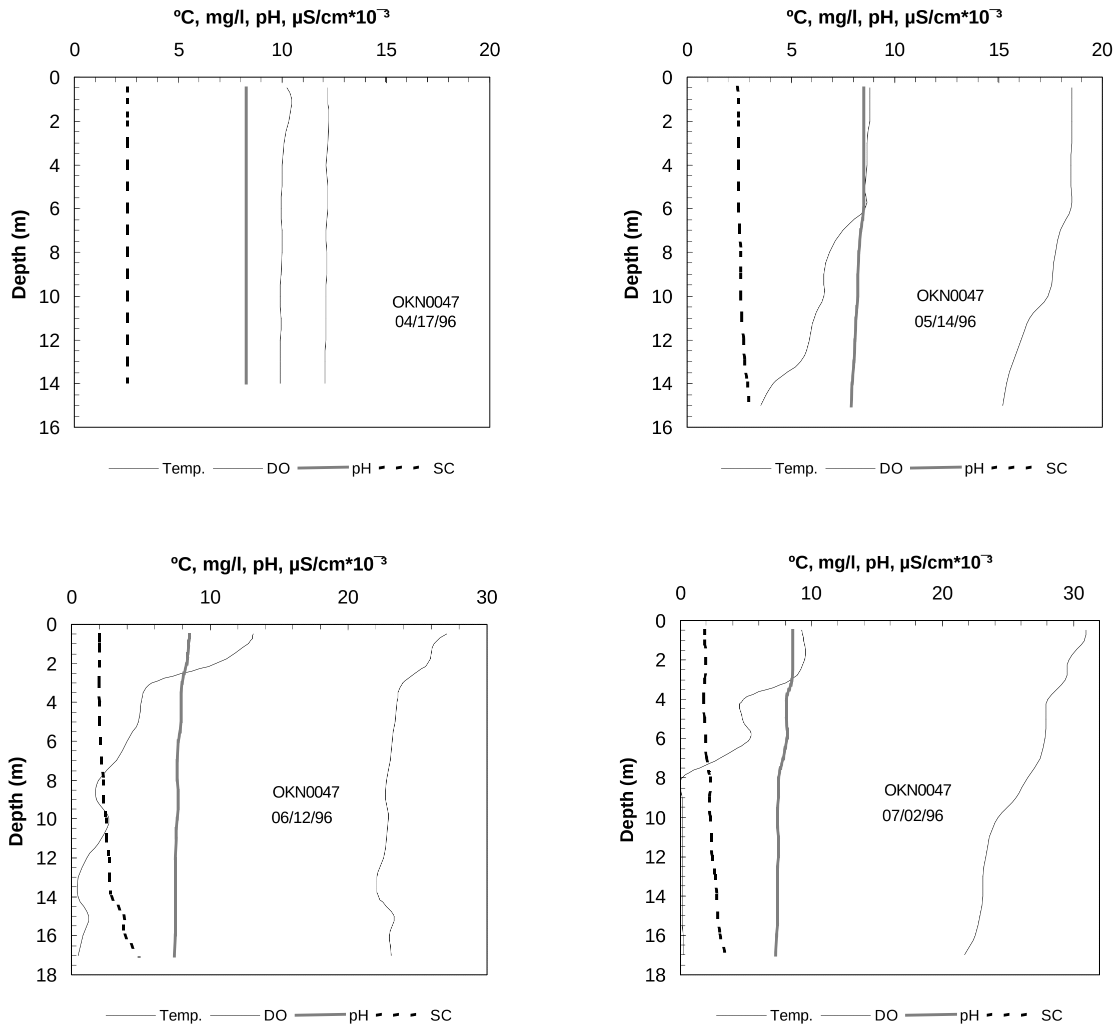

Figure 53. Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0047 on 17 April, 14 May, 12 June, and 2 July, 1996.

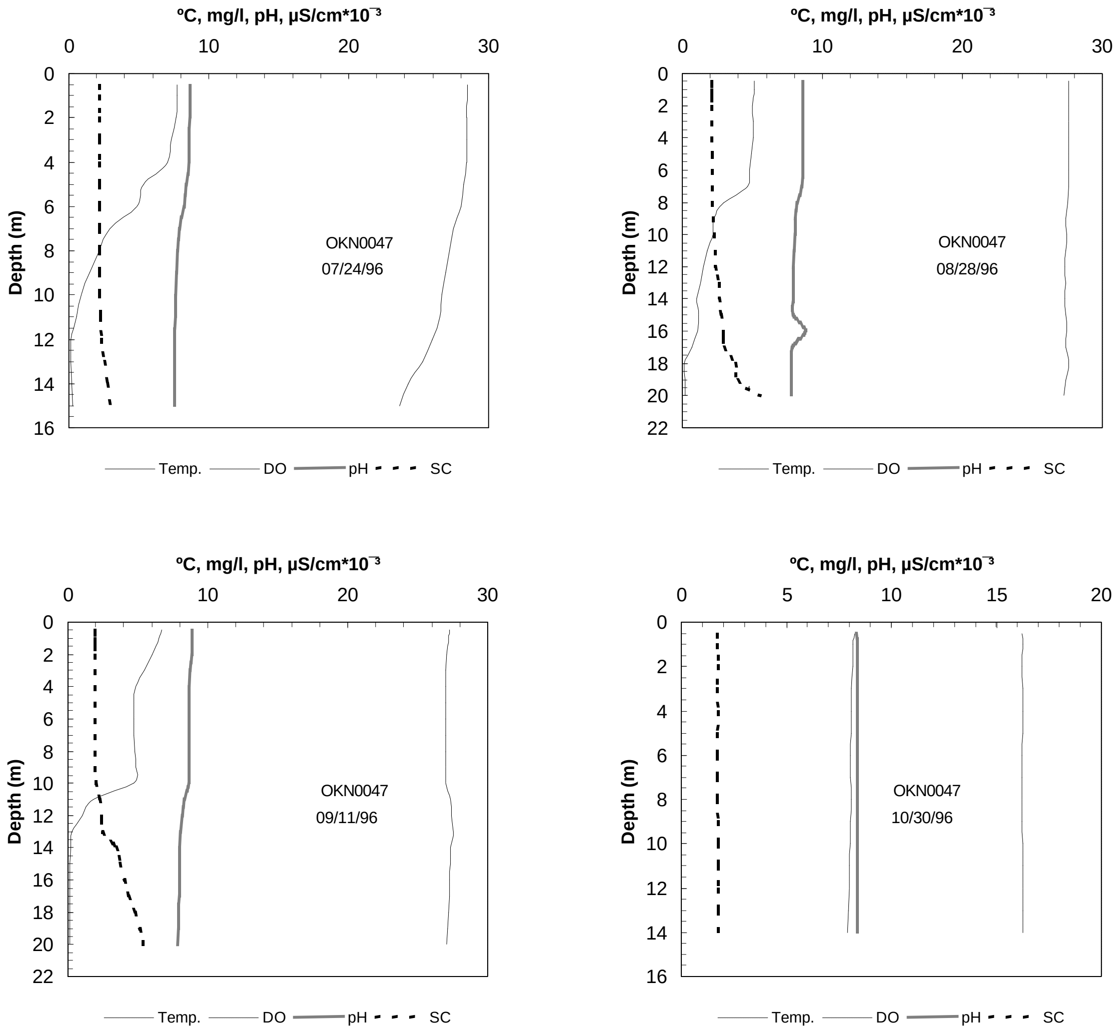

Figure 54. **Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0047 on 24 July, 28 August, 11 September, and 30 October, 1996.**

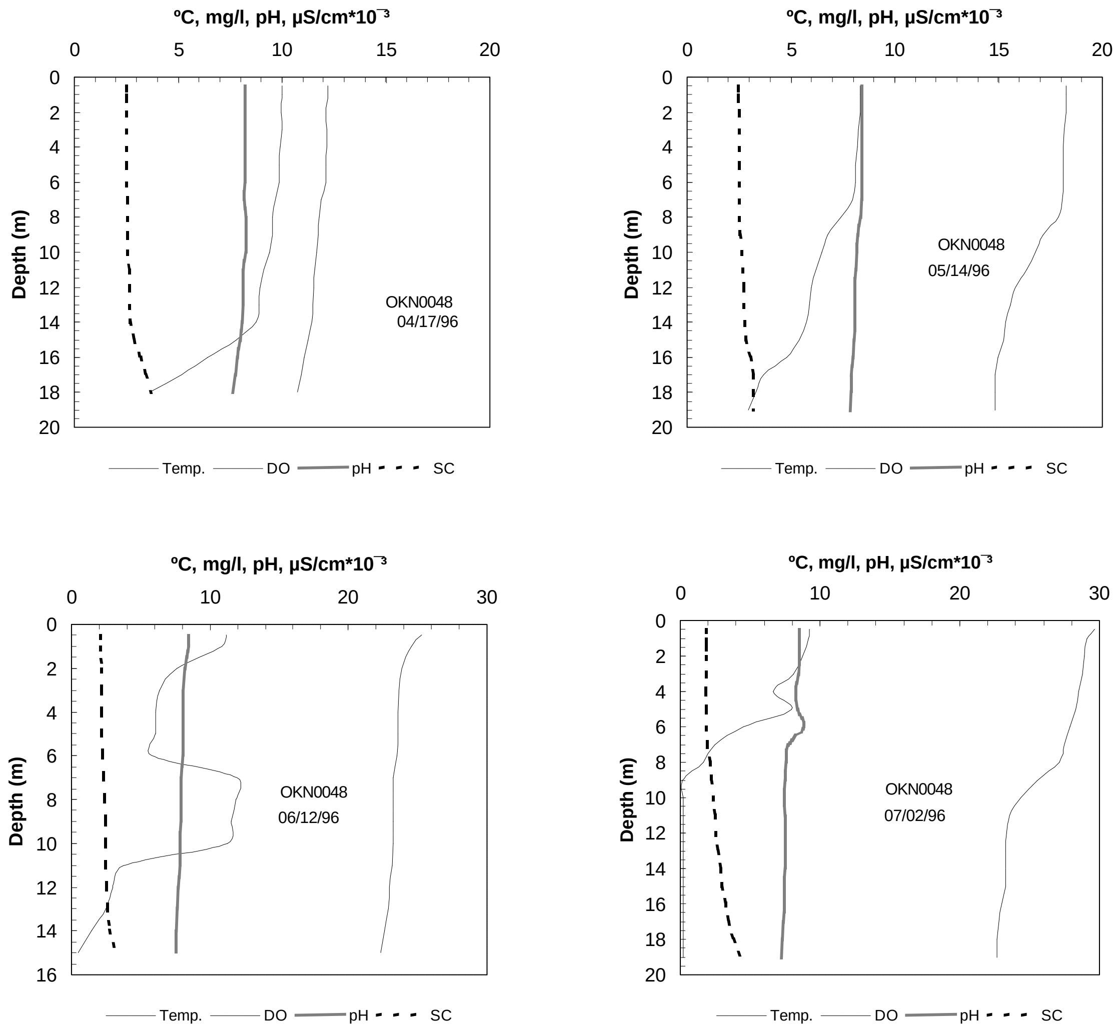

Figure 55. **Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0048 on 17 April, 14 May, 12 June, and 2 July, 1996.**

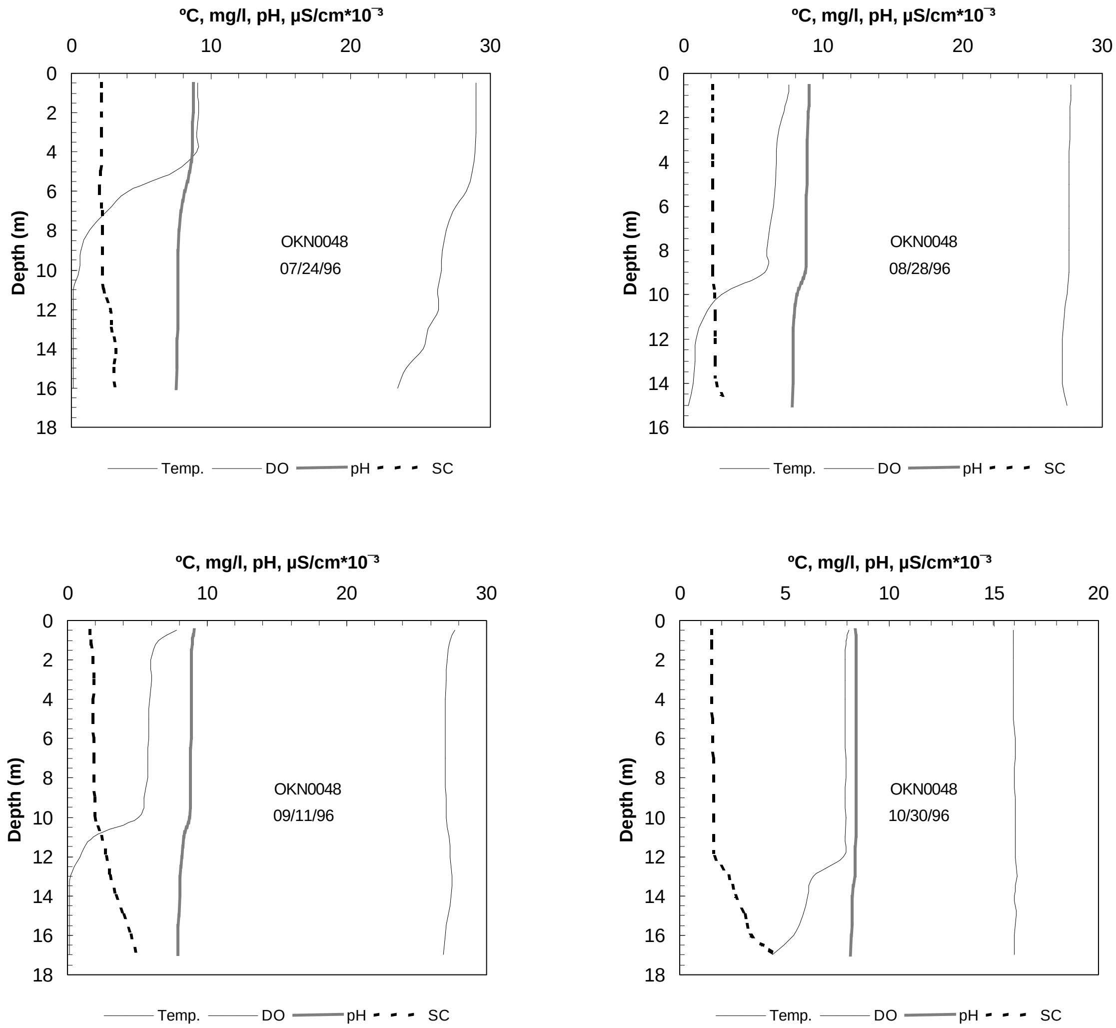

Figure 56. **Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0048 on 24 July, 28 August, 11 September, and 30 October, 1996.**

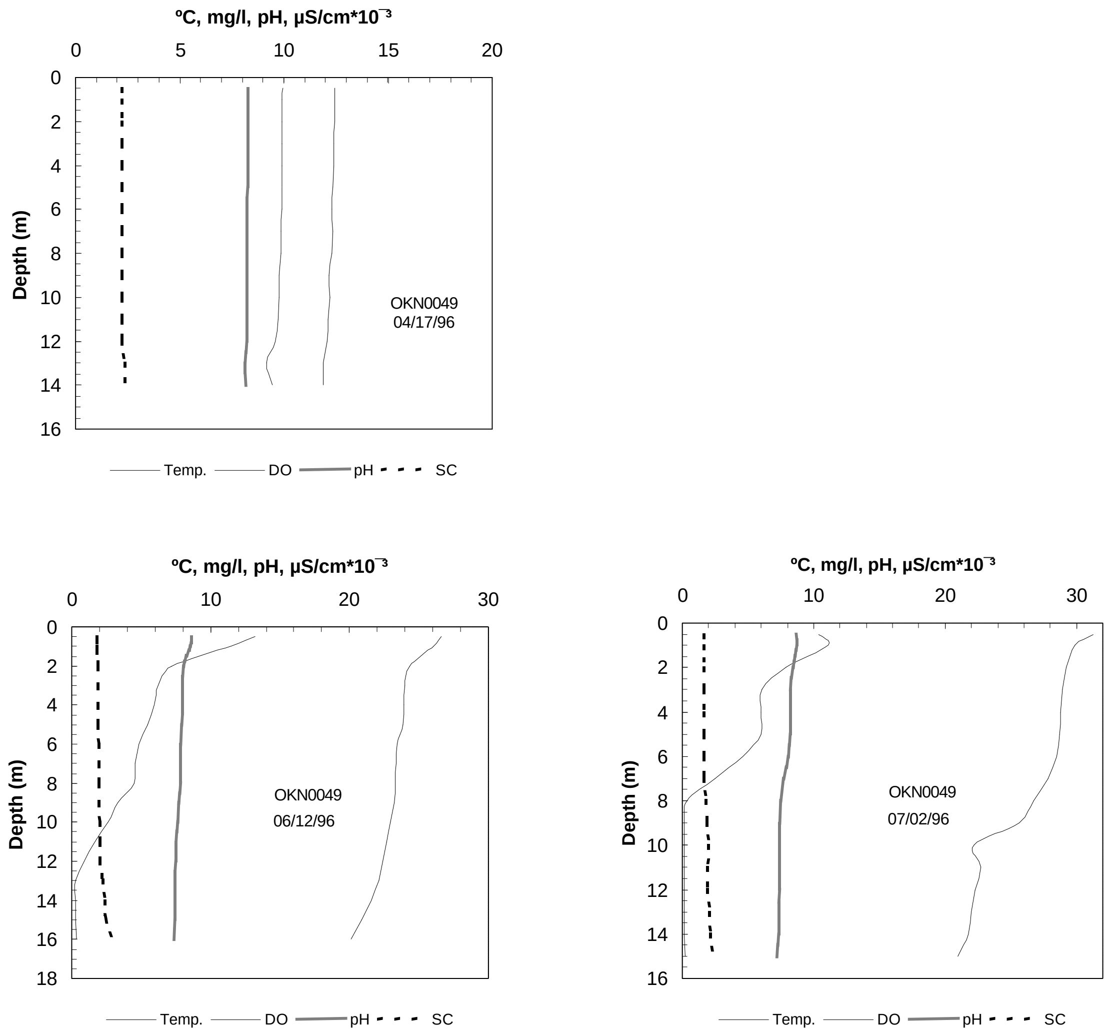

Figure 57. **Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0049 on 17 April, 12 June, and 2 July, 1996.**

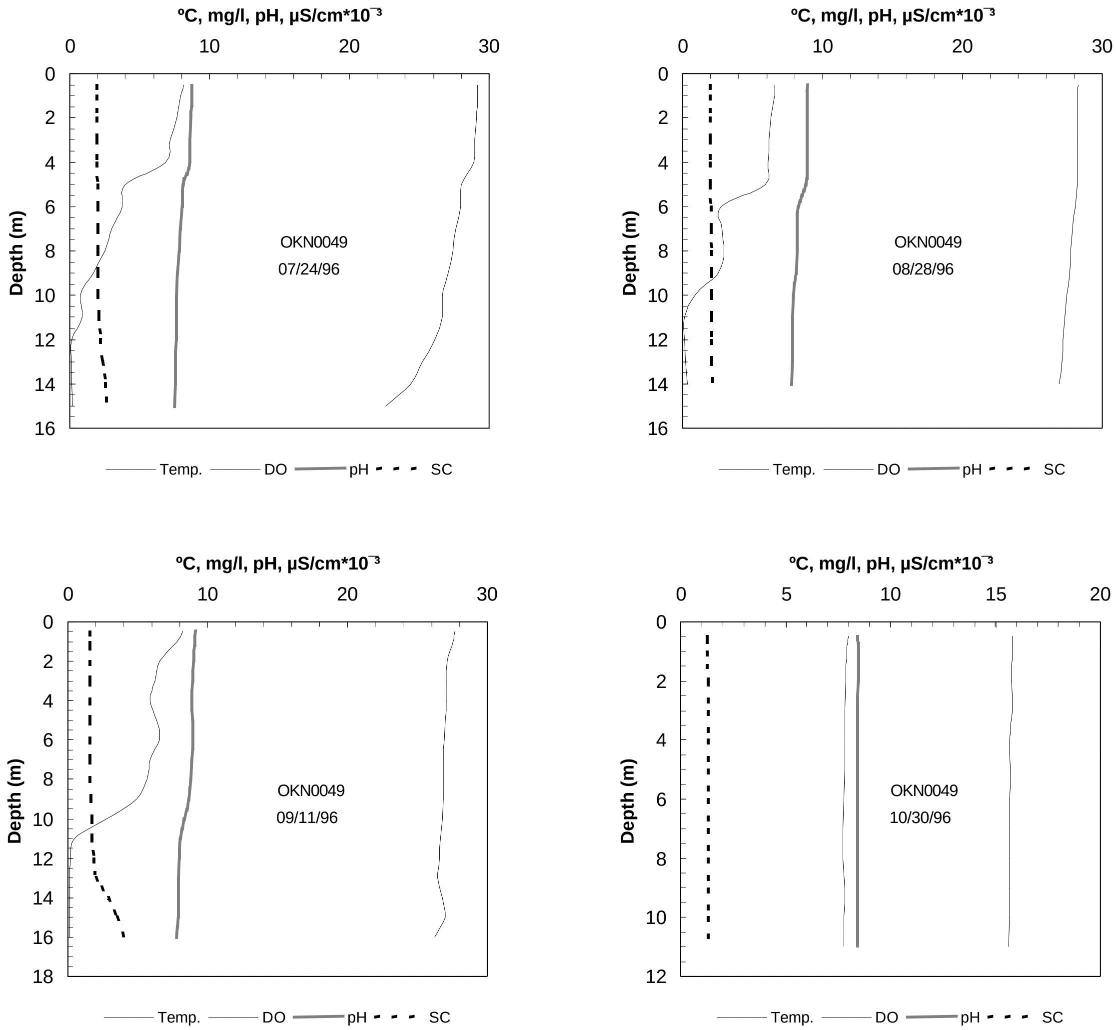

Figure 58. **Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0049 on 24 July, 28 August, 11 September, and 30 October, 1996.**

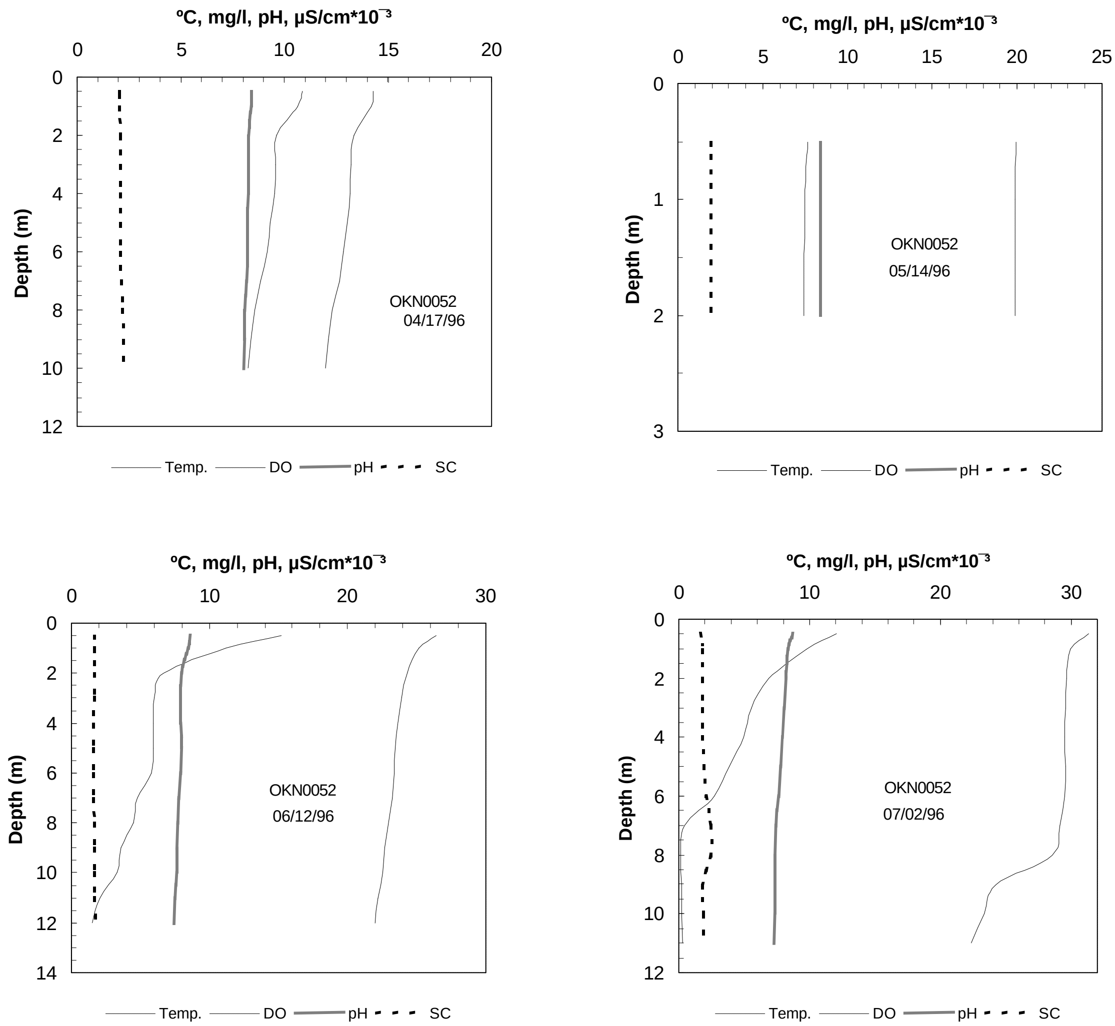

Figure 59. **Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0052 on 17 April, 14 May, 12 June, and 2 July, 1996.**

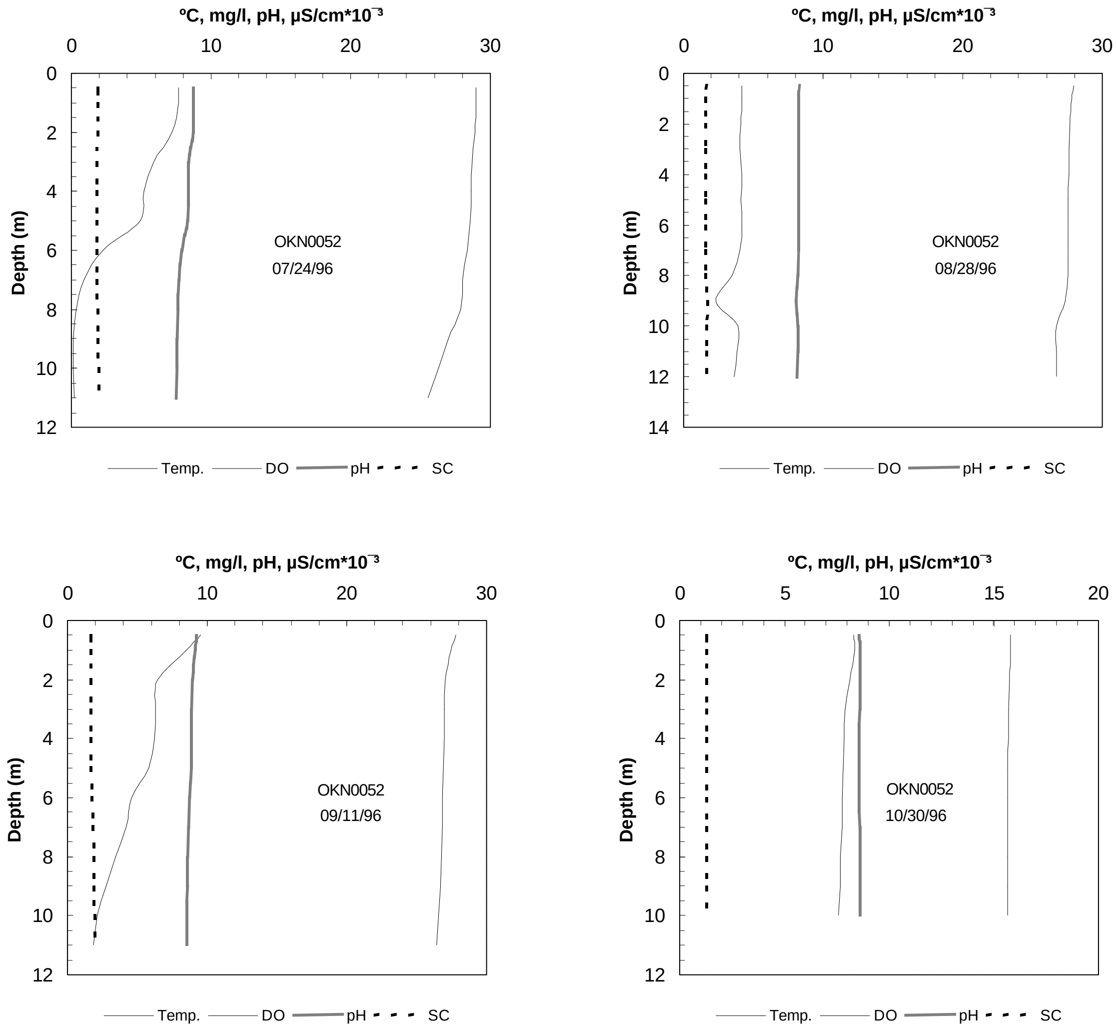

Figure 60. **Vertical profiles of temperature (°C), dissolved oxygen (mg/l), pH (units), and specific conductance (µS/cm*10^{-3}) at Keystone Lake, Oklahoma, station OKN0052 on 24 July, 28 August, 11 September, and 30 October, 1996.**

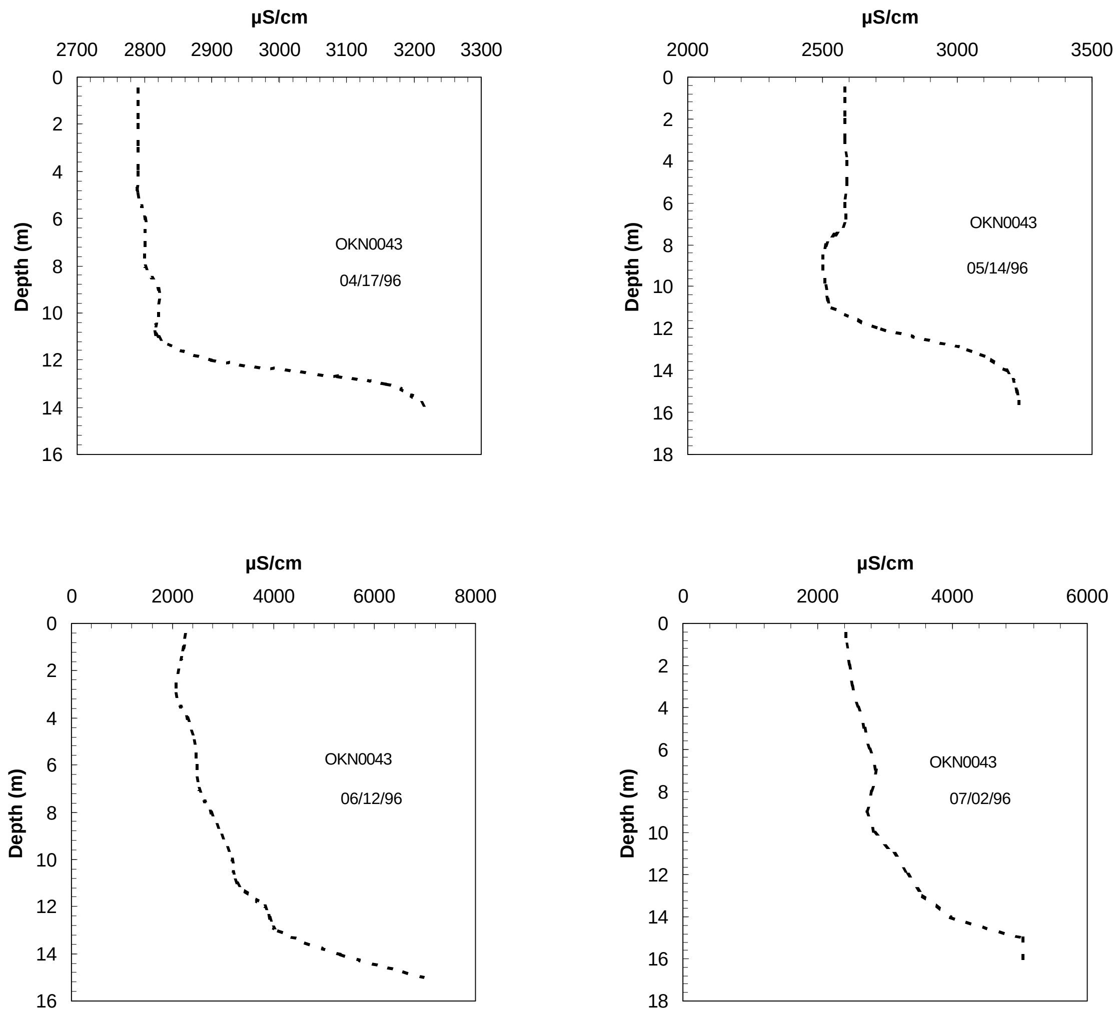

Figure 61. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0043 on 17 April, 14 May, 12 June, and 2 July, 1996.**

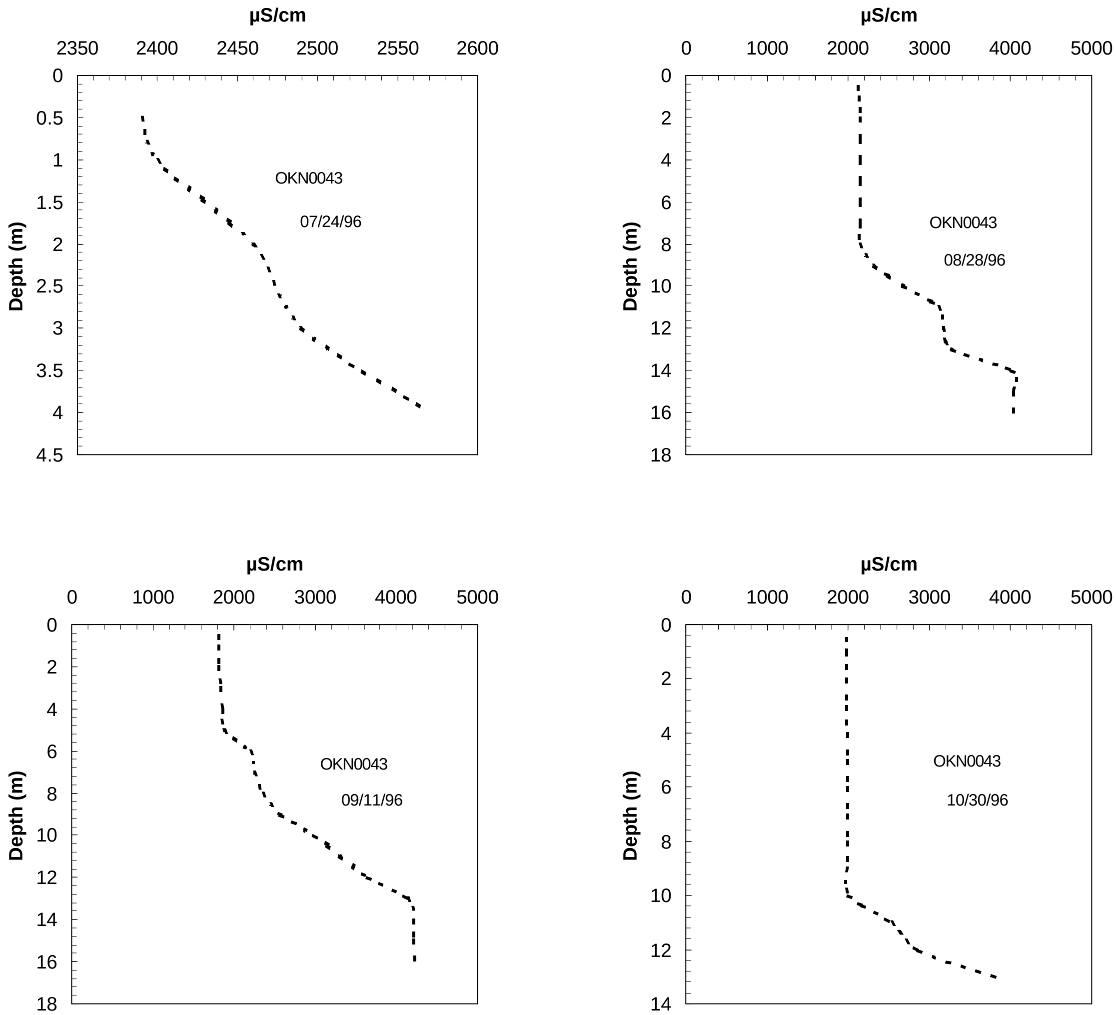

Figure 62. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0043 on 24 July, 28 August, 11 September, and 30 October, 1996.**

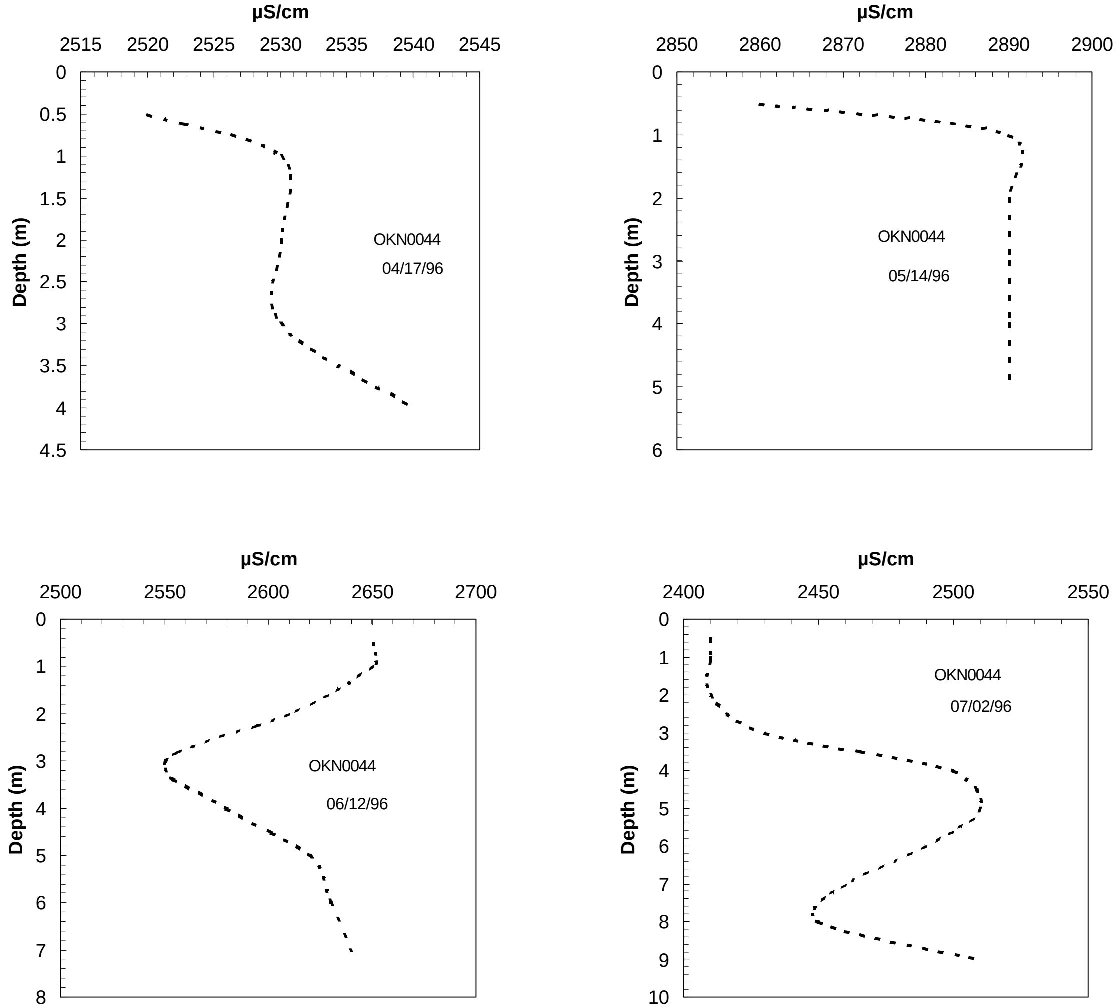

Figure 63. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0044 on 17 April, 14 May, 12 June, and 2 July, 1996.**

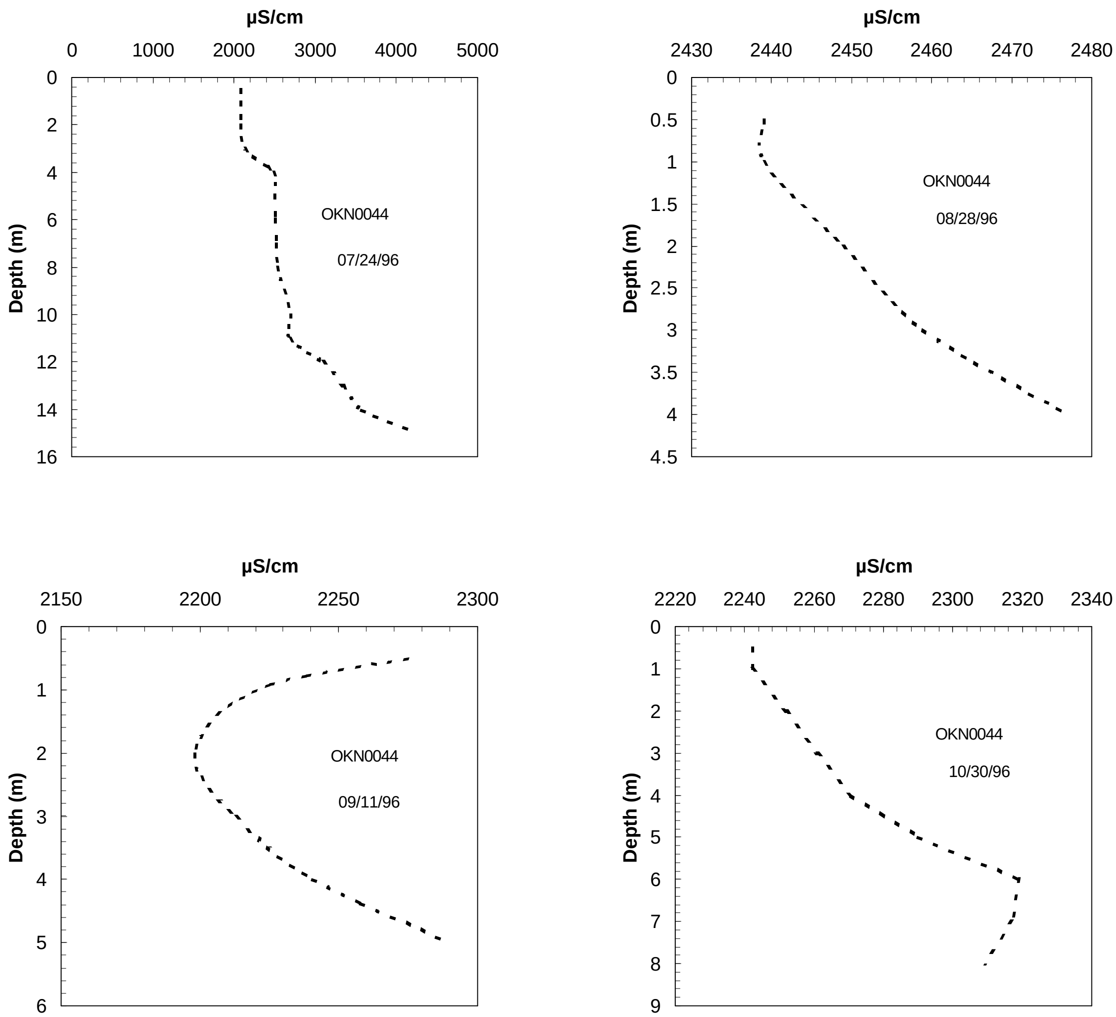

Figure 64. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0044 on 24 July, 28 August, 11 September, and 30 October, 1996.**

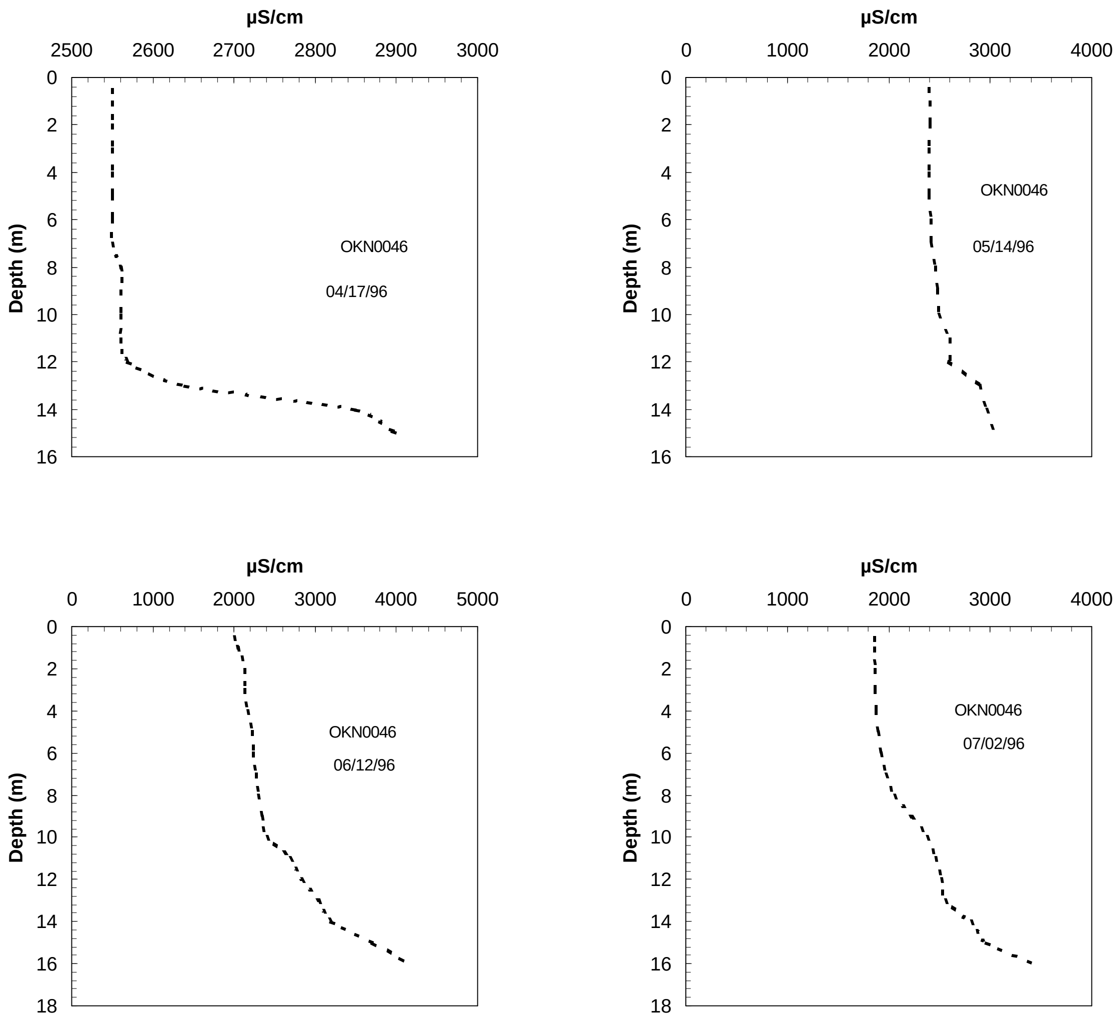

Figure 65. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0046 on 17 April, 14 May, 12 June, and 2 July, 1996.**

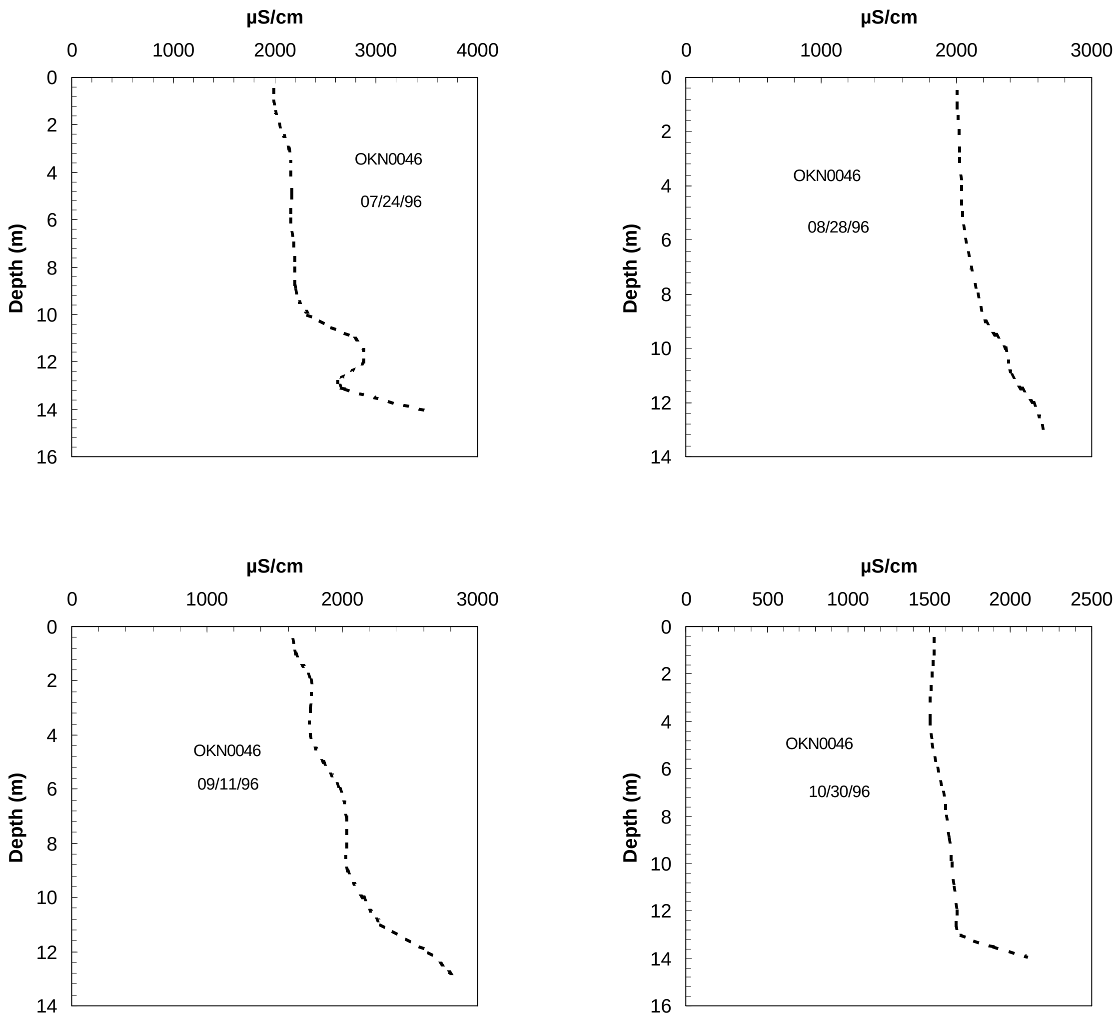

Figure 66. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0046 on 24 July, 28 August, 11 September, and 30 October, 1996.**

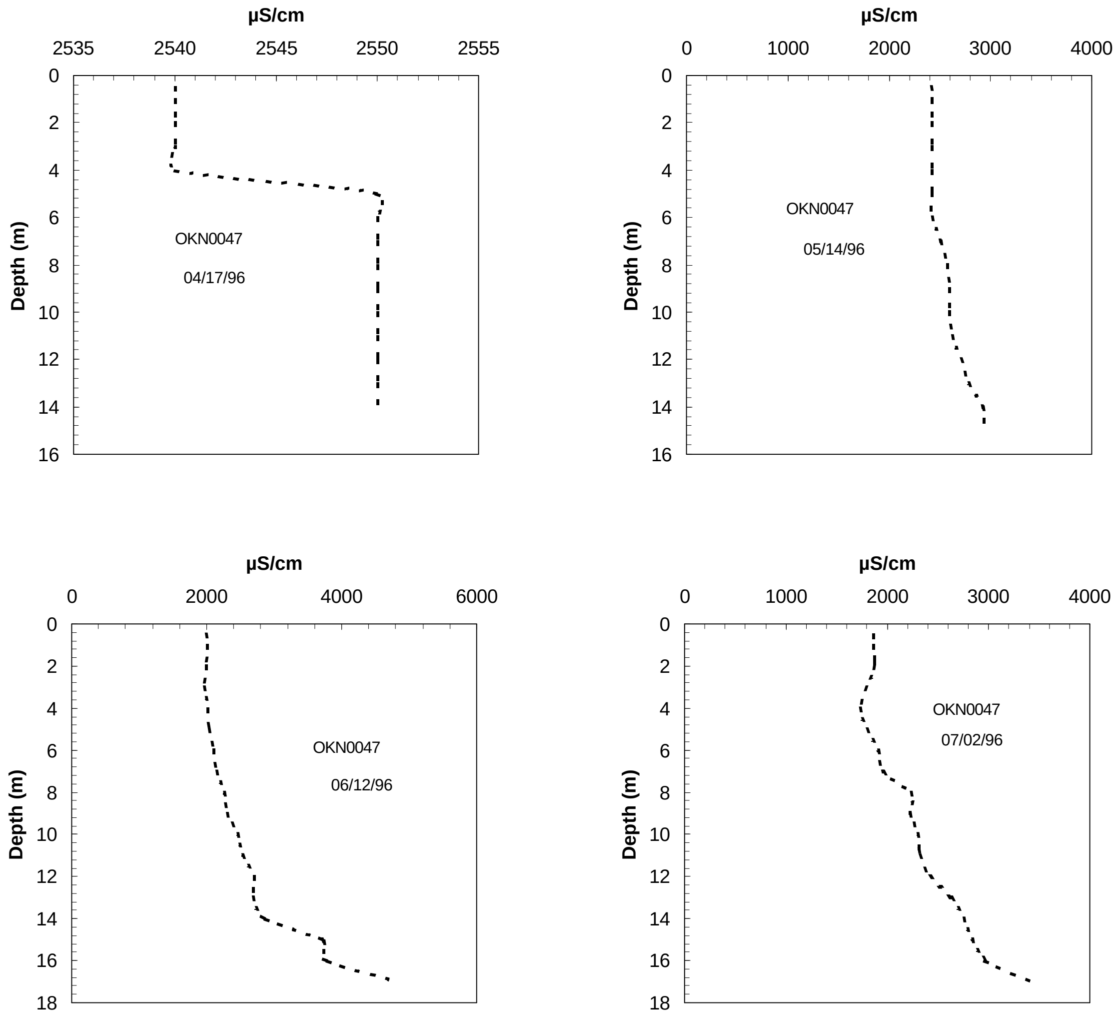

Figure 67. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0047 on 17 April, 14 May, 12 June, and 2 July, 1996.**

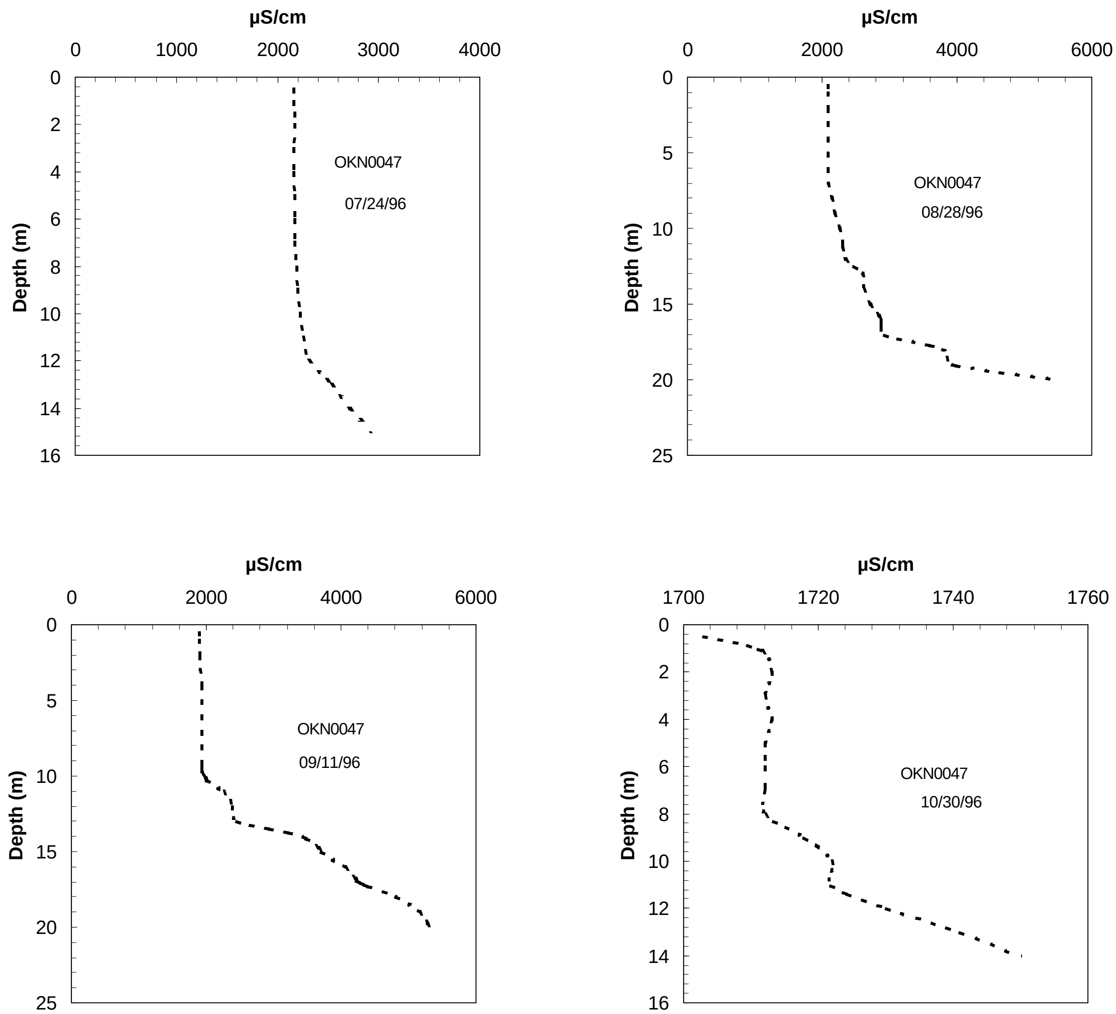

Figure 68. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0047 on 24 July, 28 August, 11 September, and 30 October, 1996.**

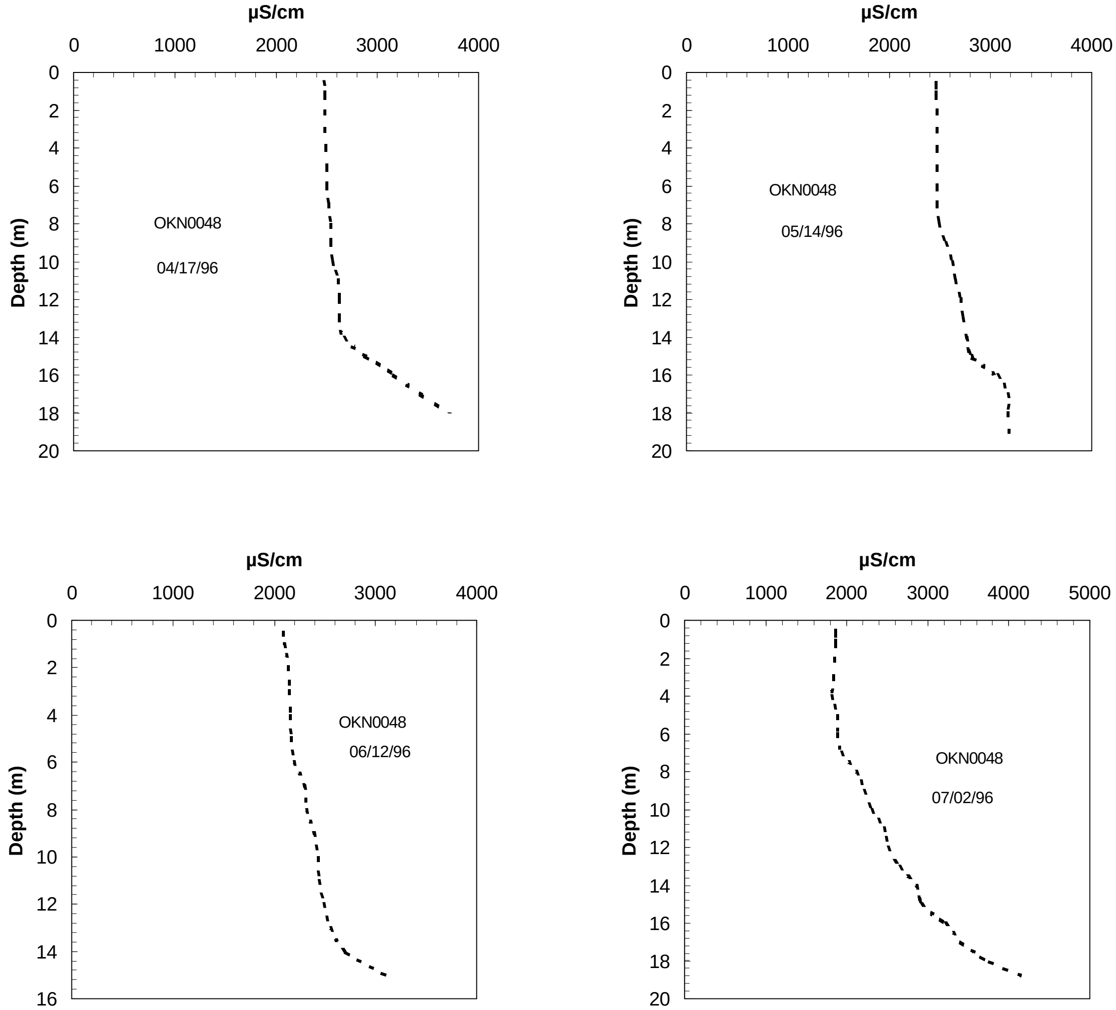

Figure 69. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0048 on 17 April, 14 May, 12 June, and 2 July, 1996.**

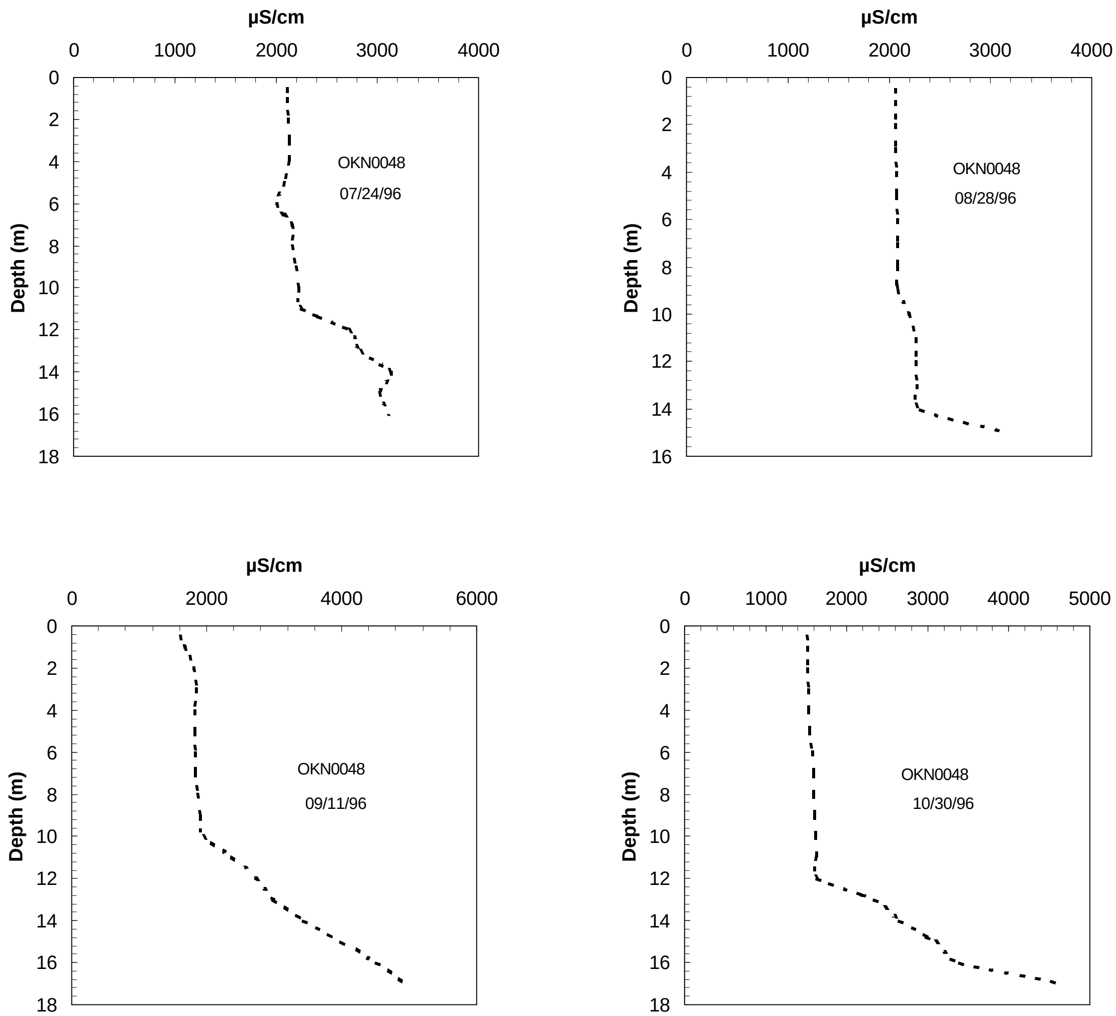

Figure 70. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0048 on 24 July, 28 August, 11 September, and 30 October, 1996.**

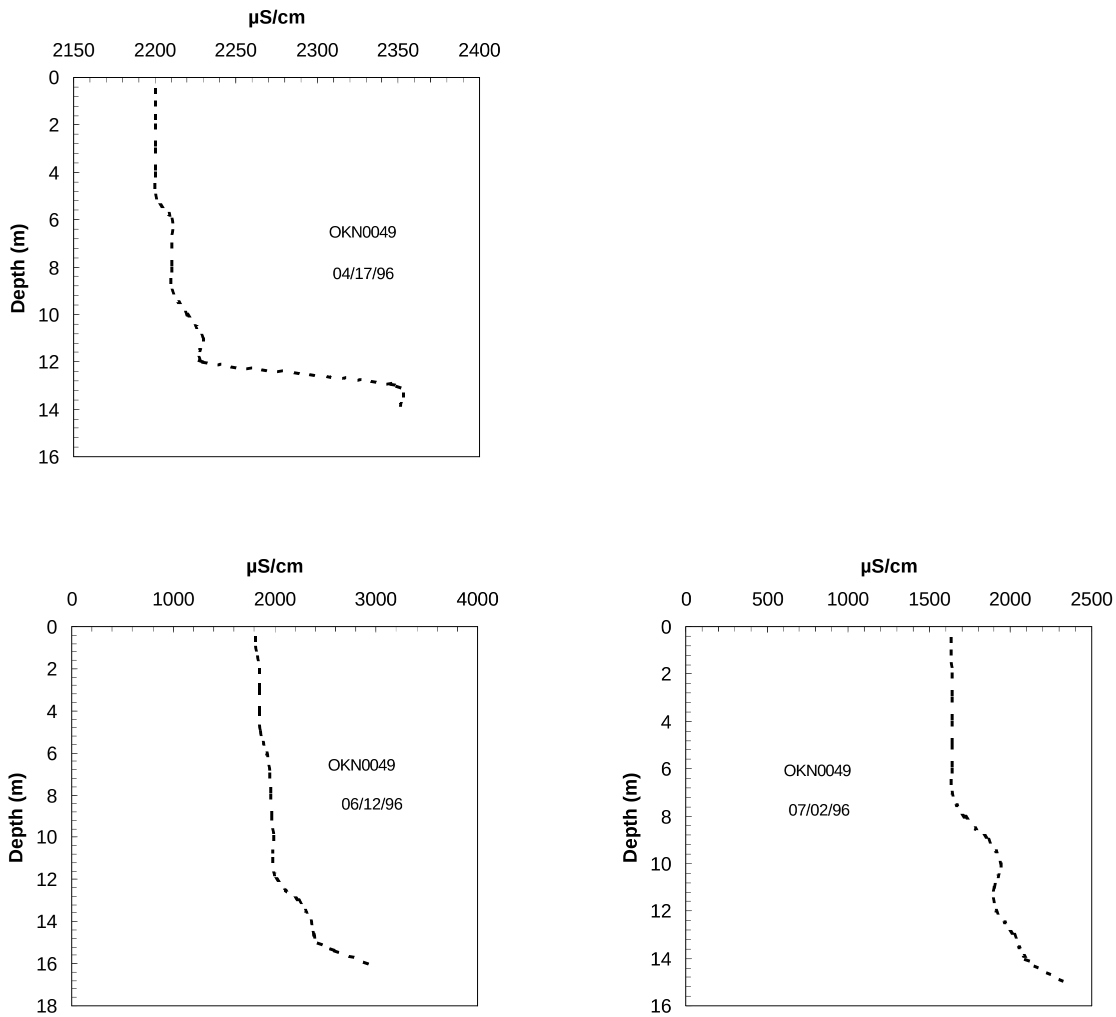

Figure 71. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0049 on 17 April, 12 June, and 2 July, 1996.**

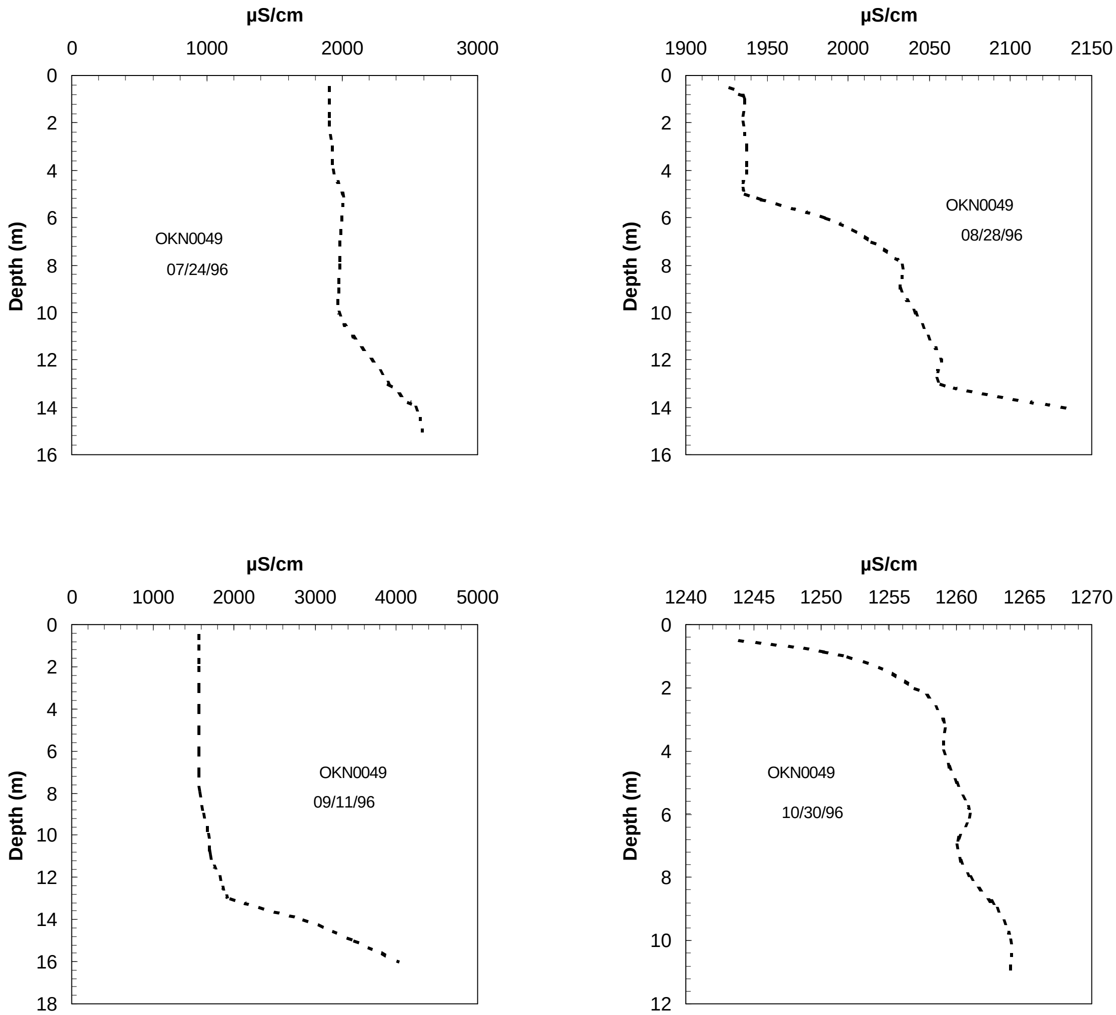

Figure 72. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0049 on 24 July, 28 August, 11 September, and 30 October, 1996.**

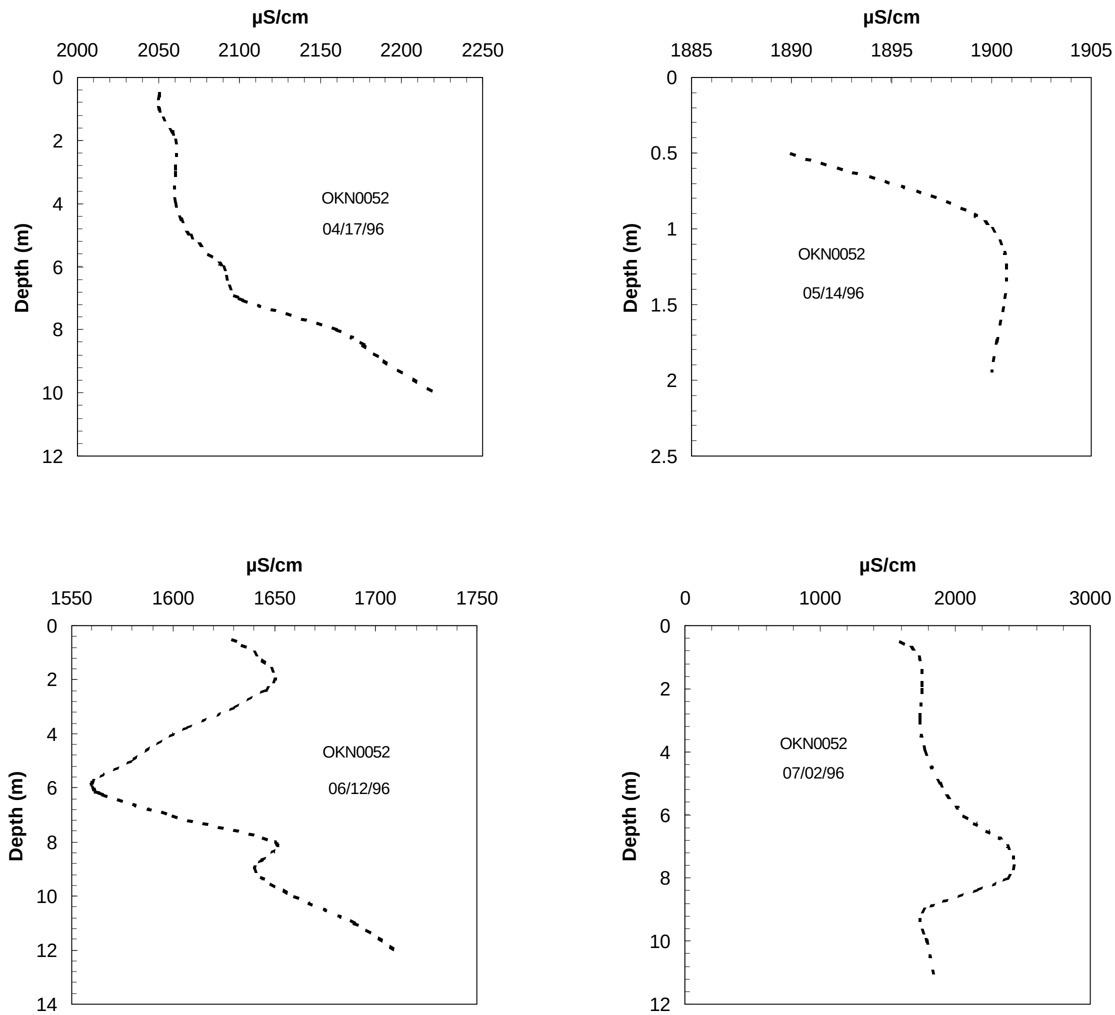

Figure 73. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0052 on 17 April, 14 May, 12 June, and 2 July, 1996.**

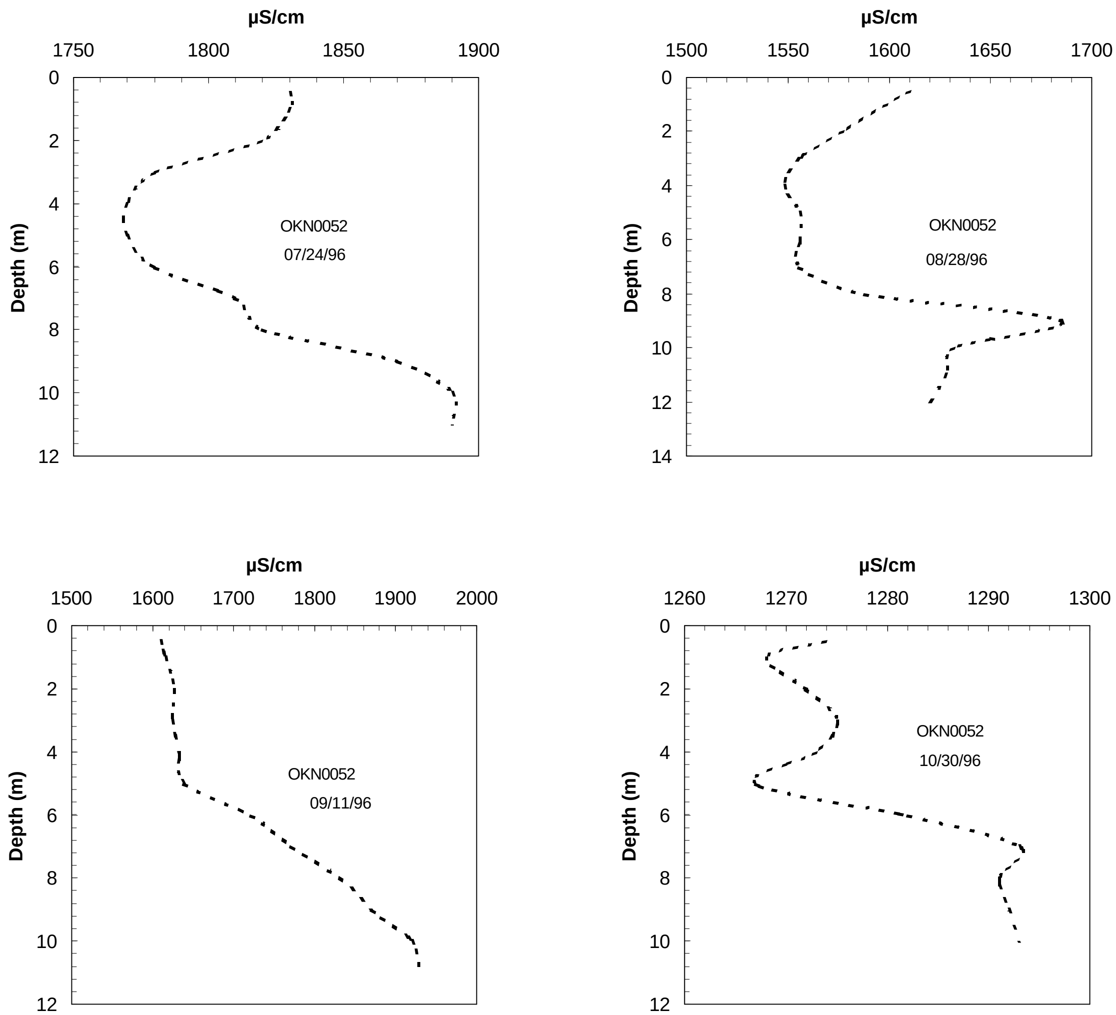

Figure 74. **Vertical profiles of specific conductance (µS/cm) at Keystone Lake, Oklahoma, station OKN0052 on 24 July, 28 August, 11 September, and 30 October, 1996.**

APPENDIX D

Box-and-Whisker
Plots of
Water Quality Data
Keystone Lake
1996

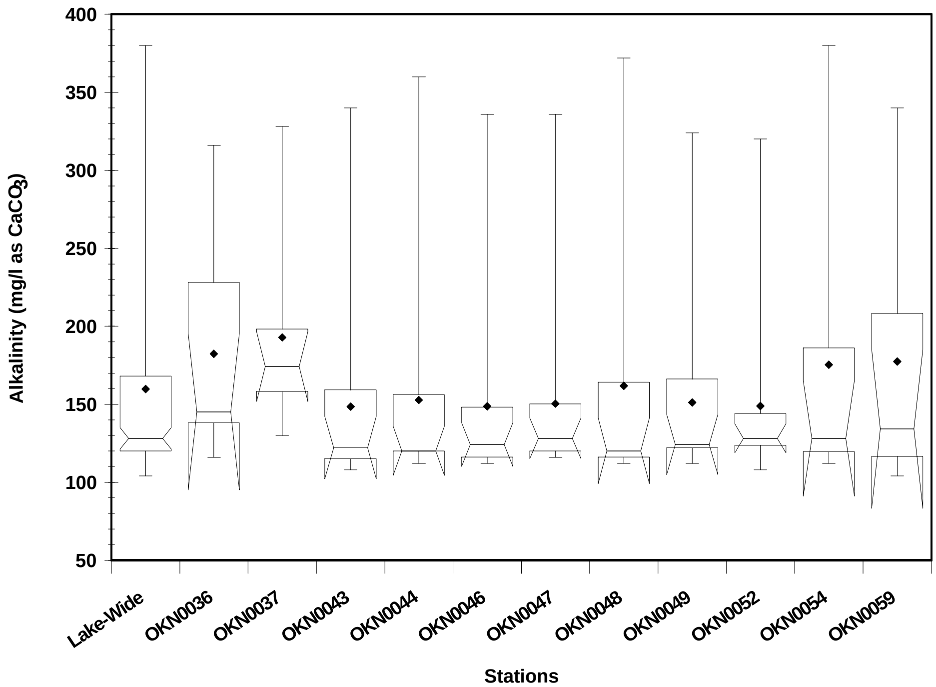

Figure 75. **Total alkalinity concentration (mg/l as $CaCO_3$) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

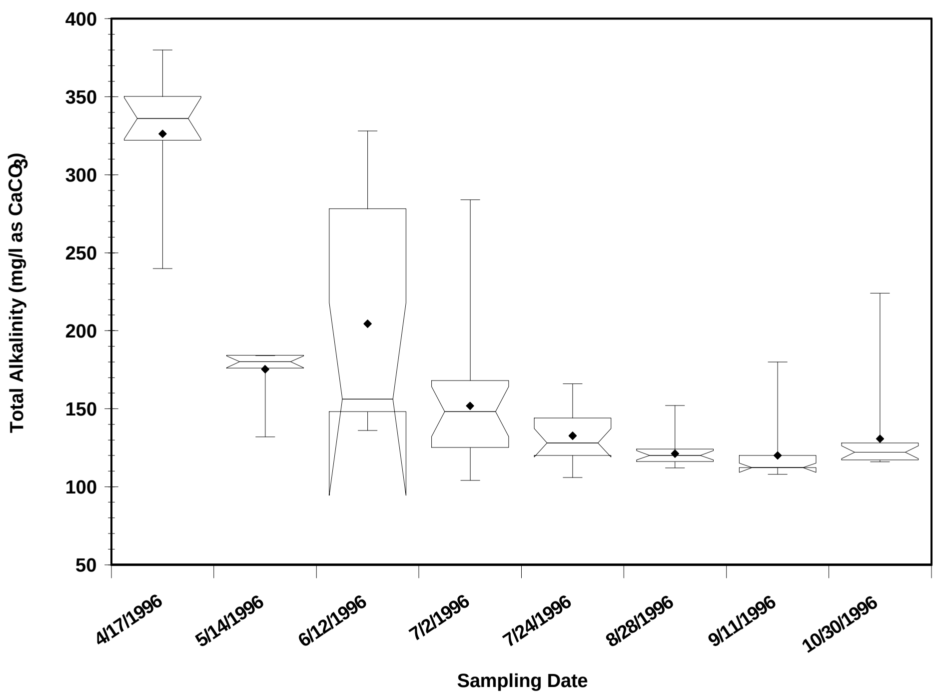

Figure 76. **Total alkalinity concentration (mg/l as $CaCO_3$) distribution by sampling date, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

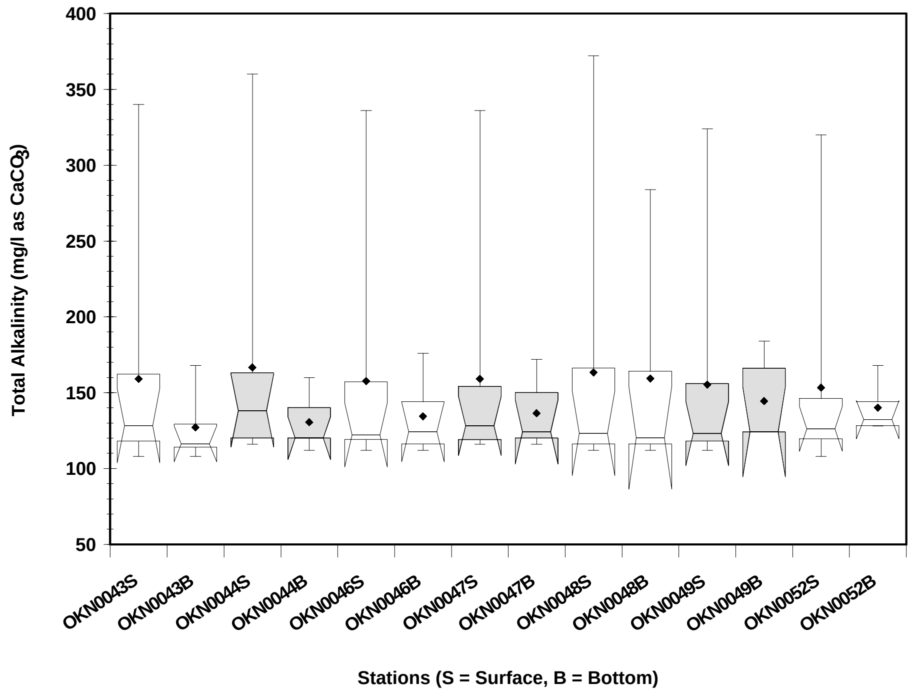

Figure 77. **Total alkalinity concentration (mg/l as $CaCO_3$) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

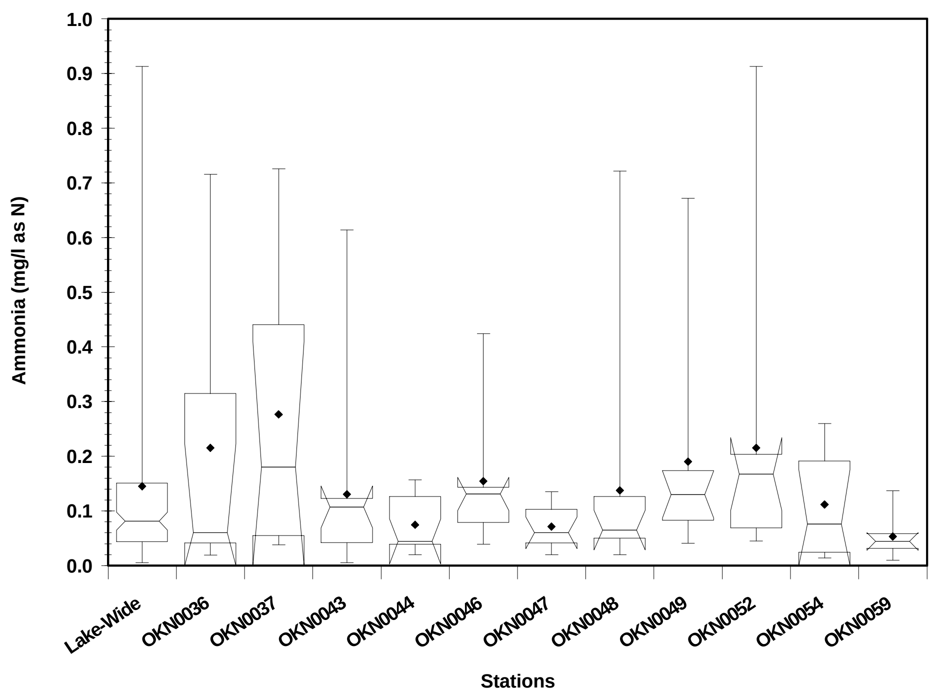

Figure 78. **Ammonia concentration (mg/l as N) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

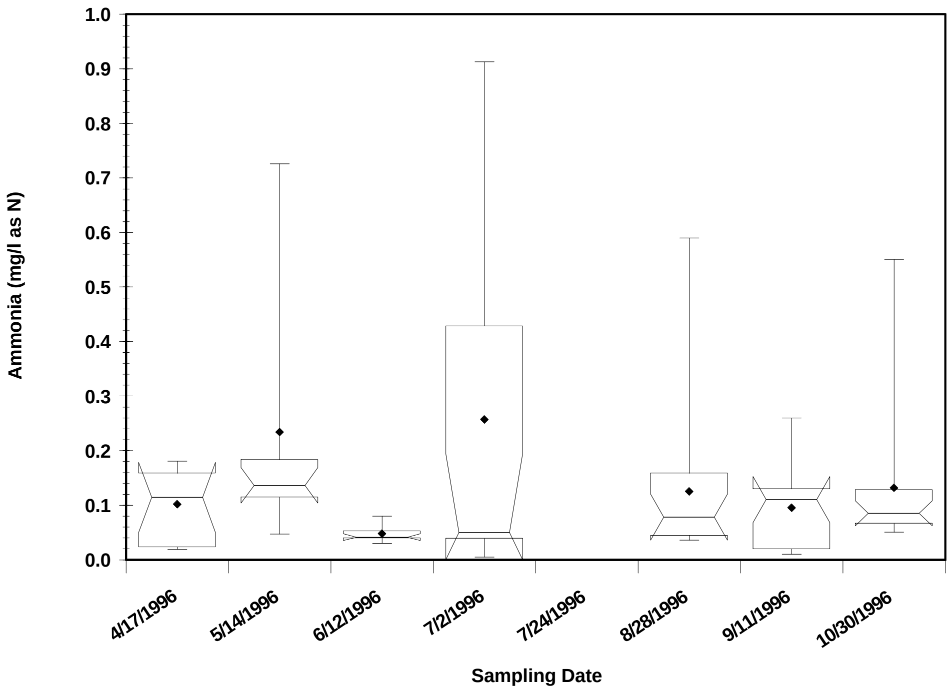

Figure 79. **Ammonia concentration (mg/l as N) distribution by sampling date, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

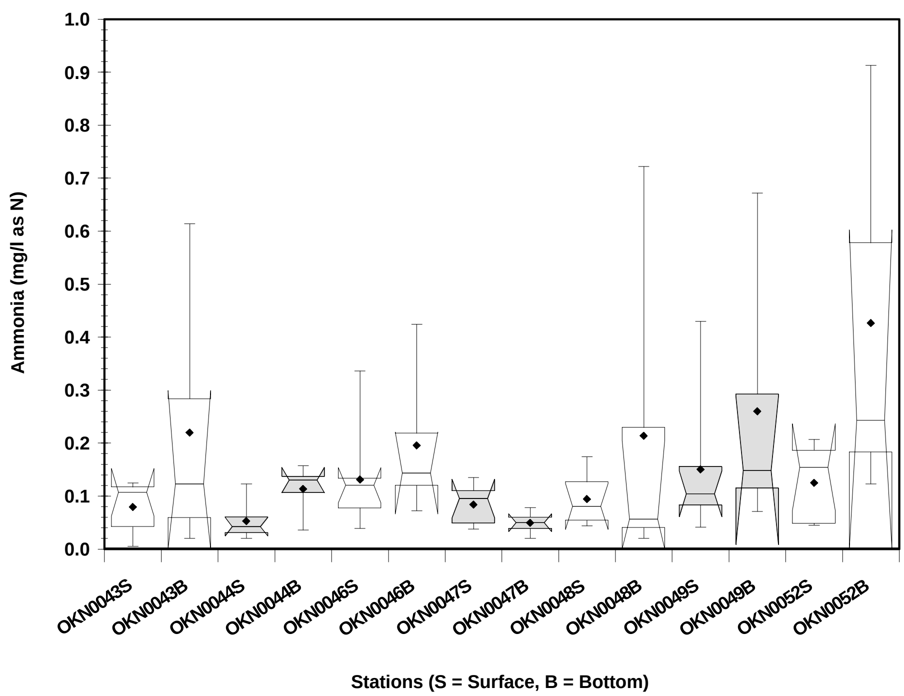

Figure 80. **Ammonia concentration (mg/l as N) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

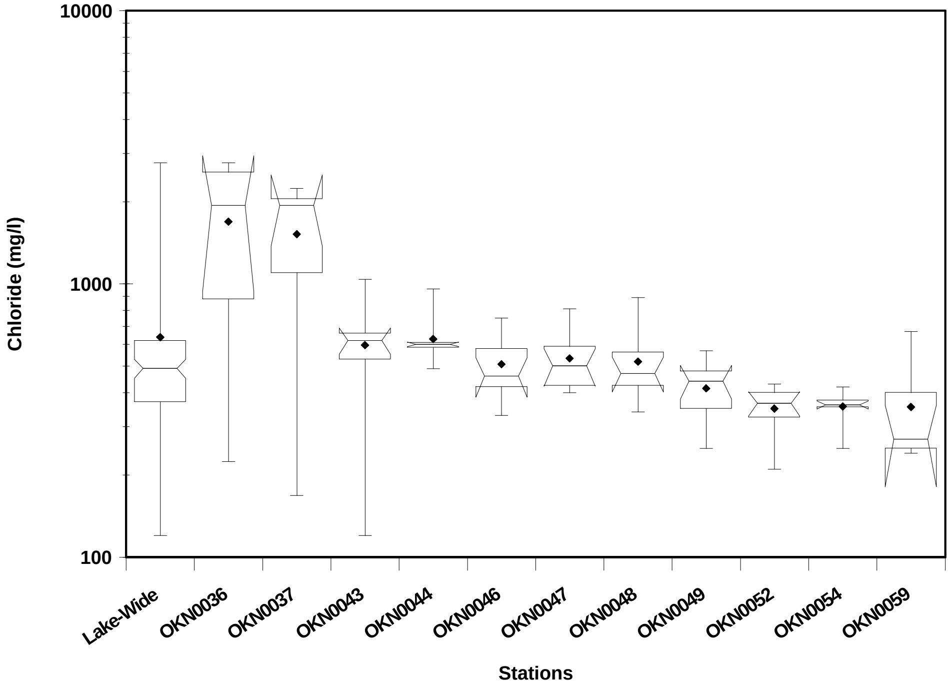

Figure 81. **Chloride concentration (mg/l) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

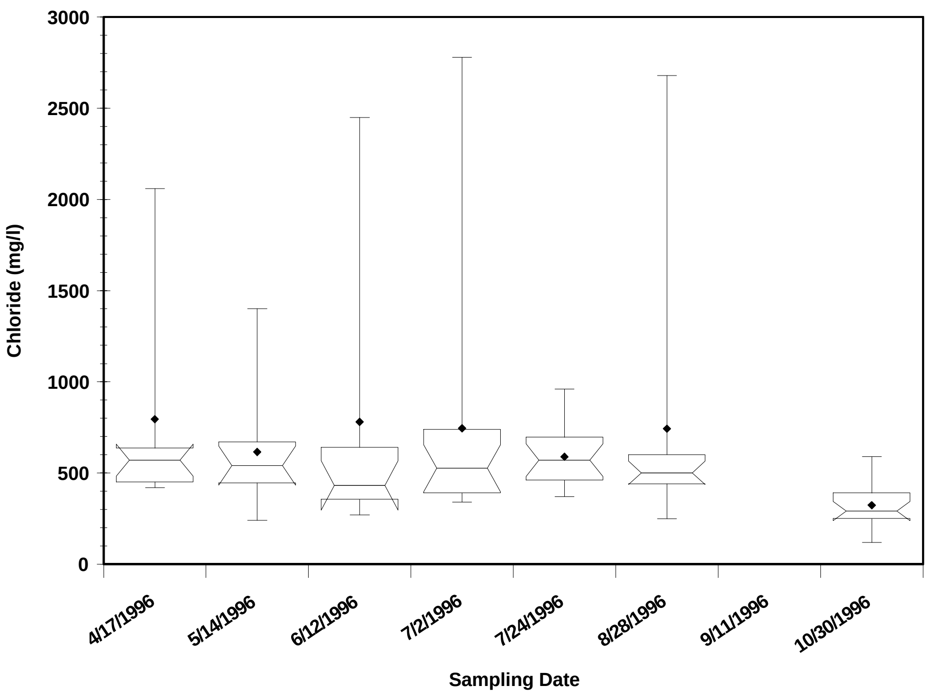

Figure 82. **Chloride concentration (mg/l) distribution by sampling date, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

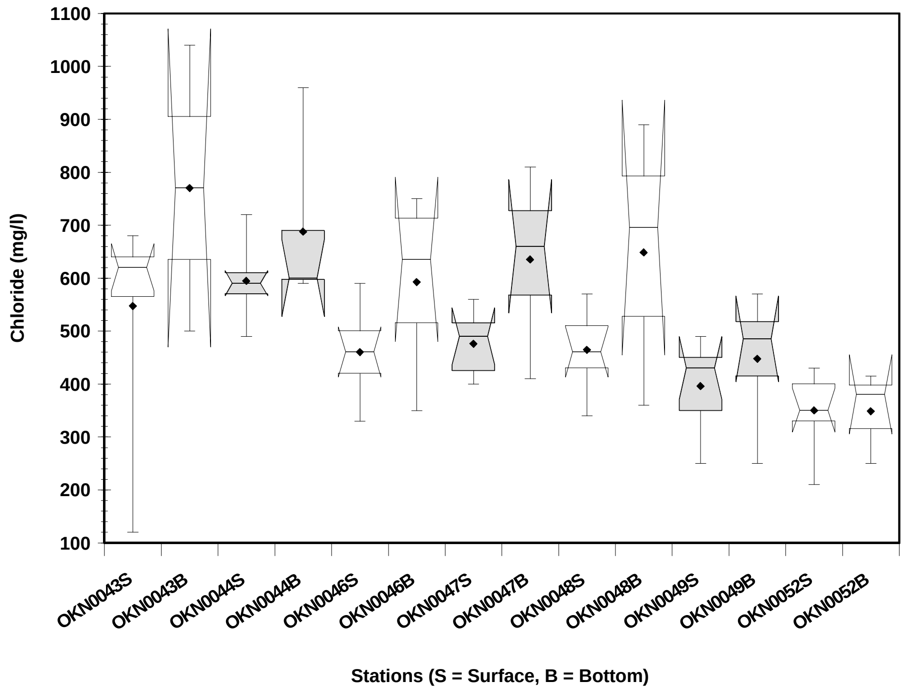

Figure 83. **Chloride concentration (mg/l) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

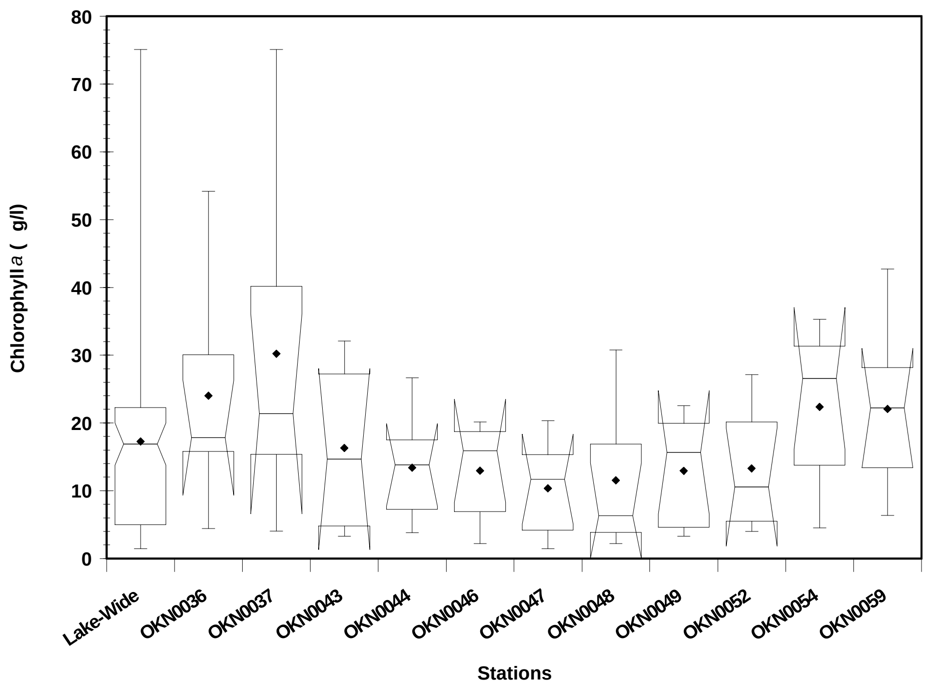

Figure 84. **Chlorophyll *a* concentration distribution by station, Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

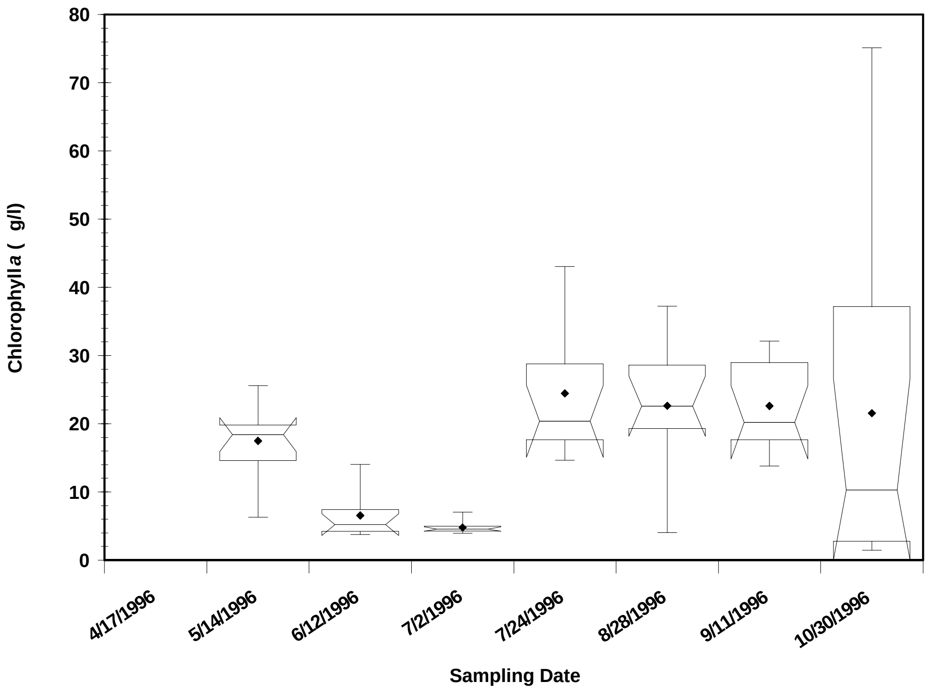

Figure 85. **Chlorophyll *a* concentration (mg/l) distribution by sampling date, Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

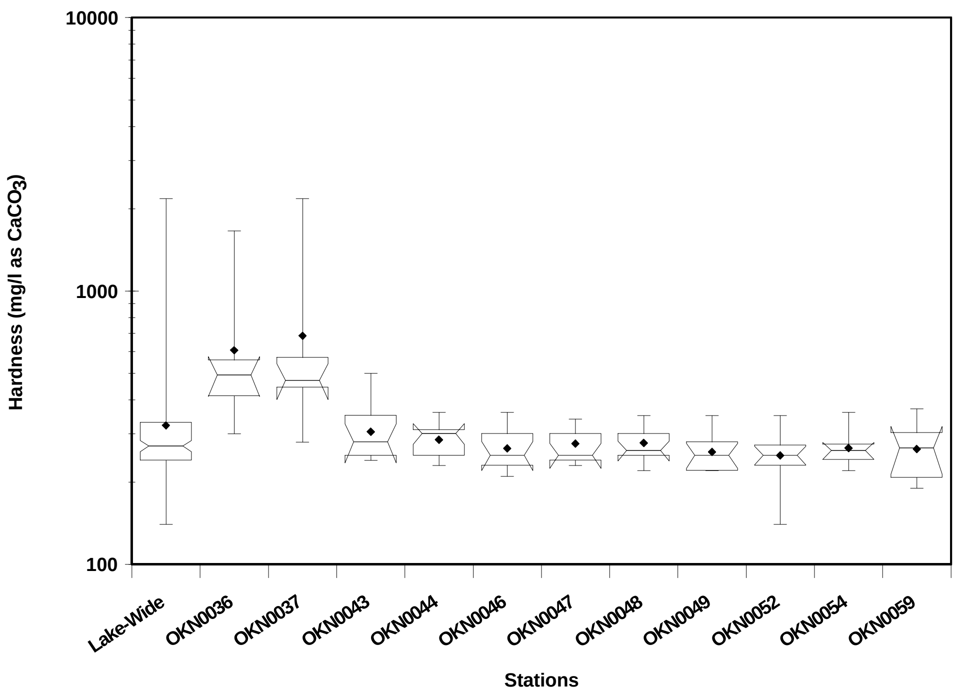

Figure 86. **Total hardness concentration (mg/l as $CaCO_3$) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

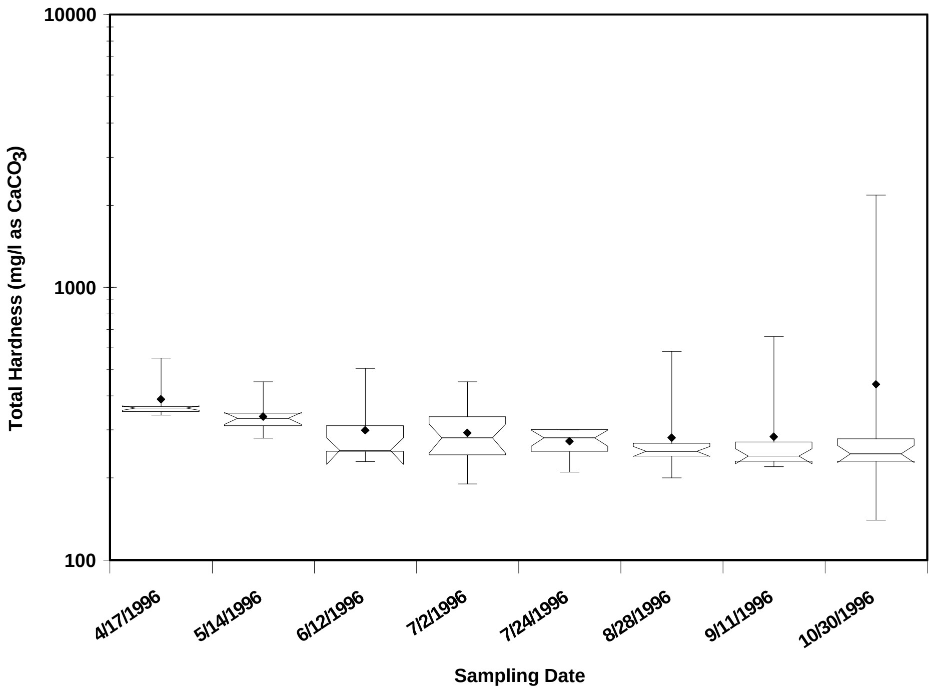

Figure 87. **Total hardness concentration (mg/l as $CaCO_3$) distribution by sampling date, Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

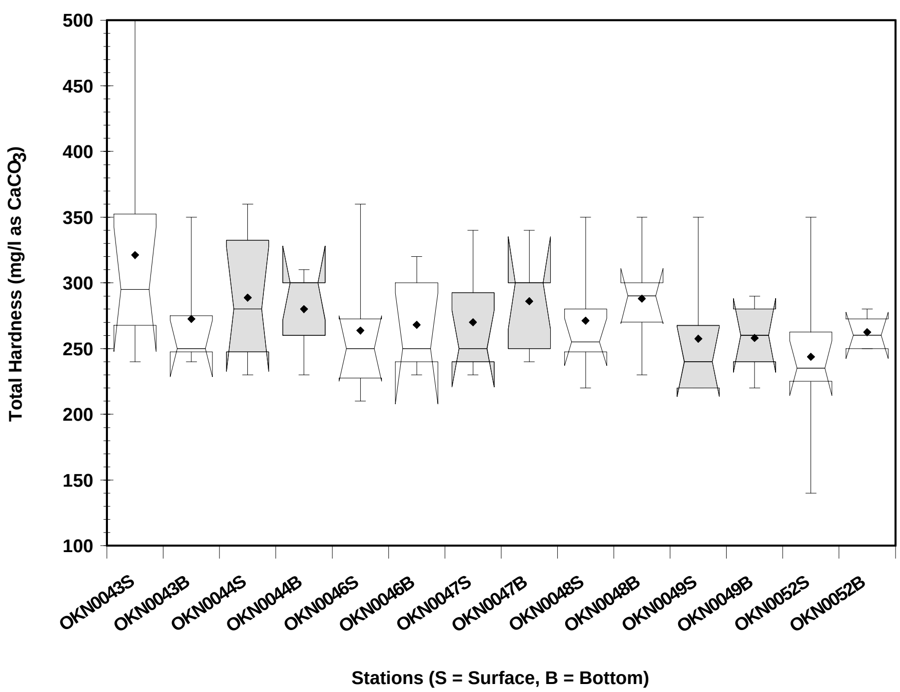

Figure 88. **Total hardness concentration (mg/l as $CaCO_3$) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

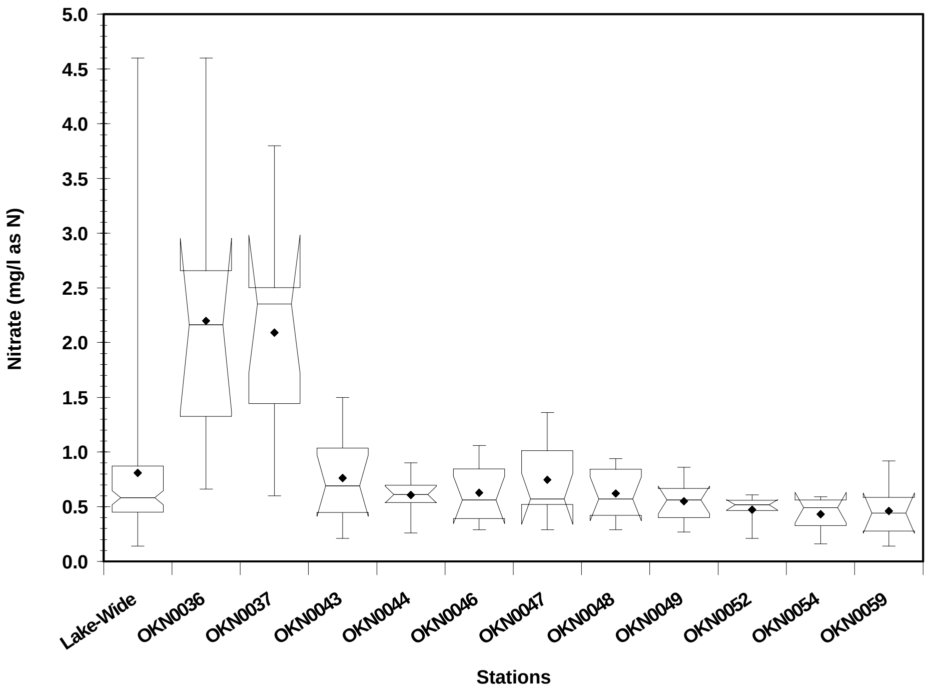

Figure 89. Nitrate concentration (mg/l as N) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.

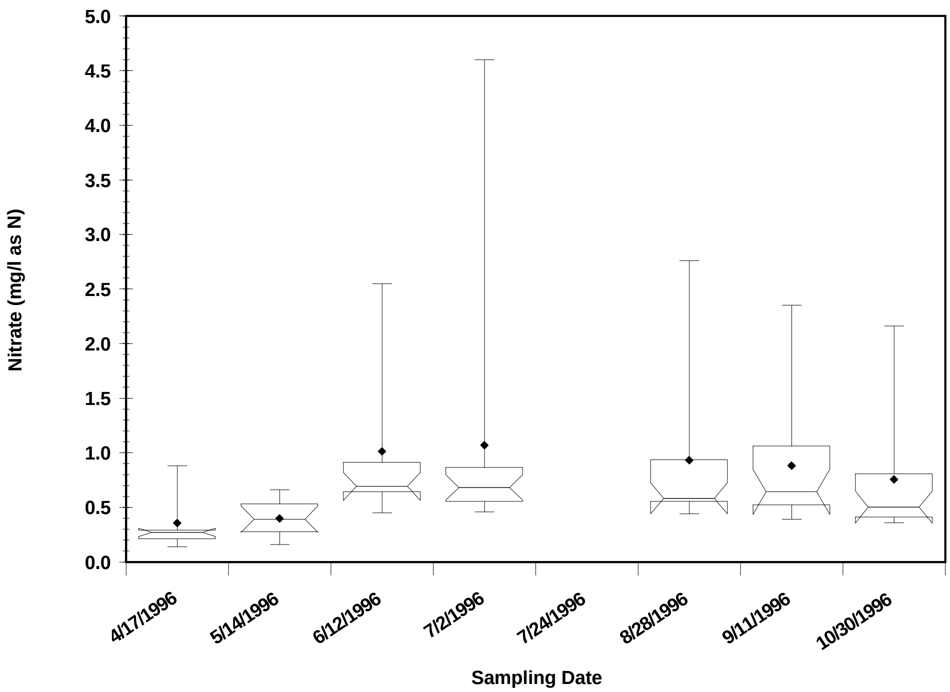

Figure 90. Nitrate concentration (mg/l as N) distribution by sampling date, Keystone Lake, Oklahoma, 17 April through 30 October 1996.

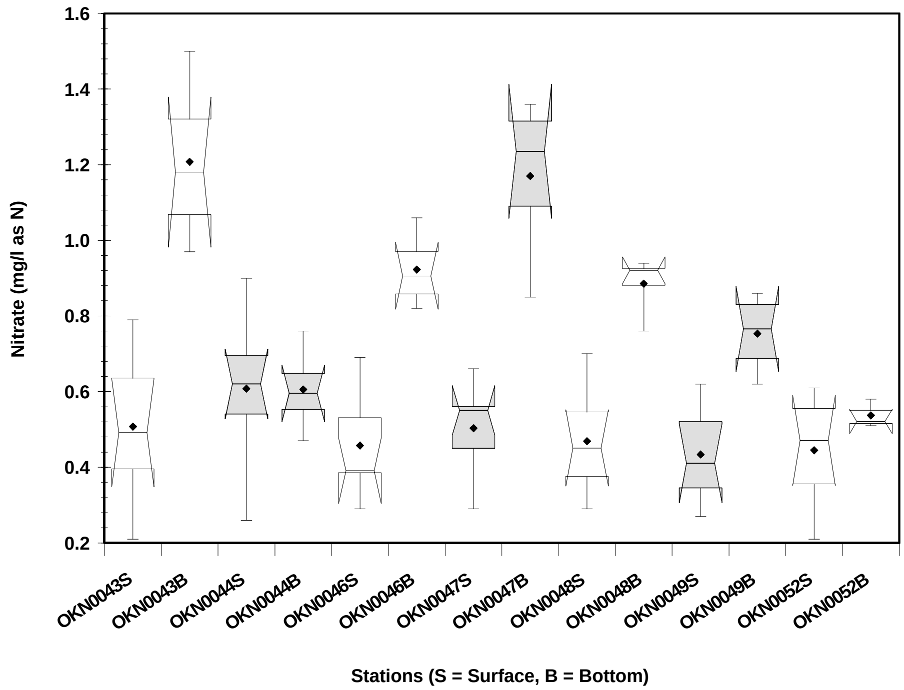

Figure 91. **Nitrate concentration (mg/l as N) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

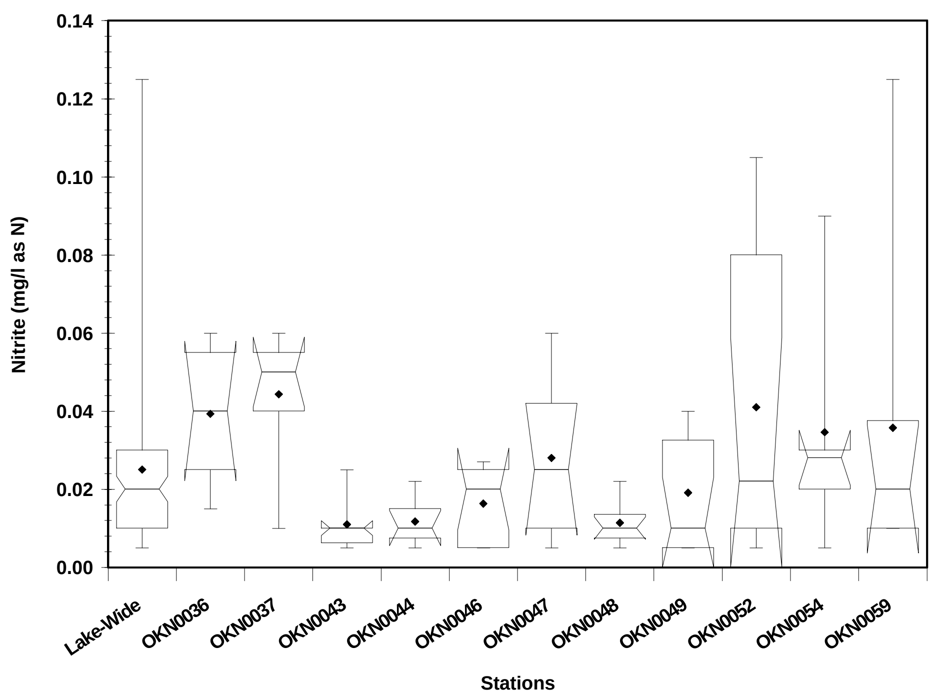

Figure 92. **Nitrite concentration (mg/l as N) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

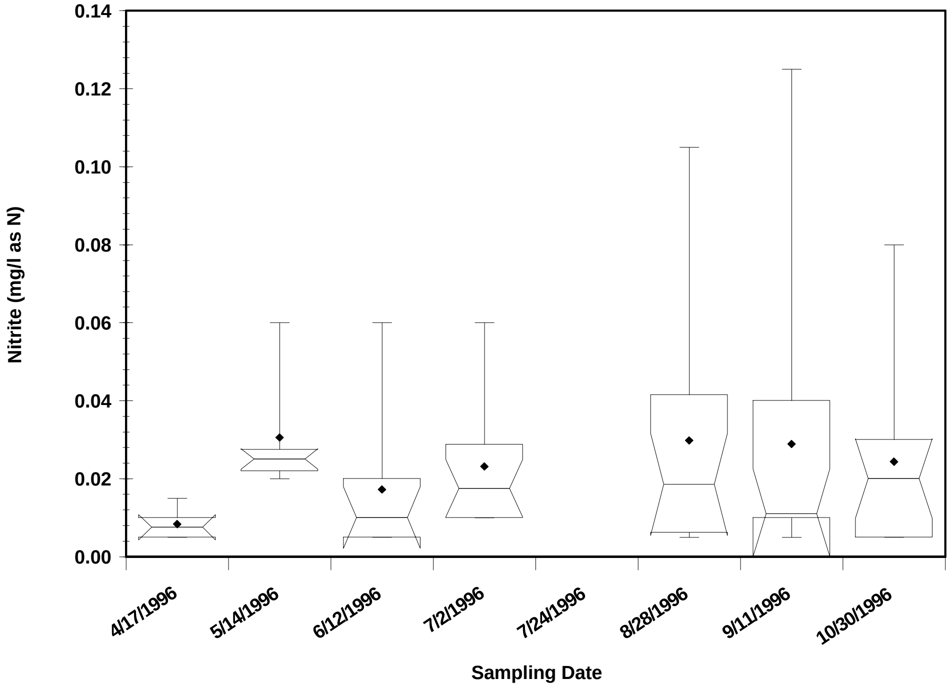

Figure 93. **Nitrite concentration (mg/l as N) distribution by sampling date, Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

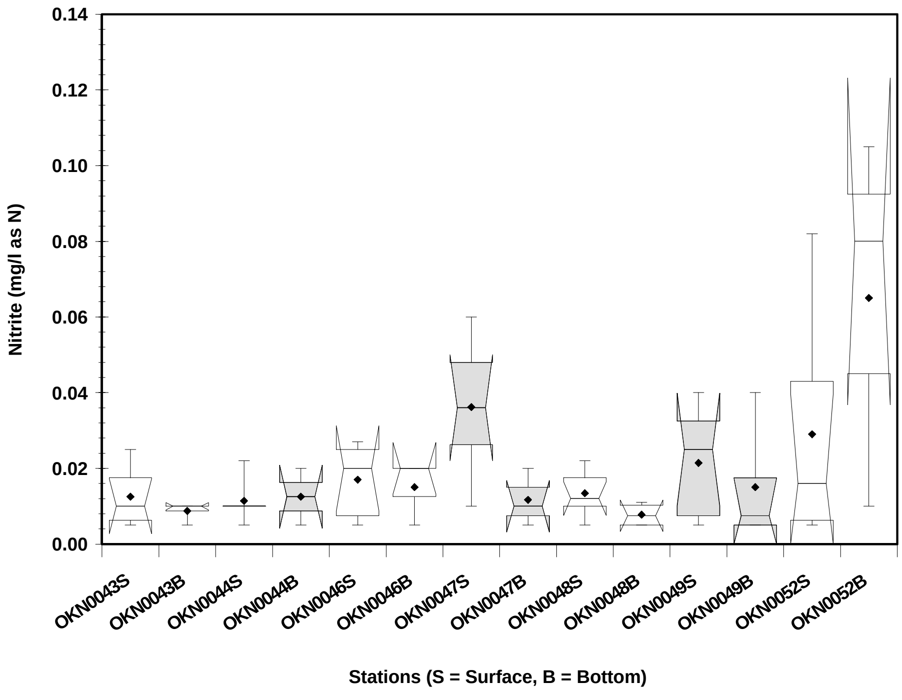

Figure 94. **Nitrite concentration (mg/l as N) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

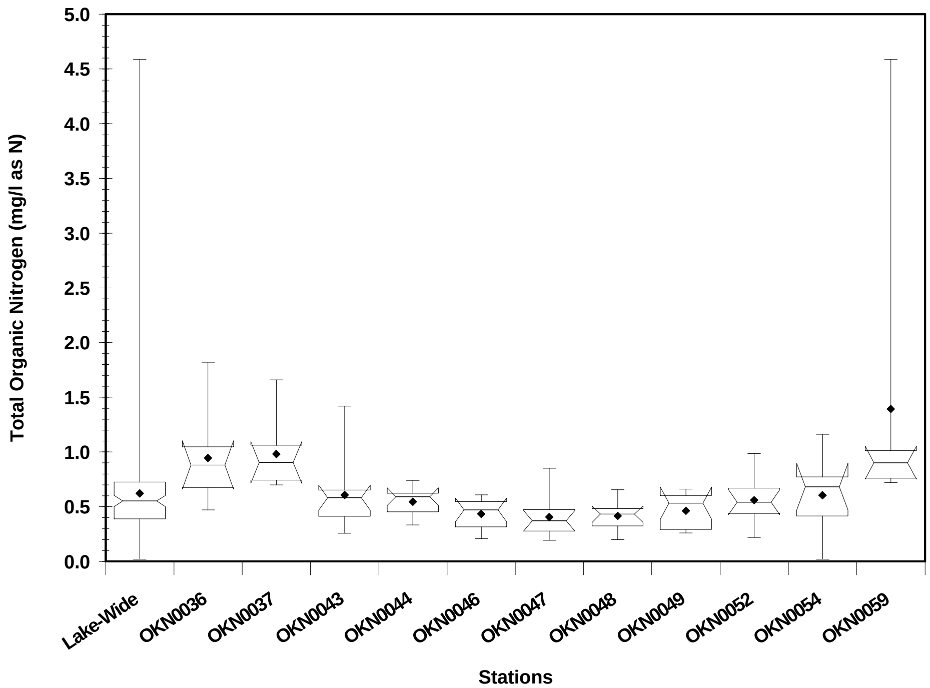

Figure 95. **Total organic nitrogen concentration (mg/l as N) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

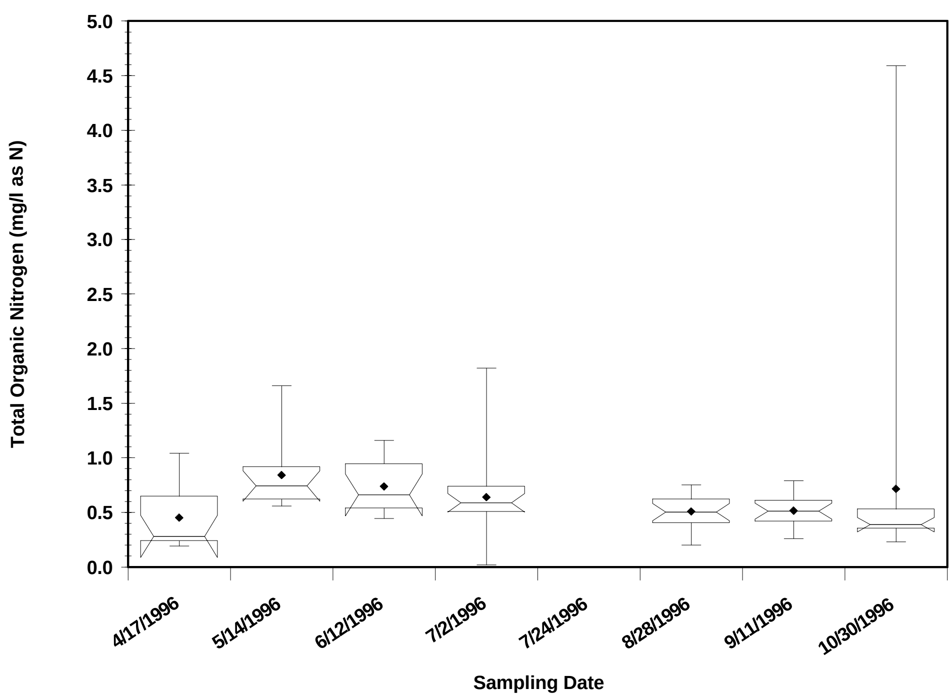

Figure 96. **Total organic nitrogen concentration (mg/l as N) distribution by sampling date, Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

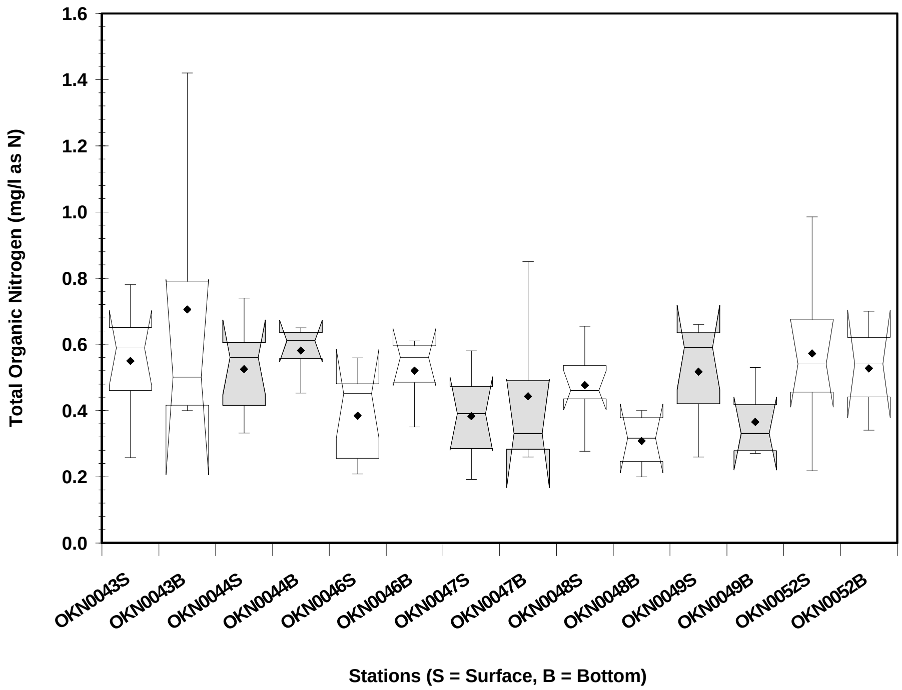

Figure 97. Total organic nitrogen concentration (mg/l as N) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.

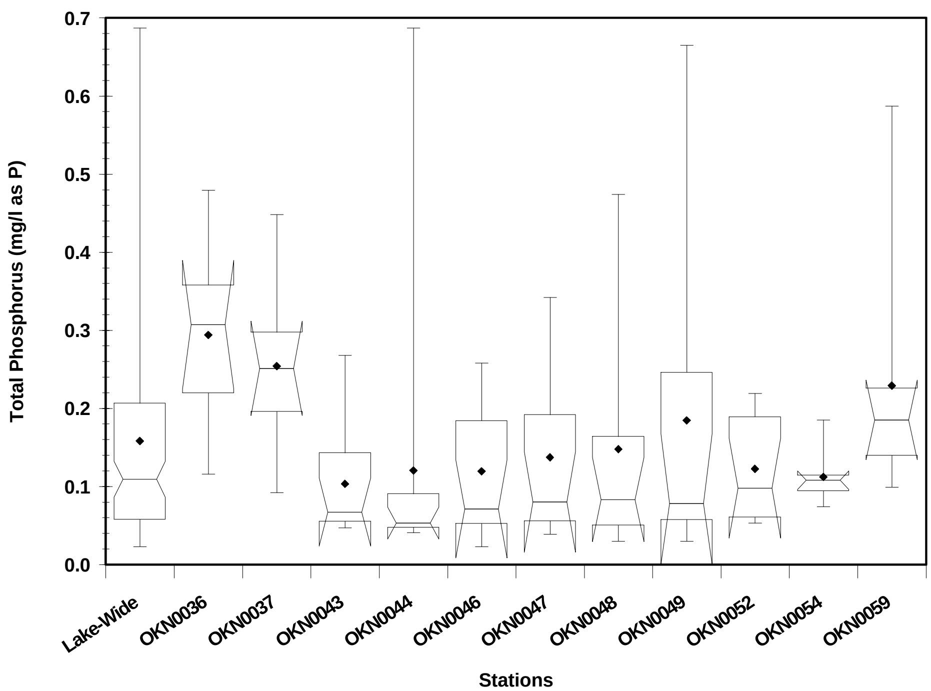

Figure 98. Total phosphorus concentration (mg/l as P) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.

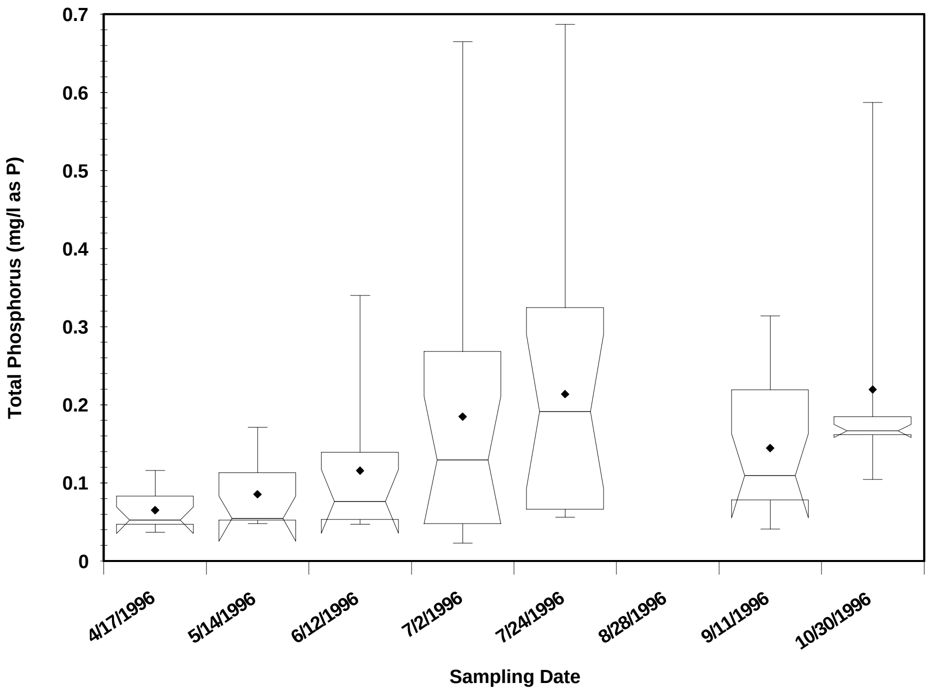

Figure 99. **Total phosphorus concentration (mg/l as P) distribution by sampling date, Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

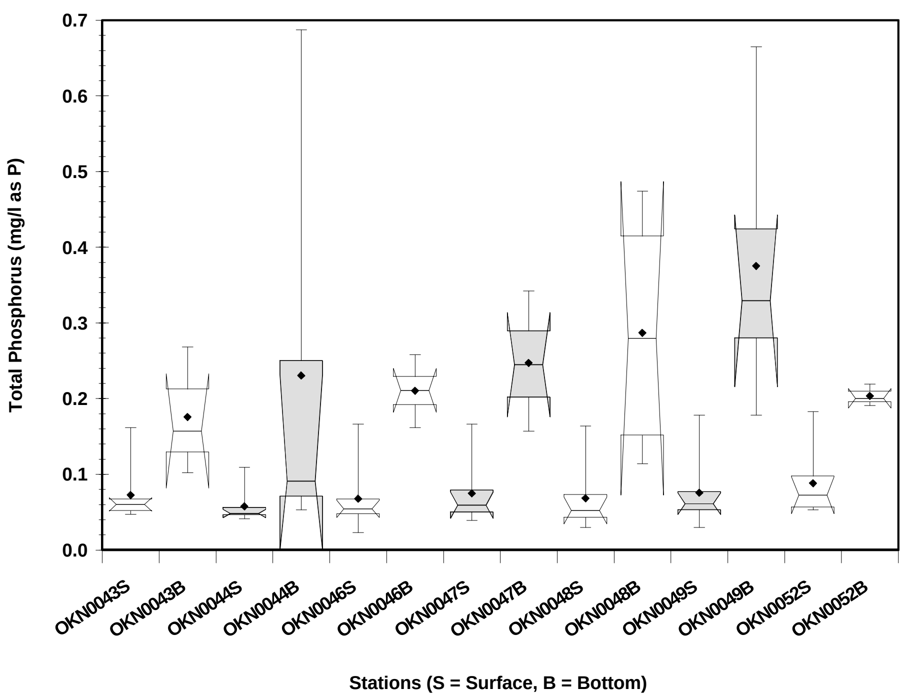

Figure 100. **Total phosphorus concentration (mg/l as P) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

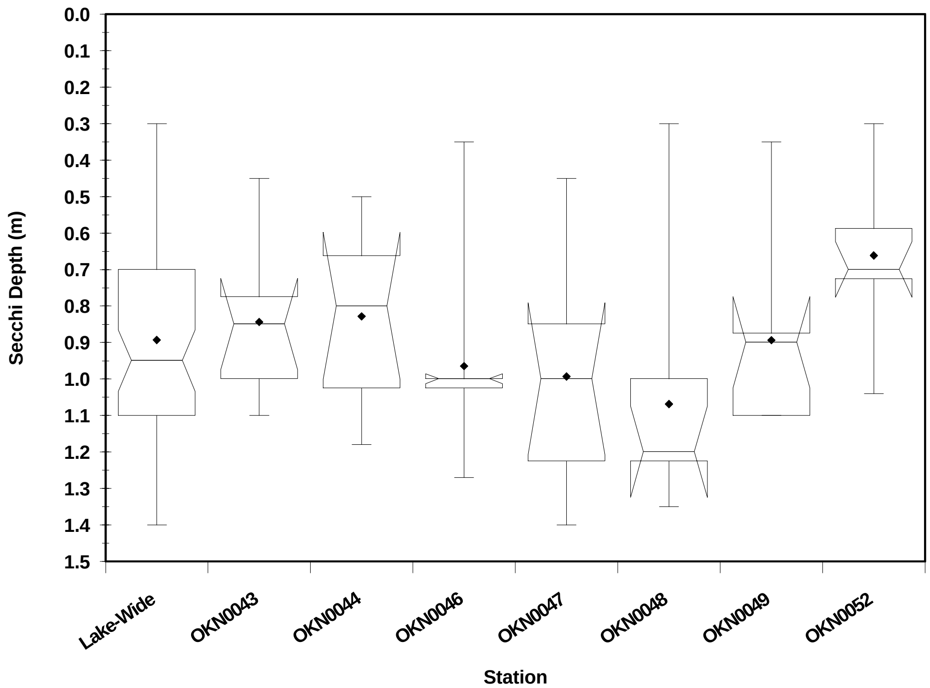

Figure 101. **Secchi disk transparency (m) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

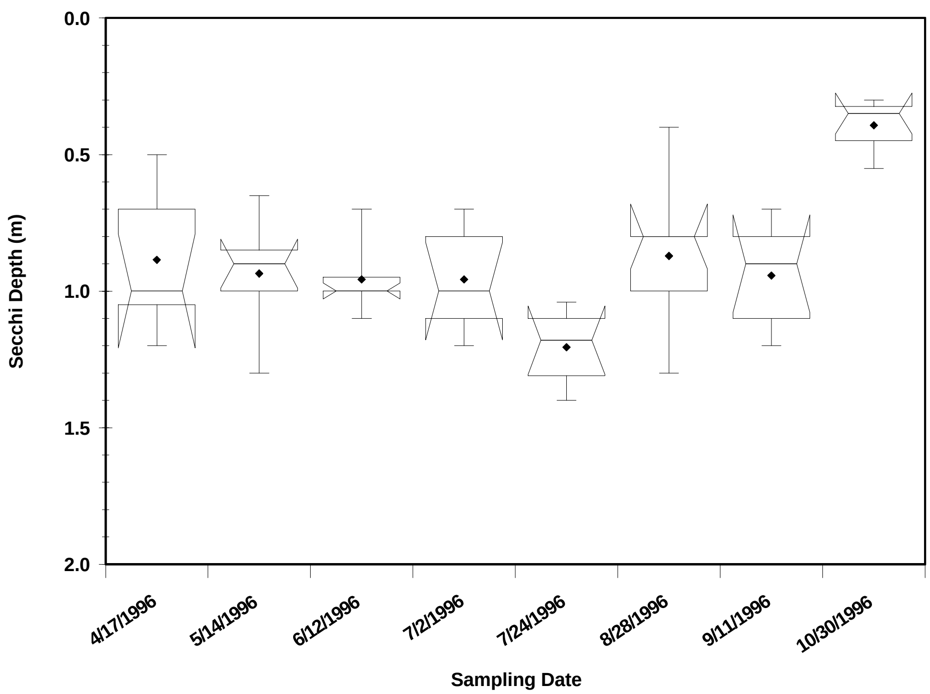

Figure 102. **Secchi disk transparency (m) distribution by sampling date, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

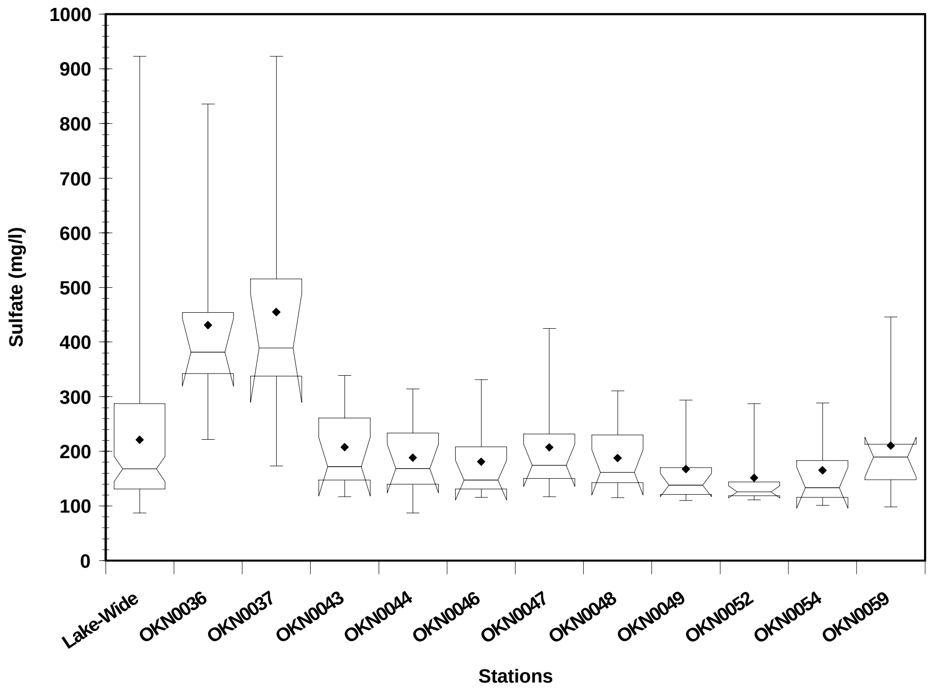

Figure 103. **Sulfate concentration (mg/l) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

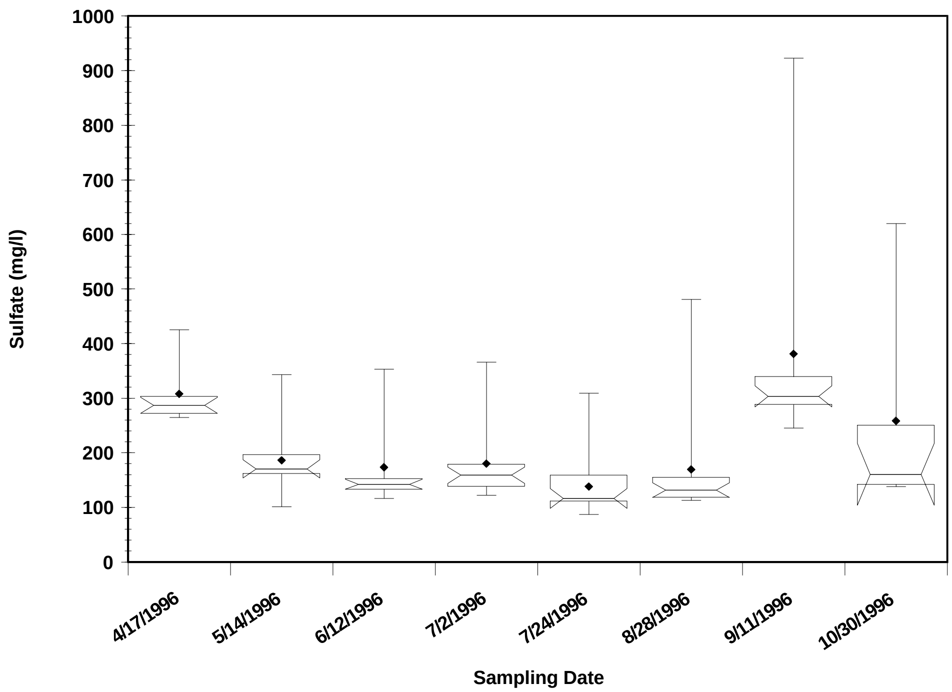

Figure 104. **Sulfate concentration (mg/l) distribution by sampling date, Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

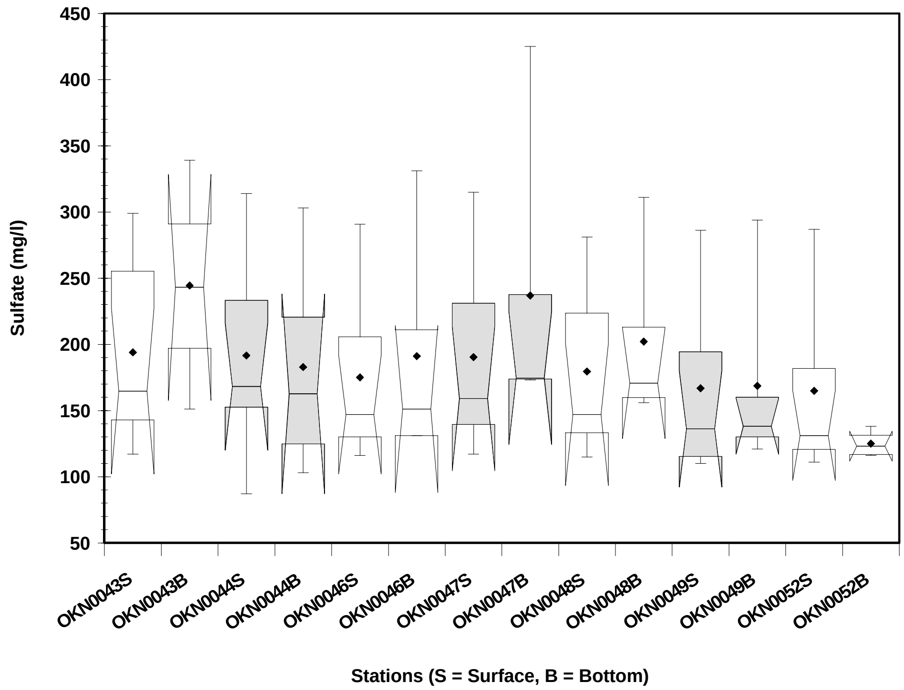

Figure 105. **Sulfate concentration (mg/l) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

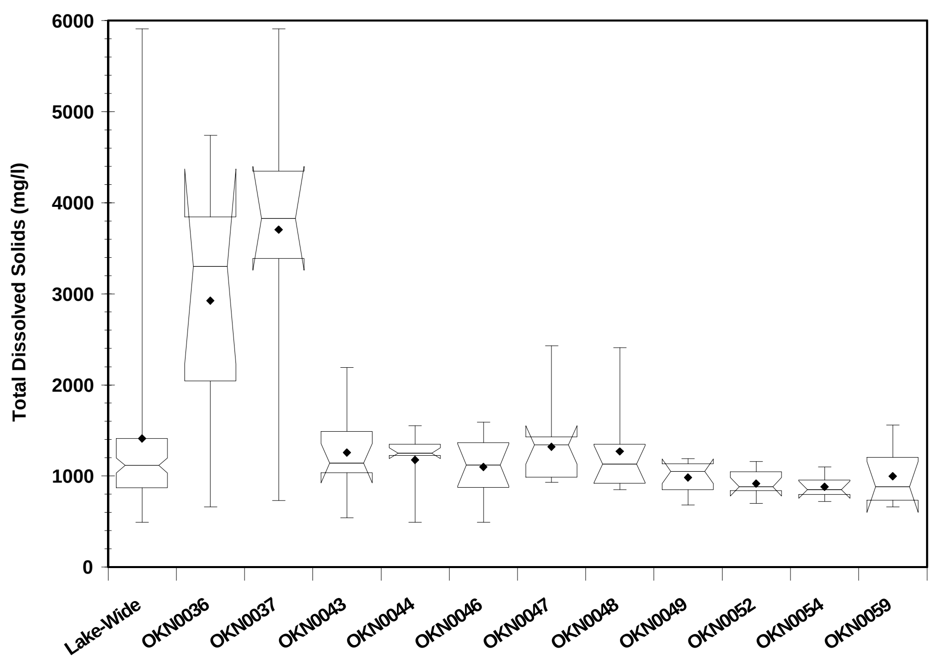

Figure 106. **Total dissolved solids concentration (mg/l) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

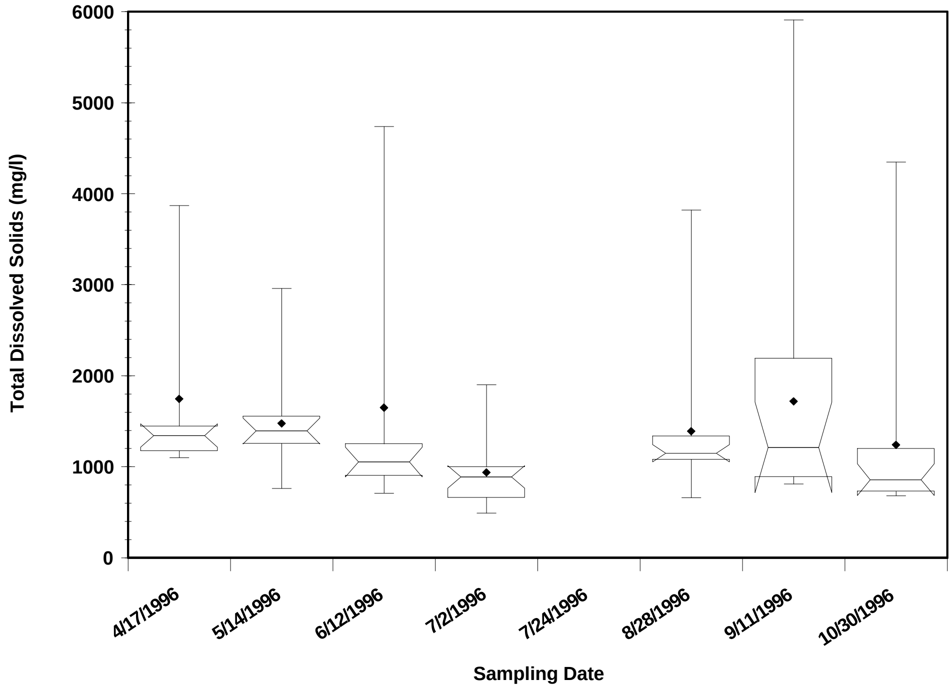

Figure 107. **Total dissolved solids concentration (mg/l) distribution by sampling date, Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

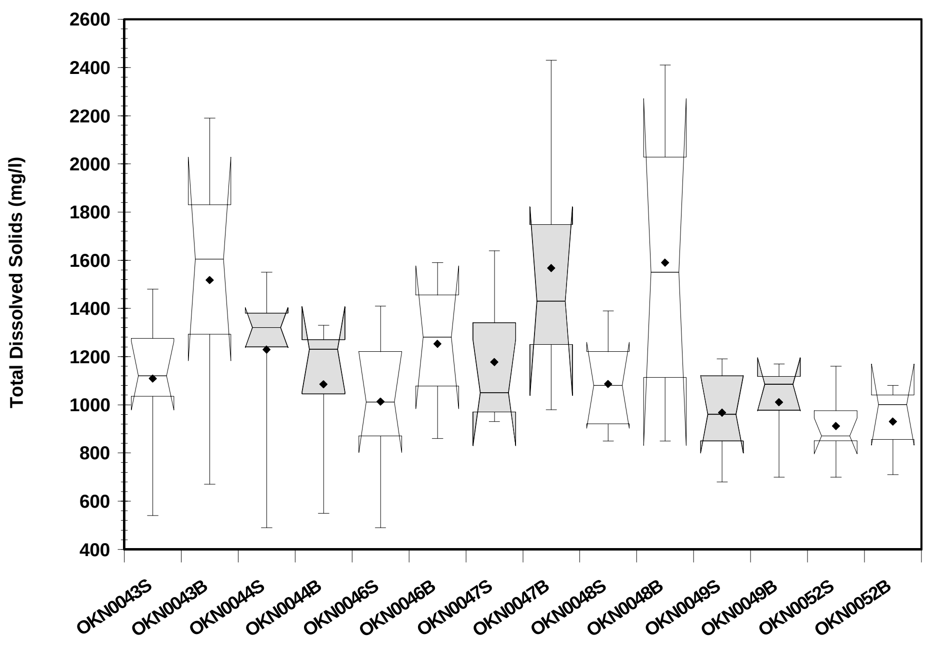

Figure 108. **Total dissolved solids concentration (mg/l) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

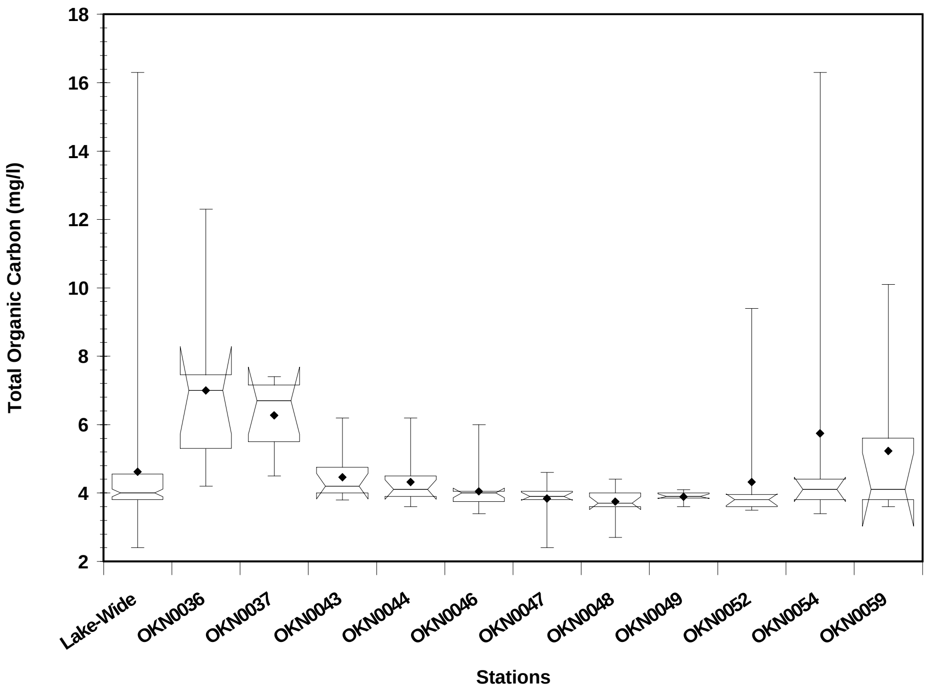

Figure 109. **Total organic carbon concentration (mg/l) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

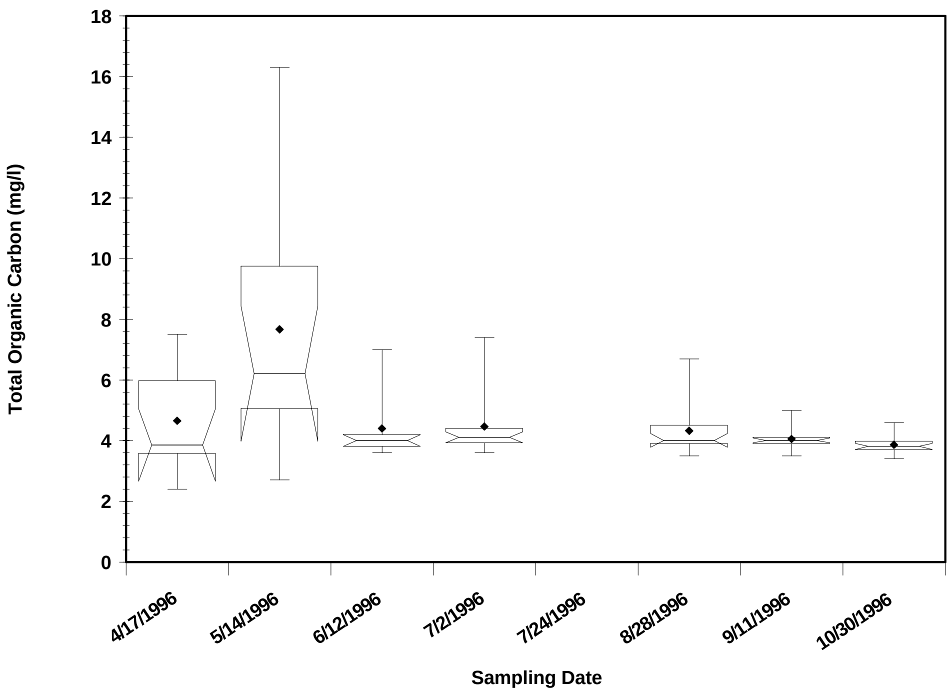

Figure 110. **Total organic carbon concentration (mg/l) distribution by sampling date, Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

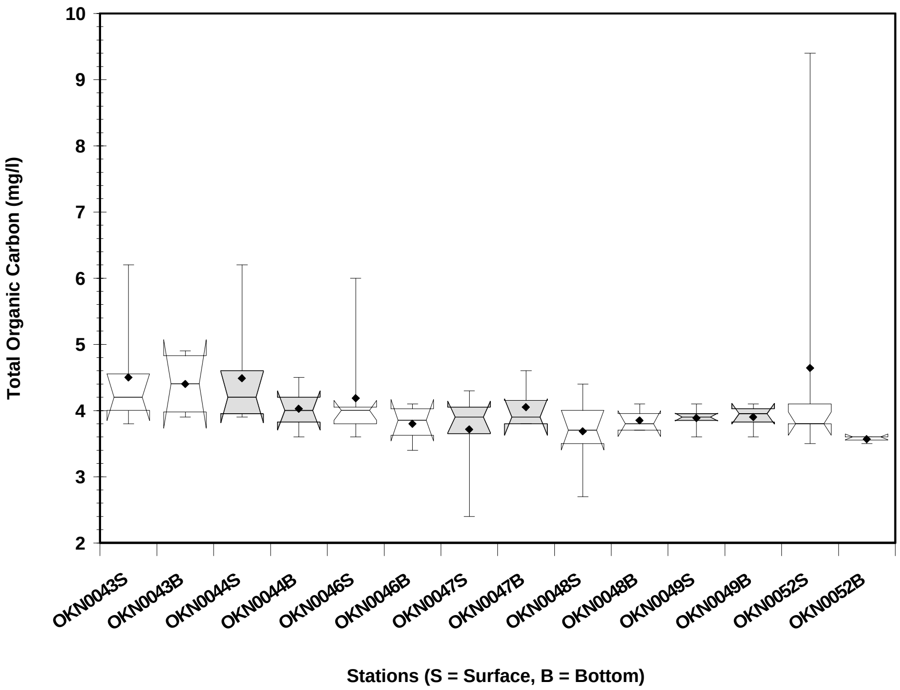

Figure 111. **Total organic carbon concentration (mg/l) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

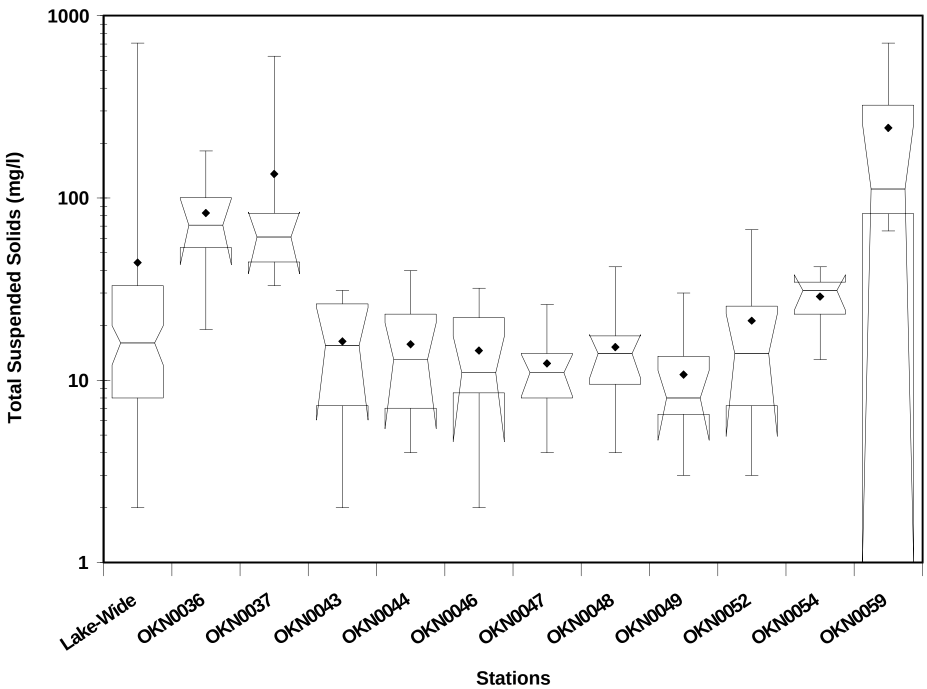

Figure 112. **Total suspended solids concentration (mg/l) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

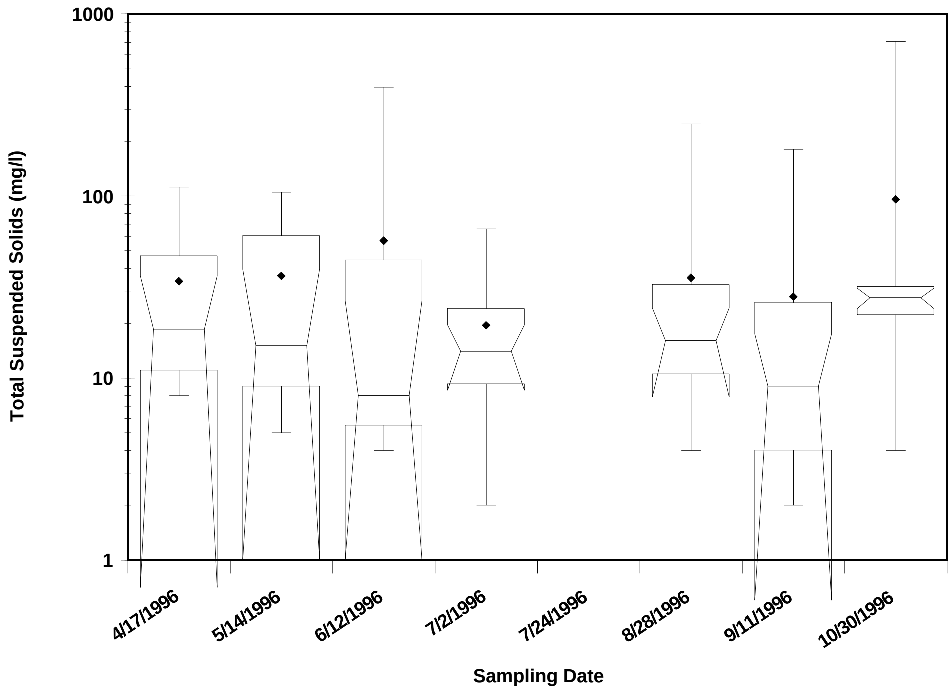

Figure 113. **Total suspended solids concentration (mg/l) distribution by sampling date, Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

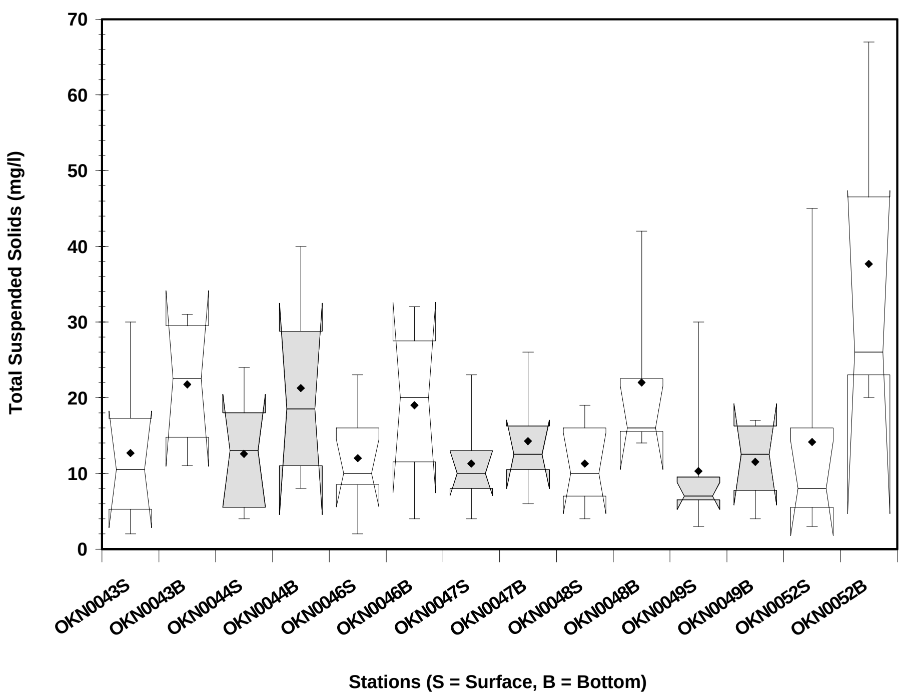

Figure 114. **Total suspended solids concentration (mg/l) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

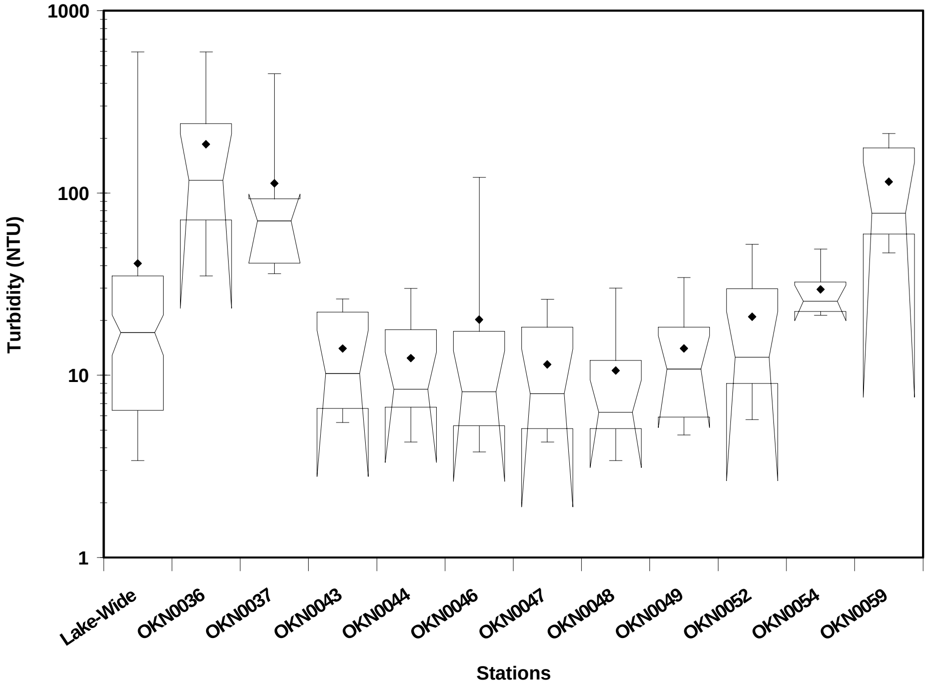

Figure 115. **Turbidity (NTU) distribution by station, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

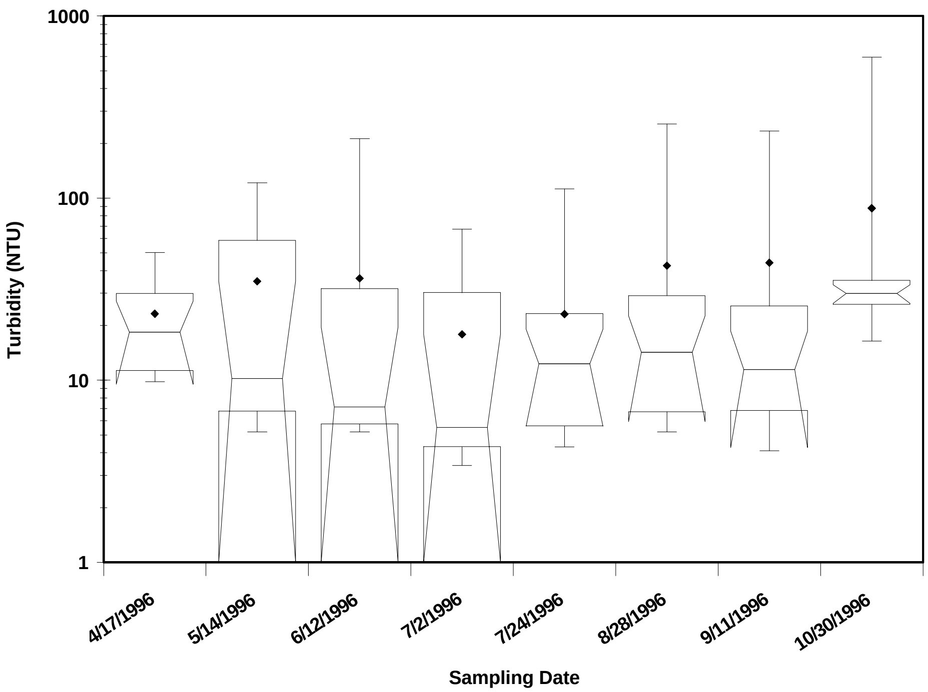

Figure 116. **Turbidity (NTU) distribution by sampling date, Keystone Lake, Oklahoma, 17 April through 30 October 1996.**

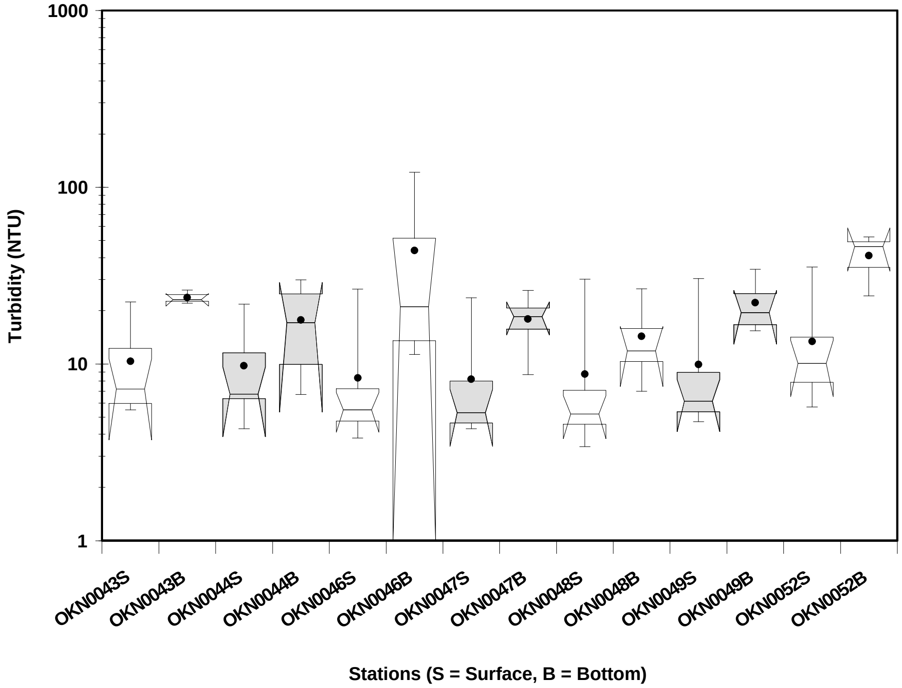

Figure 117. **Turbidity (NTU) distribution by station of surface (S) and bottom (B) samples, Keystone Lake, Oklahoma, 17April through 30 October 1996.**

APPENDIX E

Water Quality Data
Keystone Lake, 1996

Table 7. Water quality data, Keystone Lake, Oklahoma, 17 April through 30 October 1996.

Site	Date MMDDYY	Depth meters	Secchi meters	Turbidity NTU	Alkalinity mg/l	Chloride mg/l	Hardness mg/l	Sulfate mg/l	Total Phos mg/l	Chl *a* ug/L
OKN0036	4/17/1996	0.5	-	50.3	240	1940	550	425.2	0.116	-
OKN0036	5/14/1996	0.5	-	121.6	132	920	330	222	0.171	17.79
OKN0036	6/12/1996	0.5	-	77.8	316	2450	504	353	0.34	14.03
OKN0036	7/2/1996	0.5	-	35.1	140	2780	440	366	0.268	4.44
OKN0036	7/24/1996	0.5	-	112.5	146	840	300	309	0.376	39.87
OKN0036	8/28/1996	0.5	-	256	116	2680	582	396	-	20.23
OKN0036	9/11/1996	0.5	-	234	144	-	480	836	0.307	17.47
OKN0036	10/30/1996	0.5	-	594	224	224	1660	540	0.479	54.2
OKN0037	4/17/1996	0.5	-	37.4	240	2060	540	425.2	0.092	-
OKN0037	5/14/1996	0.5	-	87.5	184	1400	450	343	0.161	19.79
OKN0037	6/12/1996	0.5	-	42.3	328	2240	424	321	0.231	10.87
OKN0037	7/2/1996	0.5	-	36.2	160	1940	450	352	0.271	4.04
OKN0037	7/24/1996	0.5	-	72	130	800	280	173	0.324	43.07
OKN0037	8/28/1996	0.5	-	108.3	152	2040	490	481	-	37.23
OKN0037	9/11/1996	0.5	-	68.1	180	-	660	923	0.251	21.32
OKN0037	10/30/1996	0.5	-	452	168	168	2180	620	0.448	75.12
OKN0043	4/17/1996	0.5	1	18.3	340	680	360	270.88	0.05	-
OKN0043	5/14/1996	0.5	0.9	10.2	180	620	350	157	0.054	23.97
OKN0043	6/12/1996	0.5	1	5.9	156	660	290	142	0.047	4.16
OKN0043	7/2/1996	0.5	0.7	5.5	132	600	260	172	0.06	5.42
OKN0043	7/24/1996	0.5	1.1	6	124	620	300	143	0.066	14.64
OKN0043	8/28/1996	0.5	0.8	7.3	112	530	270	117	-	30.47
OKN0043	9/11/1996	0.5	0.8	7.1	108	-	240	299	0.068	32.09
OKN0043	10/30/1996	0.5	0.45	22.4	120	120	500	250	0.162	3.28
OKN0043	7/2/1996	16	-	-	168	1040	350	243	0.268	-
OKN0043	8/28/1996	16	-	26.2	116	-	250	151	-	-
OKN0043	9/11/1996	16	-	22	108	-	240	339	0.102	-
OKN0043	10/30/1996	13	-	23.1	116	500	250	-	0.157	-
OKN0044	4/17/1996	0.5	0.5	21.8	360	590	340	266.47	0.047	-
OKN0044	5/14/1996	0.5	0.8	9.9	184	720	360	200	0.048	18.49
OKN0044	6/12/1996	0.5	1	6.6	156	620	330	158	0.049	3.8
OKN0044	7/2/1996	0.5	1.1	4.3	156	580	300	168	0.046	4.28
OKN0044	7/24/1996	0.5	1.18	5.6	120	490	260	87	0.063	16.5
OKN0044	8/28/1996	0.5	0.8	6.7	120	600	240	147	-	26.63
OKN0044	9/11/1996	0.5	0.7	6.8	116	-	250	314	0.041	13.79
OKN0044	10/30/1996	0.5	0.55	16.4	120	560	230	-	0.109	10.22
OKN0044	7/2/1996	9	-	-	160	600	310	193	0.077	-
OKN0044	7/24/1996	15	-	23.2	140	960	300	103	0.687	-
OKN0044	8/28/1996	4	-	6.7	120	600	300	132	-	-
OKN0044	9/11/1996	5	-	11	112	-	230	303	0.053	-
OKN0044	10/30/1996	8	-	29.9	120	590	260	-	0.104	-

Site	Date MMDDYY	Depth meters	Secchi meters	Turbidity NTU	Alkalinity mg/l	Chloride mg/l	Hardness mg/l	Sulfate mg/l	Total Phos mg/l	Chl *a* ug/L
OKN0046	4/17/1996	0.5	1	9.8	336	590	360	290.72	0.044	-
OKN0046	5/14/1996	0.5	1.1	6.4	184	540	340	166	0.051	13.47
OKN0046	6/12/1996	0.5	1	5.6	148	420	250	147	0.054	-
OKN0046	7/2/1996	0.5	1	3.8	124	420	250	129	0.023	4.69
OKN0046	7/24/1996	0.5	1.27	4.3	120	460	250	116	0.071	18.24
OKN0046	8/28/1996	0.5	1	5.4	116	460	210	131	-	18.85
OKN0046	9/11/1996	0.5	1	4.9	112	-	230	245	0.063	20.15
OKN0046	10/30/1996	0.5	0.35	26.5	120	330	220	-	0.166	2.22
OKN0046	7/2/1996	16	-	-	176	750	320	171	0.202	-
OKN0046	7/24/1996	14	-	14.3	144	700	300	131	0.258	-
OKN0046	8/28/1996	13	-	11.3	116	570	250	131	-	-
OKN0046	9/11/1996	13	-	121.8	112	-	230	331	0.219	-
OKN0046	10/30/1996	14	-	27.9	124	350	240	-	0.162	-
OKN0047	4/17/1996	0.5	0.7	10.7	336	560	340	314.97	0.047	-
OKN0047	5/14/1996	0.5	0.9	7.1	184	530	330	174	0.053	12.84
OKN0047	6/12/1996	0.5	1.1	5.2	144	430	250	141	0.059	4.16
OKN0047	7/2/1996	0.5	0.9	4.3	128	420	250	138	0.039	4.16
OKN0047	7/24/1996	0.5	1.4	4.4	128	490	280	159	0.08	20.31
OKN0047	8/28/1996	0.5	1.3	5.4	120	500	240	117	-	11.68
OKN0047	9/11/1996	0.5	1.2	4.7	116	-	240	288	0.078	17.74
OKN0047	10/30/1996	0.5	0.45	23.7	116	400	230	-	0.166	1.45
OKN0047	7/2/1996	17	-	-	172	700	340	174	0.342	-
OKN0047	7/24/1996	15	-	8.7	150	620	300	175	0.272	-
OKN0047	8/28/1996	20	-	18.1	124	810	250	173	-	-
OKN0047	9/11/1996	20	-	18.9	120	-	300	425	0.217	-
OKN0047	10/30/1996	14	-	26.1	116	410	240	-	0.157	-
OKN0048	4/17/1996	0.5	1.2	11.9	372	570	350	279.69	0.037	-
OKN0048	5/14/1996	0.5	1.3	5.2	184	540	340	167	0.049	6.29
OKN0048	6/12/1996	0.5	1	5.5	160	460	260	138	0.052	3.73
OKN0048	7/2/1996	0.5	1.2	3.4	128	420	240	147	0.03	3.92
OKN0048	7/24/1996	0.5	1.35	4.7	118	480	260	115	0.063	16.95
OKN0048	8/28/1996	0.5	1	5.2	116	440	250	128	-	30.76
OKN0048	9/11/1996	0.5	1.2	4.1	112	-	220	281	0.083	16.79
OKN0048	10/30/1996	0.5	0.3	30.1	116	340	250	-	0.164	2.22
OKN0048	7/2/1996	19	-	-	284	890	350	180	0.474	-
OKN0048	7/24/1996	16	-	12.3	164	695	290	161	0.395	-
OKN0048	8/28/1996	15	-	7	120	-	300	156	-	-
OKN0048	9/11/1996	17	-	11.4	112	-	270	311	0.114	-
OKN0048	10/30/1996	17	-	26.6	116	360	230	-	0.164	-
OKN0049	4/17/1996	0.5	1.1	14.5	324	460	350	286.31	0.052	-
OKN0049	5/14/1996	0.5	0.9	6.3	180	490	320	170	0.054	15.64
OKN0049	6/12/1996	0.5	0.9	7.1	148	360	250	116	0.076	4.4
OKN0049	7/2/1996	0.5	1.1	4.7	120	340	220	130	0.03	4.79
OKN0049	7/24/1996	0.5	1.1	4.9	122	430	250	110	0.061	19.78

Site	Date MMDDYY	Depth meters	Secchi meters	Turbidity NTU	Alkalinity mg/l	Chloride mg/l	Hardness mg/l	Sulfate mg/l	Total Phos mg/l	Chl *a* ug/L
OKN0049	8/28/1996	0.5	0.8	6	112	440	230	113	-	22.54
OKN0049	9/11/1996	0.5	0.9	5.5	112	-	220	267	0.078	20.07
OKN0049	10/30/1996	0.5	0.35	30.4	124	250	220	142	0.178	3.28
OKN0049	7/2/1996	15	-	-	184	470	290	138	0.665	-
OKN0049	7/24/1996	15	-	15.4	166	570	280	121	0.344	-
OKN0049	8/28/1996	14	-	17.1	124	500	260	130	-	-
OKN0049	9/11/1996	16	-	21.9	124	-	240	294	0.314	-
OKN0049	10/30/1996	11	-	34.4	124	250	220	160	0.178	-
OKN0052	4/17/1996	0.5	0.7	10.6	320	430	350	264.26	0.057	-
OKN0052	5/14/1996	0.5	0.65	12.5	176	400	300	154	0.072	18.37
OKN0052	6/12/1996	0.5	0.7	9.5	136	320	230	119	0.086	5.94
OKN0052	7/2/1996	0.5	0.7	5.9	108	350	210	122	0.053	5.03
OKN0052	7/24/1996	0.5	1.04	5.7	122	400	250	111	0.056	21.89
OKN0052	8/28/1996	0.5	0.4	19.2	124	340	230	121	-	4.01
OKN0052	9/11/1996	0.5	0.8	8.5	112	-	240	287	0.109	27.11
OKN0052	10/30/1996	0.5	0.3	35.3	128	210	140	140	0.183	10.51
OKN0052	7/2/1996	11	-	-	168	380	270	129	0.219	-
OKN0052	7/24/1996	11	-	24.3	136	415	250	116	0.191	-
OKN0052	8/28/1996	12	-	52.3	128	-	250	117	-	-
OKN0052	10/30/1996	10	-	46.2	128	250	280	138	0.2	-
OKN0054	4/17/1996	0.5	-	22.4	380	420	360	288.51	0.074	-
OKN0054	5/14/1996	0.5	-	40	164	360	290	101	0.108	19.79
OKN0054	6/12/1996	0.5	-	21.3	252	350	248	128	0.093	7.71
OKN0054	7/2/1996	0.5	-	25.4	120	360	220	138	0.096	4.49
OKN0054	7/24/1996	0.5	-	22.3	118	370	270	116	0.112	35.29
OKN0054	8/28/1996	0.5	-	30	124	380	250	114	-	26.55
OKN0054	9/11/1996	0.5	-	25.5	112	-	220	288	0.117	31.12
OKN0054	10/30/1996	0.5	-	49.4	132	250	270	148	0.185	31.53
OKN0059	4/17/1996	0.5	-	46.9	340	440	370	273.08	0.099	-
OKN0059	5/14/1996	0.5	-	77.2	176	240	280	193	0.118	25.59
OKN0059	6/12/1996	0.5	-	212	304	270	252	144	0.185	6.37
OKN0059	7/2/1996	0.5	-	67.7	104	360	190	149	0.162	7.04
OKN0059	7/24/1996	0.5	-	51.2	106	670	210	98	0.211	22.17
OKN0059	8/28/1996	0.5	-	178	120	250	200	193	-	19.7
OKN0059	9/11/1996	0.5	-	175	128	-	300	446	0.241	30.72
OKN0059	10/30/1996	0.5	-	-	140	250	310	186	0.587	42.72
OKN0095	4/17/1996	0.5	-	13.4	344	450	360	306.15	0.049	-
OKN0095	5/14/1996	0.5	-	18.6	188	670	360	177	0.082	-
OKN0095	6/12/1996	0.5	-	10.6	328	590	316	167	0.091	-
OKN0095	7/2/1996	0.5	-	12	152	590	300	166	0.153	-
OKN0095	7/24/1996	0.5	-	5.08	-	-	-	-	-	-
OKN0095	8/28/1996	0.5	-	8.72	108	550	230	140	-	-
OKN0095	9/11/1996	0.5	-	-	120	-	250	294	0.117	-
OKN0095	10/30/1996	0.5	-	28.2	116	480	250	141	0.183	-

Site	Date MMDDYY	Depth meters	Ammonia mg/L	Nitrite mg/L	**Nitrate mg/L**	**Organic-N mg/L**	**Organic-C mg/L**	**TSS mg/L**	**TDS mg/l**
OKN0036	4/17/1996	0.5	0.019	0.015	0.87	0.88	7.5	71	3870
OKN0036	5/14/1996	0.5	0.716	0.06	0.66	0.93	12.3	105	1680
OKN0036	6/12/1996	0.5	0.06	0.06	2.55	1.16	7	96	4740
OKN0036	7/2/1996	0.5	0.042	0.05	4.6	1.82	7.4	39	660
OKN0036	7/24/1996	0.5	-	-	-	-	-	-	-
OKN0036	8/28/1996	0.5	0.078	0.04	2.76	0.47	6	68	2405
OKN0036	9/11/1996	0.5	0.04	0.02	1.78	0.51	4.2	181	3820
OKN0036	10/30/1996	0.5	0.551	0.03	2.16	0.84	4.6	19	3300
OKN0037	4/17/1996	0.5	0.18	0.01	0.88	1.04	7.1	54	3830
OKN0037	5/14/1996	0.5	0.726	0.06	0.6	1.66	7.4	97	2960
OKN0037	6/12/1996	0.5	0.04	0.03	2.4	0.903	6	68	4350
OKN0037	7/2/1996	0.5	0.038	0.05	3.8	1.08	7.2	35	730
OKN0037	7/24/1996	0.5	-	-	-	-	-	-	-
OKN0037	8/28/1996	0.5	0.59	0.06	2.6	0.75	6.7	33	3820
OKN0037	9/11/1996	0.5	0.07	0.05	2.35	0.73	5	61	5910
OKN0037	10/30/1996	0.5	0.291	0.05	2	0.7	4.5	600	4350
OKN0043	4/17/1996	0.5	0.114	0.005	0.21	0.258	-	-	1480
OKN0043	5/14/1996	0.5	0.125	0.025	0.4	0.71	6.2	18	1410
OKN0043	6/12/1996	0.5	0.041	<.005	0.69	0.588	4	5	1120
OKN0043	7/2/1996	0.5	0.005	0.02	0.79	0.78	4.4	2	540
OKN0043	7/24/1996	0.5	-	-	-	-	-	-	-
OKN0043	8/28/1996	0.5	0.043	0.01	0.58	0.53	4.6	15	1140
OKN0043	9/11/1996	0.5	0.12	0.01	0.49	0.59	4	6	990
OKN0043	10/30/1996	0.5	0.107	0.005	0.39	0.39	3.8	30	1080
OKN0043	7/2/1996	16	0.614	0.01	0.97	0.58	4.8	11	670
OKN0043	8/28/1996	16	0.173	0.01	1.5	0.4	4.9	31	1710
OKN0043	9/11/1996	16	0.02	0.01	1.26	0.42	4	16	2190
OKN0043	10/30/1996	13	0.072	0.005	1.1	1.42	3.9	29	1500
OKN0044	4/17/1996	0.5	0.02	<.005	0.26	0.332	4.7	24	1390
OKN0044	5/14/1996	0.5	0.077	0.022	0.49	0.74	6.2	14	1550
OKN0044	6/12/1996	0.5	0.042	<.005	0.9	0.45	3.9	4	1370
OKN0044	7/2/1996	0.5	0.042	0.01	0.74	0.6	4.2	6	490
OKN0044	7/24/1996	0.5	-	-	-	-	-	-	-
OKN0044	8/28/1996	0.5	0.044	0.01	0.62	0.56	4.5	13	1320
OKN0044	9/11/1996	0.5	0.02	0.01	0.65	0.61	4	5	1240
OKN0044	10/30/1996	0.5	0.123	0.005	0.59	0.38	3.9	22	1240
OKN0044	7/2/1996	9	0.157	<.005	0.76	0.59	3.6	25	550
OKN0044	7/24/1996	15	-	-	-	-	-	-	-
OKN0044	8/28/1996	4	0.036	0.005	0.58	0.63	4.5	12	1330
OKN0044	9/11/1996	5	0.13	0.02	0.61	0.65	3.9	8	1210
OKN0044	10/30/1996	8	0.13	<.005	0.47	0.453	4.1	40	1250
OKN0046	4/17/1996	0.5	0.131	<.005	0.29	0.208	3.8	11	1410
OKN0046	5/14/1996	0.5	0.136	0.027	0.38	0.559	6	10	1320

Site	Date MMDDYY	Depth meters	Ammonia mg/L	Nitrite mg/L	**Nitrate mg/L**	**Organic-N mg/L**	**Organic-C mg/L**	**TSS mg/L**	**TDS mg/l**
OKN0046	6/12/1996	0.5	0.039	0.005	0.69	0.49	3.8	7	1010
OKN0046	7/2/1996	0.5	0.336	0.025	0.56	0.28	4	21	490
OKN0046	7/24/1996	0.5	-	-	-	-	-	-	-
OKN0046	8/28/1996	0.5	0.069	0.025	0.5	0.47	4.1	10	1120
OKN0046	9/11/1996	0.5	0.12	0.005	0.39	0.45	4	2	890
OKN0046	10/30/1996	0.5	0.086	0.015	0.39	0.23	3.6	23	850
OKN0046	7/2/1996	16	0.424	0.02	0.87	0.61	4.1	14	1590
OKN0046	7/24/1996	14	-	-	-	-	-	-	-
OKN0046	8/28/1996	13	0.136	0.005	0.94	0.59	4	4	1150
OKN0046	9/11/1996	13	0.15	0.02	1.06	0.53	3.7	26	1410
OKN0046	10/30/1996	14	0.072	<.005	0.82	0.35	3.4	32	860
OKN0047	4/17/1996	0.5	0.11	<.005	0.29	0.192	2.4	11	1340
OKN0047	5/14/1996	0.5	0.135	0.025	0.57	0.58	4.1	15	1340
OKN0047	6/12/1996	0.5	0.038	0.01	0.66	0.445	3.8	8	1050
OKN0047	7/2/1996	0.5	0.038	0.06	0.55	0.2	4.3	10	990
OKN0047	7/24/1996	0.5	-	-	-	-	-	-	-
OKN0047	8/28/1996	0.5	0.095	0.042	0.55	0.37	3.9	8	1640
OKN0047	9/11/1996	0.5	0.11	0.05	0.49	0.39	4	4	950
OKN0047	10/30/1996	0.5	0.06	0.03	0.41	0.5	3.5	23	930
OKN0047	7/2/1996	17	0.045	0.02	0.85	0.85	3.8	13	1520
OKN0047	7/24/1996	15	-	-	-	-	-	-	-
OKN0047	8/28/1996	20	0.078	0.005	1.3	0.29	4	6	1340
OKN0047	9/11/1996	20	0.02	0.01	1.36	0.26	4.6	12	2430
OKN0047	10/30/1996	14	0.054	<.005	1.17	0.37	3.8	26	980
OKN0048	4/17/1996	0.5	0.163	0.005	0.29	0.277	3.5	13	1310
OKN0048	5/14/1996	0.5	0.174	0.022	0.39	0.57	2.7	5	1390
OKN0048	6/12/1996	0.5	0.08	0.02	0.7	0.655	3.8	10	1130
OKN0048	7/2/1996	0.5	0.053	0.015	0.57	0.5	4.4	9	990
OKN0048	7/24/1996	0.5	-	-	-	-	-	-	-
OKN0048	8/28/1996	0.5	0.044	0.012	0.45	0.46	4.2	19	1080
OKN0048	9/11/1996	0.5	0.09	0.01	0.52	0.43	3.5	4	850
OKN0048	10/30/1996	0.5	0.055	0.01	0.36	0.44	3.7	19	850
OKN0048	7/2/1996	19	0.722	0.01	0.94	0.4	4.1	14	1900
OKN0048	7/24/1996	16	-	-	-	-	-	-	-
OKN0048	8/28/1996	15	0.047	0.005	0.92	0.2	3.7	16	1200
OKN0048	9/11/1996	17	0.02	0.011	0.92	0.26	3.9	42	2410
OKN0048	10/30/1996	17	0.065	0.005	0.76	0.37	3.7	16	850
OKN0049	4/17/1996	0.5	0.181	0.005	0.27	0.259	3.9	11	1190
OKN0049	5/14/1996	0.5	0.104	0.025	0.3	0.66	3.6	8	1190
OKN0049	6/12/1996	0.5	0.041	0.01	0.62	0.658	4.1	6	960
OKN0049	7/2/1996	0.5	0.43	0.04	0.56	0.61	3.9	7	890
OKN0049	7/24/1996	0.5	-	-	-	-	-	-	-
OKN0049	8/28/1996	0.5	0.082	0.04	0.48	0.54	3.9	7	1050
OKN0049	9/11/1996	0.5	0.13	0.005	0.39	0.59	4	3	810

Site	Date MMDDYY	Depth meters	Ammonia mg/L	Nitrite mg/L	**Nitrate mg/L**	**Organic-N mg/L**	**Organic-C mg/L**	**TSS mg/L**	**TDS mg/l**
OKN0049	10/30/1996	0.5	0.084	0.025	0.41	0.3	3.8	30	680
OKN0049	7/2/1996	15	0.672	0.01	0.62	0.53	3.6	17	1170
OKN0049	7/24/1996	15	-	-	-	-	-	-	-
OKN0049	8/28/1996	14	0.166	0.005	0.82	0.28	3.9	16	1100
OKN0049	9/11/1996	16	0.13	0.04	0.86	0.27	4.1	9	1070
OKN0049	10/30/1996	11	0.071	0.005	0.71	0.38	4	4	700
OKN0052	4/17/1996	0.5	0.154	<.005	0.21	0.218	3.8	8	1160
OKN0052	5/14/1996	0.5	0.192	0.022	0.25	0.78	9.4	7	1060
OKN0052	6/12/1996	0.5	0.045	0.005	0.55	0.985	4.2	4	830
OKN0052	7/2/1996	0.5	0.046	0.01	0.46	0.57	4	8	870
OKN0052	7/24/1996	0.5	-	-	-	-	-	-	-
OKN0052	8/28/1996	0.5	0.207	0.082	0.56	0.42	3.5	24	870
OKN0052	9/11/1996	0.5	0.18	0.005	0.61	0.49	3.8	3	890
OKN0052	10/30/1996	0.5	0.051	0.05	0.47	0.54	3.8	45	700
OKN0052	7/2/1996	11	0.913	0.01	0.52	0.54	3.6	20	1000
OKN0052	7/24/1996	11	-	-	-	-	-	-	-
OKN0052	8/28/1996	12	0.243	0.105	0.58	0.7	3.5	67	1080
OKN0052	10/30/1996	10	0.123	0.08	0.51	0.34	3.6	26	710
OKN0054	4/17/1996	0.5	0.019	<.005	0.2	0.559	3.4	25	1100
OKN0054	5/14/1996	0.5	0.141	0.028	0.16	1.16	16.3	36	760
OKN0054	6/12/1996	0.5	0.03	0.005	0.45	0.68	4.2	21	850
OKN0054	7/2/1996	0.5	0.014	<.005	0.54	0.02	4.1	33	920
OKN0054	7/24/1996	0.5	-	-	-	-	-	-	-
OKN0054	8/28/1996	0.5	0.076	0.03	0.58	0.75	3.9	42	990
OKN0054	9/11/1996	0.5	0.26	0.09	0.59	0.79	4.6	13	830
OKN0054	10/30/1996	0.5	0.241	0.02	0.49	0.27	3.7	31	720
OKN0059	4/17/1996	0.5	0.027	0.01	0.14	0.734	6.4	112	1110
OKN0059	5/14/1996	0.5	0.047	0.02	0.18	0.9	10.1	85	1560
OKN0059	6/12/1996	0.5	0.07	0.01	0.92	1.09	3.6	396	710
OKN0059	7/2/1996	0.5	0.036	0.01	0.53	0.93	4.8	66	880
OKN0059	7/24/1996	0.5	-	-	-	-	-	-	-
OKN0059	8/28/1996	0.5	0.044	0.045	0.44	0.72	4	249	660
OKN0059	9/11/1996	0.5	0.01	0.125	0.64	0.78	3.6	79	1300
OKN0059	10/30/1996	0.5	0.137	0.03	0.37	4.59	4.1	708	760
OKN0095	4/17/1996	0.5	0.085	<.005	0.26	0.21	3.7	9	1430
OKN0095	5/14/1996	0.5	0.288	0.028	0.92	0.54	8.3	19	980
OKN0095	6/12/1996	0.5	0.129	0.01	0.86	<.10	3.5	0.9	340
OKN0095	7/2/1996	0.5	0.257	0.01	0.89	0.78	3.7	30	1380
OKN0095	7/24/1996	0.5	-	-	-	-	-	-	-
OKN0095	8/28/1996	0.5	0.118	0.005	0.85	0.71	4.2	15	1350
OKN0095	9/11/1996	0.5	0.05	0.04	0.89	0.78	4.5	2	4400
OKN0095	10/30/1996	0.5	0.087	<.005	0.69	0.431	3.9	25	1060

Site	Date MMDDYY	Depth meters	Arsenic µg/l	Cadmium µg/l	Chromium µg/l	Copper µg/l	Iron µg/l	Mercury µg/l	Manganese µg/l	Nickel µg/l	Lead µg/l	Selenium µg/l	Zinc µg/l
OKN0036	4/17/1996	0.5	<10	<10	<10	<10	1420	<2	180	<10	<10	<10	<10
OKN0036	5/14/1996	0.5	<10	<10	<10	<10	1250	<2	260	<10	<10	<10	30
OKN0036	6/12/1996	0.5	<10	<10	<10	<10	1630	<2	190	<10	<50	<10	<10
OKN0036	7/2/1996	0.5	<10	<10	<10	<10	420	<2	350	<10	<10	<10	<10
OKN0036	7/24/1996	0.5	-	-	-	-	-	-	-	-	-	-	-
OKN0036	8/28/1996	0.5	<10	<10	<10	<10	460	<2	40	<10	<10	<10	<10
OKN0036	9/11/1996	0.5	<10	<10	<20	<20	330	<2	<10	<10	<50	<10	<20
OKN0036	10/30/1996	0.5	<10	<10	<20	<20	554	<2	580	<50	<50	<10	<20
OKN0037	4/17/1996	0.5	<10	<10	<10	<10	890	<2	190	<10	<10	<10	40
OKN0037	5/14/1996	0.5	<10	<10	<10	<10	1690	<2	320	<10	<10	<10	40
OKN0037	6/12/1996	0.5	<10	<10	<10	<10	740	<2	140	<10	<50	<10	<10
OKN0037	7/2/1996	0.5	-	-	-	-	-	-	-	-	-	-	-
OKN0037	7/24/1996	0.5	<10	<10	<10	<10	480	<2	270	<10	<10	<10	<10
OKN0037	8/28/1996	0.5	<10	<10	<10	<10	1030	<2	70	<10	<10	<10	<10
OKN0037	9/11/1996	0.5	<10	<10	<20	<20	110	<2	<10	<10	<50	<10	<20
OKN0037	10/30/1996	0.5	<10	<10	<20	<20	209	<2	320	<50	<50	<10	<20
OKN0043	4/17/1996	0.5	<10	<10	<10	<10	470	<2	90	<10	<10	<10	<10
OKN0043	5/14/1996	0.5	<10	<10	<10	<10	<10	<2	50	<10	<10	<10	30
OKN0043	6/12/1996	0.5	<10	<10	<10	<10	<10	<2	<10	<10	<50	<10	<10
OKN0043	7/2/1996	0.5	<10	<10	<10	<10	<10	<2	50	<10	<10	<10	<10
OKN0043	7/24/1996	0.5	-	-	-	-	-	-	-	-	-	-	-
OKN0043	8/28/1996	0.5	<10	<10	<10	<10	140	<2	<10	<10	<10	<10	<10
OKN0043	9/11/1996	0.5	<10	<10	<20	<20	90	<2	<10	<10	<50	<10	<20
OKN0043	10/30/1996	0.5	<10	<10	<20	<20	230	<2	110	<50	<50	<10	<20
OKN0043	7/2/1996	16	<10	<10	<10	<10	340	<2	610	<10	<10	<10	<10
OKN0043	8/28/1996	16	<10	<10	<10	<10	250	<2	50	<10	<10	<10	<10
OKN0043	9/11/1996	16	<10	<10	<20	<20	170	<2	20	<10	<50	<10	<20
OKN0043	10/30/1996	13	<10	<10	<20	<20	330	<2	<10	<50	<50	<10	<20
OKN0044	4/17/1996	0.5	<10	<10	<10	<10	70	<2	<60	<10	<10	<10	<10
OKN0044	5/14/1996	0.5	<10	<10	<10	<10	80	<2	30	<10	<10	<10	<10
OKN0044	6/12/1996	0.5	<10	<10	<10	<10	<20	<2	<10	<10	<50	<10	<10
OKN0044	7/2/1996	0.5	<10	<10	<10	<10	<10	<2	40	<10	<10	<10	<10
OKN0044	7/24/1996	0.5	-	-	-	-	-	-	-	-	-	-	-
OKN0044	8/28/1996	0.5	<10	<10	<10	<10	120	<2	<10	<10	<10	<10	<10
OKN0044	9/11/1996	0.5	<10	<10	<20	<20	100	<2	<10	<10	<50	<10	60
OKN0044	10/30/1996	0.5	<10	<10	<20	<20	130	<2	<10	<50	<50	<10	<20
OKN0044	7/2/1996	9	<10	<10	<10	<10	150	<2	300	<10	<10	<10	<10
OKN0044	7/24/1996	15	-	-	-	-	-	-	-	-	-	-	-
OKN0044	8/28/1996	4	<10	<10	<10	<10	150	<2	<10	<10	<10	<10	<10
OKN0044	9/11/1996	5	<10	<10	<20	<20	80	<2	<10	<10	<50	<10	<20
OKN0044	10/30/1996	8	<10	<10	<20	<20	380	<2	60	<50	<50	<10	<20
OKN0046	4/17/1996	0.5	<10	<10	<10	<10	220	<2	110	<10	<10	<10	<10
OKN0046	5/14/1996	0.5	<10	<10	<10	<10	60	<2	30	<10	<10	<10	<10

Site	Date MMDDYY	Depth meters	Arsenic µg/l	Cadmium µg/l	Chromium µg/l	Copper µg/l	Iron µg/l	Mercury µg/l	Manganese µg/l	Nickel µg/l	Lead µg/l	Selenium µg/l	Zinc µg/l
OKN0046	6/12/1996	0.5	<10	<10	<10	<10	180	<2	<10	<10	<50	<10	<10
OKN0046	7/2/1996	0.5	<10	<10	<10	<10	<10	<2	30	<10	<10	<10	<10
OKN0046	7/24/1996	0.5	-	-	-	-	-	-	-	-	-	-	-
OKN0046	8/28/1996	0.5	<10	<10	<10	<10	330	<2	<10	<10	<10	<10	<10
OKN0046	9/11/1996	0.5	<10	<10	<10	<20	40	<2	<10	<10	<50	<10	<20
OKN0046	10/30/1996	0.5	<10	<10	<20	<20	220	<2	30	<50	<50	<10	<20
OKN0046	7/2/1996	16	<10	<10	<10	<10	250	<2	810	<10	<10	<10	<10
OKN0046	7/24/1996	14	-	-	-	-	-	-	-	-	-	-	-
OKN0046	8/28/1996	13	<10	<10	<10	<10	70	<2	<10	<10	<10	<10	<10
OKN0046	9/11/1996	13	<10	<10	<20	<20	170	<2	<10	<10	<50	<10	<20
OKN0046	10/30/1996	14	<10	<10	<20	<20	330	<2	<10	<50	<50	<10	<20
OKN0047	4/17/1996	0.5	<10	<10	30	<10	110	<2	110	<10	<10	<10	<10
OKN0047	5/14/1996	0.5	<10	<10	<10	<10	<10	<2	20	<10	<10	<10	80
OKN0047	6/12/1996	0.5	<10	<10	<10	<10	150	<2	<10	<10	<50	<10	<10
OKN0047	7/2/1996	0.5	<10	<10	<10	<10	<10	<2	40	<10	<10	<10	<10
OKN0047	7/24/1996	0.5	-	-	-	-	-	-	-	-	-	-	-
OKN0047	8/28/1996	0.5	<10	<10	<10	<10	80	<2	<10	<10	<10	<10	<10
OKN0047	9/11/1996	0.5	<10	<10	<20	<20	20	<2	<10	<10	<50	<10	<20
OKN0047	10/30/1996	0.5	<10	<10	<20	<20	210	<2	<10	<50	<50	<10	<20
OKN0047	7/2/1996	17	<10	<10	<10	<10	40	<2	840	<10	<10	<10	<10
OKN0047	7/24/1996	15	-	-	-	-	-	-	-	-	-	-	-
OKN0047	8/28/1996	20	<10	<10	<10	<10	230	<2	90	<10	<10	<10	<10
OKN0047	9/11/1996	20	<10	<10	<20	<20	80	<2	130	<10	<50	<10	<20
OKN0047	10/30/1996	14	<10	<10	<20	<20	250	<2	<10	<50	<50	<10	<20
OKN0048	4/17/1996	0.5	<10	<10	<10	<10	300	<2	130	<10	<10	<10	<10
OKN0048	5/14/1996	0.5	<10	<10	<10	<10	<10	<2	50	<10	<10	<10	<10
OKN0048	6/12/1996	0.5	<10	<10	<10	<10	140	<2	30	<10	<50	<10	<10
OKN0048	7/2/1996	0.5	<10	<10	<10	<10	<10	<2	40	<10	<10	<10	<10
OKN0048	7/24/1996	0.5	-	-	-	-	-	-	-	-	-	-	-
OKN0048	8/28/1996	0.5	<10	<10	<10	<10	150	<2	<10	<10	<10	<10	<10
OKN0048	9/11/1996	0.5	<10	<10	<20	<20	40	<2	<10	<10	<50	<10	<20
OKN0048	10/30/1996	0.5	<10	<10	<20	<20	220	<2	<10	<50	<50	<10	<20
OKN0048	7/2/1996	19	<10	<10	<20	<20	300	<2	<10	<50	<50	<10	<20
OKN0048	7/24/1996	16	-	-	-	-	-	-	-	-	-	-	-
OKN0048	8/28/1996	15	<10	<10	<10	<10	60	<2	890	<10	<10	<10	<10
OKN0048	9/11/1996	17	<10	<10	<10	<10	120	<2	<10	<10	<10	<10	<10
OKN0048	10/30/1996	17	<10	<10	<20	<20	180	<2	50	<10	<50	<10	<20
OKN0049	4/17/1996	0.5	<10	<10	<20	<20	180	<2	<10	<50	<50	<10	<20
OKN0049	5/14/1996	0.5	<10	<10	<10	<10	<10	<2	140	<10	<10	<10	<10
OKN0049	6/12/1996	0.5	<10	<10	<10	<10	<10	<2	30	<10	<10	<10	<10
OKN0049	7/2/1996	0.5	<10	<10	<10	<10	<20	<2	40	<10	<50	<10	<10
OKN0049	7/24/1996	0.5	-	-	-	-	-	-	-	-	-	-	-
OKN0049	8/28/1996	0.5	<10	<10	<10	<10	90	<2	<10	<10	<10	<10	<10
OKN0049	9/11/1996	0.5	<10	<10	<10	<10	70	<2	<10	<10	<10	<10	<10

Site	Date MMDDYY	Depth meters	Arsenic µg/l	Cadmium µg/l	Chromium µg/l	Copper µg/l	Iron µg/l	Mercury µg/l	Manganese µg/l	Nickel µg/l	Lead µg/l	Selenium µg/l	Zinc µg/l
OKN0049	10/30/1996	0.5	<10	<10	<20	<20	70	<2	<10	<10	<50	<10	<20
OKN0049	7/2/1996	15	<10	<10	<10	<10	230	<2	1410	<10	<10	<10	<10
OKN0049	7/24/1996	15	-	-	-	-	-	-	-	-	-	-	-
OKN0049	8/28/1996	14	<10	<10	<10	<10	180	<2	210	<10	<10	<10	<10
OKN0049	9/11/1996	16	<10	<10	<20	<20	60	<2	350	<10	<50	<10	<20
OKN0049	10/30/1996	11	<10	<10	<20	<20	290	<2	<10	<50	<50	<10	<20
OKN0052	4/17/1996	0.5	<10	<10	<10	<10	<10	<2	180	<10	<10	<10	40
OKN0052	5/14/1996	0.5	<10	<10	<10	<10	200	<2	60	<10	<10	<10	60
OKN0052	6/12/1996	0.5	<10	<10	<10	30	<20	<2	50	<10	<50	<10	<10
OKN0052	7/2/1996	0.5	<10	<10	<10	<10	<10	<2	30	<10	<10	<10	<10
OKN0052	7/24/1996	0.5	-	-	-	-	-	-	-	-	-	-	-
OKN0052	8/28/1996	0.5	<10	<10	<10	<10	200	<2	<10	<10	<10	<10	<10
OKN0052	9/11/1996	0.5	<10	<10	<20	<20	30	<2	<10	<10	<50	<10	<20
OKN0052	10/30/1996	0.5	<10	<10	<20	<20	330	<2	30	<50	<50	<10	<20
OKN0052	7/2/1996	11	<10	<10	<20	<20	360	<2	50	<50	<50	<10	<20
OKN0052	7/24/1996	11	-	-	-	-	-	-	-	-	-	-	-
OKN0052	8/28/1996	12	<10	<10	<10	<10	290	<2	1710	<10	<10	<10	<10
OKN0052	10/30/1996	10	<10	<10	<10	<10	640	<2	<10	<10	<10	<10	<10
OKN0054	4/17/1996	0.5	<10	<10	<10	<10	350	<2	190	<10	<10	<10	20
OKN0054	5/14/1996	0.5	<10	<10	<10	<10	410	<2	120	<10	<10	<10	<10
OKN0054	6/12/1996	0.5	<10	<10	<10	<10	220	<2	30	<10	<50	<10	<10
OKN0054	7/2/1996	0.5	<10	<10	<10	<10	360	<2	90	<10	<10	<10	<10
OKN0054	7/24/1996	0.5	-	-	-	-	-	-	-	-	-	-	-
OKN0054	8/28/1996	0.5	<10	<10	<10	<10	1990	<2	50	<10	<10	<10	<10
OKN0054	9/11/1996	0.5	<10	<10	<20	<20	<20	<2	<10	<10	<50	<10	<20
OKN0054	10/30/1996	0.5	<10	<10	<20	<20	490	<2	50	<50	<50	<10	<20
OKN0059	4/17/1996	0.5	<10	<10	<10	<10	1720	<2	240	<10	<10	<10	40
OKN0059	5/14/1996	0.5	<10	<10	<10	<10	1170	<2	90	<10	<10	<10	<10
OKN0059	6/12/1996	0.5	<10	<10	<10	<10	4770	<2	200	<10	<50	<10	<10
OKN0059	7/2/1996	0.5	<10	<10	<10	<10	680	<2	180	<10	<10	<10	<10
OKN0059	7/24/1996	0.5	-	-	-	-	-	-	-	-	-	-	-
OKN0059	8/28/1996	0.5	<10	<10	<10	<10	2130	<2	70	<10	<10	<10	<10
OKN0059	9/11/1996	0.5	<10	<10	<20	<20	110	<2	<10	<10	<50	<10	<20
OKN0059	10/30/1996	0.5	<10	<10	<20	<20	6590	<2	640	<50	<50	<10	<20
OKN0095	4/17/1996	0.5	<10	<10	50	<10	300	<2	170	<10	<10	<10	50
OKN0095	5/14/1996	0.5	<10	<10	<10	<10	110	<2	370	<10	<10	<10	<10
OKN0095	6/12/1996	0.5	<10	<10	<10	<10	<20	<2	170	<10	<50	<10	<10
OKN0095	7/2/1996	0.5	<10	<10	<10	<10	70	<2	670	<10	<10	<10	<10
OKN0095	7/24/1996	0.5	-	-	-	-	-	-	-	-	-	-	-
OKN0095	8/28/1996	0.5	<10	<10	<10	<10	170	<2	20	<10	<10	<10	<10
OKN0095	9/11/1996	0.5	<10	<10	<20	<20	100	<2	<10	<10	<50	<10	<20
OKN0095	10/30/1996	0.5	<10	<10	<20	<20	270	<2	<10	<50	<50	<10	<20

Table 8. Hydrolab data, Keystone Lake, Oklahoma, 17 April through 30 October 1996.

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0036	04/17/96	0.5	15.03	8.5	8.24	6900
OKN0037	04/17/96	0.5	15.44	8.8	8.28	6930
OKN0043	04/17/96	0.5	13.13	9.53	8.23	2790
OKN0043	04/17/96	1	13.08	9.53	8.23	2790
OKN0043	04/17/96	2	13.04	9.51	8.23	2790
OKN0043	04/17/96	3	12.99	9.48	8.23	2790
OKN0043	04/17/96	4	12.99	9.49	8.22	2790
OKN0043	04/17/96	5	12.98	9.45	8.22	2790
OKN0043	04/17/96	6	12.95	9.46	8.22	2800
OKN0043	04/17/96	7	12.89	9.4	8.21	2800
OKN0043	04/17/96	8	12.88	9.25	8.2	2800
OKN0043	04/17/96	9	12.81	9.14	8.18	2820
OKN0043	04/17/96	10	12.81	9.11	8.18	2820
OKN0043	04/17/96	11	12.81	8.9	8.17	2820
OKN0043	04/17/96	12	12.54	8.09	8.1	2900
OKN0043	04/17/96	13	12.08	6.38	7.86	3160
OKN0043	04/17/96	14	11.93	5.95	7.82	3220
OKN0044	04/17/96	0.5	14	10.99	8.47	2520
OKN0044	04/17/96	1	13.99	10.93	8.47	2530
OKN0044	04/17/96	2	14.01	11.03	8.47	2530
OKN0044	04/17/96	3	13.97	11.05	8.46	2530
OKN0044	04/17/96	4	13.85	11.1	8.43	2540
OKN0046	04/17/96	0.5	11.85	10.01	8.15	2550
OKN0046	04/17/96	1	11.87	9.97	8.14	2550
OKN0046	04/17/96	2	11.85	9.9	8.14	2550
OKN0046	04/17/96	3	11.84	9.84	8.14	2550
OKN0046	04/17/96	4	11.85	9.82	8.14	2550
OKN0046	04/17/96	5	11.86	9.85	8.14	2550
OKN0046	04/17/96	6	11.85	9.77	8.14	2550
OKN0046	04/17/96	7	11.86	9.71	8.14	2550
OKN0046	04/17/96	8	11.84	9.68	8.14	2560
OKN0046	04/17/96	9	11.78	9.63	8.14	2560
OKN0046	04/17/96	10	11.78	9.68	8.14	2560
OKN0046	04/17/96	11	11.77	9.59	8.14	2560
OKN0046	04/17/96	12	11.68	9.48	8.12	2570
OKN0046	04/17/96	13	11.51	9.71	8.08	2640
OKN0046	04/17/96	14	11.34	7.92	7.96	2850
OKN0046	04/17/96	15	11.24	7.57	7.92	2900
OKN0047	04/17/96	0.5	12.2	10.25	8.24	2540
OKN0047	04/17/96	1	12.21	10.45	8.24	2540
OKN0047	04/17/96	2	12.24	10.3	8.24	2540
OKN0047	04/17/96	3	12.19	10.08	8.24	2540
OKN0047	04/17/96	4	12.14	9.99	8.24	2540
OKN0047	04/17/96	5	12.21	9.98	8.24	2550
OKN0047	04/17/96	6	12.19	9.97	8.24	2550
OKN0047	04/17/96	7	12.14	9.98	8.24	2550
OKN0047	04/17/96	8	12.17	9.98	8.24	2550

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0047	04/17/96	9	12.16	9.95	8.24	2550
OKN0047	04/17/96	10	12.1	9.93	8.24	2550
OKN0047	04/17/96	11	12.11	9.96	8.24	2550
OKN0047	04/17/96	12	12.12	9.92	8.23	2550
OKN0047	04/17/96	13	12.08	9.91	8.23	2550
OKN0047	04/17/96	14	12.07	9.9	8.23	2550
OKN0048	04/17/96	0.5	12.19	10	8.19	2470
OKN0048	04/17/96	1	12.19	9.98	8.19	2480
OKN0048	04/17/96	2	12.14	9.96	8.19	2480
OKN0048	04/17/96	3	12.15	10	8.2	2480
OKN0048	04/17/96	4	12.16	9.93	8.2	2490
OKN0048	04/17/96	5	12.13	9.88	8.2	2500
OKN0048	04/17/96	6	12.12	9.87	8.2	2500
OKN0048	04/17/96	7	11.88	9.68	8.16	2520
OKN0048	04/17/96	8	11.82	9.53	8.25	2530
OKN0048	04/17/96	9	11.77	9.52	8.25	2530
OKN0048	04/17/96	10	11.64	9.42	8.25	2550
OKN0048	04/17/96	11	11.57	9.14	8.11	2610
OKN0048	04/17/96	12	11.51	8.94	8.1	2620
OKN0048	04/17/96	13	11.49	8.88	8.09	2620
OKN0048	04/17/96	14	11.45	8.76	8.08	2670
OKN0048	04/17/96	15	11.25	7.8	7.97	2880
OKN0048	04/17/96	16	11.07	6.4	7.85	3170
OKN0048	04/17/96	17	10.91	5.17	7.73	3430
OKN0048	04/17/96	18	10.72	3.65	7.62	3700
OKN0049	04/17/96	0.5	12.45	9.95	8.24	2200
OKN0049	04/17/96	1	12.43	9.93	8.24	2200
OKN0049	04/17/96	2	12.42	9.93	8.24	2200
OKN0049	04/17/96	3	12.4	9.92	8.23	2200
OKN0049	04/17/96	4	12.39	9.9	8.23	2200
OKN0049	04/17/96	5	12.35	9.9	8.23	2200
OKN0049	04/17/96	6	12.32	9.89	8.22	2210
OKN0049	04/17/96	7	12.37	9.86	8.22	2210
OKN0049	04/17/96	8	12.31	9.85	8.22	2210
OKN0049	04/17/96	9	12.17	9.79	8.21	2210
OKN0049	04/17/96	10	12.2	9.77	8.21	2220
OKN0049	04/17/96	11	12.1	9.72	8.21	2230
OKN0049	04/17/96	12	12.09	9.6	8.2	2230
OKN0049	04/17/96	13	11.88	9.16	8.13	2350
OKN0049	04/17/96	14	11.91	9.45	8.14	2350
OKN0052	04/17/96	0.5	14.3	10.87	8.39	2050
OKN0052	04/17/96	1	14.2	10.64	8.39	2050
OKN0052	04/17/96	2	13.35	9.61	8.25	2060
OKN0052	04/17/96	3	13.23	9.59	8.24	2060
OKN0052	04/17/96	4	13.16	9.53	8.23	2060
OKN0052	04/17/96	5	13.03	9.33	8.2	2070
OKN0052	04/17/96	6	12.88	9.15	8.18	2090
OKN0052	04/17/96	7	12.65	8.87	8.14	2100
OKN0052	04/17/96	8	12.31	8.58	8.08	2160
OKN0052	04/17/96	9	12.13	8.41	8.05	2190

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0052	04/17/96	10	11.97	8.27	8.02	2220
OKN0054	04/17/96	0.5	15.25	10.6	8.45	1990
OKN0059	04/17/96	0.5	17.14	9.2	8.29	2010
OKN0095	04/17/96	0.5	14.74	12.53	8.29	2640
OKN0036	05/14/96	0.5	20.72	6.41	7.94	3330
OKN0037	05/14/96	0.5	20.2	7.46	8.08	5260
OKN0043	05/14/96	0.5	18.91	8.72	8.47	2580
OKN0043	05/14/96	1	18.92	8.68	8.48	2580
OKN0043	05/14/96	2	18.91	8.71	8.48	2580
OKN0043	05/14/96	3	18.91	8.63	8.48	2580
OKN0043	05/14/96	4	18.91	8.58	8.48	2590
OKN0043	05/14/96	5	18.91	8.57	8.48	2590
OKN0043	05/14/96	6	18.86	8.56	8.48	2580
OKN0043	05/14/96	7	18.91	8.56	8.49	2580
OKN0043	05/14/96	8	18.68	8.54	8.48	2510
OKN0043	05/14/96	9	18.66	8.56	8.48	2500
OKN0043	05/14/96	10	18.68	8.53	8.48	2510
OKN0043	05/14/96	11	18.57	8.17	8.44	2540
OKN0043	05/14/96	12	18.57	7.42	8.39	2720
OKN0043	05/14/96	13	17.74	4.76	8.07	3040
OKN0043	05/14/96	14	17.05	2.65	7.88	3180
OKN0043	05/14/96	15	16.87	2.34	7.84	3220
OKN0043	05/14/96	16	16.85	2.32	7.84	3230
OKN0044	05/14/96	0.5	18.61	9.13	8.5	2860
OKN0044	05/14/96	1	18.61	9.11	8.52	2890
OKN0044	05/14/96	2	18.59	9	8.52	2890
OKN0044	05/14/96	3	18.59	8.92	8.52	2890
OKN0044	05/14/96	4	18.59	8.87	8.52	2890
OKN0044	05/14/96	5	18.59	8.91	8.51	2890
OKN0046	05/14/96	0.5	18.51	9.23	8.45	2390
OKN0046	05/14/96	1	18.51	8.8	8.46	2400
OKN0046	05/14/96	2	18.5	8.47	8.46	2400
OKN0046	05/14/96	3	18.47	8.42	8.46	2390
OKN0046	05/14/96	4	18.51	8.47	8.46	2390
OKN0046	05/14/96	5	18.5	8.47	8.46	2390
OKN0046	05/14/96	6	18.44	8.35	8.45	2410
OKN0046	05/14/96	7	18.42	8.34	8.45	2410
OKN0046	05/14/96	8	18.35	8.19	8.42	2460
OKN0046	05/14/96	9	18.34	8.21	8.42	2480
OKN0046	05/14/96	10	18.35	8.03	8.41	2490
OKN0046	05/14/96	11	17.99	7.14	8.31	2600
OKN0046	05/14/96	12	16.9	5.9	8.13	2600
OKN0046	05/14/96	13	15.98	5.26	8.05	2890
OKN0046	05/14/96	14	15.73	5.3	8.01	2960
OKN0046	05/14/96	15	15.22	4.72	7.96	3040
OKN0047	05/14/96	0.5	18.54	8.81	8.5	2410
OKN0047	05/14/96	1	18.54	8.78	8.5	2420
OKN0047	05/14/96	2	18.52	8.78	8.49	2420
OKN0047	05/14/96	3	18.51	8.68	8.49	2420
OKN0047	05/14/96	4	18.5	8.68	8.49	2420

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0047	05/14/96	5	18.49	8.57	8.48	2420
OKN0047	05/14/96	6	18.47	8.56	8.48	2420
OKN0047	05/14/96	7	17.99	7.53	8.33	2510
OKN0047	05/14/96	8	17.76	6.85	8.26	2570
OKN0047	05/14/96	9	17.59	6.6	8.22	2590
OKN0047	05/14/96	10	17.39	6.58	8.21	2590
OKN0047	05/14/96	11	16.5	6.11	8.11	2620
OKN0047	05/14/96	12	16.08	5.9	8.08	2700
OKN0047	05/14/96	13	15.7	5.49	8.03	2780
OKN0047	05/14/96	14	15.37	4.15	7.93	2920
OKN0047	05/14/96	15	15.2	3.56	7.88	2930
OKN0048	05/14/96	0.5	18.27	8.36	8.41	2460
OKN0048	05/14/96	1	18.27	8.36	8.41	2460
OKN0048	05/14/96	2	18.24	8.35	8.41	2470
OKN0048	05/14/96	3	18.15	8.25	8.4	2470
OKN0048	05/14/96	4	18.13	8.2	8.4	2470
OKN0048	05/14/96	5	18.13	8.12	8.4	2470
OKN0048	05/14/96	6	18.1	8.09	8.4	2470
OKN0048	05/14/96	7	18.08	7.96	8.38	2470
OKN0048	05/14/96	8	17.89	7.43	8.33	2490
OKN0048	05/14/96	9	17.13	6.77	8.2	2550
OKN0048	05/14/96	10	16.79	6.48	8.16	2620
OKN0048	05/14/96	11	16.36	6.22	8.11	2650
OKN0048	05/14/96	12	15.82	6	8.08	2700
OKN0048	05/14/96	13	15.57	5.88	8.07	2720
OKN0048	05/14/96	14	15.33	5.77	8.05	2760
OKN0048	05/14/96	15	15.27	5.41	8.02	2810
OKN0048	05/14/96	16	14.98	4.81	7.98	3060
OKN0048	05/14/96	17	14.86	3.7	7.88	3170
OKN0048	05/14/96	18	14.84	3.32	7.86	3170
OKN0048	05/14/96	19	14.82	2.96	7.85	3180
OKN0049	05/14/96	HYDROLAB BATTER DIED				
OKN0052	05/14/96	0.5	19.95	7.67	8.38	1890
OKN0052	05/14/96	1	19.89	7.51	8.38	1900
OKN0052	05/14/96	2	19.89	7.46	8.37	1900
OKN0054	05/14/96	0.5	19.97	7.75	8.65	1710
OKN0059	05/14/96	0.5	18.4	9	8.67	1359
OKN0095	05/14/96	0.5	18.5	8.25	8.26	2800
OKN0036	06/12/96	0.5	27.22	6.42	8.27	8330
OKN0037	06/12/96	0.5	26.89	8.65	8.33	7650
OKN0043	06/12/96	0.5	25.57	10.5	8.31	2250
OKN0043	06/12/96	1	25.1	8.9	8.24	2210
OKN0043	06/12/96	2	24.19	6.66	8.04	2110
OKN0043	06/12/96	3	23.59	5.35	7.91	2060
OKN0043	06/12/96	4	23.66	5.6	7.98	2290
OKN0043	06/12/96	5	23.65	5.7	8	2430
OKN0043	06/12/96	6	23.66	5.52	7.98	2480
OKN0043	06/12/96	7	23.66	5.38	7.97	2520
OKN0043	06/12/96	8	23.69	4.56	7.86	2760
OKN0043	06/12/96	9	23.73	4.2	7.81	2960

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0043	06/12/96	10	23.82	3.77	7.75	3180
OKN0043	06/12/96	11	23.82	3.54	7.72	3270
OKN0043	06/12/96	12	23.87	2.69	7.62	3820
OKN0043	06/12/96	13	23.86	2.07	7.57	4110
OKN0043	06/12/96	14	23.78	1.02	7.48	5330
OKN0043	06/12/96	15	23.71	0.3	7.45	6980
OKN0044	06/12/96	0.5	26.06	9.75	8.32	2650
OKN0044	06/12/96	1	25.82	9.4	8.31	2650
OKN0044	06/12/96	2	25.3	9.75	8.12	2610
OKN0044	06/12/96	3	23.95	6.5	7.92	2550
OKN0044	06/12/96	4	23.69	8.7	7.85	2580
OKN0044	06/12/96	5	23.61	9.45	7.8	2620
OKN0044	06/12/96	6	23.56	10.4	7.78	2630
OKN0044	06/12/96	7	23.52	10.9	7.76	2640
OKN0046	06/12/96	0.5	25.79	12.44	8.47	2000
OKN0046	06/12/96	1	25	11.65	8.36	2040
OKN0046	06/12/96	2	24.06	7.85	8.16	2130
OKN0046	06/12/96	3	23.73	6.48	8.09	2130
OKN0046	06/12/96	4	23.28	5.08	7.89	2160
OKN0046	06/12/96	5	23.3	5.42	7.95	2220
OKN0046	06/12/96	6	23.24	5	7.9	2230
OKN0046	06/12/96	7	23.21	4.81	7.88	2270
OKN0046	06/12/96	8	23.19	4.78	7.88	2290
OKN0046	06/12/96	9	23.15	4.45	7.85	2340
OKN0046	06/12/96	10	23.13	3.91	7.79	2400
OKN0046	06/12/96	11	23.08	2.25	7.59	2680
OKN0046	06/12/96	12	23.09	1.72	7.55	2830
OKN0046	06/12/96	13	23.08	1.03	7.47	3040
OKN0046	06/12/96	14	22.58	0.34	7.42	3200
OKN0046	06/12/96	15	22.82	0.34	7.39	3710
OKN0046	06/12/96	16	22.48	0.42	7.39	4150
OKN0047	06/12/96	0.5	27.1	13.11	8.5	1980
OKN0047	06/12/96	1	26.21	12.77	8.46	2000
OKN0047	06/12/96	2	25.74	10.4	8.29	1990
OKN0047	06/12/96	3	23.92	5.8	7.92	1960
OKN0047	06/12/96	4	23.51	5.04	7.87	2010
OKN0047	06/12/96	5	23.37	4.87	7.86	2030
OKN0047	06/12/96	6	23.14	4.02	7.7	2100
OKN0047	06/12/96	7	23	3.27	7.57	2140
OKN0047	06/12/96	8	22.74	1.91	7.57	2250
OKN0047	06/12/96	9	22.69	1.8	7.66	2300
OKN0047	06/12/96	10	22.85	2.68	7.61	2460
OKN0047	06/12/96	11	22.77	2.13	7.52	2520
OKN0047	06/12/96	12	22.53	1.14	7.47	2700
OKN0047	06/12/96	13	22.08	0.45	7.45	2680
OKN0047	06/12/96	14	22.17	0.46	7.47	2860
OKN0047	06/12/96	15	23.27	1.22	7.44	3700
OKN0047	06/12/96	16	22.93	0.84	7.44	3790
OKN0047	06/12/96	17	23.1	0.5	7.39	4830
OKN0048	06/12/96	0.5	25.3	11.2	8.46	2090

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0048	06/12/96	1	24.53	10.85	8.45	2100
OKN0048	06/12/96	2	23.84	7.6	8.14	2140
OKN0048	06/12/96	3	23.62	6.38	8.04	2150
OKN0048	06/12/96	4	23.59	6.09	8.02	2160
OKN0048	06/12/96	5	23.57	6.09	8.03	2170
OKN0048	06/12/96	6	23.5	5.8	8.01	2190
OKN0048	06/12/96	7	23.24	11.97	7.91	2300
OKN0048	06/12/96	8	23.24	11.89	7.91	2320
OKN0048	06/12/96	9	23.24	11.55	7.87	2390
OKN0048	06/12/96	10	23.23	11.24	7.83	2430
OKN0048	06/12/96	11	23.14	3.75	7.79	2440
OKN0048	06/12/96	12	22.98	2.95	7.68	2490
OKN0048	06/12/96	13	22.89	2.46	7.63	2550
OKN0048	06/12/96	14	22.62	1.42	7.53	2710
OKN0048	06/12/96	15	22.32	0.5	7.53	3090
OKN0049	06/12/96	0.5	26.59	13.2	8.58	1810
OKN0049	06/12/96	1	26.06	11.45	8.52	1810
OKN0049	06/12/96	2	24.33	7.22	8.05	1840
OKN0049	06/12/96	3	24.02	6.2	7.96	1840
OKN0049	06/12/96	4	23.95	5.96	7.93	1840
OKN0049	06/12/96	5	23.85	5.47	7.86	1850
OKN0049	06/12/96	6	23.42	4.83	7.81	1920
OKN0049	06/12/96	7	23.35	4.55	7.78	1950
OKN0049	06/12/96	8	23.31	4.47	7.78	1960
OKN0049	06/12/96	9	23.24	3.34	7.65	1970
OKN0049	06/12/96	10	22.98	2.63	7.58	1990
OKN0049	06/12/96	11	22.65	1.64	7.49	1980
OKN0049	06/12/96	12	22.39	0.92	7.44	2010
OKN0049	06/12/96	13	22.12	0.25	7.41	2230
OKN0049	06/12/96	14	21.57	0.27	7.41	2350
OKN0049	06/12/96	15	20.9	0.31	7.39	2440
OKN0049	06/12/96	16	20.12	0.34	7.33	2930
OKN0052	06/12/96	0.5	26.38	15.2	8.6	1630
OKN0052	06/12/96	1	25.13	11.2	8.41	1640
OKN0052	06/12/96	2	24.36	6.72	7.94	1650
OKN0052	06/12/96	3	23.93	6.03	7.89	1630
OKN0052	06/12/96	4	23.63	5.96	7.89	1600
OKN0052	06/12/96	5	23.43	5.96	7.92	1580
OKN0052	06/12/96	6	23.36	5.79	7.91	1560
OKN0052	06/12/96	7	23.21	4.79	7.77	1600
OKN0052	06/12/96	8	22.94	4.47	7.69	1650
OKN0052	06/12/96	9	22.69	3.6	7.63	1640
OKN0052	06/12/96	10	22.5	3.31	7.59	1660
OKN0052	06/12/96	11	22.17	2.07	7.47	1690
OKN0052	06/12/96	12	22	1.5	7.41	1710
OKN0054	06/12/96	0.5	26.73	11.36	8.31	1610
OKN0059	06/12/96	0.5	26.67	6.21	8.02	1380
OKN0095	06/12/96	0.5	23.4	4.14	7.72	2560
OKN0036	07/02/96	0.5	31.8	7.1	8.57	9460
OKN0037	07/02/96	0.5	31.8	7.68	8.32	6590

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0043	07/02/96	0.5	29.86	7.33	8.39	2410
OKN0043	07/02/96	1	29.54	6.46	8.3	2430
OKN0043	07/02/96	2	29.32	5.23	8.16	2470
OKN0043	07/02/96	3	29.31	4.68	8.08	2510
OKN0043	07/02/96	4	29.27	3.76	7.98	2600
OKN0043	07/02/96	5	29.16	3.77	7.85	2700
OKN0043	07/02/96	6	29.11	2.31	7.77	2760
OKN0043	07/02/96	7	29.03	1.51	7.68	2870
OKN0043	07/02/96	8	28.38	0.52	7.51	2790
OKN0043	07/02/96	9	26.45	0.15	7.44	2730
OKN0043	07/02/96	10	25.92	0.16	7.43	2830
OKN0043	07/02/96	11	25.06	0.17	7.41	3140
OKN0043	07/02/96	12	24.88	0.17	7.39	3330
OKN0043	07/02/96	13	24.94	0.18	7.38	3570
OKN0043	07/02/96	14	25.13	0.21	7.33	3970
OKN0043	07/02/96	15	24.53	0.24	7.08	5040
OKN0043	07/02/96	16	24.53	0.24	7.08	5040
OKN0044	07/02/96	0.5	29.78	7.9	8.46	2410
OKN0044	07/02/96	1	29.58	7.68	8.44	2410
OKN0044	07/02/96	2	29.42	7.36	8.37	2410
OKN0044	07/02/96	3	29.24	5.83	8.27	2430
OKN0044	07/02/96	4	28.5	2.51	7.73	2500
OKN0044	07/02/96	5	28.15	1.47	7.6	2510
OKN0044	07/02/96	6	27.21	0.22	7.45	2490
OKN0044	07/02/96	7	26.91	0.18	7.44	2460
OKN0044	07/02/96	8	26.42	0.23	7.44	2450
OKN0044	07/02/96	9	24.93	0.38	7.43	2510
OKN0046	07/02/96	0.5	29.62	9.16	8.51	1850
OKN0046	07/02/96	1	29.4	9.05	8.51	1850
OKN0046	07/02/96	2	29.18	8.95	8.48	1860
OKN0046	07/02/96	3	29.09	8.8	8.45	1860
OKN0046	07/02/96	4	28.64	7.95	8.39	1870
OKN0046	07/02/96	5	28.15	6.02	8.17	1890
OKN0046	07/02/96	6	27.78	3.94	7.9	1920
OKN0046	07/02/96	7	27.44	2.12	7.72	1970
OKN0046	07/02/96	8	26.51	0.15	7.44	2050
OKN0046	07/02/96	9	25.15	0.16	7.43	2220
OKN0046	07/02/96	10	23.83	0.16	7.44	2370
OKN0046	07/02/96	11	23.59	0.17	7.44	2460
OKN0046	07/02/96	12	23.43	0.17	7.44	2520
OKN0046	07/02/96	13	23.28	0.17	7.43	2550
OKN0046	07/02/96	14	22.96	0.18	7.41	2810
OKN0046	07/02/96	15	22.98	0.18	7.39	2970
OKN0046	07/02/96	16	22.58	0.21	7.25	3430
OKN0047	07/02/96	0.5	31.01	9.27	8.55	1860
OKN0047	07/02/96	1	30.86	9.43	8.56	1860
OKN0047	07/02/96	2	29.66	9.53	8.56	1870
OKN0047	07/02/96	3	29.34	8.41	8.46	1800
OKN0047	07/02/96	4	28.05	4.8	8.05	1730
OKN0047	07/02/96	5	27.94	4.76	8.02	1800

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0047	07/02/96	6	27.8	5.3	8.08	1910
OKN0047	07/02/96	7	27.5	3.01	7.81	1960
OKN0047	07/02/96	8	26.55	0.11	7.43	2230
OKN0047	07/02/96	9	25.61	0.11	7.42	2220
OKN0047	07/02/96	10	24.27	0.12	7.41	2300
OKN0047	07/02/96	11	23.62	0.12	7.42	2320
OKN0047	07/02/96	12	23.28	0.14	7.42	2420
OKN0047	07/02/96	13	23.12	0.14	7.41	2630
OKN0047	07/02/96	14	23.1	0.16	7.4	2750
OKN0047	07/02/96	15	22.84	0.16	7.38	2840
OKN0047	07/02/96	16	22.51	0.19	7.34	2970
OKN0047	07/02/96	17	21.72	0.22	7.21	3420
OKN0048	07/02/96	0.5	29.65	9.23	8.52	1850
OKN0048	07/02/96	1	29.12	9.2	8.52	1850
OKN0048	07/02/96	2	28.91	8.8	8.47	1840
OKN0048	07/02/96	3	28.77	8.05	8.4	1830
OKN0048	07/02/96	4	28.48	6.63	8.23	1810
OKN0048	07/02/96	5	28.28	7.94	8.34	1880
OKN0048	07/02/96	6	27.88	4.51	8.84	1880
OKN0048	07/02/96	7	27.44	2.44	7.7	1930
OKN0048	07/02/96	8	27.11	1.63	7.52	2110
OKN0048	07/02/96	9	25.55	0.17	7.44	2210
OKN0048	07/02/96	10	24.39	0.18	7.43	2300
OKN0048	07/02/96	11	23.58	0.18	7.44	2460
OKN0048	07/02/96	12	23.35	0.18	7.44	2510
OKN0048	07/02/96	13	23.28	0.19	7.44	2650
OKN0048	07/02/96	14	23.28	0.19	7.44	2860
OKN0048	07/02/96	15	23.28	0.19	7.43	2920
OKN0048	07/02/96	16	22.99	0.2	7.38	3210
OKN0048	07/02/96	17	22.81	0.21	7.33	3420
OKN0048	07/02/96	18	22.69	0.21	7.26	3760
OKN0048	07/02/96	19	22.65	0.23	7.18	4290
OKN0049	07/02/96	0.5	31.3	10.37	8.65	1630
OKN0049	07/02/96	1	29.89	11.09	8.68	1630
OKN0049	07/02/96	2	29.25	7.92	8.41	1640
OKN0049	07/02/96	3	28.93	6.07	8.19	1640
OKN0049	07/02/96	4	28.77	6	8.18	1640
OKN0049	07/02/96	5	28.73	6	8.2	1640
OKN0049	07/02/96	6	28.51	4.62	8.01	1640
OKN0049	07/02/96	7	27.84	2.47	7.68	1640
OKN0049	07/02/96	8	26.74	0.4	7.43	1720
OKN0049	07/02/96	9	25.63	0.12	7.4	1860
OKN0049	07/02/96	10	22.18	0.11	7.4	1940
OKN0049	07/02/96	11	22.73	0.12	7.38	1900
OKN0049	07/02/96	12	22.27	0.15	7.36	1910
OKN0049	07/02/96	13	22.02	0.16	7.33	2020
OKN0049	07/02/96	14	21.74	0.17	7.31	2100
OKN0049	07/02/96	15	20.94	0.23	7.18	2330
OKN0052	07/02/96	0.5	31.36	12.03	8.72	1600
OKN0052	07/02/96	1	29.98	9.82	8.34	1730

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0052	07/02/96	2	29.68	6.88	8.18	1750
OKN0052	07/02/96	3	29.59	5.58	8	1740
OKN0052	07/02/96	4	29.48	4.95	7.92	1770
OKN0052	07/02/96	5	29.56	3.88	7.78	1890
OKN0052	07/02/96	6	29.51	2.69	7.61	2070
OKN0052	07/02/96	7	29.17	0.42	7.35	2380
OKN0052	07/02/96	8	28.57	0.16	7.32	2380
OKN0052	07/02/96	9	24.25	0.19	7.31	1770
OKN0052	07/02/96	10	23.39	0.21	7.28	1790
OKN0052	07/02/96	11	22.37	0.26	7.22	1840
OKN0054	07/02/96	0.5	30.9	7.77	8.37	1690
OKN0059	07/02/96	0.5	32.88	7.05	8.32	1660
OKN0095	07/02/96	0.5	25.5	7.71	7.6	2590
OKN0036	07/24/96	0.5	29.84	3.94	8.24	3180
OKN0037	07/24/96	0.5	30.33	5.2	8.12	3140
OKN0043	07/24/96	0.5	29.29	8.52	8.7	2390
OKN0043	07/24/96	1	29.3	8.3	8.7	2400
OKN0043	07/24/96	2	29.3	7.81	8.66	2460
OKN0043	07/24/96	3	29.07	6.6	8.52	2490
OKN0043	07/24/96	4	28.42	4.33	8.16	2570
OKN0044	07/24/96	0.5	29.39	8.34	8.69	2080
OKN0044	07/24/96	1	29.4	8.21	8.69	2080
OKN0044	07/24/96	2	29.4	8.27	8.68	2080
OKN0044	07/24/96	3	29.38	8.04	8.66	2130
OKN0044	07/24/96	4	29.04	6.14	8.49	2480
OKN0044	07/24/96	5	28.73	5.03	8.3	2490
OKN0044	07/24/96	6	28.31	3.44	8.08	2510
OKN0044	07/24/96	7	28.05	2.86	7.96	2520
OKN0044	07/24/96	8	27.78	2.21	7.8	2530
OKN0044	07/24/96	9	27.48	1.17	7.73	2610
OKN0044	07/24/96	10	27.4	0.73	7.68	2700
OKN0044	07/24/96	11	27.18	0.31	7.64	2680
OKN0044	07/24/96	12	26.88	0.16	7.6	3100
OKN0044	07/24/96	13	26.81	0.15	7.6	3340
OKN0044	07/24/96	14	26.19	0.16	7.57	3580
OKN0044	07/24/96	15	25.76	0.16	7.47	4250
OKN0046	07/24/96	0.5	29.12	8.44	8.69	1990
OKN0046	07/24/96	1	29.11	8.51	8.69	1990
OKN0046	07/24/96	2	29.06	8.41	8.66	2040
OKN0046	07/24/96	3	28.69	7.12	8.51	2140
OKN0046	07/24/96	4	28.25	5.3	8.26	2160
OKN0046	07/24/96	5	28.15	5.12	8.26	2170
OKN0046	07/24/96	6	27.9	4.13	8.09	2160
OKN0046	07/24/96	7	27.67	2.66	7.88	2180
OKN0046	07/24/96	8	27.39	2.07	7.79	2190
OKN0046	07/24/96	9	27.25	2.11	7.77	2200
OKN0046	07/24/96	10	27.13	1.32	7.71	2340
OKN0046	07/24/96	11	27.04	0.74	7.65	2790
OKN0046	07/24/96	12	26.42	0.16	7.58	2870
OKN0046	07/24/96	13	25.1	0.17	7.56	2640

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0046	07/24/96	14	25.27	0.2	7.55	3470
OKN0047	07/24/96	0.5	28.46	7.75	8.61	2160
OKN0047	07/24/96	1	28.46	7.75	8.61	2160
OKN0047	07/24/96	2	28.44	7.69	8.6	2170
OKN0047	07/24/96	3	28.43	7.36	8.58	2160
OKN0047	07/24/96	4	28.4	7.04	8.56	2160
OKN0047	07/24/96	5	28.25	5.33	8.34	2170
OKN0047	07/24/96	6	28.02	4.87	8.24	2170
OKN0047	07/24/96	7	27.46	2.95	7.9	2170
OKN0047	07/24/96	8	27.2	2.18	7.77	2180
OKN0047	07/24/96	9	26.89	1.52	7.69	2190
OKN0047	07/24/96	10	26.62	0.87	7.63	2220
OKN0047	07/24/96	11	26.51	0.53	7.59	2250
OKN0047	07/24/96	12	25.95	0.17	7.56	2310
OKN0047	07/24/96	13	25.26	0.17	7.56	2530
OKN0047	07/24/96	14	24.27	0.19	7.54	2710
OKN0047	07/24/96	15	23.6	0.24	7.51	2920
OKN0048	07/24/96	0.5	28.97	9.07	8.67	2110
OKN0048	07/24/96	1	28.96	9.06	8.68	2110
OKN0048	07/24/96	2	28.98	9.09	8.67	2120
OKN0048	07/24/96	3	28.97	8.98	8.66	2130
OKN0048	07/24/96	4	28.93	8.94	8.66	2130
OKN0048	07/24/96	5	28.67	7.33	8.43	2080
OKN0048	07/24/96	6	28.27	4.09	8.08	2000
OKN0048	07/24/96	7	27.36	2.55	7.84	2160
OKN0048	07/24/96	8	26.85	1.28	7.68	2160
OKN0048	07/24/96	9	26.59	0.7	7.62	2190
OKN0048	07/24/96	10	26.48	0.53	7.6	2220
OKN0048	07/24/96	11	26.26	0.16	7.58	2260
OKN0048	07/24/96	12	26.3	0.14	7.59	2710
OKN0048	07/24/96	13	25.56	0.15	7.57	2830
OKN0048	07/24/96	14	25.19	0.16	7.56	3130
OKN0048	07/24/96	15	23.97	0.17	7.52	3020
OKN0048	07/24/96	16	23.33	0.17	7.46	3110
OKN0049	07/24/96	0.5	29.18	8.13	8.68	1900
OKN0049	07/24/96	1	29.18	7.94	8.68	1900
OKN0049	07/24/96	2	29.13	7.64	8.65	1900
OKN0049	07/24/96	3	29	7.17	8.56	1920
OKN0049	07/24/96	4	28.88	6.82	8.53	1930
OKN0049	07/24/96	5	28.03	3.96	8.06	2000
OKN0049	07/24/96	6	27.94	3.8	8.02	1990
OKN0049	07/24/96	7	27.57	3.01	7.88	1980
OKN0049	07/24/96	8	27.43	2.56	7.82	1980
OKN0049	07/24/96	9	27.07	1.73	7.7	1970
OKN0049	07/24/96	10	26.61	0.75	7.6	1970
OKN0049	07/24/96	11	26.64	0.92	7.63	2080
OKN0049	07/24/96	12	26.11	0.15	7.59	2210
OKN0049	07/24/96	13	25.2	0.15	7.56	2350
OKN0049	07/24/96	14	24.38	0.15	7.54	2540
OKN0049	07/24/96	15	22.57	0.18	7.45	2590

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0052	07/24/96	0.5	28.98	7.66	8.7	1830
OKN0052	07/24/96	1	28.94	7.64	8.7	1830
OKN0052	07/24/96	2	28.91	7.18	8.68	1820
OKN0052	07/24/96	3	28.67	5.87	8.39	1780
OKN0052	07/24/96	4	28.62	5.2	8.34	1770
OKN0052	07/24/96	5	28.58	4.9	8.3	1770
OKN0052	07/24/96	6	28.34	2.27	7.87	1780
OKN0052	07/24/96	7	28.03	0.9	7.68	1810
OKN0052	07/24/96	8	27.88	0.34	7.62	1820
OKN0052	07/24/96	9	26.99	0.14	7.55	1870
OKN0052	07/24/96	10	26.33	0.16	7.55	1890
OKN0052	07/24/96	11	25.52	0.2	7.49	1890
OKN0054	07/24/96	0.5	29.72	8.57	8.58	1720
OKN0059	07/24/96	0.5	30.59	5.09	8.07	1271
OKN0095	07/24/96	0.5	26.39	5.92	7.73	2710
OKN0036	08/28/96	0.5	25.85	7.7	8.09	9175
OKN0037	08/28/96	0.5	26.52	7.09	8.17	6920
OKN0043	08/28/96	0.5	27.94	7.91	9	2121
OKN0043	08/28/96	1	27.94	7.84	9	2126
OKN0043	08/28/96	2	27.82	7.49	8.95	2135
OKN0043	08/28/96	3	27.75	7.22	8.91	2144
OKN0043	08/28/96	4	27.73	7.02	8.89	2144
OKN0043	08/28/96	5	27.71	6.96	8.88	2136
OKN0043	08/28/96	6	27.71	6.88	8.88	2136
OKN0043	08/28/96	7	27.71	6.81	8.88	2134
OKN0043	08/28/96	8	27.69	6.8	8.87	2144
OKN0043	08/28/96	9	27.82	5.74	8.763	2325
OKN0043	08/28/96	10	27.97	2.87	8.19	2689
OKN0043	08/28/96	11	28.2	1.54	7.92	3114
OKN0043	08/28/96	12	28.23	1.36	7.9	3167
OKN0043	08/28/96	13	28.28	1.1	7.87	3279
OKN0043	08/28/96	14	28.27	0.16	7.76	4014
OKN0043	08/28/96	15	28.25	0.18	7.76	4035
OKN0043	08/28/96	16	28.21	0.3	7.75	4026
OKN0044	08/28/96	0.5	27.86	7.72	8.9	2439
OKN0044	08/28/96	1	27.84	7.58	8.89	2439
OKN0044	08/28/96	2	27.84	7.44	8.87	2449
OKN0044	08/28/96	3	27.8	7.16	8.85	2459
OKN0044	08/28/96	4	27.69	6.76	8.76	2477
OKN0046	08/28/96	0.5	28.13	6.54	8.82	1997
OKN0046	08/28/96	1	28.09	6.36	8.8	1997
OKN0046	08/28/96	2	27.88	5.7	8.7	2014
OKN0046	08/28/96	3	27.82	5.74	8.71	2024
OKN0046	08/28/96	4	27.77	5.8	8.74	2033
OKN0046	08/28/96	5	27.74	5.55	8.68	2043
OKN0046	08/28/96	6	27.71	4.86	8.57	2063
OKN0046	08/28/96	7	27.71	4.23	8.42	2103
OKN0046	08/28/96	8	27.72	4.16	8.4	2158
OKN0046	08/28/96	9	27.69	3.57	8.3	2215
OKN0046	08/28/96	10	27.61	2.56	8.11	2361

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0046	08/28/96	11	27.61	2.55	8.1	2406
OKN0046	08/28/96	12	27.72	2.62	8.14	2569
OKN0046	08/28/96	13	27.69	2.27	8.08	2639
OKN0047	08/28/96	0.5	27.57	5.12	8.57	2082
OKN0047	08/28/96	1	27.57	5.14	8.57	2082
OKN0047	08/28/96	2	27.57	5.02	8.56	2082
OKN0047	08/28/96	3	27.57	5.08	8.55	2084
OKN0047	08/28/96	4	27.57	5.06	8.56	2088
OKN0047	08/28/96	5	27.57	4.94	8.54	2090
OKN0047	08/28/96	6	27.57	4.81	8.53	2092
OKN0047	08/28/96	7	27.57	4.63	8.5	2092
OKN0047	08/28/96	8	27.53	2.94	8.17	2142
OKN0047	08/28/96	9	27.42	2.27	8.01	2191
OKN0047	08/28/96	10	27.44	2.16	8	2256
OKN0047	08/28/96	11	27.39	1.78	7.95	2302
OKN0047	08/28/96	12	27.36	1.53	7.91	2342
OKN0047	08/28/96	13	27.42	1.28	7.88	2590
OKN0047	08/28/96	14	27.36	1.03	7.86	2605
OKN0047	08/28/96	15	27.4	1.19	7.87	2714
OKN0047	08/28/96	16	27.48	1.1	8.76	2868
OKN0047	08/28/96	17	27.42	0.69	7.8	2928
OKN0047	08/28/96	18	27.59	0.17	7.72	3790
OKN0047	08/28/96	19	27.4	0.19	7.72	3926
OKN0047	08/28/96	20	27.25	0.2	7.76	5548
OKN0048	08/28/96	0.5	27.75	7.5	8.94	2063
OKN0048	08/28/96	1	27.73	7.44	8.94	2061
OKN0048	08/28/96	2	27.67	7.06	8.89	2063
OKN0048	08/28/96	3	27.65	6.71	8.86	2062
OKN0048	08/28/96	4	27.61	6.65	8.83	2072
OKN0048	08/28/96	5	27.59	6.58	8.81	2072
OKN0048	08/28/96	6	27.59	6.45	8.79	2078
OKN0048	08/28/96	7	27.59	6.16	8.76	2082
OKN0048	08/28/96	8	27.57	5.95	8.74	2082
OKN0048	08/28/96	9	27.57	5.8	8.72	2082
OKN0048	08/28/96	10	27.47	2.71	8.06	2191
OKN0048	08/28/96	11	27.28	1.53	7.9	2260
OKN0048	08/28/96	12	27.13	0.86	7.8	2258
OKN0048	08/28/96	13	27.13	0.81	7.79	2268
OKN0048	08/28/96	14	27.1	0.69	7.78	2310
OKN0048	08/28/96	15	27.46	0.32	7.74	3165
OKN0049	08/28/96	0.5	28.28	6.6	8.87	1928
OKN0049	08/28/96	1	28.25	6.59	8.86	1936
OKN0049	08/28/96	2	28.23	6.29	8.84	1935
OKN0049	08/28/96	3	28.22	6.14	8.83	1937
OKN0049	08/28/96	4	28.21	6.07	8.82	1937
OKN0049	08/28/96	5	28.21	5.87	8.8	1937
OKN0049	08/28/96	6	28.09	2.74	8.21	1986
OKN0049	08/28/96	7	27.87	2.81	8.13	2015
OKN0049	08/28/96	8	27.74	2.94	8.13	2033
OKN0049	08/28/96	9	27.64	2.53	8.06	2032

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0049	08/28/96	10	27.49	0.92	7.87	2041
OKN0049	08/28/96	11	27.34	0.17	7.8	2049
OKN0049	08/28/96	12	27.2	0.15	7.78	2057
OKN0049	08/28/96	13	27.15	0.18	7.78	2057
OKN0049	08/28/96	14	26.9	0.36	7.76	2134
OKN0052	08/28/96	0.5	27.92	4.21	8.26	1610
OKN0052	08/28/96	1	27.84	4.16	8.25	1599
OKN0052	08/28/96	2	27.67	4.1	8.21	1577
OKN0052	08/28/96	3	27.6	4.02	8.2	1556
OKN0052	08/28/96	4	27.57	4.15	8.21	1548
OKN0052	08/28/96	5	27.55	4.09	8.2	1556
OKN0052	08/28/96	6	27.55	4.15	8.2	1556
OKN0052	08/28/96	7	27.55	4.03	8.19	1556
OKN0052	08/28/96	8	27.52	3.52	8.14	1588
OKN0052	08/28/96	9	27.36	2.32	7.99	1685
OKN0052	08/28/96	10	26.72	3.89	8.12	1632
OKN0052	08/28/96	11	26.73	3.84	8.12	1628
OKN0052	08/28/96	12	26.74	3.65	8.1	1620
OKN0054	08/28/96	0.5	28.33	7.81	8.72	1719
OKN0059	08/28/96	0.5	26.42	7.96	8.28	1300
OKN0095	08/28/96	0.5	27.62	4.36	7.93	2362
OKN0036	09/11/96	0.5	25.38	7.19	8.56	6611
OKN0037	09/11/96	0.5	25.73	6.75	8.59	10284
OKN0043	09/11/96	0.5	27.78	10.54	9.31	1811
OKN0043	09/11/96	1	27.63	9.91	9.28	1809
OKN0043	09/11/96	2	27.23	9.13	8.25	1803
OKN0043	09/11/96	3	27.19	8.05	9.1	1835
OKN0043	09/11/96	4	27.17	7.55	9.05	1855
OKN0043	09/11/96	5	27.17	7.36	9.04	1876
OKN0043	09/11/96	6	27.4	3.5	8.54	2201
OKN0043	09/11/96	7	27.42	3.09	8.45	2241
OKN0043	09/11/96	8	27.47	2.56	8.4	2353
OKN0043	09/11/96	9	27.59	2.3	8.37	2577
OKN0043	09/11/96	10	27.7	2.5	8.38	2991
OKN0043	09/11/96	11	27.69	2.35	8.35	3307
OKN0043	09/11/96	12	27.64	2.2	8.29	3647
OKN0043	09/11/96	13	27.52	1.8	8.2	4132
OKN0043	09/11/96	14	27.48	1.85	8.22	4211
OKN0043	09/11/96	15	27.45	1.86	8.23	4211
OKN0043	09/11/96	16	27.44	1.86	8.23	4217
OKN0044	09/11/96	0.5	29.25	9.29	9.19	2275
OKN0044	09/11/96	1	28.19	9.6	9.26	2220
OKN0044	09/11/96	2	27.7	8.55	9.18	2198
OKN0044	09/11/96	3	27.44	7.36	9.06	2213
OKN0044	09/11/96	4	27.36	6.14	8.93	2241
OKN0044	09/11/96	5	27.29	4.73	8.76	2290
OKN0046	09/11/96	0.5	27.82	10.73	9.33	1629
OKN0046	09/11/96	1	27.39	8.68	9.24	1655
OKN0046	09/11/96	2	27.21	7.13	8.98	1765
OKN0046	09/11/96	3	27.15	7.13	8.98	1762

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0046	09/11/96	4	27.15	7.39	9	1758
OKN0046	09/11/96	5	27.19	4.73	8.7	1856
OKN0046	09/11/96	6	27.23	3.45	8.48	1977
OKN0046	09/11/96	7	27.23	3.45	8.44	2027
OKN0046	09/11/96	8	27.21	3.9	8.48	2027
OKN0046	09/11/96	9	27.19	4.18	8.57	2035
OKN0046	09/11/96	10	27.25	3.33	8.52	2155
OKN0046	09/11/96	11	27.33	2.52	8.36	2291
OKN0046	09/11/96	12	27.45	1.28	8.19	2648
OKN0046	09/11/96	13	27.44	0.66	8.1	2827
OKN0047	09/11/96	0.5	27.23	6.69	8.85	1892
OKN0047	09/11/96	1	27.2	6.5	8.85	1890
OKN0047	09/11/96	2	27.03	6	8.81	1894
OKN0047	09/11/96	3	27	5.5	8.73	1904
OKN0047	09/11/96	4	27	4.83	8.63	1932
OKN0047	09/11/96	5	27	4.74	8.61	1934
OKN0047	09/11/96	6	27	4.74	8.6	1934
OKN0047	09/11/96	7	27	4.71	8.6	1936
OKN0047	09/11/96	8	26.98	4.78	8.62	1934
OKN0047	09/11/96	9	26.97	4.88	8.63	1934
OKN0047	09/11/96	10	26.98	4.7	8.63	1954
OKN0047	09/11/96	11	27.31	1.82	8.31	2250
OKN0047	09/11/96	12	27.4	1.05	8.12	2382
OKN0047	09/11/96	13	27.52	0.27	8.03	2458
OKN0047	09/11/96	14	27.34	0.18	7.95	3437
OKN0047	09/11/96	15	27.31	0.17	7.92	3723
OKN0047	09/11/96	16	27.23	0.16	7.92	4054
OKN0047	09/11/96	17	27.27	0.16	7.92	4288
OKN0047	09/11/96	18	27.22	0.16	7.88	4819
OKN0047	09/11/96	19	27.15	0.16	7.85	5160
OKN0047	09/11/96	20	27.04	0.16	7.84	5310
OKN0048	09/11/96	0.5	27.71	7.8	9.04	1598
OKN0048	09/11/96	1	27.38	6.52	8.91	1676
OKN0048	09/11/96	2	27.2	5.97	8.84	1805
OKN0048	09/11/96	3	27.1	6.05	8.85	1840
OKN0048	09/11/96	4	27.06	5.9	8.83	1814
OKN0048	09/11/96	5	27.06	5.84	8.82	1814
OKN0048	09/11/96	6	27.06	5.82	8.81	1824
OKN0048	09/11/96	7	27.06	5.73	8.8	1834
OKN0048	09/11/96	8	27.06	5.77	8.8	1854
OKN0048	09/11/96	9	27.1	5.51	8.77	1899
OKN0048	09/11/96	10	27.12	5.06	8.69	1948
OKN0048	09/11/96	11	27.31	1.88	8.31	2378
OKN0048	09/11/96	12	27.42	0.88	8.13	2724
OKN0048	09/11/96	13	27.51	0.23	8.03	3000
OKN0048	09/11/96	14	27.49	0.15	7.98	3451
OKN0048	09/11/96	15	27.23	0.15	7.94	3993
OKN0048	09/11/96	16	27.04	0.15	7.91	4528
OKN0048	09/11/96	17	26.91	0.15	7.89	4921
OKN0049	09/11/96	0.5	27.68	8.2	9.08	1557

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0049	09/11/96	1	27.54	7.82	9.06	1556
OKN0049	09/11/96	2	27.13	6.6	8.97	1562
OKN0049	09/11/96	3	27.06	6.24	8.9	1562
OKN0049	09/11/96	4	27.04	5.9	8.85	1562
OKN0049	09/11/96	5	27	6.39	8.87	1562
OKN0049	09/11/96	6	26.95	6.55	8.92	1561
OKN0049	09/11/96	7	26.87	5.92	8.86	1560
OKN0049	09/11/96	8	26.83	5.66	8.77	1574
OKN0049	09/11/96	9	26.82	4.9	8.6	1614
OKN0049	09/11/96	10	26.75	2.76	8.3	1680
OKN0049	09/11/96	11	26.66	0.48	8.04	1702
OKN0049	09/11/96	12	26.57	0.19	7.92	1819
OKN0049	09/11/96	13	26.42	0.16	7.86	1959
OKN0049	09/11/96	14	26.78	0.15	7.85	2858
OKN0049	09/11/96	15	27.01	0.14	7.86	3482
OKN0049	09/11/96	16	26.22	0.15	7.73	4026
OKN0052	09/11/96	0.5	27.83	9.5	9.17	1610
OKN0052	09/11/96	1	27.44	8.49	9.11	1616
OKN0052	09/11/96	2	27.03	6.46	8.88	1626
OKN0052	09/11/96	3	26.99	6.28	8.84	1624
OKN0052	09/11/96	4	26.98	6.22	8.84	1632
OKN0052	09/11/96	5	26.95	5.8	8.82	1640
OKN0052	09/11/96	6	26.87	4.62	8.71	1722
OKN0052	09/11/96	7	26.83	4.21	8.66	1772
OKN0052	09/11/96	8	26.79	3.43	8.59	1832
OKN0052	09/11/96	9	26.72	2.77	8.54	1871
OKN0052	09/11/96	10	26.56	2.15	8.48	1920
OKN0052	09/11/96	11	26.45	1.86	8.47	1929
OKN0054	09/11/96	0.5	27.02	8.25	9.14	1571
OKN0059	09/11/96	0.5	28.83	9.38	9.18	1904
OKN0095	09/11/96	0.5	27.34	4.06	8.42	2574
OKN0036	10/30/96	0.5	15.49	8.34	9.07	5970
OKN0037	10/30/96	0.5	15.9	8.67	9.31	7555
OKN0043	10/30/96	0.5	16.48	8.63	8.7	1977
OKN0043	10/30/96	1	16.48	8.44	8.75	1977
OKN0043	10/30/96	2	16.42	8.42	8.75	1977
OKN0043	10/30/96	3	16.41	8.42	8.75	1977
OKN0043	10/30/96	4	16.41	8.42	8.76	1981
OKN0043	10/30/96	5	16.42	8.39	8.76	1983
OKN0043	10/30/96	6	16.41	8.35	8.76	1986
OKN0043	10/30/96	7	16.4	8.34	8.75	1987
OKN0043	10/30/96	8	16.38	8.27	8.75	1987
OKN0043	10/30/96	9	16.36	8.29	8.75	1987
OKN0043	10/30/96	10	16.26	8.23	8.75	2008
OKN0043	10/30/96	11	16.39	7.62	8.67	2535
OKN0043	10/30/96	12	16.49	7.25	8.64	2866
OKN0043	10/30/96	13	16.63	6.11	8.6	3829
OKN0044	10/30/96	0.5	16.56	8.78	9.1	2242
OKN0044	10/30/96	1	16.49	8.67	9.03	2242
OKN0044	10/30/96	2	16.4	8.35	9.01	2252

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0044	10/30/96	3	16.29	8.33	9.01	2261
OKN0044	10/30/96	4	16.18	8.15	8.99	2271
OKN0044	10/30/96	5	16.15	8.19	9	2290
OKN0044	10/30/96	6	16.12	8.08	9.04	2319
OKN0044	10/30/96	7	16.12	8.08	9.04	2317
OKN0044	10/30/96	8	16.13	8.04	9.03	2309
OKN0046	10/30/96	0.5	16.19	8.27	8.58	1523
OKN0046	10/30/96	1	16.14	8.12	8.59	1523
OKN0046	10/30/96	2	16.03	7.91	8.6	1514
OKN0046	10/30/96	3	15.91	7.73	8.61	1501
OKN0046	10/30/96	4	15.89	7.74	8.1	1503
OKN0046	10/30/96	5	15.89	7.72	8.61	1515
OKN0046	10/30/96	6	15.89	7.78	8.61	1548
OKN0046	10/30/96	7	15.97	7.91	8.62	1581
OKN0046	10/30/96	8	15.97	7.91	8.62	1600
OKN0046	10/30/96	9	16	7.96	8.62	1618
OKN0046	10/30/96	10	16.02	7.93	8.6	1637
OKN0046	10/30/96	11	16.02	7.93	8.72	1647
OKN0046	10/30/96	12	16.02	7.92	8.78	1666
OKN0046	10/30/96	13	15.96	7.91	8.83	1694
OKN0046	10/30/96	14	15.97	6.3	8.76	2149
OKN0047	10/30/96	0.5	16.22	8.27	8.31	1703
OKN0047	10/30/96	1	16.24	8.16	8.34	1711
OKN0047	10/30/96	2	16.23	8.17	8.35	1713
OKN0047	10/30/96	3	16.24	8.07	8.35	1712
OKN0047	10/30/96	4	16.24	8.08	8.35	1713
OKN0047	10/30/96	5	16.24	8.08	8.35	1712
OKN0047	10/30/96	6	16.23	8.05	8.35	1712
OKN0047	10/30/96	7	16.23	8.02	8.35	1712
OKN0047	10/30/96	8	16.23	8.06	8.35	1712
OKN0047	10/30/96	9	16.23	8.04	8.35	1718
OKN0047	10/30/96	10	16.25	8.04	8.35	1722
OKN0047	10/30/96	11	16.25	8	8.35	1722
OKN0047	10/30/96	12	16.25	8	8.35	1730
OKN0047	10/30/96	13	16.27	7.95	8.35	1741
OKN0047	10/30/96	14	16.26	7.92	8.35	1750
OKN0048	10/30/96	0.5	15.93	8.09	8.37	1505
OKN0048	10/30/96	1	15.92	7.93	8.38	1515
OKN0048	10/30/96	2	15.94	7.92	8.38	1515
OKN0048	10/30/96	3	15.95	7.91	8.38	1524
OKN0048	10/30/96	4	15.95	7.89	8.38	1524
OKN0048	10/30/96	5	15.95	7.89	8.38	1541
OKN0048	10/30/96	6	16.01	7.91	8.38	1571
OKN0048	10/30/96	7	16.02	7.93	8.38	1579
OKN0048	10/30/96	8	16	7.94	8.38	1581
OKN0048	10/30/96	9	16.01	7.92	8.38	1598
OKN0048	10/30/96	10	16.02	7.94	8.38	1609
OKN0048	10/30/96	11	16.01	7.91	8.38	1618
OKN0048	10/30/96	12	16.02	7.83	8.37	1641
OKN0048	10/30/96	13	16.1	6.39	8.36	2348

Site	Date MMDDYY	Depth meters	Temp. °C	DO mg/L	pH units	SC µS/cm
OKN0048	10/30/96	14	15.96	6.14	8.22	2659
OKN0048	10/30/96	15	16.06	5.9	8.2	3102
OKN0048	10/30/96	16	15.97	5.43	8.17	3390
OKN0048	10/30/96	17	15.99	4.41	8.14	4664
OKN0049	10/30/96	0.5	15.82	7.97	8.42	1244
OKN0049	10/30/96	1	15.8	7.92	8.43	1252
OKN0049	10/30/96	2	15.74	7.84	8.43	1257
OKN0049	10/30/96	3	15.8	7.82	8.42	1259
OKN0049	10/30/96	4	15.68	7.82	8.42	1259
OKN0049	10/30/96	5	15.69	7.8	8.42	1260
OKN0049	10/30/96	6	15.68	7.75	8.42	1261
OKN0049	10/30/96	7	15.68	7.72	8.42	1260
OKN0049	10/30/96	8	15.66	7.7	8.42	1261
OKN0049	10/30/96	9	15.67	7.8	8.42	1263
OKN0049	10/30/96	10	15.65	7.74	8.42	1264
OKN0049	10/30/96	11	15.62	7.74	8.42	1264
OKN0052	10/30/96	0.5	15.78	8.3	8.55	1274
OKN0052	10/30/96	1	15.78	8.34	8.57	1268
OKN0052	10/30/96	2	15.75	8.12	8.57	1272
OKN0052	10/30/96	3	15.73	7.88	8.57	1275
OKN0052	10/30/96	4	15.71	7.87	8.56	1273
OKN0052	10/30/96	5	15.66	7.81	8.54	1267
OKN0052	10/30/96	6	15.68	7.75	8.56	1282
OKN0052	10/30/96	7	15.65	7.76	8.59	1293
OKN0052	10/30/96	8	15.65	7.68	8.59	1291
OKN0052	10/30/96	9	15.65	7.65	8.59	1292
OKN0052	10/30/96	10	15.66	7.58	8.59	1293
OKN0054	10/30/96	0.5	16.5	10.25	9.45	1285
OKN0059	10/30/96	0.5	14.74	8.75	8.96	1304
OKN0095	10/30/96	0.5	16.22	7.83	8.85	1987

APPENDIX F

A Water Quality Study on Lake Keystone, Arkansas and Cimarron River, Oklahoma Arkansas-Red River Chloride Control Final Report, 1979

A WATER QUALITY STUDY ON LAKE KEYSTONE, ARKANSAS AND CIMARRON RIVER, OKLAHOMA ARKANSAS-RED RIVER BASIN CHLORIDE CONTROL

FINAL REPORT

Contract No. DACW 56-77-C-0159

August 1978 - December 1979

PREPARED BY

Dr. Don F. Kincannon

Environmental Engineering Consultants, Inc.

Stillwater, Oklahoma

for

Department of the Army

Corps of Engineers

Tulsa District

Tulsa, Oklahoma

December 1979

Contract No. DACW 56-77-C-0159

FINAL REPORT

A WATER QUALITY STUDY ON LAKE KEYSTONE,
ARKANSAS AND CIMARRON RIVER, OKLAHOMA
ARKANSAS-RED RIVER BASIN CHLORIDE CONTROL

August 1978 - December 1979

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INTRODUCTION

In June, 1977, Environmental Engineering Consultants, Inc. agreed by contract with Tulsa District, U.S. Army Corps of Engineers (contract No. DACW 56-77-C-0159) to collect, analyze, and document water samples from Lake Keystone, Oklahoma for a period of twelve months. This was later amended to include an additional fourteen months. This report includes all data collected during this fourteen month period.

MATERIALS AND METHODS

Water samples for laboratory analyses and field data were obtained at twenty-five locations on Lake Keystone (see Figure 1). The locations of the twenty-five sites were established by field inspection with Mr. John Hill and Mr. Tom Horner of the Tulsa District, Corps of Engineers. At this time sites 2 and 3 were dropped due to nonassessability to the sites. Water samples for laboratory analyses and field data were obtained on specific monthly sampling dates listed in Table 1.

Field measurements of dissolved oxygen, pH, conductivity, and temperature were made with a Martek Mark V Water Quality Analyzer. Meter readings were taken at depths of 1, 2, 3, 4, 5, and 6 meters, and at each additional 3 meter intervals to the bottom. All field data and notes were recorded on site.

Water samples for laboratory analyses were collected at the surface, at each ten meter interval or depth, and/or at the bottom with a LAB-LINE Polypro water sampler. The samples were given identification numbers and transported to the laboratory. All laboratory work was performed by technical personnel of Environmental Engineering Consultants, Inc. API recommended methods of analysis were followed.

RESULTS

All data from the sampling program are tabulated according to parameters and station and presented in the following Tables. Selected parameters have been plotted and are presented in the following figures.

All data has been placed on computer tape. The tape is a 9 track 1600 bpi Odd parity with 80 character records EBCDIC 4000 characters/block non labeled.

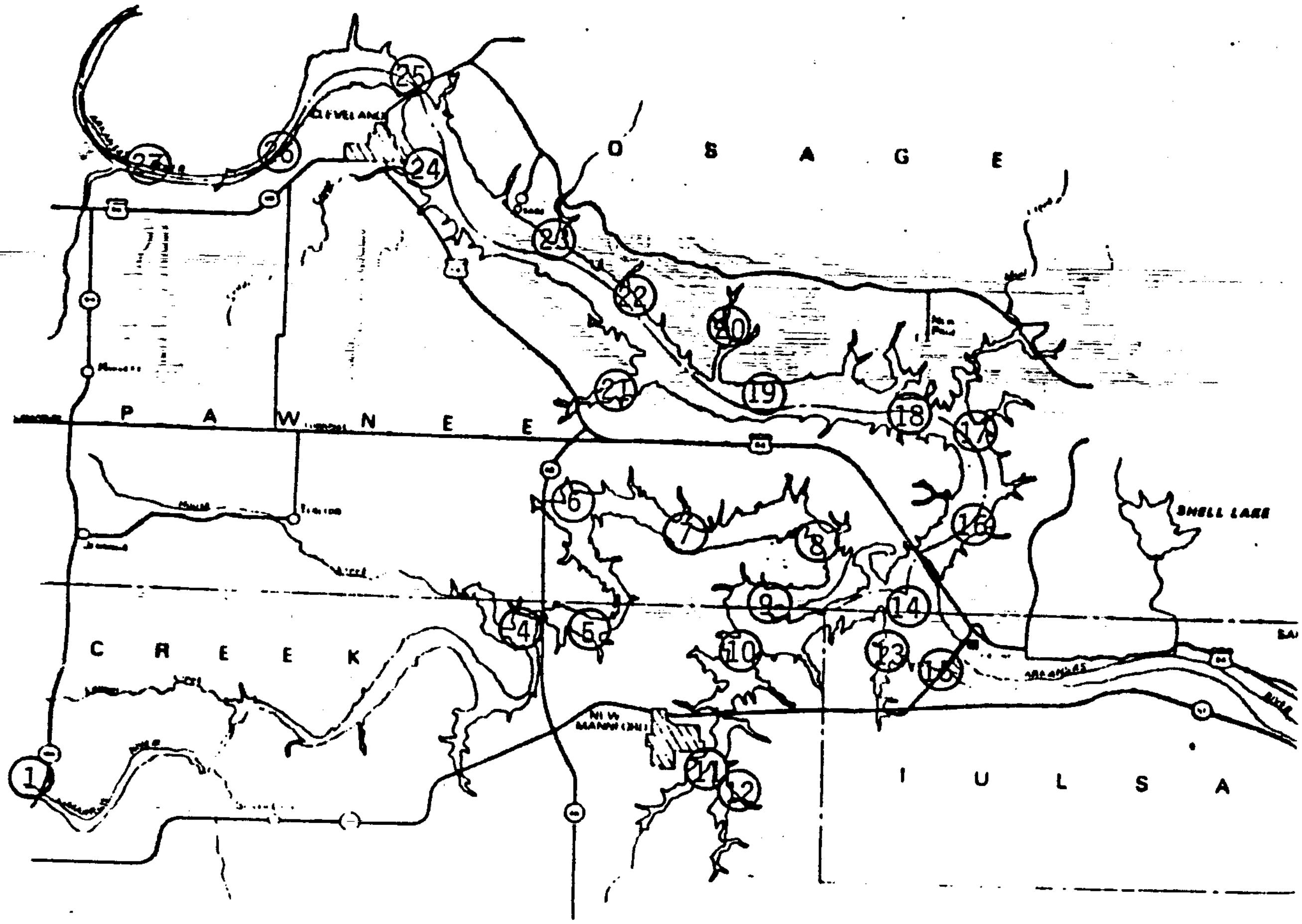


Figure 1. Sample Station Locations

TABLE 1

SAMPLE STATION LOCATIONS

Station Number	Location	Description
1	SW¼ Sec 28, T.19N., R.7E.	Bridge at old highway 51, Oilton
2	not established	
3	not established	
4	NW¼ Sec 6, T.19N., R.9E.	Next to highway 48 bridge
5	NW¼ Sec 5, T.19N., R.9E.	Old streambed at Mannford Ramp
6	NE¼ Sec 24, T.20N., R.8E.	Next to highway 48 at bend of stream
7	SW¼ Sec 21, T.20N., R.9E.	Old stream bed south of small stream inlet
8	SE¼ Sec 23, T.20N., R.9E.	Old stream bed at Cedar View Estates
9	NE¼ Sec 35, T.20N., R.9E.	Old stream bed upstream from Okla. State Univ. camp site
10	SW¼ Sec 2, T.19N., R.9E.	Old stream bed where Salt Creek joins with Cimarron River
11	NE¼ Sec 22, T.19N., R.9E.	Mouth of Little Salt Creek
12	NE¼ Sec 22, T.19N., R.9E.	Mouth of Salt Creek
13	SW¼ Sec 5, T.19N., R.10E.	Mouth of Bakers Branch
14	NE¼ Sec 32, T.20N., R.10E.	Old River beds where Arkansas and Cimarron rivers joined
15	SW¼ Sec 4, T.19N., R.10E.	Bouy at Dam
16	SW¼ Sec 21, T.20N., R.10E.	Old stream bed opposite Washington Irving Cove South
17	NE¼ Sec 8, T.20N., R.10E.	Old stream bed at Mud Creek inlet
18	NE¼ Sec 7., T.20N., R.10E.	Old stream bed at New Prue
19	NE¼ Sec 11.,T.20N., R.9E.	Old stream bed opposite Old Prue
20	NE¼ Sec 3., T.20N., R.9E.	¼ mile into Waresha Creek inlet
21	NW¼ Sec 7, T.20N., R.9E.	Hwy 64 bridge over Bear Creek and Cowskin Creek inlet
22	NE¼ Sec 30.,T.21N., R.9E.	¼ mile into Mill Creek inlet
23	SW¼ Sec 24.,T.21N., R.8E.	Mouth of inlet at Osage Point
24	NW¼ Sec 16.,T.21N., R.8E.	Mouth of Cedar Creek inlet next to Old Marina
24A	SE¼ Sec 15, T.21N., R.8E.	Under railroad bridge

TABLE 1 continued

Station Number	Location	Description
25	NW¼ Sec 4, T.21N., R.8E.	Under Highway 99 bridge
26	SE¼ Sec 12, T.21N., R.7E.	Old stream bed opposite large rock out cropping on south side
27	NE¼ Sec 16, T.21N., R.7E.	Mouth of Branch Creek

TABLE 2

SPECIFIC SAMPLING DATES

August 19 and 29, 1978	August Report
September 16 and 17, 1978	September Report
No October or November sampling	
December 9 and 10, 1978	December Report
No January sampling due to frozen lake	
March 3 and 4, 1979	February Report
March 31, and April 1, 1979	March Report
April 28 and 29, 1979	April Report
May 26 and 27, 1979	May Report
June 23 and 24, 1979	June Report
July 21 and 22, 1979	July Report
August 19 and 20, 1979	August Report
September 29 and 20, 1979	September Report
October 23 and 24, 1979	October Report
November 17 and 18, 1979	November Report
December 15 and 22, 1979	December Report

TABLE 3

FIELD TEMPERATURE DATA

TEMPERATURE in ^{o}C

Station 1

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Depth Meters																
B	24.18	26.22	**	1.88	***	3.94	15.05	13.54	21.52	25.72	25.60	26.38	23.57	21.64	8.92	4.53

** No sample
*** Inaccessible due to ice

TEMPERATURE in °C

Station 4

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Depth Meters																
1	26.84	26.96	**	2.87	***	5.39	15.52	19.28	21.74	26.45	28.22	28.26	24.39	17.70	10.85	6.57
2	26.84	26.90	**	2.90	***	5.63	15.43	19.24	21.55	26.64	28.16	28.24	23.33	18.05	10.64	6.53
3	26.84	26.73	**	2.53	***	6.13	15.35	19.26	21.68	26.65	28.15	28.15	23.28	17.98	10.03	6.43
4	26.82	26.30	**	1.98	***	6.51	15.05	19.25	21.72	26.72	28.10	28.14	23.16	17.18	10.03	5.92
5	26.82	26.42	**	1.18	***	6.51	14.81	19.34	22.14	26.72	27.88	28.55	23.05	15.94	10.51	5.97
6						6.51	14.40	19.38	21.12	27.03	27.78	28.58			10.62	
B	27.00	26.38	**	.98	***	5.92	13.27	19.04	21.06	26.50	27.15	28.72	23.12	15.72	10.96	5.96

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 5

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	[
1	26.99	26.85	**	2.34	***	5.58	15.00	18.88	22.09	26.25	28.08	27.91	24.09	17.71	11.23	6
2	26.88	26.75	**	2.34	***	5.18	1.494	18.83	21.63	26.27	27.98	27.91	23.59		11.05	6
3		26.62	**		***	4.84	1.476	19.52	21.55	26.23	27.95	27.87	23.48		10.34	6
4		26.38	**		***	4.80	14.51	19.57	21.83	26.23		27.85	22.98		9.93	6
5		26.16	**		***	4.79	14.39	19.54	21.92	26.64		27.80	22.96		9.98	5
6							14.35			26.83		27.51				5
B	26.72	26.28	**	2.32	***	4.78	14.22	19.54	21.02	26.68	27.79	28.35	22.79	17.40	9.81	5

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 6

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	27.13	27.30	**	4.58	***	4.48	13.76	18.89	21.51	26.43	29.00	28.53	25.15	18.73	11.66	7.0[illegible]
2	27.03	27.21	**	4.55	***	4.49	13.65	18.86	21.51	26.38	29.12	28.51	25.08	18.72	11.46	7.0[illegible]
3	26.93	27.15	**	4.51	***	4.46	13.58	18.64	21.50	26.37	29.06	28.42	25.04	18.65	11.39	7.0[illegible]
4	26.78	27.15	**	4.48	***	4.48	13.52	18.63	21.50	26.35	28.65	28.38	24.59	18.60	11.20	6.9[illegible]
5				4.45	***	4.50	13.44	18.65	21.46	26.35	28.59	28.34	24.52	18.38	10.96	6.9[illegible]
6				4.39	***	4.82	13.12	18.72	21.42	26.20	27.98	28.34		18.33	10.69	6.3[illegible]
9									21.44	25.92	27.58				9.87	5.9[illegible]
B	26.52	27.28	**	3.89	***	4.46	13.04	19.16	20.92	25.71	27.32	28.20	23.38	17.75	10.04	6.0[illegible]

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 7

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De
1	27.23	26.88	**	5.65	***	4.02	13.85	18.77	21.38	25.82	28.75	28.09	25.07	18.92	11.99	7.
2	27.27	26.76	**	5.60	***	4.03	13.68	18.72	21.14	25.65	28.65	28.06	24.88	18.81	12.00	7.1
3	27.76	26.71	**	5.55	***	4.02	13.52	18.70	21.02	25.64	28.65	28.06	24.87	18.78	11.90	7.1
4	27.70	26.68	**	5.49	***	4.02	13.40	18.65	20.94	25.61	28.54	28.04	24.65	18.72	11.86	7.1
5	26.93	26.66	**	5.42	***	4.04	13.26	18.64	20.91	25.61	28.46	28.04	24.59	18.69	11.78	7.1
6	26.70	26.63	**	5.26	***	4.02	13.10	18.60	20.88	25.58	28.32	27.99	24.22	18.58	11.66	7.1
9		26.52	**		***	4.08	12.78	18.86	20.94	25.55	28.67	27.98	23.78	18.36	10.95	
12						4.38	12.14								9.65	
B	26.35	26.53	**	4.92	***	5.48	11.98	18.45	20.98	25.23	28.04	27.84	22.48	17.85	9.73	7.0

** No sample
*** Inaccessible due to ice

Station 8

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	27.82	27.00	**	6.59	***	3.72	12.95	18.54	21.63	25.59	28.01	28.21	25.18	19.28	12.29	7.28
2	27.76	26.88	**	6.56	***	3.72	12.82	18.14	21.48	25.53	27.92	28.10	25.08	19.11	12.22	7.25
3	27.68	26.85	**	6.52	***	3.72	12.77	18.13	21.45	25.52	27.92	28.09	25.06	19.01	12.22	7.25
4	27.58	26.82	**	6.48	***	3.70	12.74	18.14	20.76	25.48	27.92	28.02	24.60	19.00	12.18	7.25
5	27.53	26.76	**	6.45	***	3.69	12.71	18.12	20.75	25.47	27.92	27.99	24.55	18.97	12.17	7.25
6	27.39	26.69	**	6.40	***	3.69	12.44	17.95	20.48	25.40	27.97	27.88	24.38	18.84	12.08	7.23
9	27.28	26.55	**	6.32	***	3.68	12.18	17.67	20.45	25.28	28.13	27.85	24.33	18.61	11.98	7.24
12	27.08		**		***	3.68	11.94									
B	26.87	26.49	**	5.72	***	3.67	11.93	17.49	20.85	24.88	27.98	27.58	23.73	18.38	11.88	7.47

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 9

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	27.12	26.68	**	6.84	***	3.84	12.96	17.93	20.99	25.76	28.77	27.98	25.66	18.96	12.18	7.04
2	27.03	26.68	**	6.79	***	3.84	12.72	17.93	20.98	25.75	28.60	27.93	25.64	18.54	12.18	7.00
3	27.03	26.65	**	6.74	***	3.82	12.68	17.90	20.88	25.72	28.54	27.90	25.28	18.36	12.15	7.01
4	26.93	26.53	**	6.69	***	3.80	12.62	17.89	20.88	25.68	27.93	27.89	25.21	18.22	12.15	6.96
5	26.93	26.58	**	6.63	***	3.78	12.57	17.84	20.70	25.62	27.91	27.83	24.95	18.14	12.14	6.95
6	26.87	26.54	**	6.62	***	3.76	12.36	17.83	20.69	25.59		27.82	24.88		12.13	
9	26.78		**	6.33	***	3.74	12.13									
12						3.72	12.01									
15							11.93									
B	26.62	26.44	**	6.12	***	3.62	11.87	17.15	20.12	25.98	27.53	27.68	24.28	17.84	12.12	6.88

** No sample
*** Inaccessible due to ice

TEMPERATURE in °C

Station 10

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Depth Meters																
1	27.04	26.42	**	7.05	***	3.74	12.91	17.83	20.69	25.65	28.46	27.65	25.30	19.16	12.02	7.17
2	27.02	26.35	**	7.00	***	3.74	12.78	17.78	20.68	25.64	28.15	27.61	25.29	19.03	11.96	7.12
3	27.02	26.28	**	6.98	***	37.2	12.62	17.78	20.66	25.48	27.92	27.50	25.08	18.98	11.86	7.12
4	27.00	26.23	**	6.92	***	3.72	12.49	17.78	20.65	25.46	27.91	27.48	24.99	18.96	11.86	7.13
5	26.98	26.21	**	6.87	***	3.72	12.43	17.78	20.64	25.43	27.85	27.45	24.88	18.92	11.78	7.14
6	26.95	26.16	**	6.82	***	3.70	12.38	17.78	20.63	25.43	27.86	27.44	24.88	18.84	11.77	7.24
9	26.90	26.12	**	6.75	***	3.70	12.28	17.82	20.64	25.19	27.60	27.52	24.58	18.73	11.68	7.37
12	26.73	26.08	**	6.71	***	3.70	11.98	18.65	20.94	24.97	27.80	27.57	24.33	18.80	11.35	7.71
15	26.26	25.98	**	6.64	***	3.82	11.75	19.08	21.66	25.19	27.28	27.30	23.34		10.48	7.99
18	26.07		**	6.49	***	4.58	11.65		21.65	25.24	25.55	27.24	23.07		9.62	
B	26.15	25.95	**	6.22	***	4.23	11.76	18.62	21.20	25.12	26.05	27.13	23.12	18.40	9.81	7.94

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 11

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.65	26.45	**	5.13	***	5.01	12.82	17.72	21.73	25.37	28.67	27.78	25.10	18.79	11.62	7.33
2	26.53	26.42	**	5.09	***	5.00	12.67	17.60	21.15	25.18	28.48	27.62	24.75	18.64	11.61	7.33
3	26.52	26.38	**	5.08	***	4.98	12.56	17.58	20.88	25.27	28.15	27.67	24.72	18.62	11.58	7.33
4	26.48	26.38	**	5.02	***	4.98	12.52	17.55	20.69	25.05	28.07	27.50	24.45	18.55	11.54	7.32
5	26.45	26.34	**	4.95	***	4.95	12.51	17.53	20.65	25.03	27.92	27.48	24.44	18.52	11.53	7.32
6	26.40	26.23	**	4.85	***	4.92	12.47	17.48	20.48	24.86	27.88	27.29	24.05	18.40	11.49	7.30
9	26.30	26.12	**		***	4.88	12.32	17.32	20.40	24.27		27.05	24.95	18.33		7.30
B	26.20	26.09	**	4.65	***	4.80	12.25	16.90	20.04	24.18	27.46	26.94	23.90	18.18	11.30	7.28

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 12

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.65	26.42	**	5.08	***	4.79	13.15	17.56	21.18	25.12	28.39	27.55	24.78	18.75	11.52	7.35
2	26.62	26.34	**	5.04	***	4.73	13.04	17.52	21.13	25.06	28.28	27.54	24.66	18.56	12.50	7.38
3	26.59	26.28	**	4.98	***	4.72	12.95	17.45	21.02	2505	28.16	27.35	24.32	18.53	11.38	7.38
4	26.56	26.25	**	4.90	***	4.71	12.83	17.43	20.92	25.02	28.09	27.34	24.28	18.45	11.30	7.38
5	26.52	26.24	**	4.82	***	4.70	12.72	17.39	20.70	24.99	27.85	27.29	24.05	18.41	11.25	7.35
6	26.48	26.22	**	4.76	***	4.68	12.48	17.38	20.55	24.53	27.78	27.28	23.98	18.27	11.25	7.35
9	26.43	26.14	**	4.66	***	4.62				24.28				18.07		7.33
12	26.34	26.10	**		***											7.34
B	26.15	26.17	**	4.55	***	4.55	12.47	16.72	20.08	24.16	27.15	26.96	23.63	17.78	11.23	7.29

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 13

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.84	26.00	**	7.85	***	3.34	12.12	17.63	20.74	25.11	27.68	27.27	25.24	19.04	11.20	6.59
2	28.83	25.98	**	7.79	***	3.33	12.05	17.58	20.73	25.08	27.59	27.24	25.08	18.94	11.16	6.59
3	26.82	25.98	**	7.72	***	3.31	11.94	17.57	20.58	25.05	27.58	27.23	24.98	18.92	11.15	6.59
4	26.85	25.95	**	7.61	***	3.30	11,92	17.56	20.50	25.04	27.52	27.20	24.97	18.87	11.12	6.61
5	26.78	25.92	**	7.60	***	3.26	11.91	17.55	20.44	24.84	27.46	27.19	24.97	18.85	11.09	6.63
6	26.72	25.88	**	7.52	***	3.23	11.89	17.45	20.43	24.22	27.24	27.16	24.90	18.78	10.78	6.64
9	26.64	25.83	**	7.25	***	3.22	11,87	17.42			26.81	27.14		18.72	10.50	7.02
12						3.18										7.15
15						3.15										
B	26.45	25.75	**	11.74	***	3.08	11.85	17.28	19.98	24.25	25.98	27.15	24.78	18.47	10.54	7.10

** No sample
*** Inaccessible due to ice

TEMPERATURE in °C

Station 14

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Depth Meters																
1	26.92	26.45	**	7.68	***	3.20	12.41	17.58	21.25	25.08	28.16	27.87	25.01	19.16	11.49	6.74
2	26.92	26.44	**	7.66	***	3.19	12.31	17.35	21.16	25.06	27.95	27.84	25.01	19.15	11.46	6.75
3	26.91	26.42	**	7.64	***	3.18	12.28	17.29	21.12	25.06	27.88	27.84	25.02	19.13	11.45	6.74
4	26.89	26.37	**	7.63	***	3.18	12.22	17.24	20.88	25.02	27.68	27.82	25.06	19.13	11.38	6.75
5	26.88	26.37	**	7.61	***	3.17	12.16	17.23	20.76	24.99	27.62	27.81	25.05	19.11	11.36	6.77
6	26.86	26.32	**	7.59	***	3.15	12.13	17.16	20.62	24.82	27.28	27.68	25.07	19.10	11.10	6.76
9	26.79	26.10	**	7.61	***	3.14	12.05	17.09	19.93	24.68	26.33	25.56	25.08	19.03	10.94	6.77
12	26.62	25.88	**	7.54	***	3.12	11.99	16.60	18.65	24.30	25.68	27.60	25.05	19.01	10.49	6.78
15	26.06					3.10	11.78	16.32	18.73	24.20	24.88	27.67	25.05		9.87	6.79
18							11.42									
B	25.77	25.75	**	7.18	***	3.04	11.50	16.58	18.47	23.35	24.51	27.08	25.08	18.83	10.68	7.24

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 15

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	25.97	26.16	**	8.02	***	3.18	11.76	17.35	20.86	24.70	27.29	27.33	25.15	19.08	11.40	6.68
2	25.95	26.13	**	7.96	***	3.17	11.72	17.34	20.82	24.68	27.28	27.33	25.08	19.05	11.38	6.67
3	26.93	26.07	**	7.94	***	3.17	11.70	17.28	20.77	24.62	27.24	27.32	24.98	19.01	11.24	6.68
4	26.90	26.02	**	7.91	***	3.16	11.67	17.26	20.74	24.61	27.22	27.32	24.98	18.99	11.21	6.67
5	26.85	25.98	**	7.86	***	3.15	11.65	17.18	20.66	24.54	27.15	27.20	24.95	18.96	11.04	6.68
6	26.78	25.89	**	7.82	***	3.12	11.62	17.13	20.64	24.51	27.08	27.18	24.93	18.94	11.03	6.68
9	26.75	25.84	**	7.75	***	3.11	11.62	16.85	19.72	24.38	26.18	27.32	24.88	18.86	10.75	6.73
12	26.65	25.83	**	7.66	***	3.08	11.48	15.71	19.14	24.31	25.99	27.63	24.87	18.81	10.48	7.31
15	26.27	25.78	**	7.53	***	2.54	11.05	15.27	19.79	23.55	25.42	27.56	24.83	18.70	10.98	7.24
18	25.79	25.67	**	7.30	***	2.47	10.53	15.12	20.23	23.48	24.54	27.19	24.79	18.63	11.03	7.14
B	25.65	25.55	**	6.85	***	2.45	10.85	14.71	19.34	23.57	24.35	26.95	24.65	18.20	9.88	6.82

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 16

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	27.04	26.05	**	7.33	***	3.31	12.66	18.11	21.22	25.16	27.82	27.48	24.84	18.75	10.63	6.06
2	27.03	26.04	**	7.31	***	3.32	12.62	18.04	21.21	25.14	27.64	247.44	24.73	18.74	10.60	6.06
3	26.95	26.02	**	7.27	***	3.29	12.59	18.00	21.16	25.13	27.53	27.42	24.72	18.71	10.55	6.07
4	26.94	26.02	**	7.22	***	3.28	12.54	17.95	21.14	25.10	27.42	27.38	24.65	18.69	10.55	6.07
5	26.87	26.00	**	7.15	***	3.28	12.55	17.93	21.03	25.09	27.35	27.37	24.64	18.65	10.45	6.07
6	26.75	26.00	**	7.10	***	3.28	12.52	17.43	20.87	24.88	27.13	24.33	24.56	18.62	10.41	6.08
9	26.55	25.99	**	7.00	***	3.23	12.46	16.95	20.22	24.71	25.94	27.29	24.52	18.53	9.68	6.09
12	26.50	25.98	**	6.88	***	3.20	12.39	14.53	18.09	24.23	24.53	26.98	23.52	18.46	9.48	6.10
15							12.30	14.73	17.82	23.28	24.06	27.05	22.81		9.42	6.28
18							12.13		17.93	21.78					9.43	7.22
B	26.29	25.85	**	6.62	***	3.10	12.25	14.22	17.79	21.78	23.57	26.28	22.93	18.08	9.52	6.99

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 19

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De
1	26.88	26.69	**	6.18	***	4.08	14.18	18.82	21.67	25.53	27.94	27.64	24.06	18.57	10.19	6.
2	26.85	26.66	**	6.16	***	4.02	14.15	18.76	21.67	25.53	27.85	27.63	24.02	18.50	10.18	6.
3	26.84	26.62	**	6.14	***	3.98	14.04	18.62	21.62	25.53	27.74	27.53	23.92	18.47	10.12	6.
4	26.82	26.55	**	6.15	***	3.92	14.03	18.56	21.58	25.52	27.68	27.52	23.89	18.46	10.12	5.4
5	26.78	26.34	**	6.19	***	3.83	13.96	18.29	21.53	25.52	27.48	27.43	23.76	18.40	9.89	5.4
6	26.74	26.12	**	6.16	***	3.81	13.94	18.05	21.50	25.51	27.44	27.39	23.71	18.36	9.88	5.0
9	26.35	25.86	**	6.49	***	3.66	13.82	15.86	21.28	25.47	26.72	27.29	22.38	18.32	9.69	4.6
12	25.79	25.82	**	6.69	***	3.55	13.65	15.20			25.61	27.24	22.37	18.22	9.71	4.0
15						3.51	12.35									3.9
18						3.53										
B	25.80	25.75	**	6.52	***	3.62	11.98	15.12	21.14	24.78	26.64	26.66	22.34	18.13	9.79	4.1

** No sample
*** Inaccessible

TEMPERATURE in °C

Station 20

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.75	27.02	**	4.74	***	4.08	13.92	18.67	22.32	26.43	29.50	27.99	24.42	18.68	10.16	6.82
2	26.72	27.01	**	4.71	***	4.03	13.84	18.45	31.86	26.42	29.38	27.98	24.39	18.58	10.16	6.82
3	26.69	26.98	**	4.68	***	4.02	13.64	18.27	21.77	26.30	28.85	27.83	24.34	18.56	10.16	6.89
4	26.65	26.94	**	4.67	***	4.02	13.57	18.24	21.16	26.25	28.60	27.78	24.33	18.55	10.18	6.93
5	26.54	26.92	**	4.66	***	4.03	13.32	17.74	21.11	25.92	27.74	27.66	24.25	18.49	10.16	7.09
6	26.42	26.66	**	4.64	***	4.06	12.53	17.56	20.50	25.65	27.50	27.63	24.24	18.49	10.17	7.21
9							12.18									
B	25.25	26.66	**	4.48	***	4.10	12.03	16.94	20.19	24.93	26.14	27.20	23.69	18.35	10.12	7.84

** No sample
*** Inaccessible due to ice

TEMPERATURE in °C

Station 17

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.89	26.63	**	7.14	***	3.48	13.21	18.00	21.78	25.64	27.75	27.54	24.65	18.74	10.86	6.13
2	26.84	26.60	**	7.08	***	3.49	13.14	17.91	21.76	25.60	27.67	27.48	24.54	18.59	10.84	6.13
3	26.79	26.59	**	7.07	***	3.48	13.13	17.89	21.59	25.58	27.62	27.47	24.52	18.58	10.83	6.14
4	26.70	26.55	**	7.11	***	3.48	13.06	17.76	21.50	25.48	27.60	27.44	24.48	18.58	10.81	6.12
5	26.69	26.50	**	7.17	***	3.49	13.02	17.73	21.18	25.44	27.53	27.42	24.44	18.58	10.81	6.12
6	26.68	26.53	**	7.18	***	3.50	1.233	17.34	21.13	25.08	27.50	27.39	24.32	18.56	10.74	6.08
9	26.64	26.50	**	7.24	***	3.50	11.80	16.54	19.89	24.64	26.28	27.37	24.18	18.56	10.58	6.04
12	26.36	26.13	**	7.21	***	3.48	11.62	13.28	19.62	23.96	25.14	26.86	22.92	18.52	9.80	5.38
15	26.32	26.15	**		***	3.38	11.58	14.12	17.82	23.28	25.00	26.14	22.53	18.48	9.61	5.11
18		25.78	**		***	3.28					24.59					
B	26.28	25.63	**	6.95	***	3.33	11.43	13.35	17.86	22.37	24.20	26.05	22.61	18.42	9.75	5.12
		25.74														

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 18

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	27.05	26.72	**	6.38	***	3.71	13.60	18.28	21.98	25.17	28.78	27.64	24.44	18.76	10.94	6.43
2	26.94	26.69	**	6.32	***	3.74	13.58	18.20	21.63	25.62	28.32	27.62	24.38	18.71	10.92	6.44
3	26.88	26.68	**	6.34	***	3.75	13.52	18.15	21.60	25.60	28.12	27.59	24.30	18.71	10.92	6.45
4	26.85	26.65	**	6.44	***	3.74	13.51	18.04	21.45	25.50	27.96	27.56	24.28	18.68	10.92	6.45
5	26.82	26.63	**	6.82	***	3.73	13.40	17.99	21.42	25.46	27.92	27.55	24.22	18.66	10.92	6.47
6	26.76	26.59	**	6.92	***	3.69	13.32	17.58	21.13	25.30	27.43	27.34	24.18	18.60	10.86	6.48
9	26.54	26.42	**	6.86	***	3.65	12.13	16.95	20.14	25.12	26.41	27.20	23.82	18.57	10.82	6.48
12							11.90		19.16				23.41			
B	26.28	26.25	**	6.76	***	3.73	12.10	15.70	18.61	24.54	25.75	27.11	23.24	18.41	9.83	6.48

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 21

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	24.78	26.63	**	***	***	5.68	13.87	17.00	21.45	25.99	28.15	26.81	23.72	16.14	10.32	7.41
2	24.58	26.64	**	***	***	5.67	13.80	16.65	21.25	25.74	28.06	26.56	23.42	15.66	10.18	7.15
3						5.65	13.75	16.52	21.24	25.60	27.84	26.58	23.43	15.49	10.18	7.03
4							13.49		21.16		27.75					
5							13.30									
B	24.63	27.14	**	***	***	5.71	12.83	16.51	21.12	25.15	27.49	26.45	23.28	15.59	10.34	6.82

** No sample

TEMPERATURE in ^{o}C

Station 22

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.32	27.33	**	3.38	***	5.03	13.35	18.28	23.26	26.45	29.48	27.83	24.19	18.46	11.06	7.01
2	26.16	27.28	**	3.38	***	4.98	13.32	18.24	22.28	26.45	29.16	27.74	24.14	18.26	11.05	7.06
3	26.04	27.25	**	3.38	***	5.01	13.28	18.05	22.27	26.44	28.86	27.58	23.88	18.12	11.06	7.08
4						5.05	13.26	17.96	22.14	26.43	28.73	27.53	23.82	17.89	11.07	7.21
5							13.22								11.08	7.25
6							13.18									
B	25.86	26.88	**	3.36	***	4.96	12.91	17.47	22.11	25.78	28.18	27.18	23.53	17.85	11.20	7.54

** No sample
*** Inaccessible due to ice

Station 23

TEMPERATURE in ^{o}C

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.34	26.74	**	***	***	5.56	14.74	18.32	22.05	26.64	28.96	27.44	24.06	17.76	11.17	6.45
2	26.15	26.68	**	***	***	5.39	14.68	17.78	21.74	26.64	28.85	27.40	23.88	17.48	11.16	6.47
3	26.02	26.63	**	***	***	5.37	14.63	17.62	21.72	26.63	28.59	27.39	23.85	16.78	11.16	6.55
4	25.86		**	***	***	5.37	14.55		21.57	26.61	28.08	27.33			11.16	6.57
5							14.36		21.50	26.59	27.43	27.31				
6							13.20				27.13					
B	25.64	26.40	**	***	***	5.38	14.02	16.87	21.24	26.05	26.94	26.98	23.55	16.37	11.27	6.87

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 24

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	24.64		**	***	***	6.13	15.22	16.13	16.13	21.86	26.00	27.26	26.85	23.18	10.65	9.04
2							15.12	16.02	16.02	21.74	26.59	27.27	26.70			
3							14.96									
B	24.48	26.72	**	***	***	6.34	14.59	15.99	15.99	21.46	26.09	26.92	26.52	22.95	10.90	9.32

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 25

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	24.10	*	**	***	***	*	13.94	15.38	21.75	26.45	27.44	*	*	*	*	*
2	23.78	*	**	***	***	*	13.70	15.38	21.75	26.38	27.42	*	*	*	*	*
3	23.72	*	**	***	***	*	13.55	15.38	21.74		27.42	*	*	*	*	*
4							13.39		21.74							
5							13.39									
B	23.77	*	**	***	***	*	13.22	15.44	21.48	25.46	27.08	*	*	*	*	*

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 26

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*	*	**	***	***	*	13.41	14.57	21.52	26.25	26.95	*	*	*	*	*
2	*	*	**	***	***	*	13.39	14.56	21.52	26.26	26.94	*	*	*	*	*
3	*	*	**	***	***	*	13.39	14.55	21.53	26.27	26.94	*	*	*	*	*
4	*	*	**	***	***	*	13.38		21.53							
5	*	*	**	***	***	*	13.33									
B	*	*	**	***	***	*	13.26	14.25	21.49	25.76	26.82	*	*	*	*	*

** No sample
*** Inaccessible due to ice

TEMPERATURE in ^{o}C

Station 27

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*	*	**	***	***	*	13.33	14.25	21.46	25.90	26.58	*	*	*	*	*
2	*	*	**	***	***	*	13.32	14.25	21.47		26.67	*	*	*	*	*
3	*	*	**	***	***	*					26.67	*	*	*	*	*
4	*	*	**	***	***	*					26.66	*	*	*	*	*
5	*	*	**	***	***	*					26.65	*	*	*	*	*
B	*	*	**	***	***	*	12.64	13.78	21.35	25.28	26.38	*	*	*	*	*

** No sample
*** Inaccessible du

TABLE 4

FIELD CONDUCTIVITY DATA

FIELD CONDUCTIVITY in mmhos/cm

Station 1

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
B	8.93	8.04	**	#	***	7.25	4.21	3.93	9.38	7.21	5.14	6.71	7.36	8.94	7.49	6.70

** No sample
*** Inaccessible due to ice
# Frozen

FIELD CONDUCTIVITY in mmhos/cm

Station 4

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.94	3.02	**	#	***	1.52	1.90	3.18	2.02	4.08	2.28	2.55	2.04	2.96	1.67	1.18
2	4.05	3.02	**	#	***	1.76	1.90	3.19	2.26	4.62	2.31	2.55	2.08	3.68	1.78	1.19
3	4.12	3.05	**	#	***	2.33	1.90	3.28	3.36	4.78	2.53	2.62	2.14	3.92	2.25	1.22
4	4.20	3.43	**	#	***	2.66	1.88	3.35	3.77	5.24	4.16	2.82	2.31	4.94	2.82	1.38
5	4.48	5.32	**	#	***	2.66	1.88	3.45	4.68	5.43	4.88	2.28	2.42	6.30	5.42	2.37
6						4.80	1.88	3.50	7.16	7.55	5.47	8.67			6.88	
B	5.68	4.52	**	#	***	4.62	2.22	3.77	7.68	8.80	7.46	7.82	3.96	6.29	6.87	6.42

** No sample
*** Inaccessible due to ice
# Frozen meter

FIELD CONDUCTIVITY in mmhos/cm

Station 5

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.82	2.89	**	#	***	1.23	1.88	-2.73	1.98	3.74	2.24	2.53	2.00	2.65	1.66	1.20
2	3.78	2.89	**	#	***	1.23	1.88	2.87	1.98	3.78	2.25	2.53	2.00		1.67	1.20
3		2.91	**	#	***	1.24	1.88	3.46	2.08	3.79	2.30	2.54	2.07		1.82	1.22
4		3.07	**	#	***	1.24	1.86	3.52	4.01	3.85		2.57	2.37		2.04	1.22
5		4.23	**	#	***	1.34	1.85	3.50	6.11	5.38		4.82	2.69		3.36	1.58
6							1.84			7.77		8.28				2.45
B	3.78	4.22	**	#	***	2.64	1.82	3.72	7.42	8.35	2.45	8.42	3.06	2.63	5.99	6.08

** No sample
*** Inaccessible due to ice
# Frozen meter

FIELD CONDUCTIVITY in mmhos/cm

Station 6

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.82	2.28	**	#	***	1.12	1.72	-2.08	1.78	2.21	2.12	2.18	2.07	2.98	1.44	.89
2	2.82	2.30	**	#	***	1.12	1.72	2.10	1.78	2.21	2.11	2.18	2.06	1.99	1.44	.89
3	2.82	2.30	**	#	***	1.12	1.72	2.08	1.79	2.22	2.11	2.18	2.05	2.01	1.44	.90
4	2.82	2.31	**	#	***	1.13	1.72	2.07	1.83	2.22	2.12	2.18	2.04	2.02	1.46	.91
5						1.13	1.70	2.17	1.92	2.25	2.16	2.22	2.04	2.01	1.51	.95
6						1.18	1.69	2.35	2.14	2.42	1.8	2.29		2.01	2.02	1.20
9									7.18	7.02	5.09				5.41	5.51
B	2.82	2.32	**	#	***	4.99	1.74	3.43	7.15	2.12	5.03	7.72	2.17	2.02	5.38	5.48

** No sample
*** Inaccessible due to ice
# Frozen meter

Station 7

FIELD CONDUCTIVITY in mmhos/cm

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.41	2.15	**	#	***	1.08	1.72	1.94	1.72	2.04	2.06	2.05	2.04	1.83	1.23	.80
2	2.41	2.14	**	#	***	1.07	1.72	1.94	1.71	2.07	2.10	2.05	2.05	1.84	1.23	.80
3	2.40	2.12	**	#	***	1.08	1.70	1.94	1.69	2.08	2.13	2.05	2.05	1.83	1.24	.80
4	2.47	2.11	**	#	***	1.08	1.68	1.94	1.68	2.10	2.18	2.05	2.04	1.83	1.24	.80
5	2.48	2.11	**	#	***	1.08	1.68	1.94	1.68	2.11	2.13	2.06	2.04	1.83	1.28	.80
6	2.48	2.10	**	#	***	1.07	1.68	1.98	1.73	2.15	2.28	2.05	2.03	1.80	1.42	.81
9		2.08	**	#	***	1.08	1.72	2.78	6.14	2.76	3.49	2.08	2.11	1.76	1.92	
12					***	1.18	1.83								5.22	
B	2.48	2.10	**	#	***	5.88	2.00	4.10	6.73	6.08	4.12	2.12	2.71	1.73	5.30	.81

** No sample
*** Inaccessible due to ice
# Frozen ma...

Station 8 **FIELD CONDUCTIVITY in mmhos/cm**

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.42	2.05	**	#	***	1.08	1.38	1.78	1.33	1.98	1.68	1.87	1.88	1.71	1.14	.73
2	2.42	2.04	**	#	***	1.08	1.37	1.74	1.32	1.98	1.73	1.86	1.88	1.70	1.14	.73
3	2.42	2.04	**	#	***	1.08	1.38	1.75	1.30	1.99	1.76	1.87	1.91	1.70	1.14	.73
4	2.42	2.04	**	#	***	1.08	1.39	1.78	1.32	2.02	1.80	1.86	2.02	1.70	1.14	.73
5	2.42	2.04	**	#	***	1.08	1.41	1.78	1.36	2.04	1.83	1.85	2.03	1.69	1.15	.73
6	2.43	2.04	**	#	***	1.08	1.45	1.76	1.42	2.07	1.95	1.84	2.03	1.68	1.18	.73
9	2.62	2.04	**	#	***	1.07	1.66	1.72	1.49	2.19	2.47	2.02	2.08	1.68	1.54	.73
12	3.27		**	#	***	1.08	1.79									
B	3.36	2.04	**	#	***	1.10	1.80	2.43	5.09	4.78	3.87	2.32	2.42	1.67	1.85	1.08

** No sample
*** Inaccessible due to ice
# Frozen meter

FIELD CONDUCTIVITY in mmhos/cm

Station 9

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.41	1.92	**	1.32		***	1.04	1.29	1.32	1.25	1.77	1.45	1.70	1.68	1.08	.63
2	2.40	1.92	**	1.32		***	1.04	1.29	1.24	1.25	1.78	1.52	1.70	1.72	1.08	.63
3	2.40	1.92	**	1.32		***	1.05	1.28	1.24	1.25	1.78	1.53	1.71	1.85	1.09	.63
4	2.40	1.92	**	1.32		***	1.04	1.26	1.24	1.24	1.79	1.61	1.70	1.92	1.09	.63
5	2.40	1.92	**	1.32		***	1.04	1.26	1.24	1.26	1.79	1.60	1.70	1.98	1.09	.63
6	2.40	1.91	**	1.32		***	1.04	1.26	1.33	1.26	1.79		1.69	2.01	1.09	
9	2.40		**	1.32		***	1.04	1.26								
12							1.04	1.40								
15								1.61								
B	2.39	1.92	**	1.02		***	1.04	1.73	1.33	1.36	1.92	1.62	1.69	2.02	1.09	.63

** No sample

FIELD CONDUCTIVITY in mmhos/cm

Station 10

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.39	1.92	**	1.31	***	1.04	1.11	1.18	1.22	1.75	1.27	1.78	1.53	1.68	1.13	.70
2	2.39	1.92	**	1.31	***	1.03	1.12	1.18	1.24	1.69	1.27	1.74	1.55	1.67	1.12	.70
3	2.39	1.94	**	1.31	***	1.04	1.16	1.18	1.27	1.63	1.32	1.73	1.57	1.67	1.13	.70
4	2.39	1.95	**	1.30	***	1.03	1.20	1.18	1.27	1.62	1.36	1.69	1.58	1.66	1.13	.70
5	2.39	1.96	**	1.30	***	1.03	1.24	1.18	1.28	1.61	1.91	1.72	1.74	1.67	1.14	.72
6	2.39	1.98	**	1.29	***	1.04	1.24	1.22	1.29	1.64	1.98	1.68	1.85	1.67	1.15	.73
9	2.39	2.08	**	1.29	***	1.03	1.24	1.48	1.47	1.86	2.57	1.88	2.02	1.66	1.28	.87
12	2.41	2.18	**	1.29	***	1.04	1.28	2.95	2.69	2.20	4.02	2.62	2.13	1.74	1.81	1.28
15	3.36	2.84	**	1.29	***	1.08	1.71	5.42	5.78	3.89	4.45	4.94	2.59	2.18	2.42	3.25
18	3.68		**	1.29	***	4.34	1.86		5.91	5.17	3.75	5.83	2.97		4.78	
B	3.48	2.73	**	1.29	***	4.65	1.88	4.63	5.85	5.08	2.89	5.73	2.84	2.13	4.67	3.28

** No sample
*** Inaccessible due to ice
# Frozen meter

FIELD CONDUCTIVITY in mmhos/cm

Station 11

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.35	2.02	**	#	***	1.02	1.32	1.34	1.46	1.98	1.80	1.82	1.76	1.54	1.30	.97
2	2.35	2.01	**	#	***	1.02	1.32	1.34	1.44	1.98	1.77	1.80	1.75	1.53	1.30	.97
3	2.35	2.01	**	#	***	1.02	1.31	1.34	1.40	1.98	1.73	1.80	1.75	1.53	1.29	.97
4	2.35	2.01	**	#	***	1.02	1.31	1.34	1.39	1.97	1.72	1.80	1.74	1.53	1.29	.97
5	2.35	2.01	**	#	***	1.02	1.31	1.33	1.39	1.96	1.75	1.80	1.74	1.52	1.29	.97
6	2.35	2.00	**	#	***	1.02	1.31	1.33	1.44	1.96	1.77	1.89	1.74	1.52	1.29	.97
9	2.35	2.00	**	#	***	1.02	1.30	1.34	1.44	1.93		1.79	1.74	1.52		.97
B	2.34	2.00	**	#	***	1.02	1.32	1.36	1.44	1.93	1.77	1.78	1.73	1.52	1.29	.97

** No sample
*** Inaccessible due to ice
# Frozen [illegible]

FIELD CONDUCTIVITY in mmhos/cm

Station 12

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.36	2.02	**	#	***	1.02	1.32	1.37	1.43	1.99	1.75	1.80	1.75	1.54	1.28	.98
2	2.36	2.01	**	#	***	1.02	1.31	1.36	1.43	1.99	1.74	1.80	1.74	1.53	1.28	.98
3	2.36	2.00	**	#	***	1.02	1.31	1.35	1.43	1.99	1.74	1.79	1.74	1.53	1.28	.99
4	2.36	2.00	**	#	***	1.02	1.31	1.35	1.42	1.99	1.73	1.78	1.73	1.52	1.28	.99
5	2.36	2.00	**	#	***	1.02	1.30	1.35	1.41	1.99	1.74	1.78	1.73	1.52	1.28	.99
6	2.36	2.00	**	#	***	1.02	1.30	1.35	1.41	1.98	1.74	1.78	1.73	1.52	1.28	.99
9	2.36	2.00	**	#	***	1.02	1.30			1.98				1.52		.99
12	2.35	2.00	**	#	***											.99
B	2.36	2.00	**	#	***	1.02	1.30	1.34	1.45	1.98	1.75	1.80	1.73	1.52	1.28	1.01

** No sample
*** Inaccessible due to ice
# Frozen meter

FIELD CONDUCTIVITY in mmhos/cm

Station 13

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.06	1.85	**	#	***	1.03	.92	-1.00	1.12	1.52	1.28	1.56	1.62	1.43	.88	.55
2	2.06	1.84	**	#	***	1.03	.92	1.00	1.11	1.52	1.28	1.56	1.62	1.43	.88	.55
3	2.06	1.84	**	#	***	1.03	.92	1.00	1.13	1.52	1.28	1.56	1.61	1.43	.88	.55
4	2.06	1.84	**	#	***	1.03	.93	.99	1.13	1.52	1.28	1.56	1.62	1.43	.88	.55
5	2.06	1.84	**	#	***	1.03	.94	1.00	1.13	1.55	1.32	1.56	1.72	1.42	.88	.55
6	2.07	1.84	**	#	***	1.03	.94	.99	1.14	1.60	1.35	1.56	1.62	1.43	.88	.56
9	2.05	1.86	**	#	***	1.03	.94	1.02			1.44	1.58		1.43	.88	.64
12					***	1.03										.71
15					***	1.03										
B	2.04	1.90	**	#	***	1.04	.94	1.05	1.15	1.70	1.52	1.86	1.60	1.43	.89	.72

** No sample
*** Inaccessible due to ice
# Frozen meter

FIELD CONDUCTIVITY in mmhos/cm

Station 14

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Depth Meters																
1	2.08	1.79	**	#	***	1.03	.83	.97	1.12	1.41	1.08	1.46	1.38	1.38	.85	.55
2	2.08	1.79	**	#	***	1.03	.84	1.02	1.11	1.40	1.08	1.46	1.42	1.38	.86	.55
3	2.08	1.79	**	#	***	1.03	.84	1.03	1.09	1.40	1.11	1.45	1.47	1.38	.85	.56
4	2.08	1.79	**	#	***	1.03	.86	1.02	1.08	1.41	1.26	1.46	1.58	1.38	.85	.56
5	2.08	1.79	**	#	***	1.03	.87	1.02	1.08	1.42	1.29	1.45	1.59	1.38	.85	.56
6	2.08	1.79	**	#	***	1.03	.88	1.02	1.08	1.45	1.27	1.47	1.59	1.38	.84	.56
9	2.09	1.81	**	#	***	1.03	.88	1.07	1.12	1.59	1.84	1.54	1.60	1.39	.84	.56
12	2.20	.192	**	#	***	1.03	.90	1.78	1.72	1.78	2.20	2.33	1.67	1.38	.82	.56
15	3.08		**	#	***	1.03	.96	2.37	2.62	2.18	2.16	4.11	1.79		.84	.58
18							1.20									
B	3.82	2.33	**	#	***	1.04	1.64	2.83	3.33	3.67	2.72	4.82	1.86	1.48	1.60	1.55

** No sample
*** Inaccessible due to ice
# Frozen meter

Station 15

FIELD CONDUCTIVITY in mmhos/cm

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.15	1.82	**	#	***	1.02	.94	.99	1.12	1.59	1.31	1.58	1.63	1.43	.85	.56
2	2.15	1.82	**	#	***	1.02	.94	.99	1.12	1.59	1.31	1.58	1.62	1.43	.84	.56
3	2.15	1.84	**	#	***	1.01	.94	.99	1.12	1.59	1.31	1.62	1.62	1.42	.84	.56
4	2.15	1.85	**	#	***	1.02	.94	.99	1.11	1.58	1.32	1.64	1.62	1.42	.84	.56
5	2.14	1.85	**	#	***	1.02	.95	.99	1.12	1.59	1.32	1.58	1.62	1.42	.83	.56
6	2.13	1.85	**	#	***	1.02	.95	1.00	1.12	1.59	1.35	1.57	1.62	1.42	.83	.56
9	2.15	1.93	**	#	***	1.02	.97	1.04	1.25	1.62	1.85	1.63	1.62	1.42	.85	.56
12	2.19	2.06	**	#	***	1.02	1.01	1.66	1.60	1.68	2.58	2.28	1.62	1.42	1.00	.72
15	2.58	2.24	**	#	***	1.18	1.20	2.01	2.98	3.13	3.11	4.41	1.62	1.42	1.61	.96
18	4.05	2.67	**	#	***	5.28	1.49	2.18	4.13	4.20	3.34	5.07	1.62	1.41	2.36	1.58
B	4.02	2.59	**	#	***	5.27	1.62	2.28	4.05	4.52	3.38	5.48	1.63	1.41	4.81	2.42

** No sample
*** Inaccessible due to ice
\# Frozen meter

FIELD CONDUCTIVITY in mmhos/cm

Station 16

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.69	1.50	**	#	***	.93	.80	.86	1.12	1.26	1.05	1.30	1.29	1.09	.74	.47
2	1.69	1.51	**	#	***	.93	.80	.86	1.12	1.26	1.06	1.30	1.30	1.09	.74	.47
3	1.68	1.52	**	#	***	.93	.80	.86	1.12	1.26	1.08	1.30	1.30	1.09	.74	.47
4	1.68	1.52	**	#	***	.93	.79	.86	1.12	1.26	1.08	1.30	1.28	1.09	.74	.47
5	1.68	1.52	**	#	***	.93	.78	.86	1.12	1.26	1.11	1.30	1.28	1.09	.74	.47
6	1.69	1.52	**	#	***	.93	.78	.87	1.07	1.26	1.13	1.30	1.28	1.09	.75	.47
9	1.72	1.54	**	#	***	.94	.78	1.04	1.06	1.26	1.52	1.32	1.28	1.09	.83	.48
12	1.73	1.54	**	#	***	.94	.79	1.26	1.12	1.36	1.48	1.55	.93	1.09	.88	.46
15							.79	1.72	1.62	2.23	1.80	3.00	.78		.88	.52
18							.82		3.43	3.18					.88	1.22
B	1.88	1.55	**	#	***	.93	.81	1.82	3.56	3.22	1.92	3.96	.80	1.08	.88	1.20

** No sample
*** Inaccessible due to ice
# Frozen meter

Station 17

FIELD CONDUCTIVITY in mmhos/cm

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec. Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.64	1.44	**	.96 ***	.84	.86	.87	1.20	1.24	1.02	1.27	1.22	1.09	.77	.53
2	1.64	1.44	**	.96 ***	.86	.86	.86	1.20	1.24	1.02	1.28	1.22	1.09	.77	.53
3	1.64	1.44	**	.97 ***	.87	.86	.87	1.18	1.24	1.02	1.26	1.22	1.09	.77	.53
4	1.64	1.44	**	.98 ***	.88	.86	.87	1.18	1.22	1.02	1.26	1.22	1.09	.77	.53
5	1.64	1.44	**	.98 ***	.90	.85	.87	1.16	1.21	1.02	1.26	1.21	1.08	.77	.53
6	1.69	1.44	**	.98 ***	.90	.82	.88	1.16	1.19	1.02	1.25	1.18	1.09	.77	.53
9	1.84	1.44	**	1.01 ***	.92	.78	.98	1.12	1.18	1.17	1.26	1.05	1.08	.79	.53
12	2.20	1.38	**	1.01 ***	1.02	.84	1.14	1.30	1.49	1.32	1.32	.78	1.08	.92	.58
15	2.78	1.38	**	***	2.14	.86	1.38	1.84	2.28	1.30	3.04	.78	1.08	.94	.62
18		1.38	**	***	4.14					1.41					
B	2.45	1.38	**	1.02 ***	3.95	.85	1.60	2.94	2.60	1.68	3.20	.78	1.12	.94	.63

** No sample
*** Inaccessible due to ice

FIELD CONDUCTIVITY in mmhos/cm

Station 18

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.52	1.38	**	.87	***	.88	.93	.83	1.28	1.18	1.06	1.24	1.10	1.07	.78	.52
2	1.52	1.38	**	.86	***	.88	.93	.83	1.31	1.18	1.04	1.24	1.10	1.07	.78	.52
3	1.52	1.38	**	.87	***	.88	.93	.82	1.32	1.18	1.04	1.24	1.10	1.07	.78	.52
4	1.52	1.38	**	.88	***	.89	.93	.84	1.32	1.16	1.04	1.24	1.10	1.07	.78	.52
5	1.52	1.38	**	.92	***	.89	.93	.85	1.32	1.13	1.04	1.24	1.10	1.06	.78	.52
6	1.52	1.38	**	.95	***	.89	.92	.88	1.32	1.12	1.09	1.23	1.08	1.05	.78	.52
9	1.53	1.38	**	.94	***	.92	.81	.94	1.14	1.07	1.14	1.22	.98	1.05	.79	.53
12					***		.78		1.13			1.22	.82			
B	1.75	1.38	**	.94	***	.92	.78	.98	1.05	1.18	1.18	1.22	.82	1.05	.93	.53

** No sample
*** Inaccessible due to ice

FIELD CONDUCTIVITY in mmhos/cm

Station 19

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec. Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.48	1.37	**	.84 ***	.70	1.01	.84	1.37	1.08	1.02	1.22	.91	1.02	.83	.57
2	1,48	1.37	**	.84 ***	.71	1.01	.84	1.39	1.08	1.02	1.22	.92	1.02	.83	.57
3	1.48	1.37	**	.84 ***	.72	1.01	.84	1.35	1.08	1.03	1.21	.90	1.01	.84	.56
4	1.48	1.37	**	.84 ***	.73	1.01	.84	1.36	1.08	1.02	1.21	.90	1.01	.84	.58
5	1.48	1.37	**	.85 ***	.76	1.01	.83	1.48	1.08	1.02	1.21	.87	1.00	.94	.58
6	1.49	1.36	**	.85 ***	.79	1.01	.84	1.54	1.08	1.11	1.22	.86	.99	.96	.58
9	1.52	1.34	**	.88 ***	.82	1.00	.93	1.54	1.10	1.29	1.21	.76	.99	.96	.61
12	2.20	1.34	**	.92 ***	.95	.98	.96			1.15	1.23	.79	.99	.96	.64
15					1.24	.88									.66
18					1.26										
B	2.35	1.34	**	.92 ***	1.21	.81	1.04	1.54	1.08	1.23	1.29	.80	.98	.96	.66

** No sample

FIELD CONDUCTIVITY in mmhos/cm

Station 20

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Depth Meters																
1	1.43	1.33	**	.76	***	.77	.92	.82	1.41	1.16	1.04	1.21	.88	.99	.92	.56
2	1.43	1.33	**	.75	***	.76	.88	.82	1.38	1.16	1.04	1.21	.88	.98	.92	.56
3	1.42	1.33	**	.75	***	.76	.88	.82	1.37	1.15	1.05	1.21	.88	.98	.92	.56
4	1.42	1.33	**	.75	***	.76	.87	.82	1.32	1.14	1.04	1.21	.85	.98	.92	.56
5	1.42	1.33	**	.75	***	.76	.86	.83	1.34	1.09	1.02	1.21	.85	.98	.92	.56
6	1.42	1.33	**	.75	***	.76	.84	.85	1.24	1.05	1.03	1.21	.84	.99	.92	.56
9							.82									
B	1.41	1.33	**	.75	***	.77	.80	.88	1.20	1.13	1.08	1.20	.92	.99	.93	.56

** No sample
*** Inaccessible due to ice

FIELD CONDUCTIVITY in mmhos/cm

Station 21

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.34	1.28	**	***	***	.72	.83	.80	1.45	1.16	1.00	1.18	.80	.85	.83	.56
2	13.4	1.28	**	***	***	.72	.83	.80	1.52	1.17	.99	1.18	.80	.83	.88	.56
3						.72	.83	.81	1.52	1.17	1.00	1.18	.80	.82	.92	.58
4							.82		1.49		1.03					
5							.80									
B	1.34	1.28	**	***	***	.72	.80	.80	1.48	1.15	1.02	1.18	.80	.82	.92	.58

** No sample
*** Inaccessible due to ice

FIELD CONDUCTIVITY in mmhos/cm

Station 22

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.38	1.33	**	.72	***	.66	.91	.78	1.62	1.04	1.02	1.22	.79	.98	.98	.58
2	1.38	1.33	**	.72	***	.66	.91	.78	1.52	1.04	1.04	1.22	.78	.97	.98	.58
3	1.38	1.33	**	.72	***	.67	.91	.79	1.50	1.04	1.04	1.22	.78	.96	.98	.58
4						.68	.91	.80	1.48	1.04	1.02	1.22	.75	.94	.98	.58
5							.91								.98	.58
6							.91								.98	.58
B	1.38	1.33	**	.72	***	.68	.91	.80	1.44	1.03	.99	1.22	.73	.94	.98	.58

** No sample
*** Inaccessible due to ice

FIELD CONDUCTIVITY in mmhos/cm

Station 23

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.43	1.33	**	***	***	.68	1.05	.72	1.45	1.08	1.02	1.27	.80	.98	.83	.62
2	1.42	1.33	**	***	***	.68	1.05	.72	1.36	1.08	1.04	1.28	.80	.99	.84	.62
3	1.41	1.33	**	***	***	.68	1.05	.74	1.36	1.08	1.06	1.28	.79	1.07	.84	.62
4	1.42		**	***	***	.68	1.05		1.36	1.08	1.10	1.28			.84	.62
5							1.04		1.39	1.08	1.22	1.28				
6							1.03				1.84					
B	1.42	1.33	**	***	***	.68	.99	3.74	1.44	1.08	1.26	1.28	.80	1.16	.86	.62

** No sample
*** Inaccessible due to i-

FIELD CONDUCTIVITY in mmhos/cm

Station 24

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Depth Meters																
1	1.52		**	***	***	.68	1.26	.66	1.48	1.21	1.26	1.54	.86	1.28	1.22	.84
2			**	***	***		1.28	.63	1.52	1.18	1.20	1.53				
3			**	***	***		1.28									
B	1.52	1.36	**	***	***	.69	1.28	.64	1.57	1.20	1.90	1.54	.87	1.32	1.22	.84

** No sample
*** Inaccessible due to ice

FIELD CONDUCTIVITY in mmhos/cm

Station 25

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.72	*	**	***	***	*	.93	.89	1.06	1.32	.96	*	*	*	*	*
2	1.71	*	**	***	***	*	1.00	.89	1.06	1.32	.96	*	*	*	*	*
3	1.69	*	**	***	***	*	1.08	.89	1.06		.94	*	*	*	*	*
4							1.11		1.06							
5							1.12									
B	1.69	*	**	***	***	*	1.12	.90	1.09	1.30	1.97	*	*	*	*	*

** No sample
*** Inaccessible due to ice

FIELD CONDUCTIVITY in mmhos/cm

Station 26

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*	*	**	***	***	*	1.29	.87	1.16	1.33	1.03	*	*	*	*	*
2	*	*	**	***	***	*	1.29	.87	1.17	1.33	1.03	*	*	*	*	*
3	*	*	**	***	***	*	1.32	.87	1.17	1.34	1.04	*	*	*	*	*
4	*	*	**	***	***	*	1.32		1.18			*	*	*	*	*
5	*	*	**	***	***	*	1.32					*	*	*	*	*
B	*	*	**	***	***	*	1.30	.86	1.28	1.33	1.04	*	*	*	*	*

** No sample
*** Inaccessible due to ice

FIELD CONDUCTIVITY in mmhos/cm

Station 27

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*	*	**	***	***	*	1.33	.85	1.20	1.32	1.04	*	*	*	*	*
2	*	*	**	***	***	*	1.33	.86	1.21		1.04	*	*	*	*	*
3	*	*	**	***	***	*					1.02	*	*	*	*	*
4	*	*	**	***	***	*					1.48	*	*	*	*	*
5	*	*	**	***	***	*					1.00	*	*	*	*	*
B	*	*	**	***	***	*	1.32	.86	1.28	1.32	1.02	*	*	*	*	*

** No sample
*** Inaccessible due to ice

TABLE 5

FIELD DISSOLVED OXYGEN DATA

DISSOLVED OXYGEN in mg/l

Station 1

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Depth Meters																
B	5.30	3.19	**	3.51	***	10.84	8.62	9.45	9.00	6.83	7.10	5.85	8.72	8.00	8.55	9.44

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 4

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.05	6.00	**	12.92	***	10.51	8.48	7.84	7.13	6.03	5.56	6.70	7.68	8.97	10.58	9.68
2	7.79	5.88	**	13.21	***	10.28	8.45	7.82	6.87	5.98	5.45	6.62	7.22	9.00	10.41	9.69
3	6.38	5.65	**	13.62	***	10.20	8.42	7.84	7.56	5.82	5.16	6.48	7.25	9.02	10.16	9.85
4	6.94	3.92	**	13.28	***	10.00	8.35	7.79	8.21	5.64	3.88	5.93	7.26	9.08	9.05	9.95
5	6.55	.80	**	12.99	***	9.80	8.22	7.68	8.91	5.56	3.46	4.34	6.50	9.34	8.91	10.48
6						9.70	8.08	7.48	7.86	5.16	2.53	3.31			8.92	
B	5.24	1.98	**	12.41	***	10.18	1.64	8.06	7.64	4.38	3.80	2.88	7.53	9.60	8.98	10.40

** No sample
*** Inaccessible due to ice

Station 5

DISSOLVED OXYGEN in mg/l

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.20	5.43	**	11.91	***	10.83	8.28	8.05	7.35	6.11	5.48	6.26	7.75	10.39	11.32	9.55
2	8.12	5.68	**	12.03	***	10.82	8.26	7.80	6.67	6.10	5.60	6.21	7.68		11.19	9.56
3		5.92	**		***	10.82	8.23	7.44	6.66	6.09	5.56	6.12	6.81		10.40	9.60
4		3.65	**		***	10.82	8.31	7.44	7.83	5.98		6.00	6.82		10.25	9.72
5		1.04	**		***	10.76	8.04	7.35	8.11	5.37		4.54	7.18		9.79	9.87
6							8.13			4.32		4.22				10.32
B	8.20	1.02	**	13.10	***	11.18	8.20	7.17	7.03	4.29	4.88	2.50	7.23	9.35	9.26	10.15

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 6

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.95	6.68	**	10.88	***	11.32	8.51	8.21	6.84	6.62	8.35	7.02	7.47	10.24	8.99	9.20
2	7.87	6.04	**	10.94	***	11.27	8.55	7.98	6.86	6.62	8.02	6.95	7.48	10.84	8.88	9.19
3	7.72	6.20	**	11.02	***	11.18	8.61	7.90	6.70	6.59	7.73	6.88	7.46	11.63	8.74	9.30
4	8.49	6.84	**	11.07	***	11.08	8.69	7.76	6.69	6.61	4.38	6.76	7.13	12.30	8.85	9.31
5				11.22	***	11.88	8.76	7.62	6.51	6.58	5.08	6.66	7.16	12.82	8.91	9.36
6				11.38	***	10.66	8.76		6.58	6.58	3.76	6.46		13.39	9.06	9.41
9									6.28	3.56	1.24				8.99	9.36
B	8.67	6.77	**	11.33	***	9.82	8.85	6.51	8.24	3.62	1.33	2.59	5.74	8.91	9.15	9.45

** No sample
*** Inaccessible due to ice

Station 7

DISSOLVED OXYGEN in mg/l

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.92	6.15	**	10.51	***	11.33	8.60	7.53	7.13	6.35	8.18	7.21	6.63	8.45	8.86	9.05
2	7.21	5.84	**	10.61	***	11.29	8.56	7.49	6.86	6.29	6.96	7.19	6.48	8.35	8.85	9.04
3	7.45	6.02	**	10.64	***	11.22	8.54	7.48	6.48	6.25	6.42	7.19	6.10	8.31	8.85	9.04
4	7.92	5.88	**	10.73	***	11.18	8.54	7.46	6.51	6.24	5.72	7.21	5.96	8.30	8.82	9.03
5	7.95	5.70	**	10.73	***	11.10	8.58	7.44	6.43	6.22	4.52	7.27	5.68	8.28	8.75	9.04
6	8.39	5.88	**	10.96	***	10.96	8.54	7.43	6.28	6.15	3.48	7.31	5.48	8.23	8.47	9.09
9		5.55	**			10.69	8.39	5.66	5.78	5.52	1.46	7.28	5.06	8.08	8.36	
12						9.78	7.56								8.31	
B	7.82	4.82	**	11.64	***	9.31	7.21	2.09	6.03	2.88	.58	7.42	4.05	8.18	8.37	9.19

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 8

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.04	6.46	**	9.92	***	11.30	9.70	7.28	8.13	6.32	6.84	7.08	7.06	8.68	8.57	9.03
2	6.23	5.76	**	10.01	***	11.31	8.97	6.98	8.12	6.31	6.10	7.06	6.98	8.39	8.56	9.03
3	6.32	6.18	**	10.09	***	11.32	8.90	6.97	7.98	6.27	5.75	6.99	6.73	8.39	8.59	9.00
4	6.34	5.99	**	10.14	***	11.32	8.85	6.93	6.90	6.22	5.66	6.95	5.55	8.44	8.60	9.01
5	7.28	5.73	**	10.22	***	11.33	8.77	6.94	6.86	6.18	5.63	6.85	5.24	8.50	8.58	8.99
6	7.09	5.30	**	10.30	***	11.37	8.62	6.96	6.73	6.15	5.56	6.66	5.23	8.55	8.48	8.98
9	5.74	5.14	**	10.47	***	11.40	8.20	6.82	6.55	5.72	1.88	5.94	4.64	8.51	8.34	8.96
12	2.55		**		***	11.35	7.52									
B	2.92	4.41	**	10.72	***	11.78	7.68	3.01	3.45	2.84	.50	3.38	2.23	8.75	8.52	9.18

** No sample
*** Inaccessible due to ice

Station 9

DISSOLVED OXYGEN in mg/l

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.31	6.52	**	10.11	***	11.58	9.24	7.43	7.43	6.31	8.52	7.08	7.54	8.58	8.47	9.18
2	5.32	6.54	**	10.18	***	11.58	9.12	7.33	7.40	6.12	8.49	7.23	7.62	8.59	8.50	9.18
3	5.64	6.68	**	10.23	***	11.59	9.07	7.29	6.22	6.65	7.48	7.28	7.62	8.60	8.52	9.21
4	5.64	6.88	**	10.24	***	11.59	9.06	7.34	6.59	6.56	4.46	7.38	5.88	8.66	8.58	9.25
5	5.25	6.64	**	10.45	***	11.60	9.03	7.36	6.24	6.64	4.08	7.46	5.08	8.82	8.65	9.37
6	6.34	6.94	**	10.66	***	11.65	8.95	7.39	6.49	6.52		7.48	4.59		8.81	
9	6.68		**	10.24	***	11.72	8.75									
12						11.82	8.50									
15							8.08									
B	6.27	6.85	**	10.27	***	11.95	7.88	7.73	8.26	5.95	3.95	7.54	4.47	9.04	9.02	9.64

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 10

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.92	4.98	**	9.82	***	11.48	9.20	7.36	6.73	5.60	8.09	5.74	5.85	8.32	8.29	9.03
2	6.58	4.59	**	9.87	***	11.44	9.16	7.32	6.67	5.49	7.30	5.64	5.69	8.29	8.21	9.01
3	7.15	4.42	**	9.92	***	11.38	9.10	7.31	6.62	5.44	6.43	5.65	5.62	8.30	8.22	8.98
4	6.95	3.91	**	9.99	***	11.32	9.07	7.30	6.61	5.60	5.92	5.94	5.38	8.31	8.25	8.94
5	6.58	3.95	**	10.02	***	11.24	9.01	7.25	6.64	5.58	2.78	5.98	5.18	8.28	8.27	8.88
6	6.58	4.03	**	10.04	***	11.15	8.96	7.18	6.33	5.57	2.33	5.88	4.78	8.26	8.22	8.80
9	6.24	3.25	**	10.08	***	10.97	8.81	6.54	5.98	5.28	.76	5.15	4.69	8.22	8.25	8.55
12	6.39	2.47	**	10.09	***	10.54	8.38	4.59	5.08	4.52	.39	4.18	4.07	8.16	8.38	8.12
15	1.43	1.02	**	10.07	***	9.43	7.54	2.82	4.92	3.79	.39	2.29	3.75	6.00	8.19	7.72
18	1.85			10.28	***	8.57	7.32		4.55	2.98	.37	1.98	3.18		7.69	
B	2.75	1.45	**	11.08	***	8.62	7.15	2.02	3.63	2.79	.48	2.18	3.25	5.24	7.87	7.74

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 11

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.51	5.21	**	10.51	***	11.64	9.80	7.88	8.63	5.54	9.47	6.76	9.14	8.36	9.42	9.05
2	6.32	5.28	**	10.58	***	11.68	9.59	7.72	7.70	5.28	6.78	6.77	8.85	8.41	9.28	9.05
3	6.52	5.46	**	10.65	***	11.77	9.40	7.65	6.58	5.42	5.64	5.96	7.83	8.39	9.25	9.04
4	6.29	5.54	**	10.73	***	11.84	9.30	7.65	6.53	5.04	5.24	5.97	6.98	8.32	9.31	9.05
5	6.28	5.68	**	10.86	***	11.92	9.27	7.60	6.42	5.10	4.60	5.84	6.58	8.25	9.15	9.02
6	6.42	5.57	**	11.04	***	12.01	9.11	7.61	6.28	4.68	3.82	5.68	4.88	8.22	8.94	8.98
9	6.17	5.12	**		***	12.14	8.76	7.09	5.58	3.68		3.68	2.19	8.17		9.05
B	6.25	1.15	**	11.60	***	12.35	8.64	6.00	4.03	3.42	1.85	3.35	2.24	8.22	8.95	9.28

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 12

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.12	6.11	**	10.64	***	11.86	10.14	8.58	7.58	5.53	8.07	6.15	8.46	8.86	8.90	8.93
2	6.15	5.48	**	10.69	***	11.89	10.12	7.88	7.39	5.30	6.62	5.94	7.26	8.83	8.85	8.95
3	6.45	5.77	**	10.72	***	11.88	10.05	7.93	7.39	5.52	6.66	4.98	7.10	8.84	8.82	8.93
4	6.06	5.52	**	10.79	***	11.88	9.92	7.92	7.06	5.38	5.70	6.28	6.83	8.94	8.76	8.93
5	6.49	5.72	**	10.84	***	11.92	9.86	7.94	6.94	5.58	5.28	6.34	6.85	9.04	8.79	8.91
6	6.55	5.78	**	10.92	***	11.92	9.76	7.92	6.42	5.22	4.87	6.28	6.43	9.08	8.94	8.89
9	5.83	5.03	**	11.00	***	11.95				3.86				9.04		8.90
12	2.29	4.69	**		***											
B	2.37	4.28	**	11.35	***	12.01	9.78	8.55	6.11	3.29	3.18	4.08	6.02	9.16	9.07	9.19

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 13

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.58	5.09	**	9.89	***	11.08	8.75	7.42	7.18	6.42	6.32	4.74	5.90	8.24	8.14	9.27
2	6.08	5.09	**	10.01	***	110.4	8.79	7.42	6.86	6.39	6.09	4.72	4.84	8.26	8.15	9.24
3	6.12	5.09	**	10.19	***	110.2	8.72	7.42	6.83	6.41	6.02	4.72	4.82	8.30	8.13	9.22
4	6.41	5.11	**	10.30	***	10.98	8.74	7.43	6.78	6.32	5.93	4.74	4.98	8.35	8.07	9.18
5	6.95	5.18	**	10.42	***	10.94	8.76	7.40	6.78	6.22	5.30	4.78	5.09	8.45	8.05	9.12
6	6.97	5.19	**	10.61	***	10.88	8.79	7.32	6.72	5.86	4.79	4.87	5.26	8.54	8.06	8.92
9	6.59	5.10	**	10.97	***	10.84	8.84	7.12			3.08	4.98		8.66	8.01	8.98
12						10.74										9.04
15						10.62										
B	6.58	4.20	**	10.38	***	10.70	8.94	7.78	6.62	5.68	2.33	3.78	5.55	8.81	8.06	9.18

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 14

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.13	5.63	**	10.27	***	11.15	8.75	7.63	7.57	6.24	7.43	6.22	5.14	9.02	8.03	9.25
2	6.89	5.45	**	10:33	***	11.15	8.75	7.60	7.52	6.20	7.25	6.28	5.14	9.94	8.03	9.22
3	6.87	5.41	**	10.32	***	11.12	8.67	7.61	7.33	6.23	6.58	6.12	5.10	10.72	8.03	9.15
4	6.99	5.65	**	10.32	***	11.08	8.65	7.60	7.18	6.22	6.38	6.09	5.15	11.49	8.05	9.12
5	7.04	5.63	**	10.36	***	11.06	8.69	7.60	7.06	6.28	6.15	6.05	5.23	11.76	8.09	9.05
6	7.36	5.35	**	10.22	***	11.02	8.72	7.58	7.05	6.28	5.58	5.88	5.28	12.40	8.12	9.00
9	7.21	5.17	**	10.28	***	10.96	8.74	7.42	6.29	6.08	1.96	5.15	5.10	14.18	8.16	8.94
12	6.03	3.48	**	10.31	***	10.90	8.69	6.66	4.28	5.74	1.56	1.62	4.82	15.87	8.13	8.85
15	1.95		**			10.80	8.56	3.98	3.75	4.66	.70	.88	3.89		7.88	8.57
18							8.25									
B	2.08	1.35	**	10.58	***	10.74	7.75	4.68	2.70	2.44	1.82	.98	3.87	9.97	7.73	8.15

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 15

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.81	5.09	**	9.75	***	11.05	8.82	7.58	7.41	6.34	5.92	4.79	5.33	8.23	8.17	9.27
2	6.86	4.79	**	9.90	***	11.03	8.80	7.56	7.26	6.27	5.92	4.08	5.08	8.22	8.11	9.24
3	6.87	4.20	**	9.93	***	10.98	8.79	7.55	7.27	6.28	5.85	4.40	5.06	8.25	8.12	9.23
4	6.92	4.33	**	10.02	***	10.88	8.79	7.50	7.21	6.24	5.78	4.52	5.08	8.27	8.17	9.18
5	6.94	3.85	**	10.14	***	10.81	8.79	7.48	7.22	6.26	5.72	4.73	5.08	8.30	8.13	9.14
6	6.95	4.31	**	10.26	***	10.70	8.78	4.32	7.18	6.12	5.56	4.74	5.11	8.33	8.15	9.06
9	5.58	2.68	**	10.40	***	10.48	8.75	7.38	6.40	6.02	2.42	4.62	5.15	8.39	8.13	8.90
12	4.25	1.74	**	10.54	***	10.16	8.68	5.65	4.80	5.64	.68	2.26	5.17	8.45	7.78	8.61
15	2.15	.93	**	10.76	***	9.63	8.29	4.68	4.08	1.68	.50	.92	5.14	8.47	7.58	8.46
18	1.81	.84	**	11.03	***	5.64	7.94	3.68	3.75	.92	.49	1.05	4.78	8.62	7.49	8.42
B	2.94	1.08	**	11.60	***	5.81	8.18	4.51	3.37	.69	.62	1.52	4.73	8.95	7.45	8.74

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.92	5.25	**	10.38	***	10.75	8.72	7.48	6.99	5.77	6.36	5.28	5.08	9.04	8.46	9.53
2	6.82	5.20	**	10.33	***	10.73	8.72	7.48	7.02	5.78	5.68	5.24	5.05	9.36	8.46	9.52
3	8.50	4.88	**	10.37	***	10.68	8.68	7.49	7.04	5.73	4.98	5.22	5.11	9.89	8.45	9.49
4	6.67	4.86	**	10.48	***	10.66	8.68	7.51	7.04	5.74	4.96	5.13	5.14	10.61	8.48	9.46
5	6.48	5.23	**	10.56	***	10.66	8.67	7.46	7.04	5.74	4.98	5.14	5.15	11.50	8.49	9.44
6	7.23	4.92	**	10.66	***	10.64	8.65	7.43	6.95	5.74	4.95	5.08	5.16	12.01	8.60	9.39
9	6.68	4.82	**	10.72	***	10.58	8.64	6.58	6.38	5.16	2.58	4.62	5.08	13.15	8.65	9.33
12	6.48	4.22	**	10.59	***	10.57	8.53	4.95	3.08	6.35	.69	3.08	4.66	14.76	8.55	9.18
15							8.44	4.78	2.92	2.85	.52	1.03	4.17		8.51	8.98
18							8.44		2.44	.56					8.46	8.21
B	5.30	1.48	**	11.14	***	11.02	8.57	4.65	1.61	.58	.63	1.55	4.23	8.52	8.50	8.47

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 17

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Depth Meters																
1	5.14	5.31	**	10.11	***	10.52	8.60	7.66	5.65	5.94	4.47	5.55	5.22	8.30	8.64	9.64
2	4.47	5.21	**	10.09	***	10.46	8.59	7.66	5.59	5.96	4.53	5.49	5.18	8.28	8.63	9.62
3	5.10	5.12	**	10.08	***	10.44	8.61	7.65	5.41	5.90	4.63	5.44	5.17	8.30	8.63	9.59
4	5.24	5.14	**	10.08	***	10.41	8.63	7.64	5.50	5.91	4.58	5.39	5.18	8.31	8.63	9.51
5	5.16	5.44	**	10.09	***	10.39	8.62	7.60	5.29	5.80	4.54	5.36	5.14	8.32	8.64	9.53
6	4.77	5.08	**	10.09	***	10.38	8.55	7.56	5.04	5.78	4.44	5.28	5.16	8.33	8.65	9.50
9	3.82	4.84	**	10.12	***	10.29	8.58	4.09	3.82	3.98	.16	5.05	5.31	8.38	8.78	9.46
12	2.32	4.43	**	10.16	***	10.18	8.64	3.89	3.80	4.28	.43	2.11	5.26	8.46	8.76	9.39
15	.73	1.82	**		***	6.85	8.59	2.74	.86	2.69	.31	1.02	5.18	8.59	8.91	9.38
18		2.38	**		***	3.97					.32					
B	1.32	2.84	**	10.30	***	4.35	7.58	2.77	.73	.52	.36	1.08	5.32	8.76	8.98	9.30

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 18

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.59	5.54	**	10.24	***	10.93	8.60	7.71	5.84	5.95	7.44	5.79	5.33	8.42	8.71	9.47
2	5.46	5.68	**	10.26	***	10.86	8.59	7.71	5.83	5.92	4.35	5.74	5.22	8.41	8.70	9.44
3	5.35	5.58	**	10.24	***	10.78	8.60	7.68	5.64	5.82	5.42	5.72	5.22	8.39	8.70	9.41
4	5.38	5.57	**	10.20	***	10.72	8.62	7.70	5.42	5.73	5.19	5.68	5.23	8.37	8.70	9.38
5	5.01	5.88	**	10.22	***	10.69	8.65	7.63	5.52	5.54	4.82	5.66	5.24	8.38	8.70	9.34
6	4.68	5.54	**	10.29	***	10.67	8.55	6.88	5.25	5.39	3.38	5.61	5.23	8.25	8.70	9.33
9	4.16	5.75	**	10.33	***	10.66	8.33		2.97	4.58	1.16	5.06	5.08	7.94	8.79	9.32
12							8.00		2.64			3.17	2.86			
B	1.72	1.38	**	10.52	***	10.74	8.18	5.32	1.14	2.98	.51	2.59	2.93	7.81	8.70	9.34

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 19

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Depth Meters																
1	4.58	5.55	**	10.43	***	10.58	8.76	8.42	5.27	5.82	4.45	6.23	5.64	8.54	8.89	9.42
2	5.28	5.12	**	10.44	***	10.54	8.67	8.32	5.57	5.84	3.92	6.17	5.54	8.50	8.90	9.39
3	5.49	5.62	**	10.46	***	10.52	8.67	8.31	5.36	5.85	3.66	5.68	5.57	8.52	8.92	9.37
4	5.47	5.32	**	10.47	***	10.53	8.67	8.21	5.03	5.88	3.82	5.64	5.62	8.55	9.09	9.41
5	5.55	5.63	**	10.47	***	10.47	8.70	8.18	5.09	5.89	3.69	5.58	5.64	8.58	9.07	9.31
6	5.58	4.73	**	10.45	***	10.42	8.68	6.70	5.23	5.92	2.42	4.88	5.66	8.62	8.99	9.41
9	4.73	3.68	**	10.48	***	10.36	8.72	5.94	4.78	5.74	2.44	4.49	5.66	8.64	8.94	9.38
12	1.53	3.27	**	10.59	***	10.17	8.72	3.58			.65	3.76	5.38	6.61	8.93	9.28
15						8.35	7.99									9.18
18						8.21										
B	2.25	2.94	**	11.01	***	8.54	7.44	3.61	3.25	5.74	.50	1.75	5.48	8.81	8.97	9.05

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 20

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.00	5.59	**	10.72	***	10.44	8.74	7.50	5.73	6.18	7.40	6.29	6.50	8.64	8.92	8.36
2	5.64	5.32	**	10.76	***	10.41	8.71	7.28	5.57	6.17	6.99	6.76	5.97	8.53	8.90	8.32
3	5.40	4.95	**	10.80	***	10.39	8.73	7.29	5.28	6.13	4.63	6.19	5.99	8.52	8.85	8.24
4	5.67	5.46	**	10.83	***	10.41	8.75	7.22	4.75	5.95	2.18	6.32	6.07	8.40	8.79	8.16
5	5.24	4.83	**	10.84	***	10.38	8.77	7.18	4.26	5.68	1.68	6.44	6.08	8.19	8.73	8.03
6	4.94	4.56	**	10.83	***	10.29	8.54	4.43	3.66	4.96	.51	6.54	6.02	7.98	8.54	7.55
9							8.08									
B	3.28	4.50	**	11.97	***	10.40	7.83	4.44	2.27	1.34	.62	5.77	2.08	7.92	8.38	7.42

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 21

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.58	4.95	**	***	***	11.94	8.39	8.13	4.06	5.55	4.38	6.38	7.44	10.04	9.34	9.18
2	6.46	3.21	**	***	***	11.95	8.37	8.07	3.91	3.94	3.53	6.25	7.42	9.99	9.08	9.15
3						12.01	8.30	7.90	3.48	3.04	2.82	6.05	7.04	9.82	8.88	9.08
4							8.27		3.04		.64					
5							7.70									
B	5.32	3.02	**	***	***	12.24	7.94	8.01	2.11	2.84	.64	5.74	7.08	10.04	9.01	9.03

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/1

Station 22

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Depth Meters																
1	6.45	5.28	**	11.30	***	10.79	8.53	7.90	6.82	5.71	5.78	6.62	6.62	8.74	9.06	9.25
2	6.20	6.18	**	11.26	***	10.65	8.48	7.78	5.77	5.65	4.58	6.55	6.35	8.54	9.02	9.23
3	5.70	4.37	**	11.27	***	10.52	8.47	7.78	5.96	5.62	4.08	6.55	6.32	8.42	8.93	9.22
4						10.51	8.44	7.62	5.36	5.54	2.78	6.65	5.28	7.88	8.86	9.18
5							8.37								8.85	9.21
6							8.24									
B	6.43	1.36	**	11.42	***	10.55	7.34	7.67	3.94	6.93	1.71	6.74	5.38	7.95	8.88	9.25

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 23

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.75	5.61	**	***	***	10.66	8.79	8.55	5.69	5.51	5.27	5.86	6.22	9.95	8.89	9.54
2	6.07	5.58	**	***	***	10.55	8.82	8.65	5.22	5.52	5.25	5.86	6.19	10.30	8.83	9.52
3	6.39	5.57	**	***	***	10.52	8.90	9.36	5.52	5.48	5.25	5.88	5.43	10.60	8.77	9.49
4	6.59		**	***	***	10.56	8.98		5.02	5.42	3.65	5.88			8.71	9.53
5							8.84		4.55	5.15	1.18	5.77				
6							9.03				.82					
B	5.00	3.32	**	***	***	10.72	9.37	9.28	2.98	7.27	1.02	5.64	5.41	7.65	8.77	9.64

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 24

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.82		**	***	***	10.07	8.95	8.12	6.04	5.54	5.54	5.10	7.48	8.82	8.62	9.65
2							9.06	7.95	3.36	5.18	2.86	3.85				
3							9.21									
B	4.92	3.08	**	***	***	10.02	9.65	8.02	2.79	5.27	1.54	3.72	3.78	9.34	7.93	10.18

** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 25

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.52	*	**	***	***	*	8.75	9.48	6.52	7.58	6.03	*	*	*	*	*
2	4.80	*	**	***	***	*	8.98	9.49	6.78	7.18	6.24	*	*	*	*	*
3	3.55	*	**	***	***	*	9.15	9.57	6.61		6.26	*	*	*	*	*
4							9.29		6.00							
5							9.41									
B	4.04	*	**	***	***	*	9.64	9.55	6.54	7.47	7.21	*	*	*	*	*

* Unable to reach site due to low water
** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 26

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*	*	**	***	***	*	8.73	8.67	6.71	7.02	6.43	*	*	*	*	*
2	*	*	**	***	***	*	8.78	8.67	6.91	7.01	6.47	*	*	*	*	*
3	*	*	**	***	***	*	8.89	8.66	7.00	7.01	6.49	*	*	*	*	*
4	*	*	**	***	***	*	8.92		5.75			*	*	*	*	*
5	*	*	**	***	***	*	8.95					*	*	*	*	*
B	*	*	**	***	***	*	9.00	9.62	6.86	7.06	6.58	*	*	*	*	*

* Unable to reach site due to low water
** No sample
*** Inaccessible due to ice

DISSOLVED OXYGEN in mg/l

Station 27

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*	*	**	***	***	*	9.04	8.77	5.98	7.02	6.27	*	*	*	*	*
2	*	*	**	***	***	*	9.00	8.78	5.75		6.57	*	*	*	*	*
3	*	*	**	***	***	*					6.54	*	*	*	*	*
4	*	*	**	***	***	*					6.59	*	*	*	*	*
5	*	*	**	***	***	*					6.59	*	*	*	*	*
B	*	*	**	***	***	*	9.32	9.05	6.70	7.42	6.92	*	*	*	*	*

* Unable to reach site due to low water
** No sample
*** Inaccessible due to ice

TABLE 6

FIELD pH DATA

pH

Station 1

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
Depth Meters																
B	8.5	8.4	**	8.3	***	9.4	9.9	8.8	9.0	8.7	8.5	8.8	8.7	8.5	8.1	7.7

** No sample

*** Inaccessible due to ice

pH

Station 4

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
Depth Meters																
1	8.5	8.6	**	8.5	***	9.0	8.1	8.4	8.9	7.9	7.6	8.7	8.7	8.3	8.6	8.5
2	8.4	8.5	**	8.5	***	9.0	8.1	8.4	8.9	7.8	7.6	8.7	8.7	8.3	8.5	8.5
3	8.3	8.4	**	8.4	***	9.0	8.1	8.4	9.1	7.9	7.5	8.6	8.6	8.3	8.5	8.6
4	8.2	8.3	**	8.4	***	9.1	8.1	8.5	9.1	7.8	7.6	8.6	8.6	8.3	8.3	8.6
5	8.1	8.2	**	8.3	***	9.1	8.1	8.5	8.1	7.9	7.5	8.5	8.5	8.2	8.1	8.7
6						9.0	8.1	8.7	9.1	7.8	7.6	8.5			8.1	
B	8.0	8.1	**	8.3	***	9.2	8.2	8.7	8.9	7.7	7.7	8.5	8.5	8.2	8.1	8.4

** No sample
*** Inaccessible due to ice

pH

Station 5

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De
Depth Meters																
1	8.2	8.6	**	8.5	***	8.7	8.2	8.5	8.7	8.2	8.0	8.8	8.5	8.0	8.6	8.5
2	8.1	8.5	**	8.5	***	8.7	8.1	8.5	8.8	8.3	8.0	8.7	8.5		8.6	8.5
3		8.4	**		***	8.7	8.2	8.4	9.2	8.3	8.0	8.7	8.5		8.6	8.5
4		8.3	**		***	8.7	8.2	8.4	9.1	8.5		8.7	8.4		8.5	8.6
5		8.2	**		***	8.8	8.3	8.5	9.3	8.5		8.4	8.4		8.4	8.5
6							8.3			8.6		8.4				8.6
B	8.1	8.1	**	8.5	***	8.7	8.3	8.6	9.4	8.6	8.0	8.1	8.4	7.9	8.2	8.4

** No sample

pH

Station 6

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
1	8.2	8.6	**	8.4	***	8.5	8.4	8.5	8.5	8.3	7.5	8.8	8.4	8.0	8.2	8.3
2	8.2	8.6	**	8.4	***	8.6	8.4	8.6	8.5	8.4	7.5	8.7	8.4	7.9	8.2	8.3
3	8.1	8.6	**	8.4	***	8.7	8.5	8.6	8.5	8.4	7.6	8.7	8.3	7.8	8.2	8.3
4	8.1	8.6	**	8.4	***	8.6	8.5	8.7	8.5	8.4	7.6	8.6	8.3	7.8	8.2	8.3
5				8.4	***	8.7	8.6	8.7	8.5	8.5	7.8	8.6	8.2	7.7	8.2	8.4
6				8.4	***	8.7	8.7	8.8	8.6	8.5	7.9	8.6		7.7	8.2	8.4
9									8.6	8.5	8.2				8.0	8.1
B	8.1	8.6	**	8.4	***	8.5	8.8	8.8	8.6	8.6	8.4	8.4	8.1	7.7	8.0	8.0

** No sample
*** Inaccessible due to ice

pH

Station 7

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
Depth Meters																
1	8.3	8.6	**	8.4	***	8.6	8.0	7.9	8.0	8.2	8.0	8.8	8.4	8.1	8.1	8.3
2	8.3	8.6	**	8.4	***	8.6	8.0	7.9	8.0	8.2	8.0	8.8	8.3	8.1	8.1	8.3
3	8.3	8.6	**	8.4	***	8.6	7.9	8.0	8.0	8.2	7.9	8.8	8.3	8.1	8.1	8.3
4	8.3	8.6	**	8.4	***	8.7	8.0	8.0	8.0	8.2	7.9	8.8	8.2	8.1	8.0	8.2
5	8.3	8.5	**	8.4	***	8.7	8.0	8.1	8.1	8.2	8.0	8.8	8.1	8.0	8.0	8.2
6	8.3	8.5	**	8.4	***	8.7	8.1	8.1	8.1	8.2	8.0	8.8	8.0	8.0	7.9	8.2
9		8.5	**		***	8.7	8.1	8.4	8.3	8.3	8.1	8.8	8.0	7.9	7.8	
12						8.8	8.2								7.7	
B	8.3	8.3	**	8.4	***	8.5	8.3	8.5	8.3	8.2	8.2	8.8	7.9	7.9	7.7	8.2

** No sample
*** Inaccessible due to ice

pH

Station 8

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De
Depth Meters																
1	8.5	8.6	**	8.2	***	8.6	8.1	8.2	7.9	8.1	7.9	8.7	8.5	8.2	8.2	8.2
2	8.5	8.6	**	8.2	***	8.6	8.1	8.2	7.9	8.1	7.9	8.7	8.5	8.2	8.2	8.2
3	8.4	8.6	**	8.2	***	8.6	8.1	8.3	8.2	8.1	7.9	8.7	8.4	8.2	8.2	8.2
4	8.3	8.5	**	8.2	***	8.6	8.1	8.3	8.2	8.1	7.9	8.7	8.3	8.2	8.2	8.2
5	8.3	8.5	**	8.2	***	8.7	8.1	8.3	8.4	8.1	7.9	8.5	8.2	8.2	8.1	8.2
6	8.2	8.5	**	8.1	***	8.7	8.1	8.3	8.4	8.1	7.9	8.4	8.1	8.2	8.1	8.2
9	8.1	8.4	**	8.0	***	8.7	8.1	8.5	8.7	8.1	7.9	8.2	8.0	8.1	8.1	8.1
12	8.0		**		***	8.8	8.1									
B	7.9	8.4	**	7.8	***	8.6	8.1	8.5	8.7	8.1	7.9	8.3	7.9	8.1	8.0	8.1

** No sample
*** Inaccessible due to ice

pH

Station 9

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De
Depth Meters																
1	8.1	8.6	**	8.4	***	8.6	8.2	8.5	8.3	8.2	8.2	8.6	8.4	8.2	8.2	8.2
2	8.1	8.6	**	8.4	***	8.6	8.2	8.6	8.3	8.2	8.2	8.6	8.3	8.2	8.2	8.2
3	8.1	8.6	**	8.4	***	8.6	8.2	8.6	8.3	8.2	8.1	8.6	8.3	8.2	8.2	8.2
4	8.1	8.6	**	8.4	***	8.6	8.3	8.6	8.3	8.3	8.1	8.6	8.2	8.2	8.2	8.2
5	8.2	8.5	**	8.3	***	8.6	8.3	8.7	8.4	8.3	8.2	8.6	8.1	8.2	8.2	8.2
6	8.2	8.5	**	8.3	***	8.6	8.3	8.7	8.4	8.4		8.6	8.1		8.2	
9	8.2		**	8.3	***	8.6	8.3									
12						8.7	8.3									
15							8.4									
B	8.2	8.5	**	8.3	***	8.7	8.4	8.8	8.4	8.4	8.2	8.6	8.0	8.2	8.2	8.2

** No sample
*** Inaccessible due to ice

pH

Station 10

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
1	8.2	8.6	**	8.4	***	8.5	8.2	8.4	8.3	7.9	7.9	8.4	8.1	7.2	8.0	7.6
2	8.2	8.6	**	8.4	***	8.5	8.3	8.4	8.3	7.9	7.8	8.4	8.1	7.2	8.0	7.6
3	8.2	8.6	**	8.4	***	8.5	8.3	8.4	8.3	7.9	7.8	8.4	8.1	7.2	8.0	7.6
4	8.2	8.5	**	8.4	***	8.5	8.3	8.4	8.4	7.9	7.6	8.3	8.1	7.2	7.9	7.6
5	8.2	8.5	**	8.4	***	8.5	8.3	8.5	8.5	7.9	7.6	8.3	8.1	7.2	7.9	7.5
6	8.1	8.4	**	8.4	***	8.5	8.3	8.5	8.6	7.9	7.5	8.3	8.1	7.2	7.9	7.5
9	8.1	8.4	**	8.3	***	8.5	8.3	8.8	8.6	7.9	7.5	8.3	8.1	7.2	7.9	7.5
12	8.0	8.3	**	8.3	***	8.6	8.3	8.6	8.7	7.9	7.4	8.3	7.9	7.2	7.8	7.5
15	7.9	8.1	**	8.2	***	8.6	8.3	8.5	8.6	7.8	7.4	8.3	7.7	7.2	7.7	7.6
18	7.9		**	8.1	***	8.4	8.4		8.6	7.8	7.7	8.3	7.5		7.5	
B	7.8	7.9	**	8.3	***	8.3	8.4	8.5	8.7	7.9	7.7	8.3	7.3	7.3	7.4	7.6

** No sample
*** Inaccessible due to ice

pH

Station 11

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
Depth Meters																
1	8.2	8.4	**	8.0	***	8.4	8.4	8.1	8.5	7.9	8.0	8.3	8.8	8.2	8.3	8.3
2	8.2	8.4	**	7.9	***	8.4	8.4	8.1	8.4	7.9	7.9	8.3	8.7	8.2	8.3	8.3
3	8.2	8.4	**	7.9	***	8.4	8.4	8.2	8.3	7.9	7.9	8.3	8.6	8.2	8.3	8.3
4	8.2	8.3	**	7.9	***	8.4	8.4	8.2	8.3	7.9	7.8	8.3	8.6	8.2	8.3	8.3
5	8.2	8.3	**	7.7	***	8.4	8.4	8.2	8.4	7.9	7.8	8.3	8.5	8.2	8.2	8.3
6	8.1	8.2	**	7.6	***	8.4	8.4	8.3	8.4	7.9	7.8	8.3	8.3	8.2	8.2	8.2
9	8.1	8.2	**		***	8.4	8.4	8.5	8.5	8.3		8.1	8.1	8.1		8.2
B	8.1	8.3	**	7.7	***	8.4	8.5	8.6	8.5	8.4	7.9	8.0	7.9	8.1	8.2	8.2

** No sample
*** Inaccessible due to ice

Station 12

pH

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De
1	8.2	8.5	**	8.4	***	8.5	8.5	8.7	8.6	7.9	8.1	8.3	8.6	8.2	8.2	8.3
2	8.2	8.5	**	8.4	***	8.5	8.6	8.8	8.6	7.9	8.1	8.3	8.5	8.2	8.2	8.2
3	8.2	8.4	**	8.3	***	8.5	8.6	8.8	8.6	7.9	8.1	8.3	8.4	8.2	8.2	8.2
4	8.2	8.4	**	8.3	***	8.5	8.6	8.8	8.6	7.9	8.0	8.3	8.4	8.2	8.2	8.2
5	8.1	8.4	**	8.3	***	8.5	8.6	8.9	8.6	7.9	8.0	8.3	8.3	8.2	8.2	8.2
6	8.1	8.3	**	8.2	***	8.5	8.6	8.9	8.7	7.9	8.1	8.3	8.2	8.2	8.2	8.1
9	8.1	8.3	**	8.0	***	8.5				8.1				8.1		8.1
12	8.1	8.3	**		***											7.9
B	8.1		**	8.0	***	8.5	8.7	8.9	8.7	8.2	8.1	8.2	8.1	8.1	8.2	7.9

** No sample
*** Inaccessible due to ice

pH

Station 13

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De-
Depth Meters																
1	8.2	8.2	**	8.4	***	8.5	8.3	8.4	6.6	8.1	7.9	8.2	8.3	8.2	8.1	8.2
2	8.2	8.2	**	8.4	***	8.5	8.3	8.4	8.7	8.2	7.9	8.2	8.3	8.2	8.1	8.2
3	8.2	8.2	**	8.3	***	8.5	8.3	8.4	8.7	8.2	7.9	8.2	8.2	8.2	8.1	8.2
4	8.2	8.2	**	8.3	***	8.5	8.4	8.5	8.8	8.2	7.9	8.2	8.2	8.2	8.1	8.2
5	8.2	8.2	**	8.3	***	8.5	8.4	8.5	8.8	8.2	7.8	8.2	8.1	8.1	8.1	8.2
6	8.2	8.2	**	8.3	***	8.5	8.4	8.5	8.9	8.4	7.8	8.2	8.1	8.2	8.1	8.2
9	8.2	8.3	**	8.3	***	8.5	8.4	8.6			7.8	8.2		8.1	8.0	8.1
12						8.5										8.1
15						8.6										
B	8.2	8.2	**	8.2	***	8.6	8.5	8.6	9.0	8.5	7.9	8.0	8.0	8.2	8.0	8.0

** No sample
*** Inaccessible due to ice

pH

Station 14

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De:
1	8.2	8.4	**	8.3	***	8.8	8.2	8.6	9.0	7.8	8.0	8.4	8.0	8.1	7.7	8.3
2	8.2	8.4	**	8.3	***	8.8	8.2	8.6	9.0	7.8	8.0	8.4	8.0	8.0	7.7	8.3
3	8.1	8.4	**	8.3	***	8.8	8.2	8.6	8.9	7.7	7.9	8.4	8.0	8.0	7.7	8.3
4	8.1	8.4	**	8.2	***	8.8	8.2	8.7	8.9	7.6	7.9	8.3	8.0	7.8	7.6	8.3
5	8.0	8.4	**	8.2	***	8.9	8.2	8.7	8.9	7.6	7.8	8.3	8.0	7.8	7.6	8.3
6	8.0	8.4	**	8.1	***	8.9	8.3	8.7	8.9	7.6	7.8	8.2	8.0	7.4	7.5	8.3
9	7.9	8.0	**	8.0	***	8.9	8.3	8.9	9.2	7.5	7.9	8.2	8.0	7.2	7.5	8.3
12	7.9	7.9	**	7.9	***	9.0	8.4	8.8	9.3	7.5	8.0	8.1	8.0	7.3	7.5	8.3
15	7.8		**		***	9.0	8.4	8.9	9.2	7.7	8.3	8.1	8.1		7.2	8.2
18							8.5									
B	7.8	7.8	**	7.7	***	9.1	8.7	8.9	9.2	7.7	8.3	8.1	8.1	7.3	7.1	8.1

** No sample
*** Inaccessible due to ice

pH

Station 15

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De[c.]
Depth Meters																
1	8.3	8.3	**	8.3	***	10.5	8.4	8.3	8.7	8.0	7.8	8.2	8.1	8.1	8.1	8.3
2	8.3	8.3	**	7.4	***	8.5	8.4	8.3	8.7	7.9	7.8	8.2	8.1	8.1	8.1	8.3
3	8.3	8.3	**	7.4	***	8.5	8.4	8.3	8.7	8.0	7.7	8.2	8.1	8.1	8.1	8.3
4	8.3	8.3	**	7.4	***	8.5	8.4	8.3	8.7	7.9	7.7	8.2	8.0	8.1	8.1	8.3
5	8.3	8.4	**	7.3	***	8.5	8.4	8.3	8.7	7.9	7.7	8.2	8.0	8.1	8.1	8.3
6	8.2	8.4	**	7.3	***	8.5	8.4	8.3	8.8	7.9	7.6	8.2	8.0	8.0	8.1	8.3
9	8.2	8.5	**	7.3	***	8.5	8.5	8.4	8.9	7.9	7.6	8.2	8.0	8.0	8.1	8.3
12	8.1	8.3	**	7.4	***	8.5	8.6	8.6	9.2	8.0	7.6	8.2	8.0	7.9	8.1	8.2
15	8.1	8.2	**	7.4	***	8.5	8.6	8.6	9.1	8.1	7.7	8.2	8.0	7.7	8.1	8.2
18	8.0	8.1	**	7.5	***	8.3	8.7	8.8	9.4	8.3	7.8	8.0	8.0	7.2	8.0	8.1
B	8.0	8.0	**	7.6	***	8.4	8.7	8.9	9.6	8.3	7.9	8.0	8.0	7.2	7.9	8.0

** No sample
*** Inaccessible due to ice

pH

Station 16

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
1	8.1	8.2	**	8.4	***	8.5	8.2	8.1	8.3	7.8	7.6	8.2	8.0	8.0	8.0	8.3
2	8.1	8.2	**	8.4	***	8.6	8.2	8.2	8.2	7.8	7.6	8.2	8.0	8.0	7.9	8.3
3	8.1	8.2	**	8.4	***	8.6	8.2	8.2	8.2	7.8	7.6	8.2	8.0	8.0	7.9	8.3
4	8.2	8.2	**	8.3	***	8,6	8.3	8.2	8.2	7.8	7.6	8.2	7.9	8.0	7.9	8.3
5	8.2	8.2	**	8.3	***	8.6	8.3	8.3	8.2	7.7	7.6	8.2	7.9	8.0	7.9	8.3
6	8.1	8.1	**	8.3	***	8.6	8.3	8.3	8.1	7.7	7.6	8.2	7.9	7.9	7.9	8.3
9	8.1	8.1	**	8.3	***	8.7	8.3	8.3	8.1	7.7	7.6	8.2	7.9	7.9	7.8	8.3
12	8.0	8.1	**	8.2	***	8.7	8.4	8.3	8.2	7.7	7.6	8.1	7.9	7.7	7.7	8.2
15							8.5	8.5	8.3	7.7	7.7	8.1	7.8		7.7	8.2
18							8.5		8.7	7.8					7.4	8.0
B	8.0	8.1	**	8.2	***	8.8	8.6	8.5	8.8	8.0	7.8	7.9	7.8	7.6	7.4	8.0

** No sample
*** Inaccessible due to ice

pH

Station 17

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De
Depth Meters																
1	8.1	8.3	**	8.2	***	7.1	8.2	8.2	8.1	7.9	7.6	8.2	8.0	8.1	8.1	8.2
2	8.1	8.3	**	8.2	***	7.2	8.2	8.2	8.0	7.9	7.5	8.2	8.0	8.1	8.1	8.2
3	8.0	8.3	**	8.2	***	7.2	8.3	8.2	8.0	7.8	7.5	8.2	8.0	8.1	8.1	8.2
4	8.0	8.3	**	8.2	***	7.2	8.3	8.1	8.0	7.8	7.4	8.2	8.0	8.1	8.1	8.2
5	8.0	8.3	**	8.2	***	7.2	8.4	8.1	8.0	7.7	7.4	8.2	8.0	8.1	8.1	8.2
6	7.9	8.2	**	8.1	***	7.2	8.4	8.1	7.9	7.6	7.4	8.2	7.9	8.1	8.1	8.2
9	7.8	8.2	**	8.0	***	7.2	8.5	8.0	8.0	7.5	7.4	8.2	7.9	8.1	8.1	8.2
12	7.7	8.2	**	7.8	***	7.2	8.5	8.0	8.3	7.5	7.6	8.0	7.9	8.1	8.1	8.1
15	7.7	8.1	**		***	7.3	8.6	7.9	8.4	7.7	7.4	7.9	7.9	8.0	8.1	8.0
18		8.1	**		***	7.3					7.6					
B	7.6	8.1	**	7.5	***	7.3	8.3	7.9	8.8	7.9	7.8	7.9	7.9	8.1	8.1	8.0

** No sample
*** Inaccessible due to ice

Station 18 pH

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
1	8.0	8.3	**	8.3	***	8.0	8.2	8.2	8.1	7.6	7.9	8.2	7.6	8.1	8.1	8.2
2	8.0	8.3	**	8.3	***	8.0	8.2	8.2	8.1	7.6	7.8	8.2	7.6	8.1	8.1	8.2
3	8.0	8.3	**	8.3	***	8.0	8.2	8.1	8.0	7.6	7.6	8.2	7.7	8.0	8.1	8.2
4	8.0	8.3	**	8.3	***	8.0	8.3	8.0	8.0	7.6	7.6	8.2	7.7	8.0	8.1	8.2
5	7.9	8.3	**	8.3	***	8.0	8.3	7.9	7.9	7.6	7.4	8.2	7.8	8.0	8.1	8.2
6	7.9	8.3	**	8.2	***	8.0	8.4	7.9	7.9	7.6	7.4	8.2	7.8	8.0	8.1	8.2
9	7.8	8.2	**	8.2	***	8.0	8.5	7.8	7.9	7.7	7.6	8.2	7.9	7.7	8.1	8.1
12							8.6		7.9			8.1	7.7			
B	7.8	8.3	**	8.2	***	8.0	8.7	7.8	7.9	7.7	7.7	8.1	7.5	7.6	8.1	8.1

** No sample
*** Inaccessible due to ice

pH

Station 19

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De
Depth Meters																
1	8.0	8.3	**	8.3	***	7.6	8.2	8.3	8.2	8.3	7.6	8.2	7.6	7.9	8.1	8.4
2	8.0	8.3	**	8.3	***	7.6	8.2	8.3	8.2	8.3	7.6	8.2	7.6	7.9	8.1	8.4
3	7.9	8.3	**	8.3	***	7.6	8.2	8.2	8.2	8.3	7.6	8.2	7.6	7.9	8.1	8.4
4	7.9	8.2	**	8.3	***	7.6	8.2	8.2	8.1	8.3	7.5	8.2	7.6	7.9	8.2	8.4
5	7.9	8.2	**	8.3	***	7.6	8.2	8.1	8.1	8.4	7.5	8.1	7.6	7.9	8.1	8.4
6	7.8	8.2	**	8.3	***	7.7	8.2	8.1	8.2	8.4	7.5	8.1	7.6	7.8	8.1	8.4
9	7.7	8.1	**	8.3	***	7.7	8.3	8.1	8.2	8.5	7.5	8.1	7.6	7.7	8.1	8.4
12	7.6	8.1	**	8.2	***	7.7	8.3	8.0			7.7	8.0	7.7	7.6	8.1	8.4
15						7.8	8.7									8.3
18						7.8										
B	7.5	8.1	**	8.3	***	7.9	8.8	8.0	8.4	8.5	7.8	8.0	7.7	7.6	8.1	8.3

** No sample
*** Inaccessible due to ice

Station 20

pH

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De
1	8.1	8.3	**	8.3	***	8.3	8.3	8.1	8.2	8.0	7.9	8.2	7.6	8.1	8.1	8.6
2	8.1	8.3	**	8.3	***	8.3	8.3	8.1	8.2	7.9	7.5	8.2	7.6	8.1	8.0	8.6
3	8.0	8.3	**	8.3	***	8.3	8.3	8.1	8.2	7.9	7.5	8.2	7.6	8.1	8.0	8.6
4	8.0	8.3	**	8.2	***	8.3	8.4	8.1	8.2	7.9	7.4	8.2	7.7	8.0	8.0	8.6
5	8.0	8.2	**	8.2	***	8.3	8.4	8.0	8.2	7.9	7.4	8.2	7.7	8.0	8.0	8.6
6	7.9	8.2	**	8.1	***	8.3	8.5	8.0	8.2	8.2	7.5	8.2	7.7	7.8	7.9	8.6
9							8.6									
B	7.9	8.2	**	8.1	***	8.4	8.8	8.0	8.4	8.3	7.6	8.1	7.7	7.8	7.9	8.7

** No sample
*** Inaccessible due to ice

pH

Station 21

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De
Depth Meters																
1	8.3	8.5	**	***	***	8.0	8.8	8.5	8.2	8.2	7.6	8.2	8.0	8.3	8.2	8.4
2	8.1	8.3	**	***	***	8.0	8.8	8.4	8.2	8.2	7.6	8.2	8.0	8.3	8.1	8.4
3						8.0	8.9	8.4	8.2	8.4	7.6	8.1	7.9	8.2	8.1	8.4
4							8.9		8.2		7.8					
5							9.0									
B	8.0	8.2	**	***	***	8.0	9.1	8.3	8.3	8.4	7.8	8.0	7.9	8.2	8.1	8.4

** No sample
*** Inaccessible due to ice

Station 22

pH

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De
1	8.0	8.6	**	8.2	***	8.4	8.2	8.3	8.5	7.9	7.7	8.2	8.0	8.1	8.1	8.3
2	8.0	8.6	**	8.1	***	8.4	8.2	8.3	8.6	8.0	7.7	8.2	7.9	8.0	8.1	8.3
3	7.9	8.6	**	7.9	***	8.4	8.3	8.3	8.6	8.0	7.7	8.2	7.9	8.0	8.0	8.3
4						8.5	8.3	8.3	8.6	8.1	7.9	8.2	7.8	7.8	8.0	8.2
5							8.3								8.0	8.3
6							8.4									
B	7.9	8.6	**	8.0	***	8.5	8.6	8.3	8.7	8.1	8.0	8.2	7.7	7.8	8.0	8.3

** No sample
*** Inaccessible due to ice

pH

Station 23

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De(
Depth Meters																
1	8.0	8.3	**	***	***	8.5	8.5	8.4	8.5	8.0	7.7	8.1	7.9	8.0	8.1	8.1
2	8.0	8.3	**	***	***	8.5	8.5	8.4	8.5	8.0	7.6	8.1	7.9	7.9	8.1	8.1
3	8.0	8.3	**	***	***	8.5	8.6	8.5	8.4	8.0	7.7	8.1	7.9	7.7	8.0	8.0
4	8.0		**	***	***	8.5	8.7		8.5	8.0	7.7	8.1			8.0	7.9
5							8.8		8.5	8.1	7.8	8.1				
6							9.0				7.9					
B	8.0	8.3	**	***	***	8.5	9.2	8.6	8.6	8.1	7.9	8.1	7.9	7.6	7.9	7.9

** No sample
*** Inaccessible due to ice

pH

Station 24

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De.
1	8.3		**	***	***	9.5	8.5	8.2	8.8	8.2	7.9	8.2	8.2	7.7	8.2	8.1
2							8.5	8.2	8.7	8.2	8.0	8.2				
3							8.6									
B	8.3	8.6	**	***	***	9.7	8.9	8.2	8.	8.3	8.1	8.1	8.4	7.8	8.2	8.1

** No sample

*** Inaccessible due to ice

pH

Station 25

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	De
Depth Meters																
1	8.4	*	**	***	***	*	8.8	9.7	8.9	7.4	8.6	*	*	*	*	*
2	8.4	*	**	***	***	*	8.9	9.6	8.9	7.5	8.7	*	*	*	*	*
3	8.3	*	**	***	***	*	8.9	9.7	8.9		8.8	*	*	*	*	*
4							9.0		9.0							
5							9.1									
B	8.3	*	**	***	***	*	9.3	9.7	9.0	7.5	8.9	*	*	*	*	*

** No sample
*** Inaccessible due to ice

pH

Station 26

Sampling Period / Depth Meters	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
1	*	*	**	***	***	*	8.7	9.6	8.9	8.9	8.5	*	*	*	*	*
2	*	*	**	***	***	*	8.7	9.7	9.0	9.0	8.5	*	*	*	*	*
3	*	*	**	***	***	*	8.8	9.8	9.0	9.0	8.6	*	*	*	*	*
4	*	*	**	***	***	*	8.8		9.1							
5	*	*	**	***	***	*	8.0									
B	*	*	**	***	***	*	9.0	9.8	9.1	9.1	8.2	*	*	*	*	*

** No sample
*** Inaccessible due to ice

pH

Station 27

Sampling Period	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
Depth Meters																
1	*	*	**	***	***	*	8.8	9.3	9.4	9.5	8.4	*	*	*	*	*
2	*	*	**	***	***	*	8.8	9.3	9.5		8.4	*	*	*	*	*
3	*	*	**	***	***	*					8.5	*	*	*	*	*
4	*	*	**	***	***	*					8.5	*	*	*	*	*
5	*	*	**	***	***	*					8.7	*	*	*	*	*
B	*	*	**	***	***	*	8.9	9.4	9.6	9.5	8.8	*	*	*	*	*

** No sample
*** Inaccessible due to ice

TABLE 7

CALCIUM CONCENTRATIONS

CALCIUM as mg/l Ca

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1 - S	100	140	**	156	***	200	108	128	144	112	88	144	148	168	168	208
B	100	128	**		***	200	72		148	112	96	136	140	168	160	204
4 - S	52	60	**	88	***	72	60	88	56	80	56	68	52	84	68	56
B	68	76	**	96	***	76	60	88	100	120	128	132	80	108	140	160
5 - S	64	64	**	80	***	60	56	80	56	72	60	72	56	80	68	56
B	32	88	**	84	***	68	56	88	104	108	60	140	68	76	124	112
6 - S	44	52	**	80	***	68	56	80	52	64	56	72	56	68	60	44
B	29	40	**	68	***	88	56	80	104	96	96	116	56	68	102	120
7 - S	44	48	**	66	***	60	56	76	48	60	56	72	56	60	60	40
10		40					64	76							72	
B	44	46	**	68	***	80	56	92	56	64	76	84	60	60	102	56
8 - S	36	52	**	72	***	76	68	68	48	64	56	76	56	60	56	44
10	46						68		52		48	68				
B	48	56	**	60	***	72	68	64	60	72	76	76	56	60	64	50
9 - S	38	56	**	60	***	60	68	56	52	56	60	64	56	60	56	40
10	40						68									
B	40	52	**	72	***	68	72	64	48	56	64	64	52	64	60	40

** No Sample
*** Inaccessible due to ice

CALCIUM as mg/l Ca

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
10 - S	44	56	**	62	***	56	62	52	48	52	60	72	52	60	60	44
10	44	56	**	64	***	52	66	68	56	56	60	72	52	64	64	44
B	64	36	**	70	***	60	68	92	76	84	76	108	70	68	100	92
11 - S	44	34	**	74	***	68	76	64	52	56	56	72	56	60	64	56
10	52	40					66									
B	52	36	**	72	***	56	68	68	48	56	56	76	56	60	60	56
12 - S	52	48	**	72	***	52	68	68	48	52	56	60	56	64	62	60
10	76	40	**	72	***									60		
B	60	40	**	72	***	48	68	64	52	56	60	60	60	66	64	56
13 - S	60	40	**	76	***	60	64	60	52	56	60	64	58	60	56	40
10		52	**	76	***	70						60		56		44
B	60	52	**	76	***	60	64	50	52	56	60	60	56	56	56	44
14 - S	56	60	**	80	***	60	56	56	48	48	60	52	52	56	56	40
10	60	60	**	80	***	76	76	56	56	56	60	60	52	56	48	40
B	52	56	**	80	***	68	52	56	64	64	60	64	56	56	64	40
15 - S	44	60	**	80	***	68	54	60	60	56	56	56	54	56	50	38
10	40	52	**	68	***	64	60	56	52	60	58	48	52	60	52	40
B	68	64	**	64	***	64	60	68	72	76	72	88	56	60	72	84

** No Sample
*** Inaccessible due to ice

CALCIUM as mg/l Ca

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16 - S	48	52	**	68	***	68	60	56	56	56	52	52	52	52	56	44
10	52	60	**	68	***	76	60	52	56	60	64	54	56	52	56	44
B	60	60	**	68	***	72	44	60	68	68	68	76	44	52	58	40
17 - S	48	60	**	68	***	76	52	52	52	56	48	50	52	52	52	44
10	60	64	**	80	***	68	100	56	50	56	56	56	48	52	52	44
B	60	60	**	72	***	72	44	54	52	60	56	72	44	52	56	44
18 - S	58	64	**	72	***	64	52	44	56	52	48	52	56	48	52	40
10	56	52	**	66	***	72	48	48	56	56	52	48	44	56	56	
B	52	56	**	68	***	64	48	52	56	54	60	56	48	56	58	44
19 - S	48	52	**	64	***	66	48	48	48	54	52	50	44	52	56	52
10	48	60	**	68	***	60	52	52	72	52	52	56	40	52	56	52
B	56	64	**	64	***	74	50	52	68	56	64	56	48	52	60	56
20 - S	40	48	**	68	***	70	48	48	56	56	56	56	44	52	56	44
B	48	54	**	72	***	50	48	52	60	60	60	52	44	52	60	48
21 - S	44	54	**	***	***	60	48	48	52	56	52	52	40	48	56	50
B	44	64	**	***	***	48	48	52	68	56	56	56	44	48	56	50
22 - S	44	64	**	68	***	56	48	48	68	58	52	56	40	52	56	48
B	44	56	**	72	***	68	44	44	68	52	52	56	48	48	56	50

** No Sample
*** Inaccessible due to ice

CALCIUM as mg/l Ca

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23 - S	44	56	**	***	***	76	56	48	64	56	52	56	44	56	52	52
B	48	68	**	***	***	72	54	52	64	42	56	56	40	64	52	52
24 - S	48	64	**	***	***	80	56	40	68	56	60	68	48	64	60	62
B	40	56	**	***	***	68	56	48	72	56	60	68	48	72	64	60
25 - S	36	*	**	***	***	*	56	56	66	60	44	*	*	*	*	*
B	30	*	**	***	***	*	60	60	60	60	64	*	*	*	*	*
26 - S	*	*	**	***	***	*	60	56	64	56	44	*	*	*	*	*
B	*	*	**	***	***	*	60	56	64	60	40	*	*	*	*	*
27 - S	*	*	**	***	***	*	64	52	64	60	48	*	*	*	*	*
B	*	*	**	***	***	*	64	64	72	60	56	*	*	*	*	*

* Inaccessible due to low water
** No Sample
*** Inaccessible due to ice

TABLE 8

MAGNESIUM CONCENTRATIONS

MAGNESIUM as mg/l Mg

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1 - S	61	54	**	46	***	73	24	24	46	34	22	20	36	56	56	56
B	61	54	**		***	49	22		44	34	17	18	41	56	61	58
4 - S	32	32	**	27	***	15	24	15	10	10	15	19	12	15	15	17
B	39	41	**	19	***	36	12	12	32	32	19	20	12	29	32	49
5 - S	29	28	**	22	***	22	15	15	7	12	12	17	15	17	15	12
B	39	24	**	19	***	15	12	19	34	29	10	15	24	17	32	22
6 - S	32	24	**	19	***	17	10	7	10	10	7	9	15	12	16	15
B	29	34	**	24	***	19	12	15	17	19	12	14	17	15	40	36
7 - S	27	24	**	21	***	17	12	10	12	10	7	9	17	15	12	12
10		28	**				12	15							17	
B	29	27	**	22	***	19	15	12	10	15	12	13	17	15	24	10
8 - S	32	22	**	15	***	15	12	10	10	7	5	10	15	15	12	10
10	33						12		10		12	8				
B	32	22	**	28	***	12	12	12	5	7	12	12	17	12	15	16
9 - S	35	19	**	24	***	15	12	12	10	10	10	10	19	12	15	10
10	34						12									
B	29	22	**	22	***	17	10	7	10	12	5	10	17	15	12	12

** No sample
*** Inaccessible due to ice

MAGNESIUM as mg/l Mg

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
10 - S	27	19	**	23	***	24	13	15	10	15	5	12	15	19	12	10
10	32	19	**	22	***	27	13	7	10	10	10	12	17	15	12	12
B	34	44	**	19	***	27	12	15	12	17	15	14	18	15	22	24
11 - S	29	38	**	16	***	17	12	10	12	7	5	10	15	15	10	10
10	22	32	**		***		13									
B	24	32	**	17	***	24	15	10	15	7	10	10	12	15	17	15
12 - S	22	29	**	17	***	27	19	8	12	10	8	8	12	12	13	10
10	15	29	**	17	***									17		
B	24	29	**	17	***	29	17	12	10	7	7	8	12	11	12	12
13 - S	21	29	**	19	***	15	5	7	10	10	6	8	11	15	12	10
10		22	**	15	***	17						7		15		
B	24	22	**	15	***	15	5	11	7	10	7	7	12	19	17	10
14 - S	27	17	**	12	***	22	7	7	11	12	5	5	10	17	10	10
10	29	17	**	12	***	19	7	10	10	11	12	10	12	15	15	10
B	35	24	**	12	***	19	7	12	15	12	15	12	12	12	15	12
15 - S	32	17	**	12	***	19	13	10	7	10	5	5	15	15	13	12
10	34	23	**	21	***	24	7	10	10	10	8	6	15	10	13	12
B	24	19	**	22	***	19	10	10	15	15	12	12	17	12	18	19

** No sample
*** Inaccessible due to ice

MAGNESIUM as mg/l Mg

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16 - S	24	27	**	17	***	17	5	12	7	7	7	7	12	12	7	7
10	24	21	**	17	***	15	7	10	10	7	7	7	15	12	10	7
B	24	19	**	17	***	15	10	17	12	15	10	8	10	12	13	10
17 - S	27	19	**	18	***	10	8	7	12	7	10	16	17	12	12	10
10	19	17	**	10	***	17	12	7	11	7	7	15	10	10	12	10
B	29	17	**	15	***	19	12	11	12	10	5	17	12	12	12	10
18 - S	18	17	**	15	***	19	7	12	10	7	10	17	10	12	12	12
10	19	24	**	22	***	17	12	11	10	12	10	17	10	17	12	
B	24	22	**	17	***	19	10	10	10	12	10	12	7	17	11	11
19 - S	24	24	**	22	***	16	12	10	15	11	8	13	10	12	12	7
10	24	19	**	15	***	21	12	8	10	11	7	15	12	11	12	10
B	27	17	**	19	***	13	13	10	12	7	5	12	10	12	11	12
20 - S	24	24	**	19	***	17	8	10	17	12	7	10	10	12	12	13
B	24	22	**	12	***	12	12	10	10	10	6	10	12	12	12	10
21 - S	27	23	**	***	***	19	12	12	12	7	10	10	15	12	15	8
B	27	17	**	***	***	27	10	10	10	10	12	12	10	13	12	11
22 - S	29	18	**	17	***	22	11	7	12	7	15	7	12	11	15	10
B	32	23	**	15	***	15	10	12	12	12	7	12	5	12	12	11

** No sample
*** Inaccessible due to ice

MAGNESIUM as mg/l Mg

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23 - S	32	24	**	***	***	12	7	7	12	7	10	12	12	10	12	10
B	29	17	**	***	***	15	8	7	12	10	10	10	12	13	12	10
24 - S	27	22	**	***	***	17	8	10	15	10	5	10	12	17	17	13
B	36	29	**	***	***	17	10	10	12	10	7	12	10	17	15	17
25 - S	36	*	**	***	***	*	10	5	11	12	10	*	*	*	*	*
B	30	*	**	***	***	*	10	10	12	10	5	*	*	*	*	*
26 - S	*	*	**	***	***	*	10	15	7	15	7	*	*	*	*	*
B	*	*	**	***	***	*	10	15	12	12	10	*	*	*	*	*
27 - S	*	*	**	***	***	*	12	17	10	12	5	*	*	*	*	*
B	*	*	**	***	***	*	12	10	10	10	8	*	*	*	*	*

* Inaccessible due to low water
** No sample

TABLE 9

SODIUM CONCENTRATIONS

SODIUM as mg/l Na

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1 - S	1546	2769	**	1787	***	3169	1760	1007	1971	1293	886	2123	1293	1681	2155	2015
B	1608	2852	**		***	2886	1661		1983	1405	886	2125	1293	1438	2187	2013
4 - S	614	607	**	504	***	541	405	676	370	711	400	715	363	619	380	306
B.	862	745	**	564	***	982	520	803	1136	1433	1155	2192	621	932	1318	1596
5 - S	570	511	**	476	***	423	412	695	393	938	400	711	373	524	439	311
B	552	632	**	550	***	391	412	721	1265	1297	437	2604	522	524	1350	987
6 - S	504	492	**	407	***	354	400	501	361	414	380	623	357	366	382	306
B	389	485	**	449	***	731	400	596	927	964	798	1688	375	375	1187	1081
7 - S	313	370	**	393	***	366	400	426	357	352	366	587	359	294	283	251
10		361					363	538							474	
B	308	396	**	386	***	423	391	649	389	554	626	619	432	308	968	239
8 - S	389	327	**	331	***	354	322	393	239	322	311	566	299	299	255	219
10							354		276		354	580				
B	455	354	**	324	***	368	317	405	347	451	630	697	405	308	405	193
9 - S	315	327	**	329	***	336	269	267	198	258	285	453	258	276	244	189
10	315						288									
B	324	327	**	322	***	297	306	294	242	253	285	465	345	324	248	145

** No Sample

*** Inaccessible due to ice

SODIUM as mg/l Na

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
10 - S	317	327	**	331	***	324	251	239	244	258	267	495	269	297	202	177
10	315	329	**	317	***	327	269	246	271	292	402	561	340	299	253	200
B	529	435	**	320	***	499	251	653	621	807	658	1727	504	368	1035	771
11 - S	324	334	**	301	***	320	281	278	322	324	373	566	276	267	288	258
10	324	345	**		***	294										
B	317	324	**	306	***	322	288	281	304	260	366	490	251	271	278	237
12 - S	322	343	**	329	***	322	219	276	269	324	334	501	285	271	269	258
10	308	334	**	322	***									267		
B	340	329	**	306	***	322	299	292	317	324	297	598	251	271	267	244
13 - S	313	327	**	297	***	320	202	212	214	216	184	446	251	253	177	133
10		311	**	311	***	322						451		253		166
B	244	327	**	308	***	327	200	193	221	258	251	481	251	251	207	182
14 - S	276	292	**	267	***	327	189	175	221	225	163	455	205	232	182	150
10	285	327	**	285	***	490	205	223	216	253	299	478	223	225	214	152
B	453	416	**	272	***	331	191	223	400	488	398	706	292	246	407	166
15 - S	281	327	**	276	***	322	182	182	230	258	207	453	253	237	179	131
10	313	324	**	315	***	322	184	214	235	258	334	428	221	244	179	147
B	310	350	**	322	***	331	219	329	497	752	515	1495	246	239	577	660

** No sample
*** Inaccessible due to ice

SODIUM as mg/l Na

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16 - S	209	237	**	290	***	258	150	150	207	232	129	393	177	177	154	115
10	177	276	**	255	***	285	179	219	200	191	223	382	170	175	170	110
B	244	255	**	271	***	292	161	124	389	488	320	1166	186	193	177	120
17 - S	205	212	**	315	***	228	189	166	216	230	166	290	166	205	154	133
10	170	228	**	269	***	274	212	251	232	196	166	281	145	179	154	133
B	398	216	**	274	***	469	212	251	196	294	168	872	97	175	200	136
18 - S	223	214	**	237	***	228	216	163	237	168	200	281	62	207	170	133
10	175	212	**	246	***	225	246	170	235	150	198	345	117	161	322	
B	170	202	**	255	***	311	225	186	251	154	200	352	113	168	184	143
19 - S	172	207	**	214	***	191	232	179	244	150	239	292	115	168	166	117
10	179	207	**	232	***	214	219	168	274	152	193	313	113	170	223	115
B	278	207	**	218	***	262	223	214	313	154	198	281	110	168	205	100
20 - S	186	207	**	209	***	248	196	166	246	166	161	320	110	168	221	120
B	177	189	**	202	***	285	232	202	248	115	166	327	115	168	237	136
21 - S	154	189	**	***	***	207	186	168	198	191	163	297	90	170	163	138
B	177	166	**	***	***	221	189	170	290	182	150	285	99	131	207	120
22 - S	170	186	**	177	***	191	225	170	306	184	117	324	97	147	207	122
B	163	189	**	140	***	189	230	170	274	136	133	352	101	133	228	129

** No sample
*** Inaccessible due to ice

SODIUM as mg/l Na

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23 - S	166	207	**	***	***	191	242	159	283	124	152	350	90	147	186	166
B	168	202	**	***	***	191	206	159	283	166	193	329	97	198	193	168
24 - S	189	214	**	***	***	200	311	138	274	154	196	416	99	191	292	200
B	175	209	**	***	***	191	292	129	288	156	196	345	110	198	274	186
25 - S	223	*	**	***	***	*	177	200	198	186	186	*	*	*	*	*
B	253	*	**	***	***	*	225	184	202	189	207	*	*	*	*	*
26 - S	*	*	**	***	***	*	294	179	230	182	166	*	*	*	*	*
B	*	*	**	***	***	*	311	179	242	152	175	*	*	*	*	*
27 - S	*	*	**	***	***	*	324	175	244	170	179	*	*	*	*	*
B	*	*	**	***	***	*	322	182	232	175	159	*	*	*	*	*

* Unable to reach site due to low water
** No sample
*** Inaccessible due to ice

TABLE 10

BICARBONATE CONCENTRATIONS

BICARBONATE ALKALINITY as mg/l HCO_3

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1 - S	85	104	**	134	***	110	67	116	92	98	98	57	67	61	104	140
B	79	110	**		***	110	79		92	116	98	57	67	61	104	131
4 - S	92	92	**	116	***	85	61	92	73	98	79	67	85	58	67	61
B	92	92	**	104	***	104	61	98	98	110	92	61	67	61	85	122
5 - S	85	92	**	110	***	92	61	98	73	92	79	50	49	79	61	67
B	79	98	**	104	***	92	61	92	98	110	85	63	61	61	73	92
6 - S	79	98	**	104	***	92	64	98	79	85	73	60	55	61	73	61
B	92	92	**	98	***	104	70	98	85	92	104	57	73	73	85	104
7 - S	92	92	**	98	***	92	76	79	73	98	79	60	61	61	73	67
10		92					85	92							79	
B	92	92	**	92	***	98	76	92	73	92	92	42	61	73	79	67
8 - S	92	92	**	92	***	92	92	79	79	98	92	42	67	61	85	67
10	92						85		79		98	61				
B	92	92	**	104	***	95	92	85	79	92	98	61	73	73	79	67
9 - S	92	92	**	98	***	92	92	79	73	92	79	40	73	73	73	79
10	92						88									
B	92	92	**	104	***	116	92	79	85	92	73	52	73	61	79	58

** No sample
*** Inaccessible due to ice

BICARBONATE ALKALINITY as mg/l HCO_3

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
10 - S	92	92	**	104	***	104	85	72	92	92	73	61	61	61	85	58
10	92	92	**	98	***	110	92	76	79	85	85	61	61	55	79	61
B	92	92	**	98	***	104	85	92	79	85	104	67	43	55	67	82
11 - S	92	92	**	98	***	98	92	92	67	85	79	61	43	55	73	67
10	92	92					98									
B	85	92	**	98	***	98	98	98	79	85	98	73	52	55	73	67
12 - S	92	98	**	98	***	104	98	92	73	85	79	61	43	55	79	67
10	92	92	**	98	***									55		
B	92	101	**	92	***	98	98	79	73	85	104	67	49	55	73	96
13 - S	92	95	**	92	***	104	76	73	79	79	79	61	52	61	73	58
10		92	**	92	***	98						67		61		58
B	92	92	**	92	***	110	76	73	92	92	101	67	49	67	79	61
14 - S	104	92	**	92	***	104	79	73	85	92	98	67	49	61	79	61
10	92	92	**	98	***	104	82	73	85	85	104	67	52	79	73	58
B	92	92	**	85	***	104	73	73	79	98	92	64	55	73	79	64
15 - S	92	92	**	73	***	104	82	79	85	92	104	61	49	73	67	61
10	92	92	**	98	***	104	76	79	79	104	79	73	52	79	67	67
B	92	88	**	104	***	116	82	79	73	104	79	67	49	73	67	67

** No sample
*** Inaccessible due to ice

BICARBONATE ALKALINITY as mg/l HCO_3

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16 - S	92	85	**	98	***	110	70	79	85	98	85	67	49	79	67	61
10	92	98	**	98	***	104	67	79	79	92	79	61	49	73	73	61
B	98	92	**	98	***	110	70	82	85	98	85	73	46	73	67	67
17 - S	104	98	**	98	***	98	70	73	85	98	85	37	46	61	79	67
10	98	92	**	92	***	104	76	79	79	92	92	31	46	73	73	67
B	98	92	**	98	***	104	70	79	79	92	92	37	43	73	79	67
18 - S	98	98	**	101	***	104	76	67	85	98	92	31	46	73	73	67
10	104	92	**	98	***	104	70	79	79	98	92	31	43	73	73	
B	92	92	**	98	***	104	70	79	79	104	104	37	37	73	85	67
19 - S	92	92	**	98	***	101	70	73	85	92	110	31	43	73	67	73
10	92	92	**	110	***	104	70	73	92	92	85	31	43	73	73	79
B	92	92	**	92	***	104	70	73	85	92	98	31	43	73	73	85
20 - S	92	92	**	98	***	104	73	73	85	98	92	34	43	73	79	85
B	92	92	**	85	***	104	73	73	85	98	98	37	46	73	79	76
21 - S	92	98	**	***	***	104	70	79	85	104	98	31	43	73	73	76
B	92	92	**	***	***	116	70	73	85	92	85	37	46	73	73	79
22 - S	98	98	**	79	***	116	70	70	73	98	92	31	46	73	73	79
B	92	92	**	79	***	110	70	73	73	104	92	34	46	73	73	76

** No sample
*** Inaccessible due to ice

BICARBONATE ALKALINITY as mg/l HCO_3

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23 - S	98	104	**	***	***	110	73	73	85	98	73	34	46	73	67	79
B	104	92	**	***	***	110	73	73	85	79	104	34	46	79	73	82
24 - S	110	110	**	***	***	110	70	73	85	92	85	43	43	79	79	92
B	110	110	**	***	***	104	73	64	85	104	79	37	49	79	73	92
25 - S	104	*	**	***	***	*	79	61	92	104	92	*	*	*	*	*
B	110	*	**	***	***	*	79	61	85	98	98	*	*	*	*	*
26 - S	*	*	**	***	***	*	79	61	85	98	73	*	*	*	*	*
B	*	*	**	***	***	*	79	61	79	104	85	*	*	*	*	*
27 - S	*	*	**	***	***	*	79	61	73	104	79	*	*	*	*	*
B	*	*	**	***	***	*	79	67	79	98	85	*	*	*	*	*

* Inaccessible due to low water
** No sample
*** Inaccessible due to ice

TABLE 11

CHLORIDE CONCENTRATIONS

CHLORIDES as mg/l Cl

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1 - S	2400	4350	**	2500	***	5000	2750	1550	3000	2000	1350	3300	2100	2750	3400	3250
B	2500	4450	**		***	4500	2500		3000	2050	1350	3300	2100	2700	3450	3250
4 - S	950	950	**	800	***	750	675	1050	575	1100	600	1100	550	1000	600	500
B	1350	1200	**	900	***	1500	675	1200	1750	2200	1800	3400	900	1500	2050	2550
5 - S	900	800	**	750	***	650	650	1050	600	1450	600	1100	600	850	700	500
B	850	1000	**	850	***	600	650	1125	1800	2000	650	4000	800	850	2100	1550
6 - S	650	750	**	650	***	550	625	775	550	650	550	1000	550	600	600	500
B	600	750	**	700	***	1100	625	900	1400	1500	1200	2600	550	600	1850	1750
7 - S	500	550	**	600	***	550	625	675	525	550	550	900	550	500	450	400
10		550	**				550	825							750	
B	500	600	**	600	***	650	625	975	575	850	950	1000	650	500	1500	400
8 - S	150	500	**	500	***	550	500	600	350	500	450	900	450	500	400	350
10	150						550		400		500	900				
B	150	550	**	500	***	550	500	600	500	700	950	1100	600	500	575	325
9 - S	500	500	**	500	***	500	425	400	300	400	450	700	400	450	400	300
10	500						450									
B	500	500	**	500	***	450	475	450	350	400	450	700	500	500	400	250

** No sample
*** Inaccessible due to ice

CHLORIDES as mg/l Cl

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
10 - S	500	500	**	500	***	500	400	375	350	400	375	800	400	500	325	300
10	500	500	**	500	***	750	425	375	400	450	600	900	500	500	400	325
B	850	700	**	500	***	500	400	1000	900	1250	1000	2200	800	600	1600	1250
11 - S	500	525	**	475	***	500	450	425	450	500	550	900	450	450	450	425
10	500	550	**				450									
B	500	500	**	475	***	500	450	425	450	450	550	800	400	450	450	400
12 - S	500	550	**	500	***	500	400	425	400	500	500	800	450	450	425	425
10	500	525	**	500										450		
B	550	500	**	475	***	500	475	450	475	500	450	900	400	450	425	400
13 - S	500	500	**	450	***	500	325	325	325	350	275	700	400	425	300	225
10		475	**	475	***	500						700		425		275
B	400	500	**	475	***	500	325	300	325	400	375	750	400	425	350	300
14 - S	450	450	**	425	***	500	300	275	325	350	250	650	300	400	300	250
10	475	500	**	450	***	750	350	350	325	400	450	700	350	400	350	250
B	700	650	**	450	***	500	300	350	600	750	600	1100	450	400	600	275
15 - S	450	500	**	450	***	500	300	300	350	400	300	700	400	400	300	225
10	500	500	**	500	***	500	300	325	350	400	500	650	350	400	300	250
B	500	550	**	500	***	500	350	500	750	1150	800	2300	400	400	900	1100

** No sample
*** Inaccessible due to ice

CHLORIDES as mg/l Cl

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16 - S	350	400	**	450	***	400	250	250	300	350	300	600	300	300	250	200
10	300	450	**	450	***	450	300	325	300	300	350	600	300	300	275	200
B	400	400	**	425	***	450	250	200	575	750	500	1800	300	325	300	200
17 - S	350	350	**	500	***	350	300	250	325	350	250	500	300	350	250	225
10	300	375	**	425	***	425	300	350	350	300	250	500	250	300	250	225
B	600	350	**	425	***	700	325	350	300	450	250	1400	175	300	325	225
18 - S	375	350	**	375	***	350	325	250	350	250	300	500	125	300	275	225
10	300	350	**	400	***	350	325	250	350	250	300	600	200	300	250	
B	300	350	**	400	***	475	350	275	350	250	300	600	200	300	300	225
19 - S	300	350	**	350	***	300	350	275	350	250	350	500	200	275	275	200
10	300	350	**	350	***	325	350	250	400	250	275	550	200	275	350	200
B	450	350	**	350	***	400	350	300	450	250	300	500	200	275	325	325
20 - S	300	350	**	350	***	350	300	250	375	275	250	550	200	275	350	200
B	300	325	**	325	***	350	350	300	350	200	250	550	200	275	375	225
21 - S	275	325	**	***	***	350	300	250	300	300	250	500	175	275	275	225
B	300	300	**	***	***	350	300	250	400	300	250	500	175	275	325	200
22 - S	300	325	**	300	***	300	350	250	450	300	200	550	175	250	325	200
B	300	325	**	250	***	300	350	250	400	225	200	600	175	225	350	225

** No sample

CHLORIDES as mg/l Cl

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23 - S	300	350	**	***	***	300	375	225	400	200	250	600	175	250	300	250
B	300	350	**	***	***	300	475	225	400	250	300	550	175	325	300	275
24 - S	300	350	**	***	***	300	475	175	400	250	300	700	200	325	450	325
B	300	350	**	***	***	300	450	175	425	250	300	600	200	350	425	300
25 - S	350	*	**	***	***	*	275	275	300	300	275	*	*	*	*	*
B	400	*	**	***	***	*	350	275	300	300	300	*	*	*	*	*
26 - S	*	*	**	***	***	*	450	275	325	300	250	*	*	*	*	*
B	*	*	**	***	***	*	475	275	350	250	250	*	*	*	*	*
27 - S	*	*	**	***	***	*	500	275	350	275	250	*	*	*	*	*
B	*	*	**	***	***	*	500	275	350	275	250	*	*	*	*	*

* Inaccessible due to low water
** No sample
*** Inaccessible due to ice

TABLE 12

SULFATE CONCENTRATIONS

SULFATES as mg/l SO_4

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1 - S	400	275	**	400	***	550	288	325	525	312	245	338	305	375	450	425
B	400	375	**		***	540	288		550	300	245	330	305	375	450	425
4 - S	175	180	**	200	***	190	130	193	112	150	150	186	120	150	145	120
B	225	213	**	188	***	275	130	238	300	350	295	320	262	250	375	375
5 - S	175	180	**	175	***	165	130	205	120	150	155	190	120	145	140	100
B	175	200	**	200	***	155	120	205	350	300	150	378	220	150	350	250
6 - S	137	160	**	162	***	155	118	145	112	112	150	144	145	120	135	80
B	150	160	**	175	***	250	120	200	312	225	245	303	185	138	325	275
7 - S	120	160	**	175	***	160	115	138	140	100	120	151	157	95	120	73
10		150					150	180							160	
B	120	160	**	175	***	200	108	188	150	150	180	144	185	112	275	80
8 - S	140	145	**	175	***	165	135	150	115	101	120	133	150	105	110	75
10	140						140		135		150	140				
B	175	145	**	175	***	170	130	170	150	125	188	151	180	105	130	93
9 - S	140	145	**	175	***	155	130	135	114	100	101	140	150	105	110	65
10	140						135									
B	140	145	**	175	***	150	135	125	115	100	100	168	180	120	110	65

** No sample
*** Inaccessible due to ice

SULFATES as mg/l SO_4

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
10 - S	130	145	**	175	***	150	115	120	120	110	150	125	148	120	110	65
10	140	150	**	150	***	150	125	140	135	110	145	125	180	120	130	85
B	175	150	**	160	***	200	125	220	250	200	180	263	180	135	275	170
11 - S	150	145	**	150	***	145	135	130	125	100	125	125	123	110	130	95
10	140	125					140									
B	140	140	**	160	***	150	135	135	135	100	120	106	129	120	130	95
12 - S	140	130	**	175	***	145	135	130	130	100	125	98	135	120	130	95
10	140	130	**	160	***									120		
B	140	145	**	165	***	150	135	140	125	100	101	156	135	120	130	100
13 - S	135	140	**	200	***	150	100	115	110	90	113	125	123	110	95	65
10		145	**	175	***	150						120		100		70
B	140	145	**	170	***	150	95	110	120	100	113	115	129	110	100	75
14 - S	140	140	**	150	***	155	95	98	115	90	88	165	105	100	90	65
10	145	145	**	150	***	190	100	110	120	100	125	119	129	100	90	70
B	180	150	**	170	***	175	95	120	175	132	150	144	142	100	140	70
15 - S	140	145	**	150	***	155	95	100	115	100	101	106	135	90	95	65
10	140	145	**	150	***	165	100	115	120	100	120	99	132	90	100	63
B	155	150	**	155	***	155	100	150	200	175	155	219	139	95	180	170

** No sample

SULFATES as mg/l SO_4

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16 - S	120	120	**	150	***	140	85	100	125	100	88	115	105	80	98	60
10	130	120	**	145	***	145	95	120	125	100	113	98	107	80	100	60
B	140	140	**	145	***	145	90	135	180	150	125	160	93	80	110	65
17 - S	120	115	**	140	***	145	95	110	125	95	98	83	98	80	100	70
10	120	120	**	145	***	145	275	150	115	100	105	78	83	80	105	70
B	190	120	**	150	***	190	100	160	120	120	98	140	90	80	105	75
18 - S	115	120	**	140	***	150	110	110	125	95	98	78	98	80	100	70
10	120	120	**	140	***	155	110	120	130	85	105	69	86	80	100	70
B	120	100	**	145	***	155	95	120	160	85	118	78	83	95	110	95
19 - S	100	110	**	135	***	140	115	100	140	80	98	81	85	95	105	75
10	115	110	**	145	***	150	100	115	170	80	115	79	76	95	120	75
B	140	110	**	140	***	155	110	150	190	80	110	68	82	95	120	95
20 - S	110	100	**	125	***	180	100	110	140	80	92	70	72	95	110	75
B	110	100	**	135	***	375	120	130	160	80	105	75	87	95	120	80
21 - S	95	100	**	***	***	100	92	120	120	80	95	85	73	96	105	85
B	100	95	**	***	***	120	90	125	200	80	95	73	80	85	115	85
22 - S	100	100	**	135	***	130	100	110	180	75	86	73	75	85	125	80
B	100	110	**	135	***	130	95	120	180	75	92	78	72	85	125	75

** No sample
*** Inaccessible due to ice

SULFATES as mg/l SO_4

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23 - S	100	110	**	***	***	140	105	120	180	80	86	75	69	90	110	80
B	100	110	**	***	***	140	105	125	180	90	92	88	72	120	120	75
24 - S	125	125	**	***	***	190	120	135	180	90	105	93	71	120	150	110
B	120	125	**	***	***	145	120	140	180	85	118	95	81	120	150	125
25 - S	140	*	**	***	***	*	110	140	135	100	90	*	*	*	*	*
B	140	*	**	***	***	*	120	140	140	100	128	*	*	*	*	*
26 - S	*	*	**	***	***	*	125	135	150	95	90	*	*	*	*	*
B	*	*	**	***	***	*	130	135	160	95	98	*	*	*	*	*
27 - S	*	*	**	***	***	*	140	130	160	95	112	*	*	*	*	*
B	*	*	**	***	***	*	135	135	150	95	98	*	*	*	*	*

* Inaccessible due to low water
** No sample
*** Inaccessible due to ice

TABLE 13

LABORATORY CONDUCTIVITY DATA

LABORATORY CONDUCTIVITY as mmhos/cm

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temp °C	27	28		22		27	25	22	28	22	29	25	17	18	26	20
1 - S	8.0	8.5	**	6.4	***	13.0	6.0	5.5	10.4	7.0	4.8	6.4	7.2	9.0	10.9	11.5
B	8.0	8.5	**		***	12.5	5.8		10.4	7.0	4.8	6.4	7.1	9.0	11.2	11.5
4 - S	3.8	3.5	**	3.5	***	2.0	2.75	3.75	4.5	3.8	1.95	2.5	1.8	3.2	2.5	2.2
B	5.0	4.6	**	4.0	***	6.0	2.75	4.2	6.5	7.5	6.0	6.0	3.5	5.1	8.2	9.5
5 - S	3.5	3.5	**	3.4	***	1.7	2.7	4.0	2.4	3.5	1.95	2.4	1.8	3.2	2.5	2.2
B	3.5	4.1	**	3.5	***	1.7	2.7	4.4	6.6	6.8	2.2	6.8	3.0	3.0	7.5	5.5
6 - S	1.75	1.8	**	3.0	***	1.65	2.5	2.75	2.0	2.0	1.75	2.2	1.9	2.4	2.2	1.45
B	1.75	1.7	**	3.0	***	4.2	2.5	3.6	5.5	5.0	4.2	4.8	2.0	2.4	6.5	6.5
7 - S	1.5	1.65	**	1.9	***	1.6	2.5	2.5	1.91	1.86	1.75	2.0	1.8	1.85	1.65	1.3
10		1.6					2.5	3.0							2.8	
B	1.55	1.65	**	1.95	***	2.5	2.5	3.5	2.3	3.0	3.1	2.0	2.4	1.95	5.8	1.3
8 - S	1.5	1.58	**	1.85	***	1.55	2.0	2.4	1.45	1.8	1.42	1.8	1.7	1.84	1.56	1.25
10	1.5						2.5		1.57		1.8	2.0				
B	1.85	1.58	**	1.85	***	1.55	2.1	2.4	1.75	2.5	3.5	2.15	2.5	1.82	2.4	1.4
9 - S	1.5	1.5	**	1.8	***	1.5	1.75	1.57	1.31	1.6	1.18	1.7	1.5	1.76	1.44	1.02
10	1.5						1.8									
B	1.5	1.5	**	1.8	***	1.5	1.85	1.6	1.34	1.62	1.4	1.44	1.9	1.75	1.45	1.02

** No sample
*** Inaccessible due to ice

LABORATORY CONDUCTIVITY as mmhos/cm

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temp °C	27	38		22		27	25	22	28	22	29	25	17	18	26	20
10 - S	1.5	1.5	**	1.78	***	1.5	1.5	1.45	1.35	1.58	1.07	1.46	1.4	1.7	1.5	1.12
10	1.5	1.55	**	1.75	***	1.5	1.65	1.7	1.5	1.65	2.2	1.78	1.8	1.8	1.6	1.4
B	2.5	1.9	**	1.78	***	2.5	1.6	4.0	3.75	4.5	3.5	3.65	3.0	2.4	5.6	5.0
11 - S	1.5	1.55	**	1.75	***	1.45	1.8	1.65	1.57	1.8	1.52	1.58	1.6	1.65	1.85	1.53
10	1.5	1.5	**				1.8									
B	1.5	1.55	**	1.75	***	1.45	1.8	1.65	1.58	1.8	1.52	1.55	1.6	1.55	1.78	1.54
12 - S	1.5	1.55	**	1.75	***	1.45	1.8	1.7	1.56	1.82	1.46	1.54	1.6	1.69	1.85	1.53
10	1.5	1.55	**	1.75			1.8							1.65		
B	1.5	1.55	**	1.75	***	1.45	1.8	1.7	1.58	1.85	1.5	1.58	1.6	1.66	1.775	1.58
13 - S	1.4	1.5	**	1.7	***	1.5	1.33	1.25	1.23	1.35	1.1	1.36	1.5	1.52	1.24	.9
10		1.5	**	1.7	***	1.5						1.35		1.5		1.0
B	1.4	1.5	**	1.7	***	1.55	1.2	1.25	1.25	1.5	1.25	1.38	1.5	1.5	1.25	1.15
14 - S	1.35	1.45	**	1.6	***	1.5	1.2	1.1	1.25	1.3	.95	8.42	1.2	1.49	1.2	.92
10	1.45	1.55	**	1.6	***	2.0	1.35	1.33	1.25	1.45	1.55	8.21	1.5	1.49	1.25	.92
B	2.0	1.75	**	1.65	***	1.55	1.25	1.39	2.75	3.0	2.2	8.08	1.7	1.54	2.5	1.16
15 - S	1.4	1.5	**	1.7	***	1.5	1.38	1.25	1.23	1.45	1.15	1.35	1.5	1.52	1.17	.92
10	1.4	1.5	**	1.7	***	1.5	1.3	1.25	1.3	1.5	1.5	1.37	1.5	1.5	1.16	.95
B	1.68	1.68	**	1.7	***	1.5	1.4	1.94	3.0	4.0	3.0	4.6	1.5	1.5	3.7	4.4

** No sample
*** Inaccessible due to ice

LABORATORY CONDUCTIVITY as mmhos/cm

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temp ^oC	27	28		22		27	25	22	28	22	31	24	17	18	26	21
16 - S	1.2	1.32	**	1.5	***	1.4	1.15	1.08	1.24	1.15	.9	1.18	1.2	1.2	1.2	.8
10	1.2	1.35	**	1.5	***	1.4	1.15	1.26	1.2	1.15	1.32	1.14	1.2	1.19	1.2	.85
B	1.15	1.35	**	1.5	***	1.45	1.15	1.63	2.5	3.0	1.72	3.3	.85	1.18	1.3	.9
17 - S	1.2	1.25	**	1.42	***	1.3	1.2	1.06	1.3	1.1	.9	1.27	1.1	1.12	2.3	.85
10	1.25	1.25	**	1.45	***	1.4	1.45	1.45	1.25	1.1	1.02	1.12	.9	1.14	2.3	.85
B	1.75	1.25	**	1.48	***	1.95	1.2	1.46	1.2	1.75	.9	2.5	.8	1.14	1.22	.86
18 - S	1.15	1.2	**	1.35	***	1.35	1.3	1.0	1.4	1.05	.9	1.18	1.03	1.15	1.1	.85
10	1.15	1.2	**	1.4	***	1.42	1.25	1.1	1.35	1.0	.98	1.11	.9	1.12	1.12	
B	1.2	1.2	**	1.4	***	1.42	1.28	1.14	1.35	1.05	1.05	1.09	.85	1.12	1.2	.925
19 - S	1.1	1.2	**	1.35	***	1.2	1.38	1.01	1.45	.98	.88	1.06	.86	1.07	1.18	.925
10	1.15	1.2	**	1.35	***	1.3	1.38	1.1	1.75	1.0	1.15	1.07	.75	1.07	1.4	.975
B	1.5	1.2	**	1.4	***	1.4	1.35	1.18	1.7	.95	1.08	1.09	.8	1.07	1.39	1.15
20 - S	1.1	1.2	**	1.25	***	1.32	1.33	1.0	1.52	1.05	.85	1.05	.8	1.05	1.32	.925
B	1.1	1.2	**	1.25	***	1.32	1.2	1.0	1.45	1.0	.95	1.06	.85	1.05	1.35	.9
21 - S	1.1	1.16	**	***	***	1.22	1.15	1.0	1.2	1.02	.85	1.05	.76	1.02	1.2	.925
B	1.1	1.16	**	***	***	1.22	1.15	1.01	1.65	1.04	.85	1.06	.78	.97	1.3	.95

** No sample
*** Inaccessible due to ice

LABORATORY CONDUCTIVITY as mmhos/cm

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temp °C	27	28		22		27	25	22	29	26	31	24	17	18	26	21
22 - S	1.1	1.2	**	1.25	***	1.15	1.28	.95	1.72	.92	.85	1.06	.75	1.05	1.4	.95
B	1.1	1.2	**	1.25	***	1.28	1.25	.95	1.63	.92	.90	1.07	.75	1.05	1.4	.95
23 - S	1.1	1.2	**	***	***	1.18	1.4	.88	1.6	.95	.88	1.12	.76	1.07	1.17	1.02
B	1.1	1.2	**	***	***	1.18	1.4	.96	1.5	.95	1.0	1.14	.76	1.27	1.2	1.02
24 - S	1.2	1.2	**	***	***	1.2	1.65	.95	1.68	1.05	1.1	1.35	.85	1.35	1.75	1.27
B	1.2	1.2	**	***	***	1.2	1.7	.85	1.65	1.05	1.05	1.37	.85	1.45	1.75	1.28
25 - S	1.3	*	**	***	***	*	1.18	1.14	1.25	1.3	.90	*	*	*	*	*
B	1.3	*	**	***	***	*	1.4	1.16	1.2	1.15	.90	*	*	*	*	*
26 - S	*	*	**	***	***	*	1.65	1.18	1.4	1.2	.95	*	*	*	*	*
B	*	*	**	***	***	*	1.75	1.18	1.43	1.2	.93	*	*	*	*	*
27 - S	*	*	**	***	***	*	1.8	1.16	1.4	1.2	.90	*	*	*	*	*
B	*	*	**	***	***	*	1.83	1.16	1.4	1.2	.95	*	*	*	*	*

* Inaccessible due to low water
** No sample
*** Inaccessible due to ice

TABLE 14

LABORATORY SPECIFIC GRAVITY DATA

SPECIFIC GRAVITY

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temp °C	27	28		22		27	25	22	28	22	29	25	17	18	26	20
1 - S	1.001	1.001	**	1.001	***	1.001	1.001	1.002	1.002	1.002	1.001	1.003	1.003	1.0025	1.0015	1.004
B	1.001	1.001	**			1.001	1.001		1.002	1.001	1.003		1.003	1.0025	1.0015	1.004
4 - S	1.000	1.000	**	1.001	***	1.000	1.000	1.02	1.00-	1.001	1.000	1.005	1.005	1.001	1.000	1.004
B	1.001	1.000	**	1.001	***	1.001	1.000	1.002	1.002	1.002	1.001	1.003	1.002	1.0025	1.0005	1.001
5 - S	1.000	1.000	**	1.001	***	1.000	1.000	1.002	1.000	1.001	1.000	1.000	1.001	1.001	1.000	1.001
B	1.000	1.000	**	1.001	***	1.000	1.000	1.002	1.002	1.002	1.000	1.003	1.002	1.001	1.0005	1.002
6 - S	1.000	0.9995	**	1.001	***	1.000	1.000	1.001	1.000	1.0005	1.000	1.000	1.001	1.001	1.000	1.001
B	1.000	0.9995	**	1.001	***	1.001	1.000	1.001	1.002	1.002	1.001	1.000	1.002	1.001	1.0005	1.002
7 - S	1.000	0.9995	**	1.0005	***	1:000	1.000	1.000	1.001	1.000	1.000	1.000	1.001	1.000	1.000	1.001
10		0.9995					1.000	1.001							1.000	
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.001	1.001	1.000	1.002	1.000	1.0005	1.001
8 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
10	1.000						1.000		1.000	1.000	1.000					
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.001	1.001	1.000	1.002	1.000	1.000	1.001
9 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
10	1.000						1.000									
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.0000	1.000	1.000	1.001	1.000	1.000	1.001

** No sample
*** Inaccessible due to ice

SPECIFIC GRAVITY

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temp °C	27	28		22		27	25	22	28	22	29	25	17	18	26	20
10 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
10	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.001	1.000	1.000	1.002	1.001	1.0005	1.002
11 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
10	1.000	0.9995	**				1.000									
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
12 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
10	1.000	0.9995	**	1.0005			1.000							1.000		
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
13 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
10		0.9995	**	1.0005	***	1.000						1.000		1.000		1.001
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
14 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
10	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.001	1.000	1.000	1.001	1.000	1.000	1.001
15 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.002
10	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.001	1.001	1.000	1.001	1.000	1.0005	1.001

** No sample
*** Inaccessible due to ice

SPECIFIC GRAVITY

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temp °C	27	28		22		27	25	22	28	22	31	24	17	28	26	21
16 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
10	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.001	1.000	1.000	1.001	1.000	1.000	1.001
17 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
10	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
18 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
10	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
19 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
10	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
20 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
21 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005

** No sample
*** Inaccessible due to ice

SPECIFIC GRAVITY

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temp °C	27	28		22		27	25	22	28	22	31	24	17	18	26	21
22 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
23 - S	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
B	1.000	0.9995	**	1.0005	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
24 - S	1.000	0.9995	**	***	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
B	1.000	0.9995	**	***	***	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.0005
25 - S	1.000	*	**	***	***	*	1.000	1.001	1.000	1.000	1.000	*	*	*	*	*
B	1.000	*	**	***	***	*	1.000	1.001	1.000	1.000	1.000	*	*	*	*	*
26 - S	*	*	**	***	***	*	1.000	1.001	1.000	1.000	1.000	*	*	*	*	*
B	*	*	**	***	***	*	1.000	1.001	1.000	1.000	1.000	*	*	*	*	*
27 - S	*	*	**	***	***	*	1.000	1.001	1.000	1.000	1.000	*	*	*	*	*
B	*	*	**	***	***	*	1.000	1.001	1.000	1.000	1.000	*	*	*	*	*

* Inaccessible due to low water
** No sample

TABLE 15

TOTAL DISSOLVED SOLIDS CONCENTRATIONS

TOTAL DISSOLVED SOLIDS as mg/l

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1 - S	4592	7792	**	5023	***	9102	4997	3150	5778	3849	2695	5992	3955	5091	6333	6094
B	5448	7969	**		***	8285	4622		5817	4017	2698	5976	3952	4798	6412	6081
4 - S	1915	1921	**	1231	***	1653	1355	2114	1196	2149	1306	2161	1198	1926	1281	1060
B	2636	2367	**	1307	***	2973	1458	2439	3216	4245	3289	6125	1948	2880	4000	4852
5 - S	1823	1675	**	1137	***	1412	1324	2143	1249	2714	1306	2140	1219	1695	1429	1046
B	1727	2042	**	1257	***	1321	1311	2280	3651	3844	1392	7200	1701	1678	4029	3013
6 - S	1347	1576	**	1015	***	1236	1273	1606	1164	1335	1222	1918	1184	1227	1266	1006
B	1304	1561	**	1065	***	2292	1283	1889	2850	2896	2455	4782	1256	1269	3305	3366
7 - S	1096	1244	**	960	***	1245	1279	1404	1155	1170	1184	1787	1206	1025	998	843
10		1222	**				1224	1726							1552	
B	1093	1321	**	957	***	1470	1271	2008	1253	1725	1936	1914	1405	1068	2948	852
8 - S	839	1038	**	854	***	1252	1129	1300	841	1092	1040	1739	1043	1040	918	765
10	788						1209		952		1162	1759				
B	952	1219	**	867	***	1267	1119	1336	1141	1447	1954	2097	1331	1058	1268	744
9 - S	1120	1039	**	857	***	1158	996	949	748	916	991	1419	956	976	892	683
10	1121						1041									
B	1125	1038	**	873	***	1098	1090	1019	850	913	983	1465	1167	1084	909	570

** No Sample
*** Inaccessible due to ice

TOTAL DISSOLVED SOLIDS as mg/l

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
10 - S	1110	1039	**	864	***	1158	926	873	864	927	936	1565	945	1057	794	654
10	1123	1146	**	834	***	1166	990	912	951	1003	1303	1731	1150	1053	938	727
B	1744	1457	**	847	***	1640	941	2072	1938	2443	2033	4379	1615	1142	3099	2389
11 - S	1139	1168	**	813	***	1148	1046	999	1040	1072	1194	1734	969	957	1015	911
10	1130	1184					1061									
B	1118	1024	**	822	***	1150	1054	1017	1031	958	1200	1555	900	971	1008	870
12 - S	1128	1198	**	862	***	1150	939	999	932	1071	1108	1528	987	972	978	915
10	1131	1150	**	847	***									969		
B	1206	1144	**	821	***	1141	1092	1037	1052	1072	1019	1789	907	973	971	908
13 - S	1121	1131	**	837	***	1165	772	792	790	801	723	1404	895	924	713	531
10		1097	**	833	***	1155						1405		910		523
B	960	1138	**	828	***	1174	765	737	817	916	907	1480	897	928	809	672
14 - S	1053	1051	**	759	***	1168	726	684	805	817	670	1394	721	866	717	576
10	1086	1141	**	790	***	1629	820	822	812	905	1050	1434	818	875	790	580
B	1512	1388	**	797	***	1197	718	834	1333	1544	1315	2090	1007	887	1305	627
15 - S	1039	1141	**	765	***	1168	726	731	847	916	773	1381	906	871	704	532
10	1119	1136	**	837	***	1179	727	799	846	932	1099	1304	822	883	711	579
B	1150	1221	**	845	***	1185	821	1136	1607	2272	1633	4181	907	879	1814	2100

** No Sample
*** Inaccessible due to ice

TOTAL DISSOLVED SOLIDS as mg/l

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16 - S	843	894	**	783	***	993	620	647	780	842	661	1234	695	700	632	488
10	775	1025	**	728	***	1075	708	806	770	750	836	1202	697	692	684	483
B	966	966	**	753	***	1084	625	618	1309	1569	1108	3283	679	735	725	502
17 - S	854	854	**	824	***	907	714	658	815	836	657	976	679	760	647	549
10	767	896	**	752	***	888	975	893	837	751	676	961	582	694	646	549
B	1375	855	**	760	***	1554	763	905	759	1026	669	2538	461	692	777	557
18 - S	887	863	**	703	***	915	786	646	863	670	548	959	397	720	682	447
10	774	850	**	726	***	923	772	678	860	651	757	1110	500	687	813	
B	758	822	**	728	***	1128	798	722	906	659	792	1135	488	709	748	585
19 - S	736	835	**	669	***	814	827	685	882	637	857	967	497	675	681	524
10	758	838	**	688	***	874	803	666	1018	637	727	1044	484	676	834	531
B	1043	840	**	665	***	1008	816	799	1118	639	775	948	493	675	794	773
20 - S	752	821	**	660	***	979	725	657	919	687	658	1040	479	675	827	537
B	751	782	**	629	***	1242	835	767	913	563	685	1051	504	675	883	575
21 - S	687	789	**	***	***	840	708	677	767	738	668	975	436	674	687	582
B	740	734	**	***	***	882	707	680	1053	720	648	963	454	625	788	545
22 - S	741	791	**	599	***	815	804	655	1095	722	562	1041	445	618	801	539
B	731	795	**	541	***	812	799	669	1013	604	576	1132	447	576	844	566

** No Sample
*** Inaccessible due to ice

TOTAL DISSOLVED SOLIDS as mg/l

Station No. Depth (m)	Aug.	Sept.	Oct. Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23 - S	740	851	**	***	***	829	858	632	1030	565	623	1127	436	626	727	637
B	749	839	**	***	***	828	1021	641	1031	637	755	1067	442	799	750	662
24 - S	799	885	**	***	***	897	1040	572	1028	652	751	1330	473	796	1048	802
B	781	879	**	***	***	825	1001	567	1068	661	760	1157	498	836	1001	780
25 - S	889	*	**	***	***	*	707	738	802	762	697	*	*	*	*	*
B	983	*	**	***	***	*	844	731	805	757	802	*	*	*	*	*
26 - S	*	*	**	***	***	*	1018	722	867	746	630	*	*	*	*	*
B	*	*	**	***	***	*	1065	722	919	673	658	*	*	*	*	*
27 - S	*	*	**	***	***	*	1119	711	903	716	673	*	*	*	*	*
B	*	*	**	***	***	*	1112	734	905	713	656	*	*	*	*	*

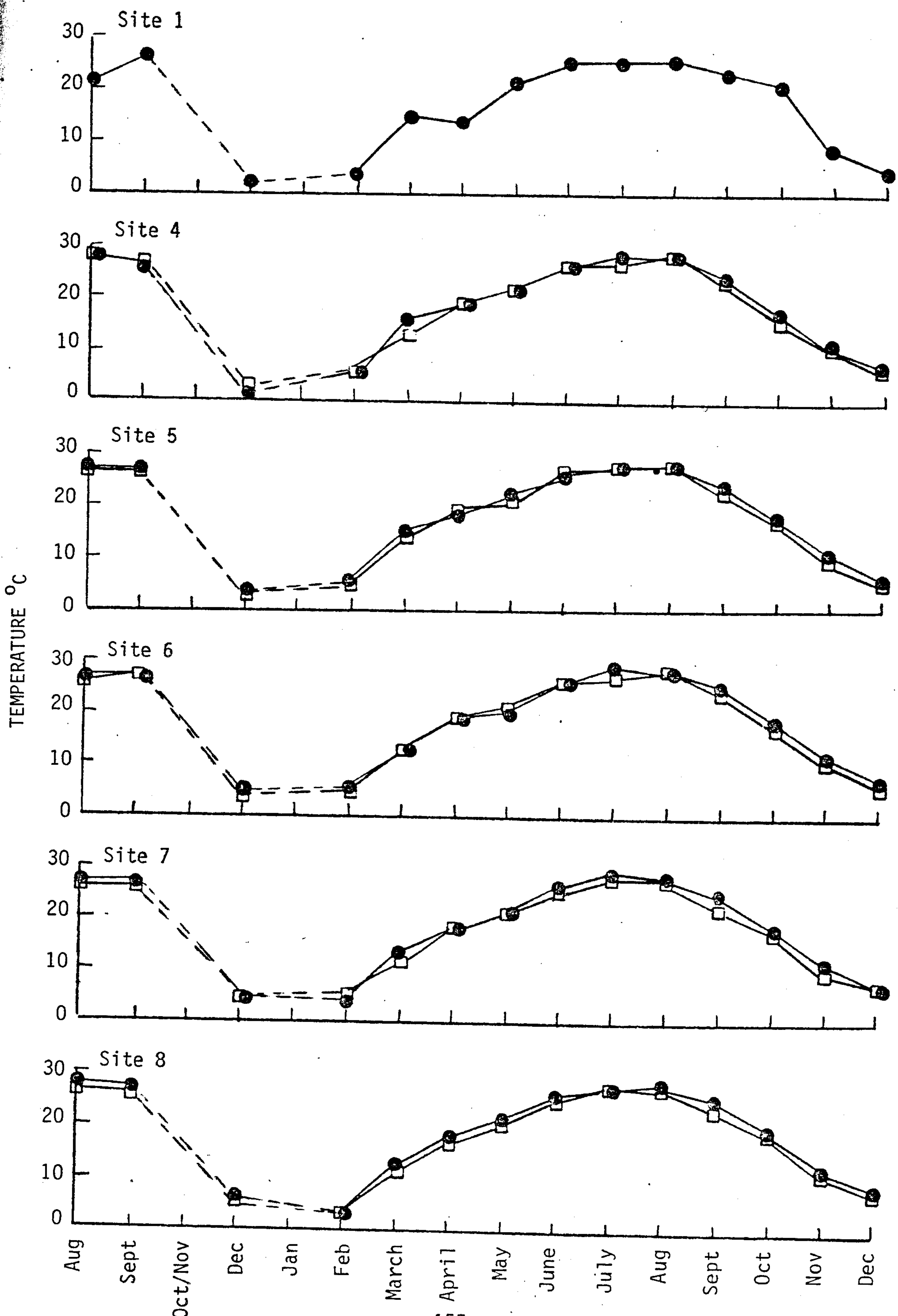
* Inaccessible due to low water
** No Sample
*** Inaccessible due to ice

FIGURE 2

PLOTS OF FIELD AND LABORATORY DATA

● Surface

◘ Bottom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Site 4
Site 5
Site 6
Site 7
Site 8
30
20
10
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Aug
Sept
Oct/Nov
Dec
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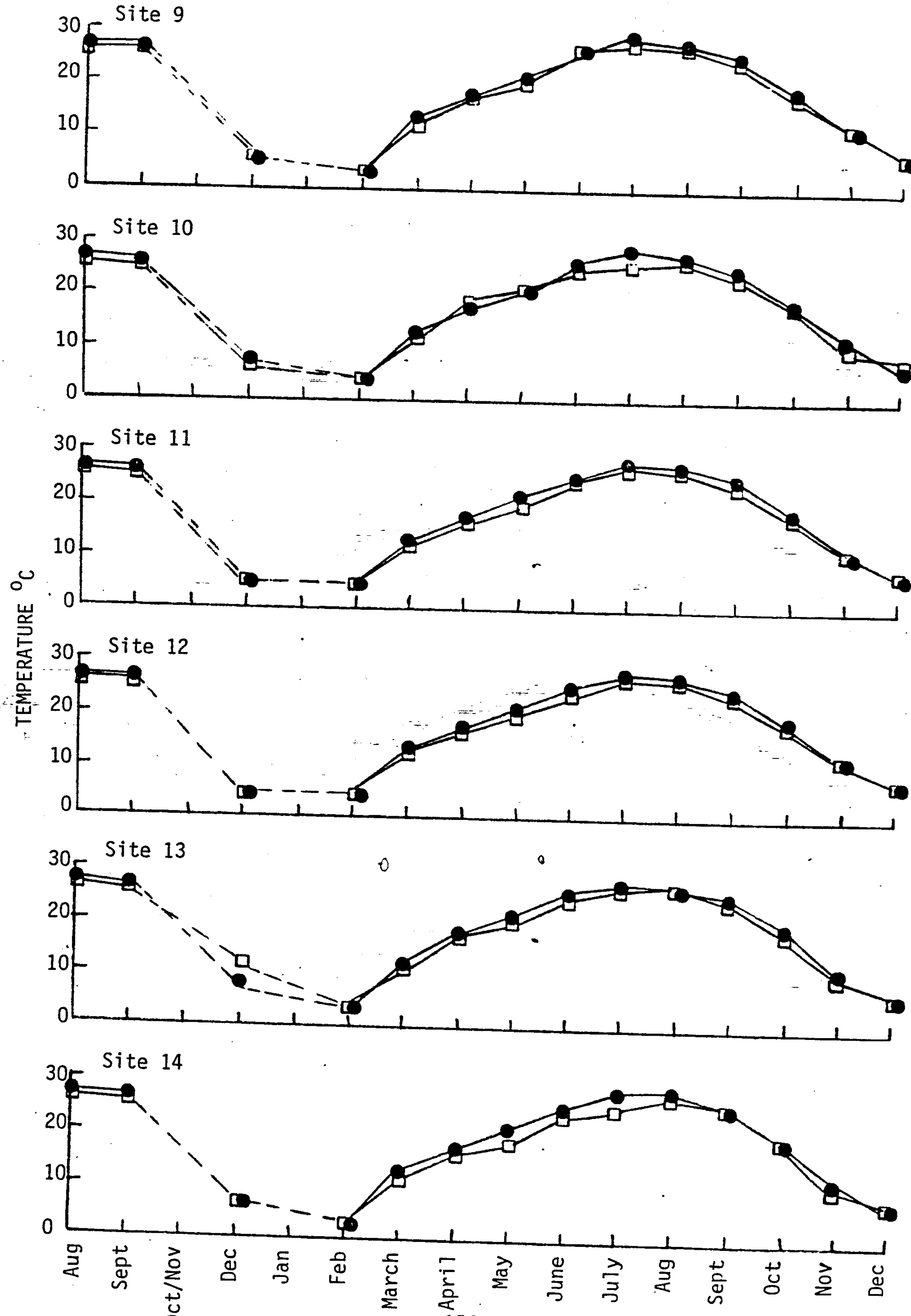
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec



Site 9
Site 10
Site 11
Site 12
Site 13
Site 14
TEMPERATURE °C
30
20
10
0
Aug
Sept
Oct/Nov
Dec
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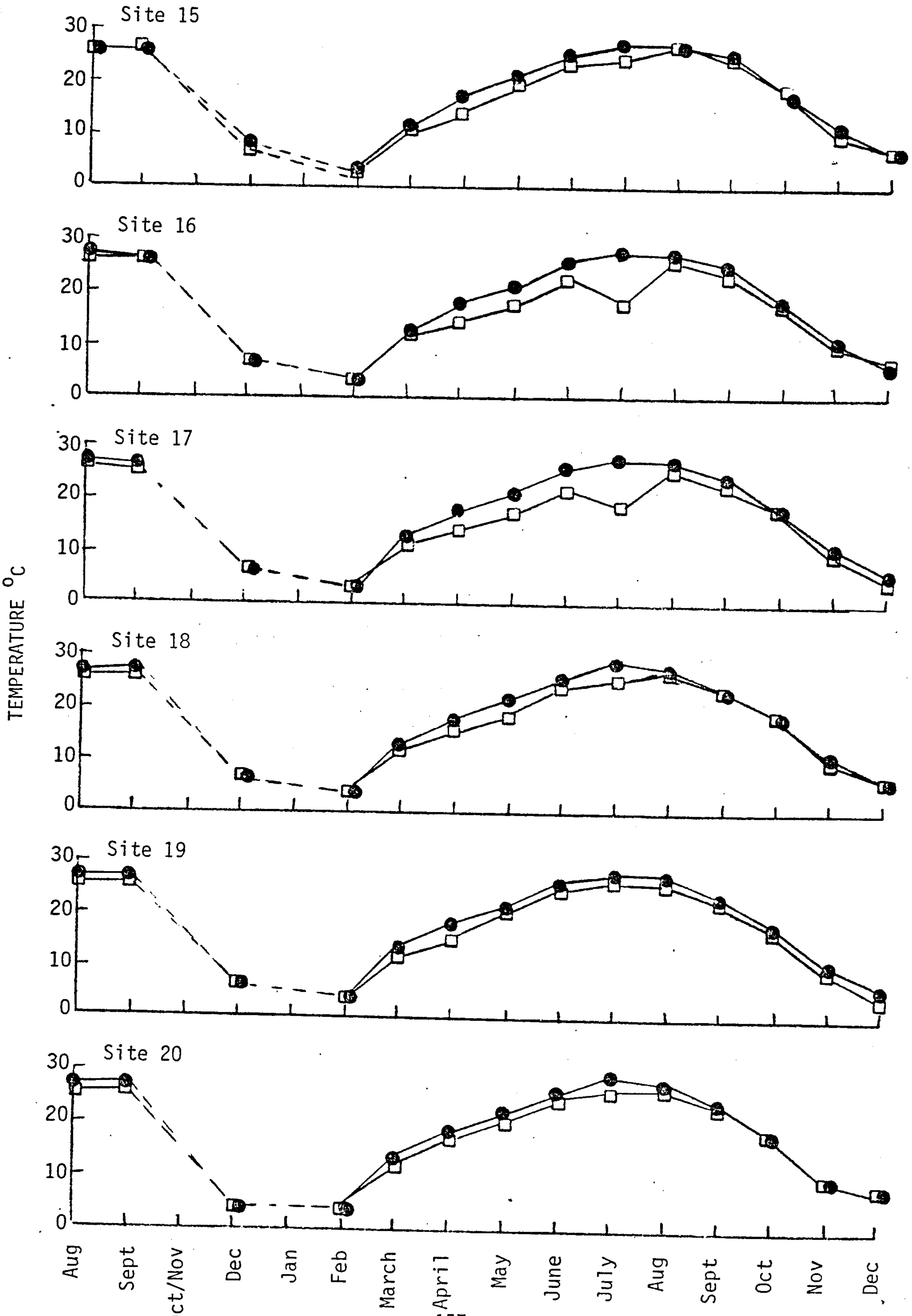
Aug
Sept
Oct
Nov
Dec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Site 16
Site 17
Site 18
Site 19
Site 20
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20
10
0
Aug
Sept
Oct/Nov
Dec
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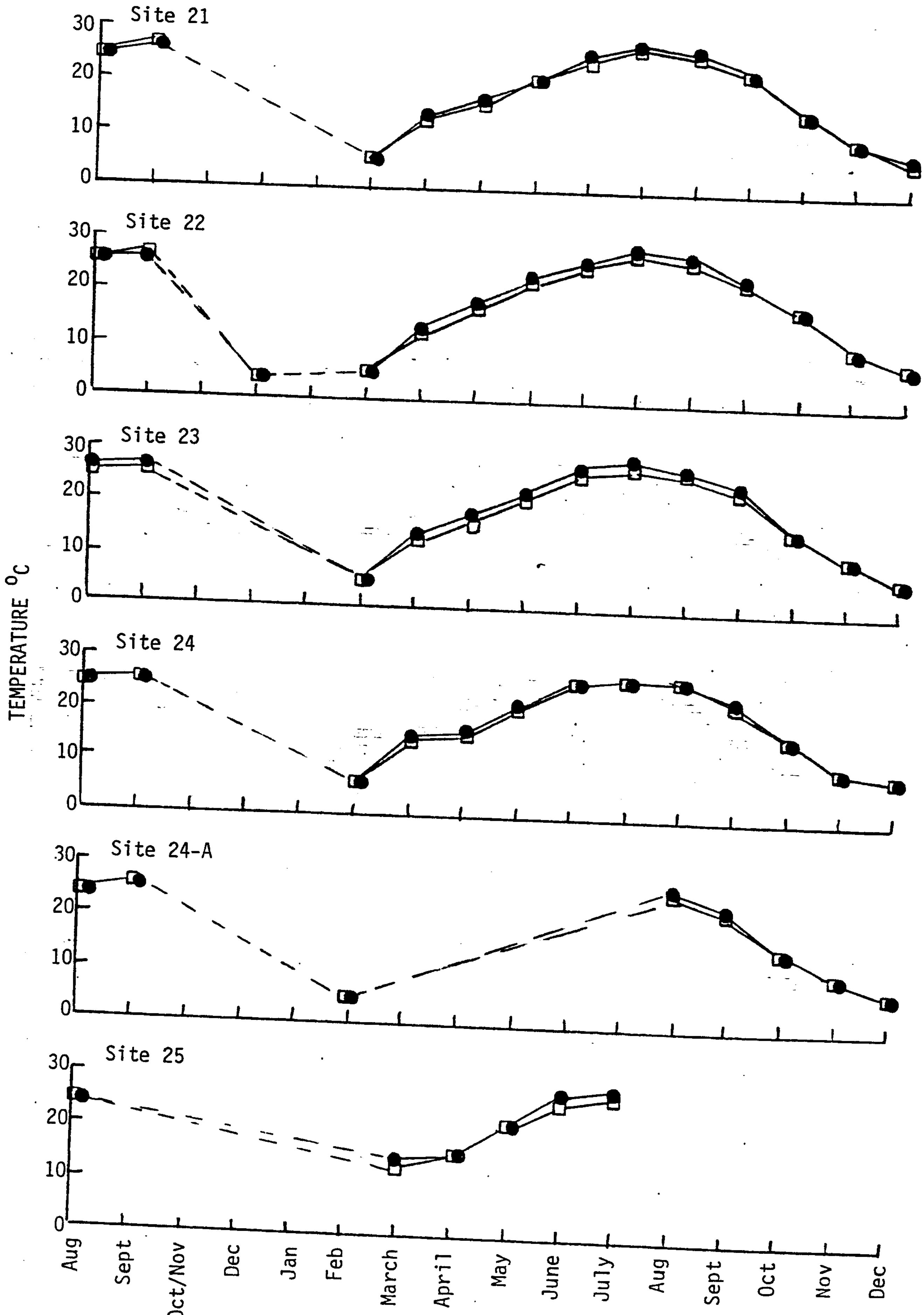
Aug
Sept
Oct
Nov
Dec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Site 22
Site 23
Site 24
Site 24-A
Site 25
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20
10
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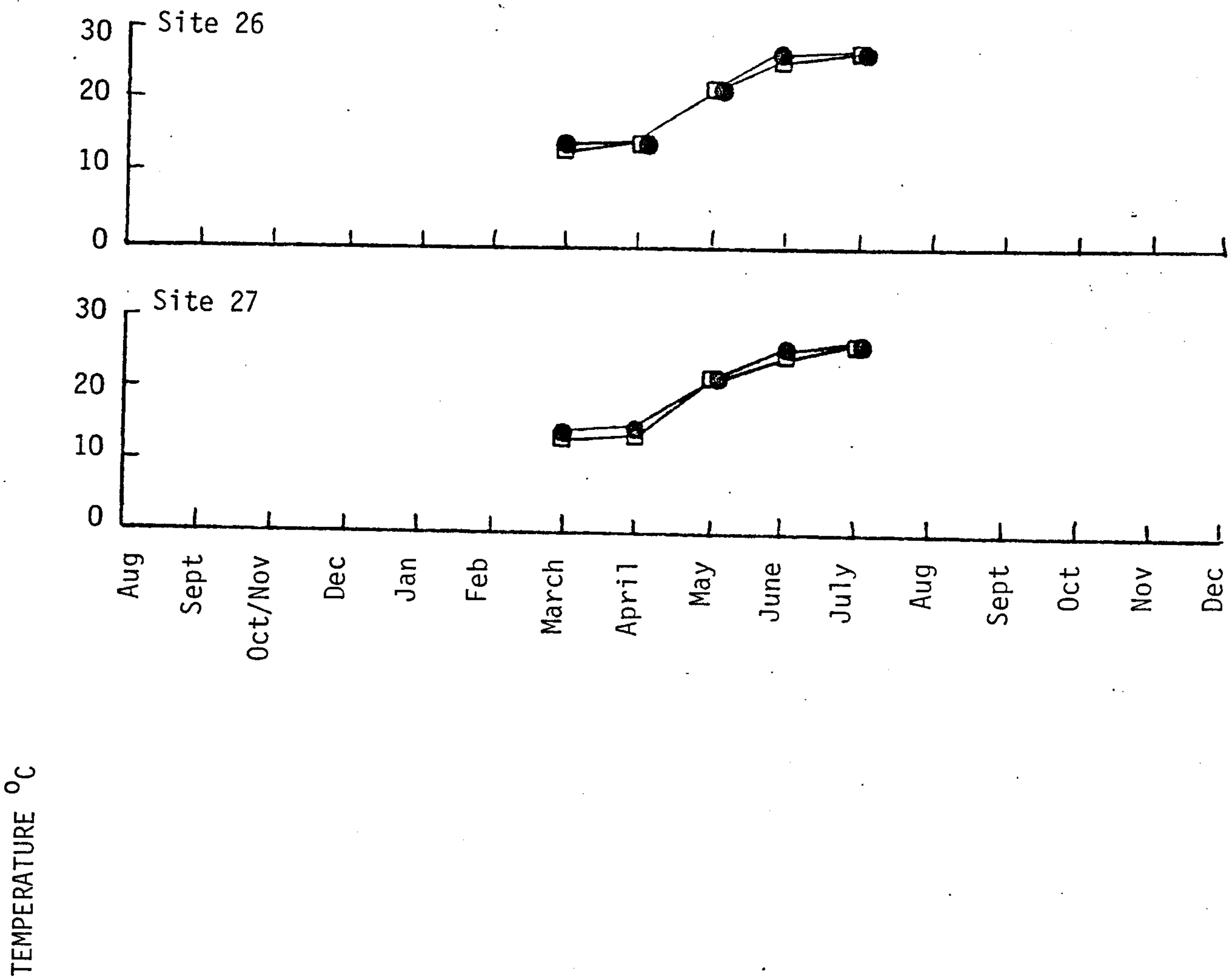
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec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Site 27
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Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
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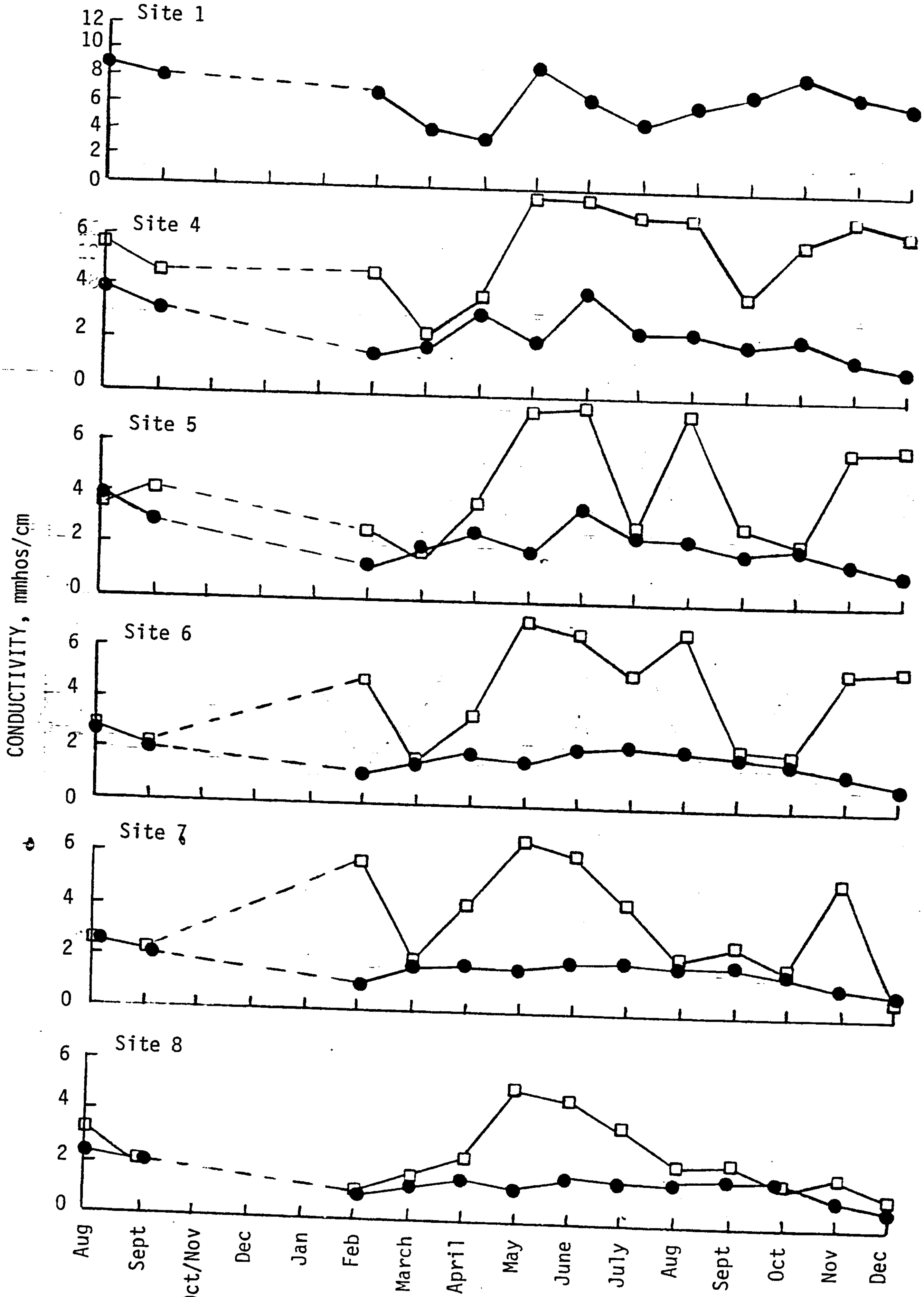
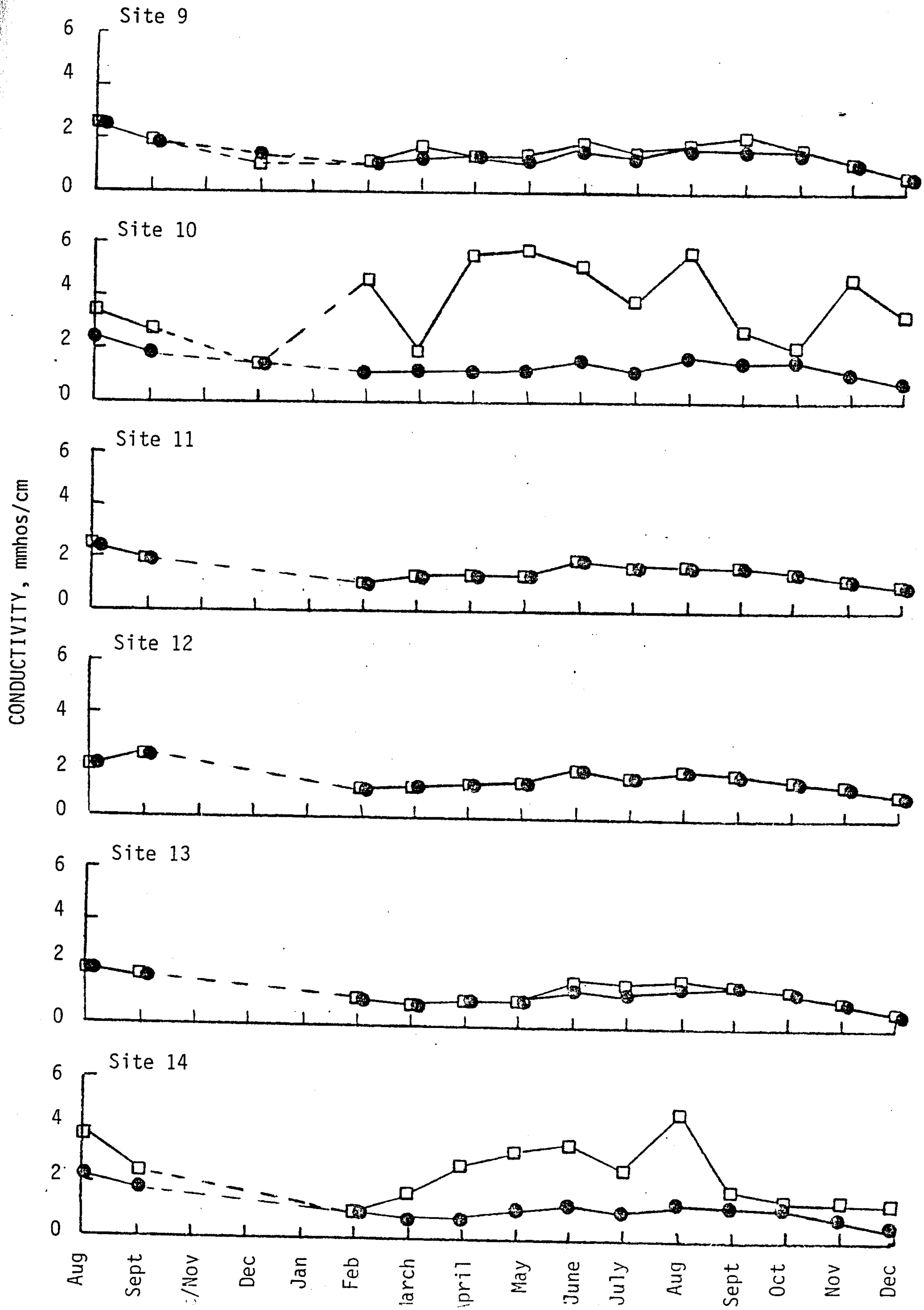
Oct
Nov
Dec
TEMPERATURE °C


Site 1
Site 4
Site 5
Site 6
Site 7
Site 8
12
10
8
6
4
2
0
CONDUCTIVITY, mmhos/cm
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec


Site 9
Site 10
Site 11
Site 12
Site 13
Site 14
CONDUCTIVITY, mmhos/cm
0
2
4
6
Aug
Sept
:/Nov
Dec
Jan
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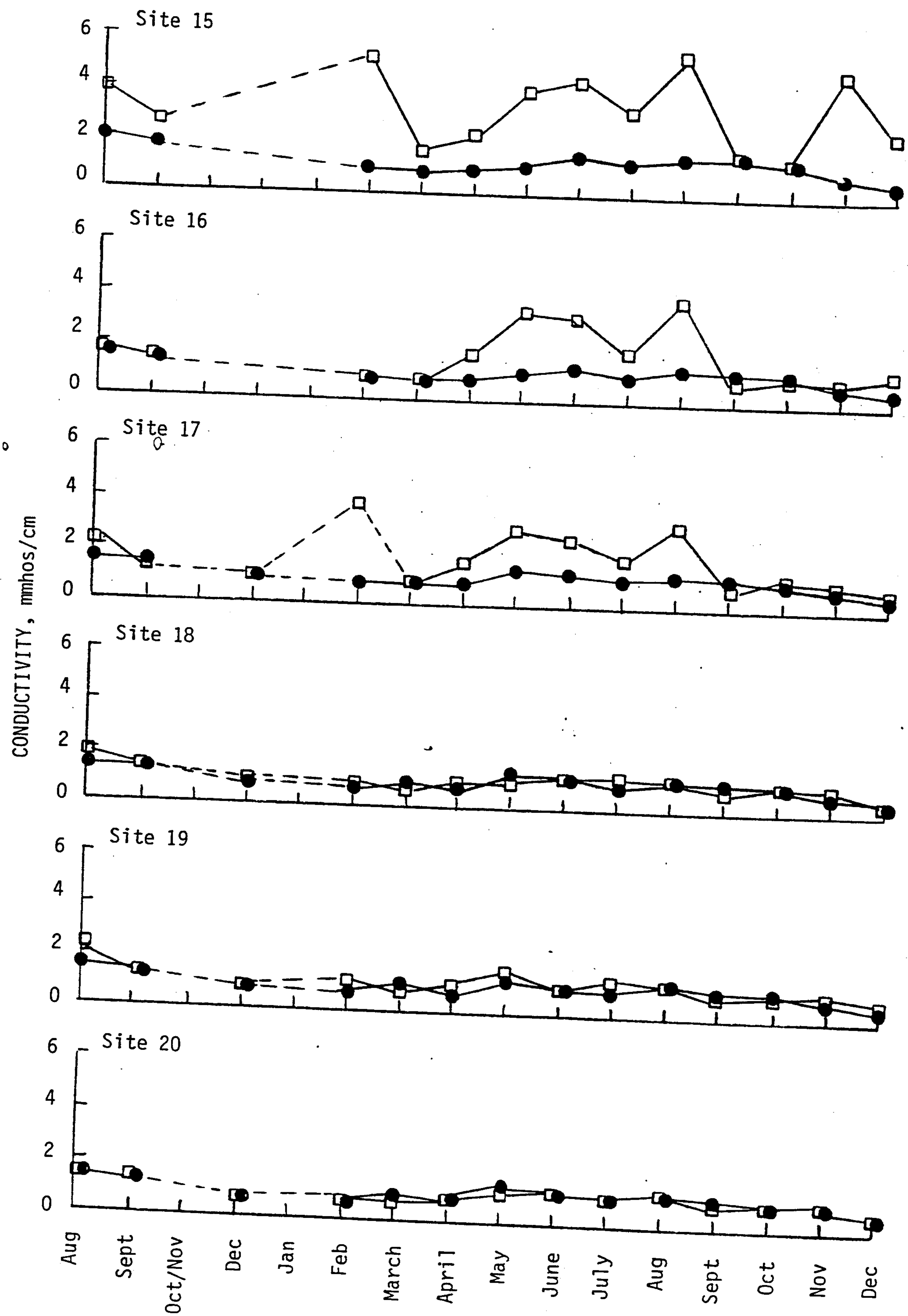
May
June
July
Aug
Sept
Oct
Nov
Dec


Site 15
Site 16
Site 17
Site 18
Site 19
Site 20
CONDUCTIVITY, mmhos/cm
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4
2
0
Aug
Sept
Oct/Nov
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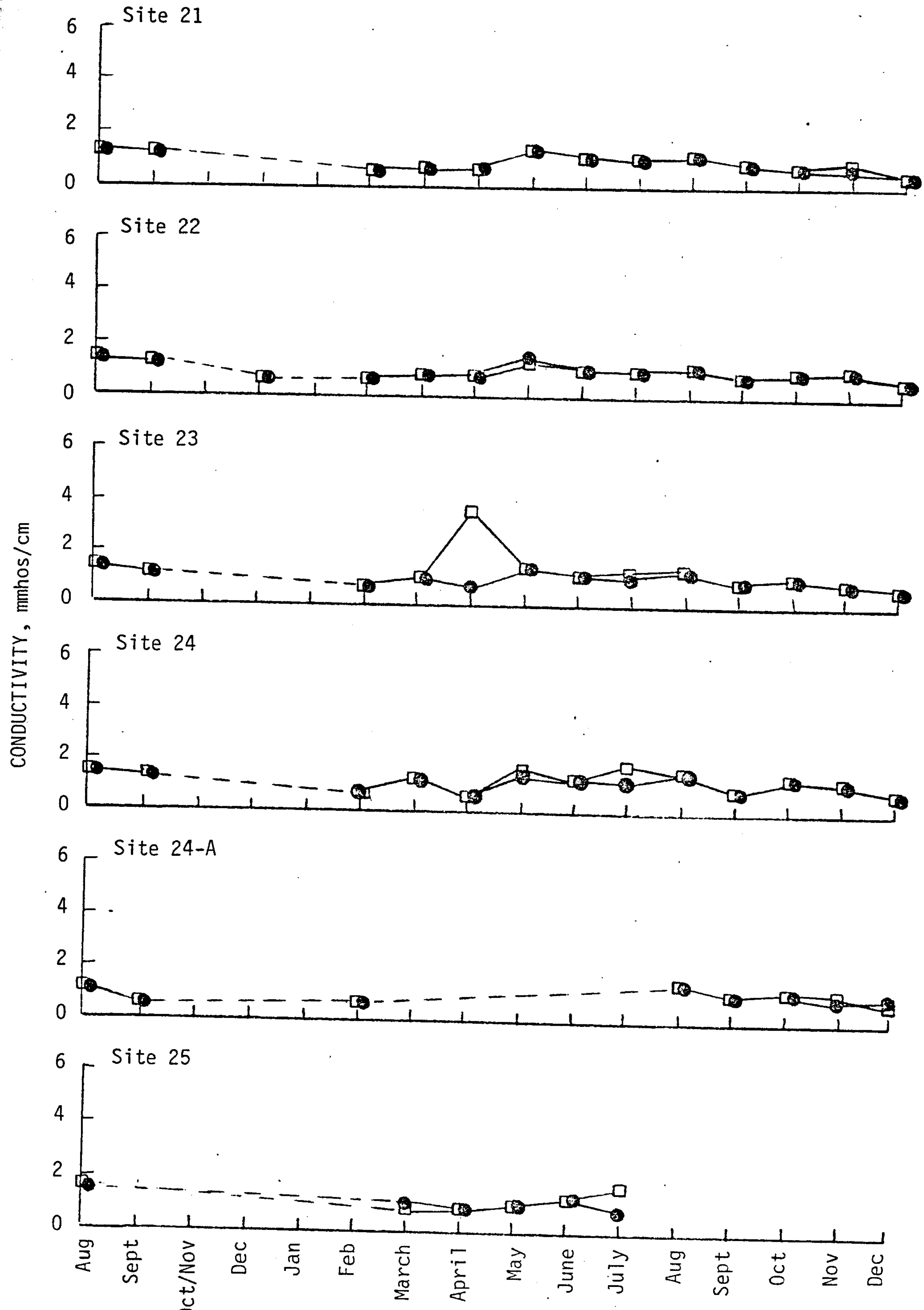
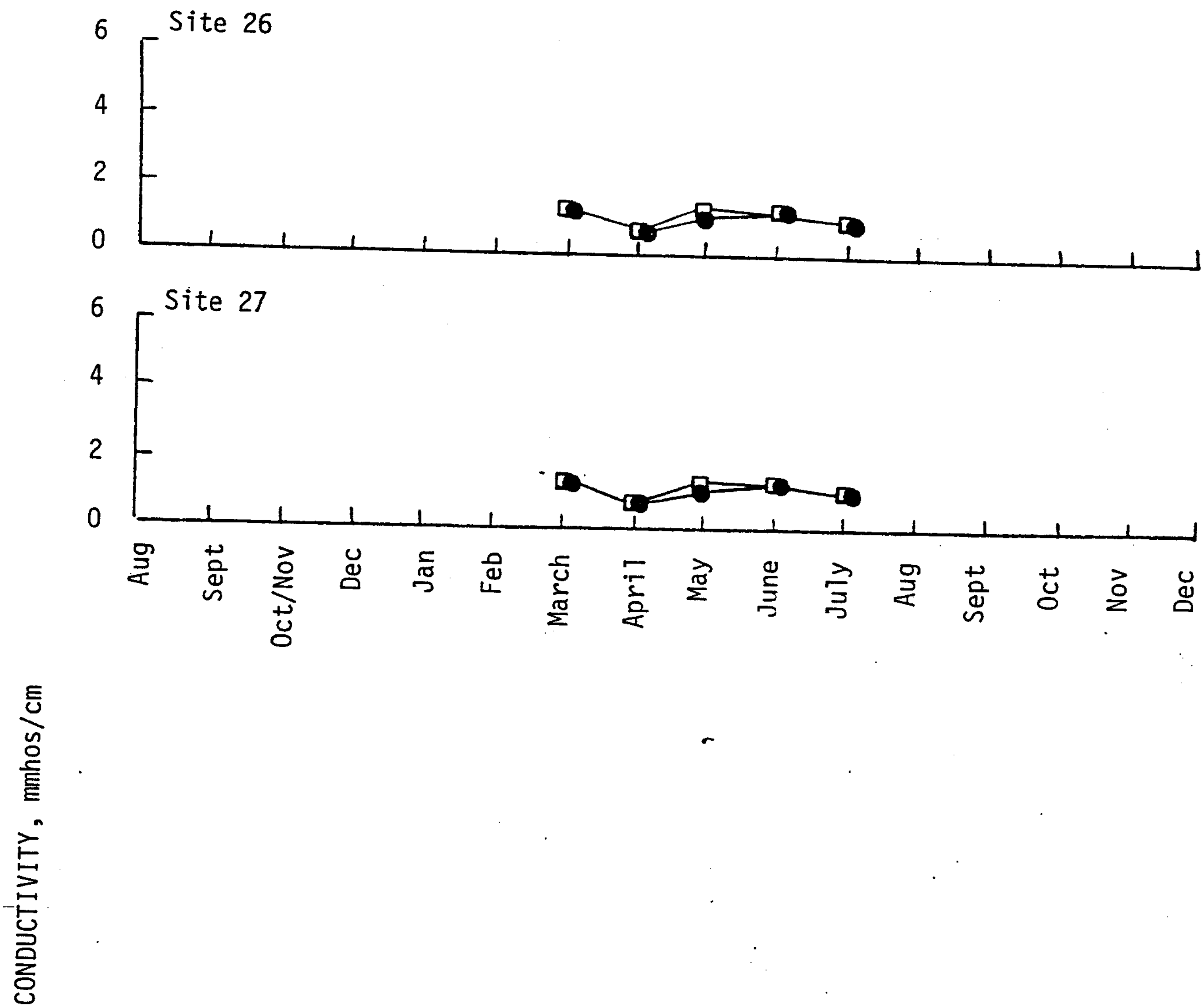
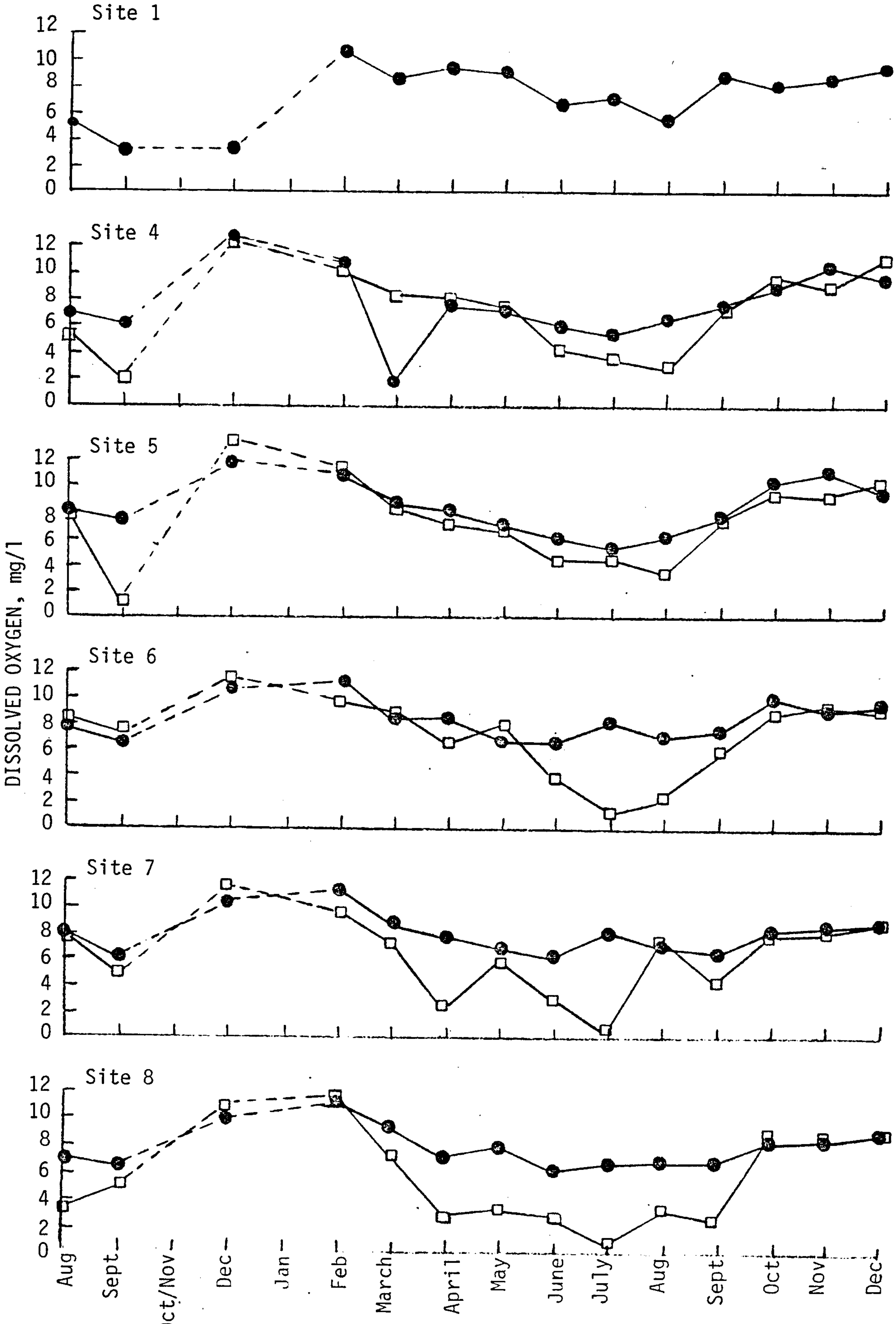
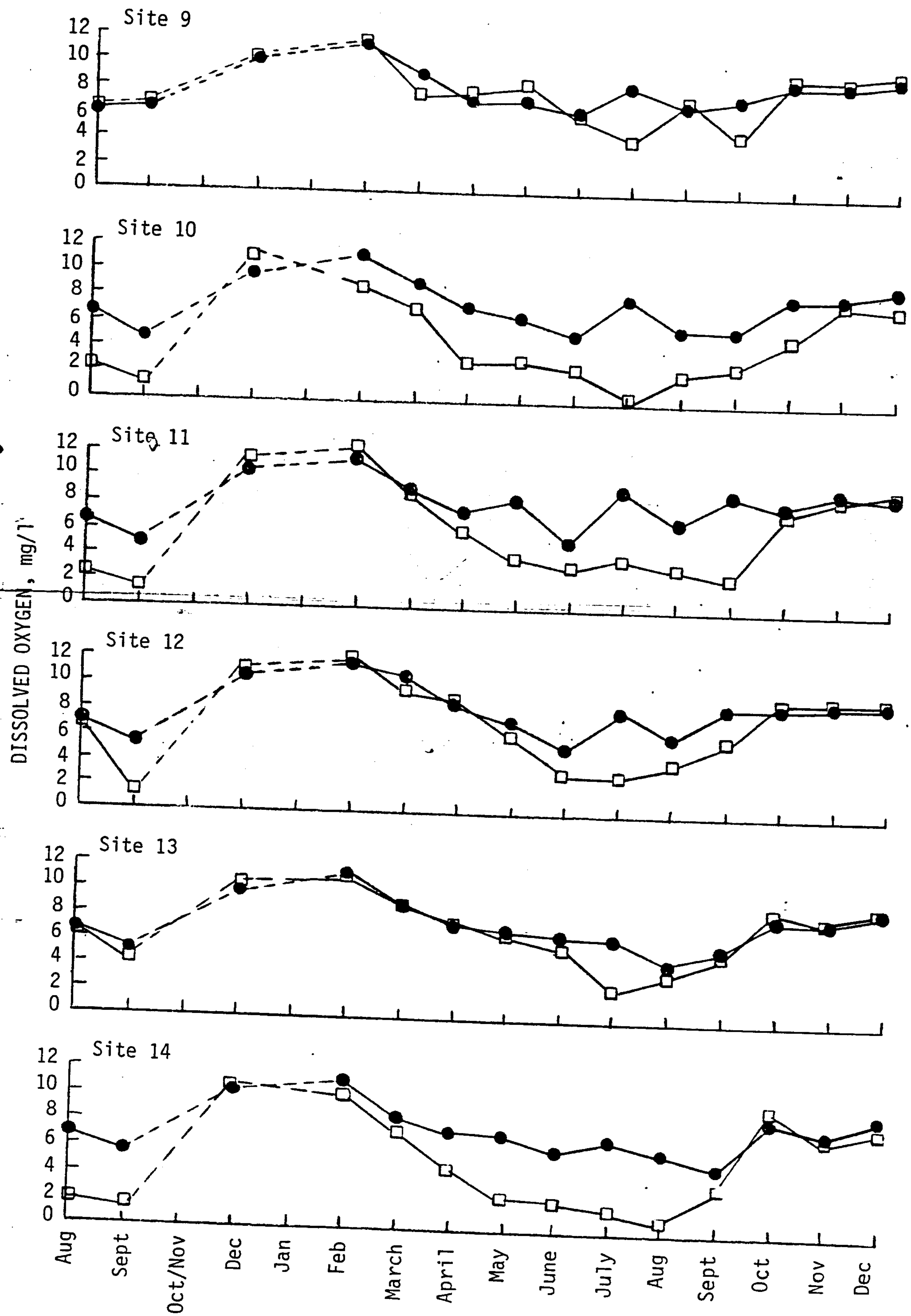
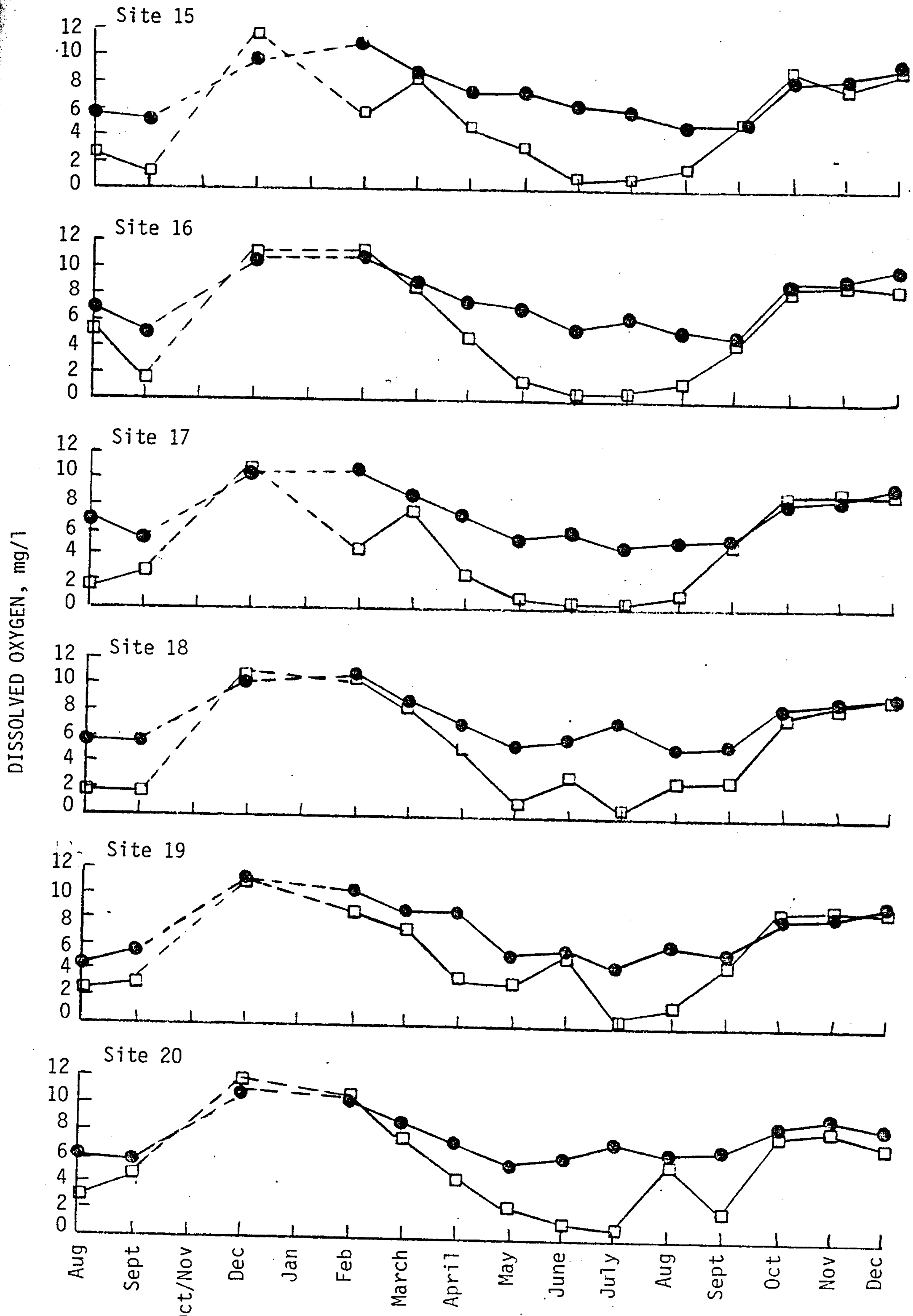
Aug
Sept
Oct
Nov
Dec

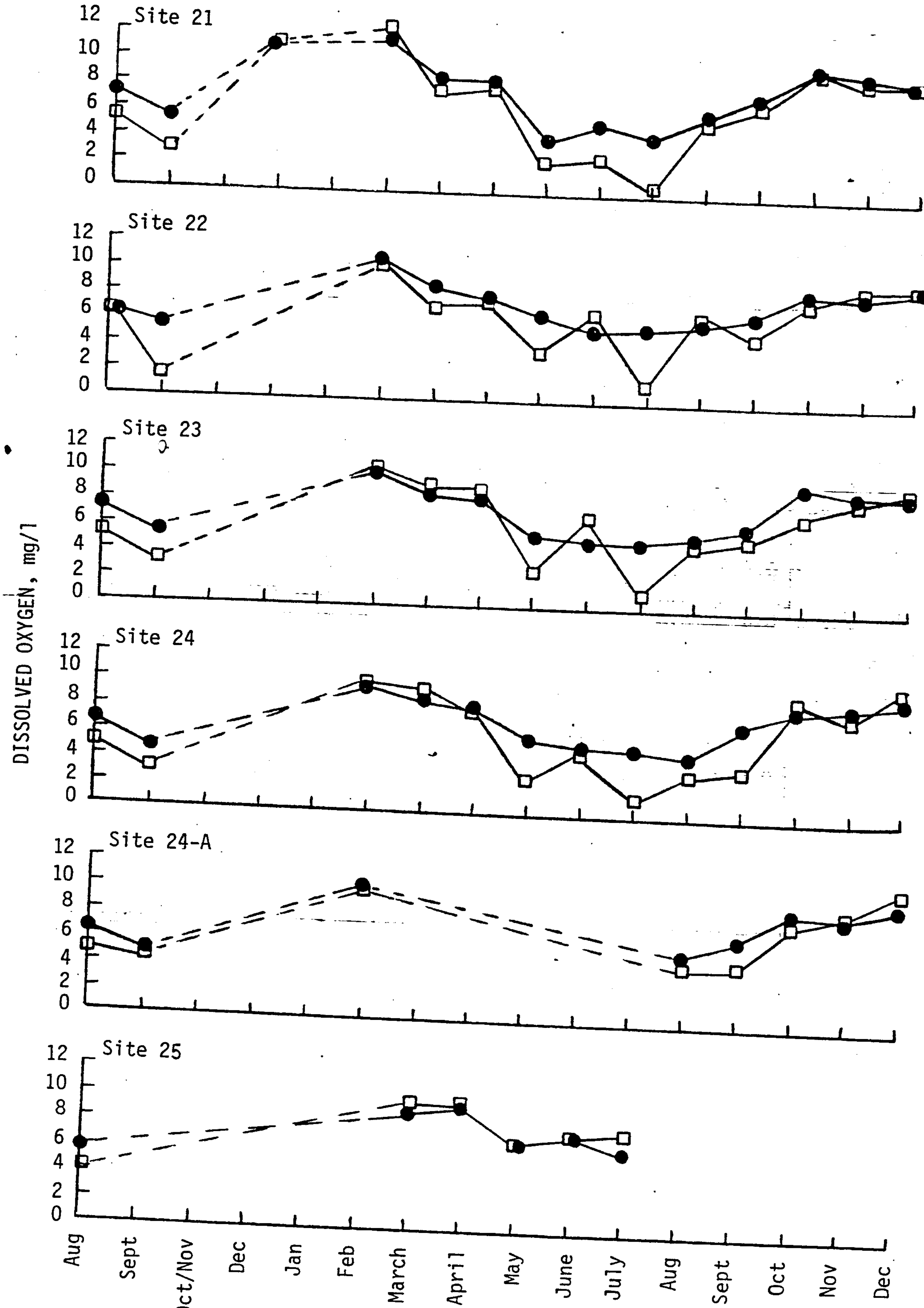

CONDUCTIVITY, mmhos/cm
Site 21
Site 22
Site 23
Site 24
Site 24-A
Site 25
6
4
2
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec


Site 26
Site 27
6
4
2
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
CONDUCTIVITY, mmhos/cm

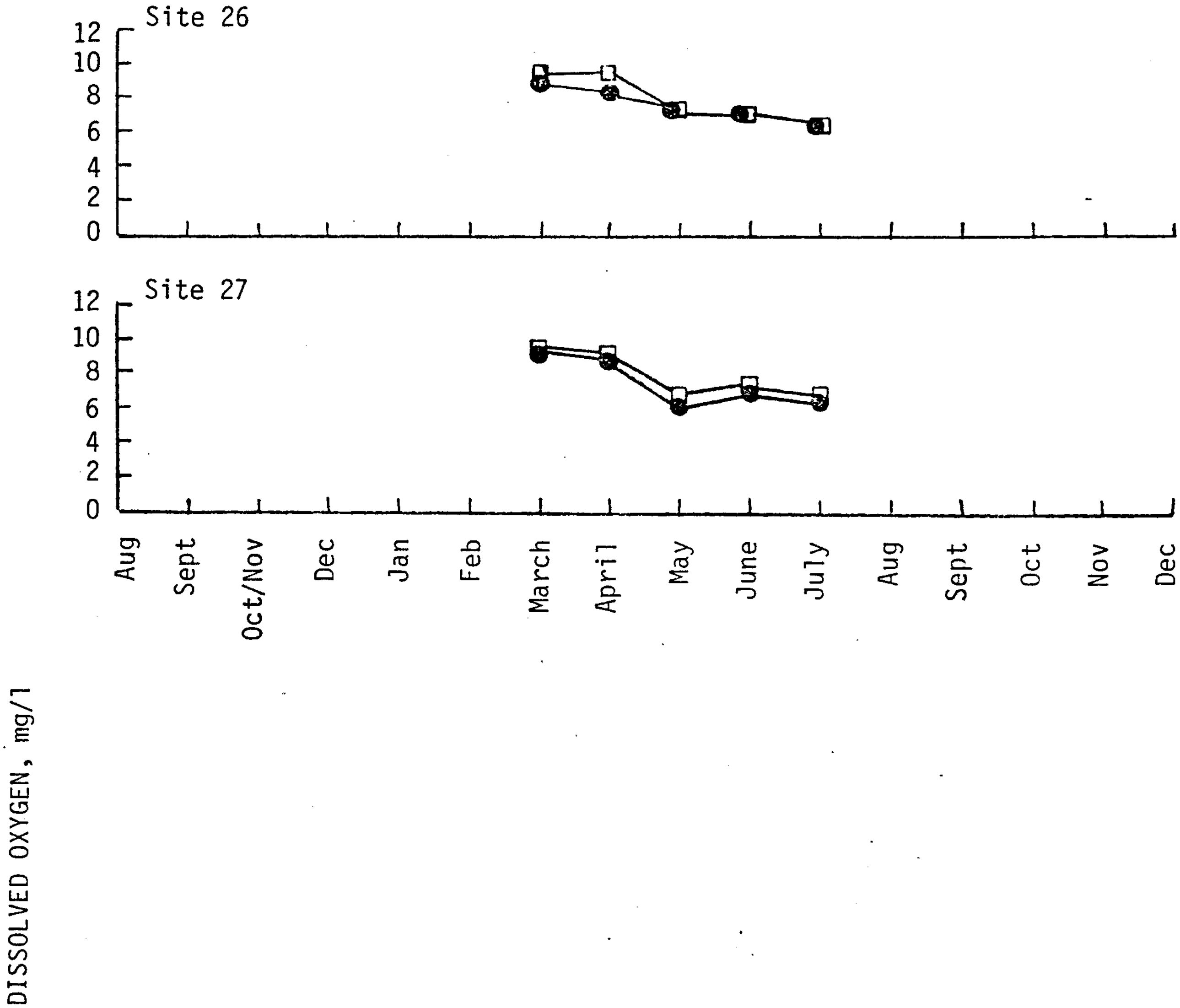

Site 1
Site 4
Site 5
Site 6
Site 7
Site 8
DISSOLVED OXYGEN, mg/l
12
10
8
6
4
2
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug.
Sept
Oct
Nov
Dec


Site 9
Site 10
Site 11
Site 12
Site 13
Site 14
12
10
8
6
4
2
0
DISSOLVED OXYGEN, mg/l
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

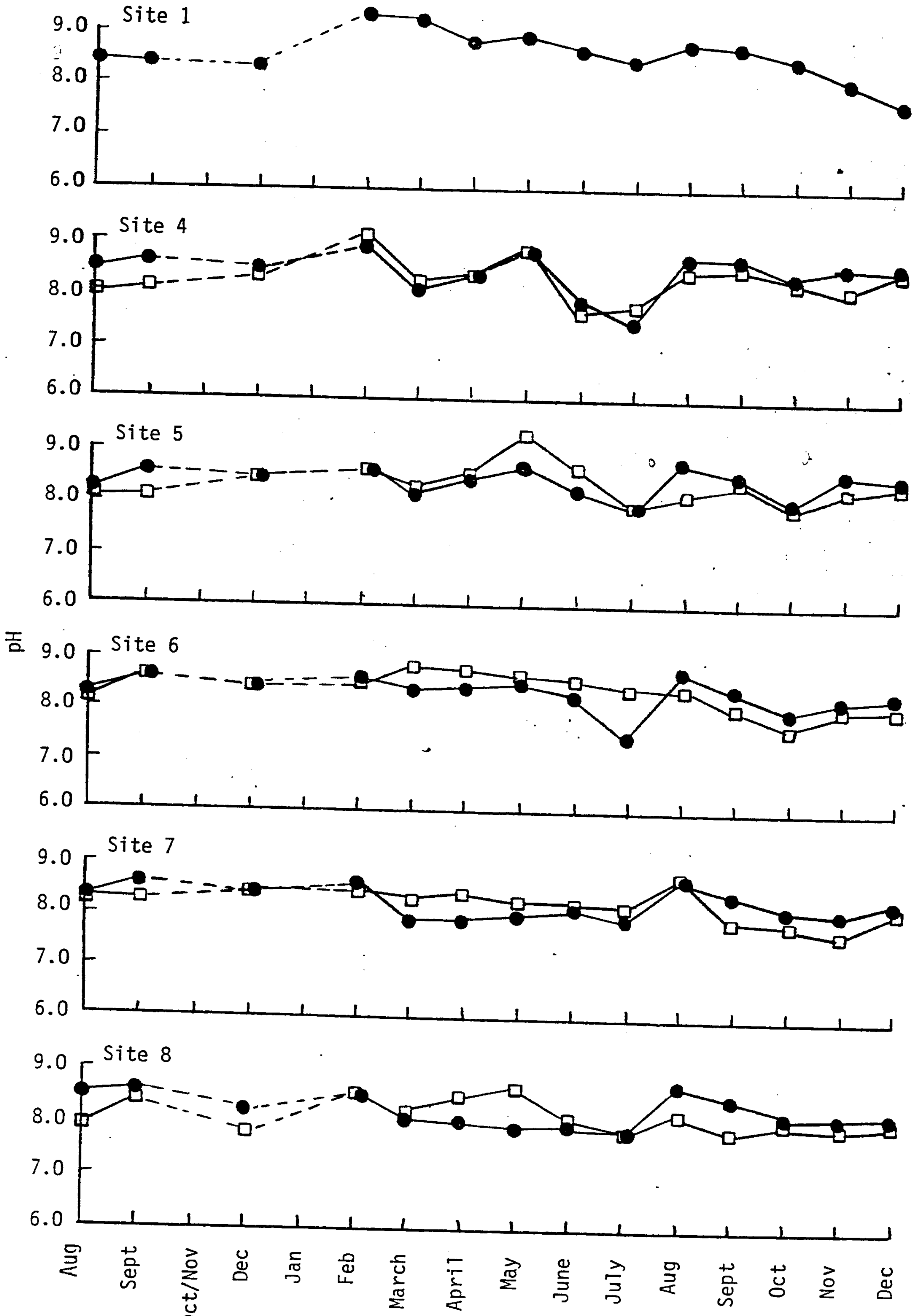

DISSOLVED OXYGEN, mg/l
Site 15
Site 16
Site 17
Site 18
Site 19
Site 20
12
10
8
6
4
2
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec



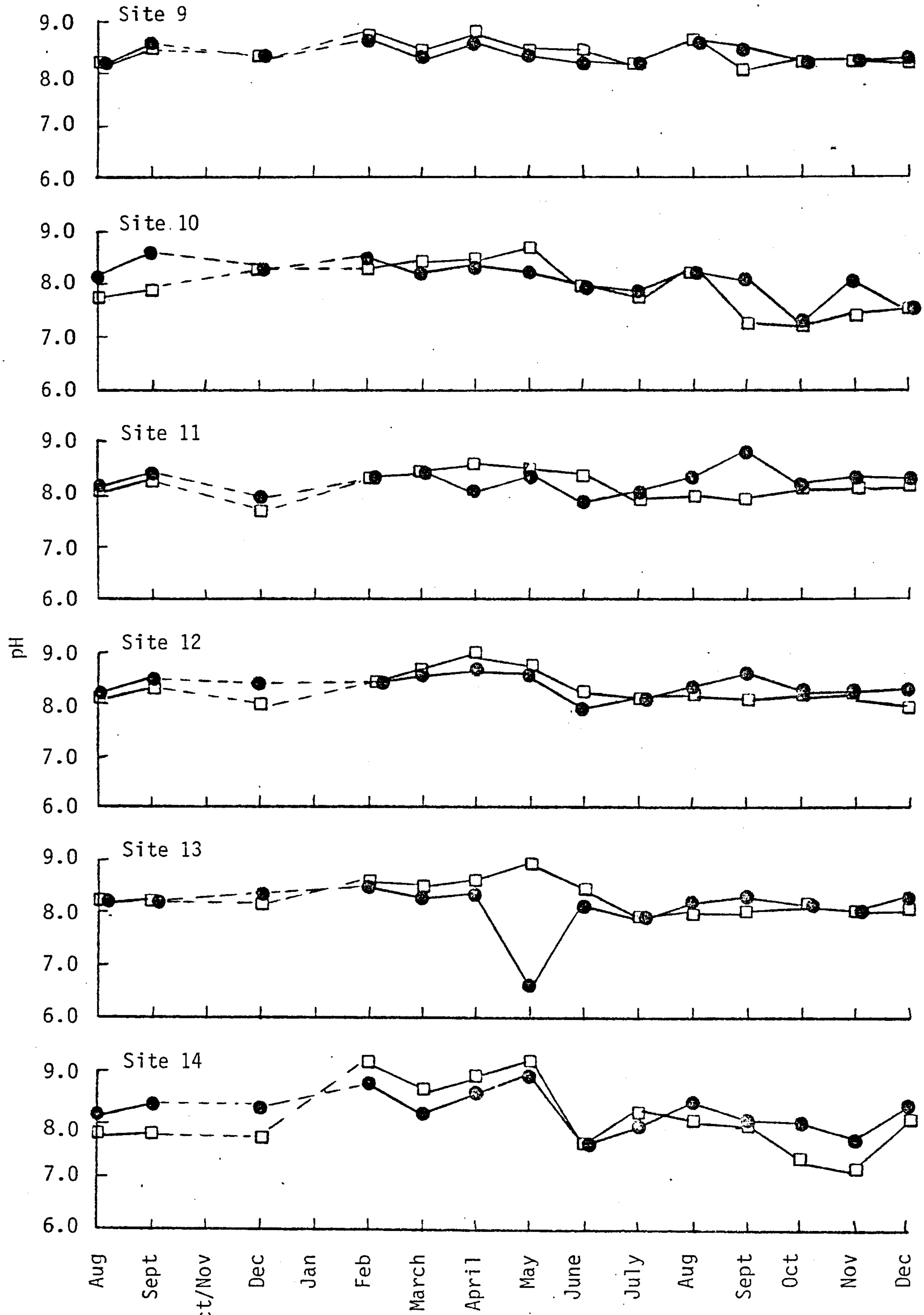
DISSOLVED OXYGEN, mg/l
Site 21
Site 22
Site 23
Site 24
Site 24-A
Site 25
0
2
4
6
8
10
12
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

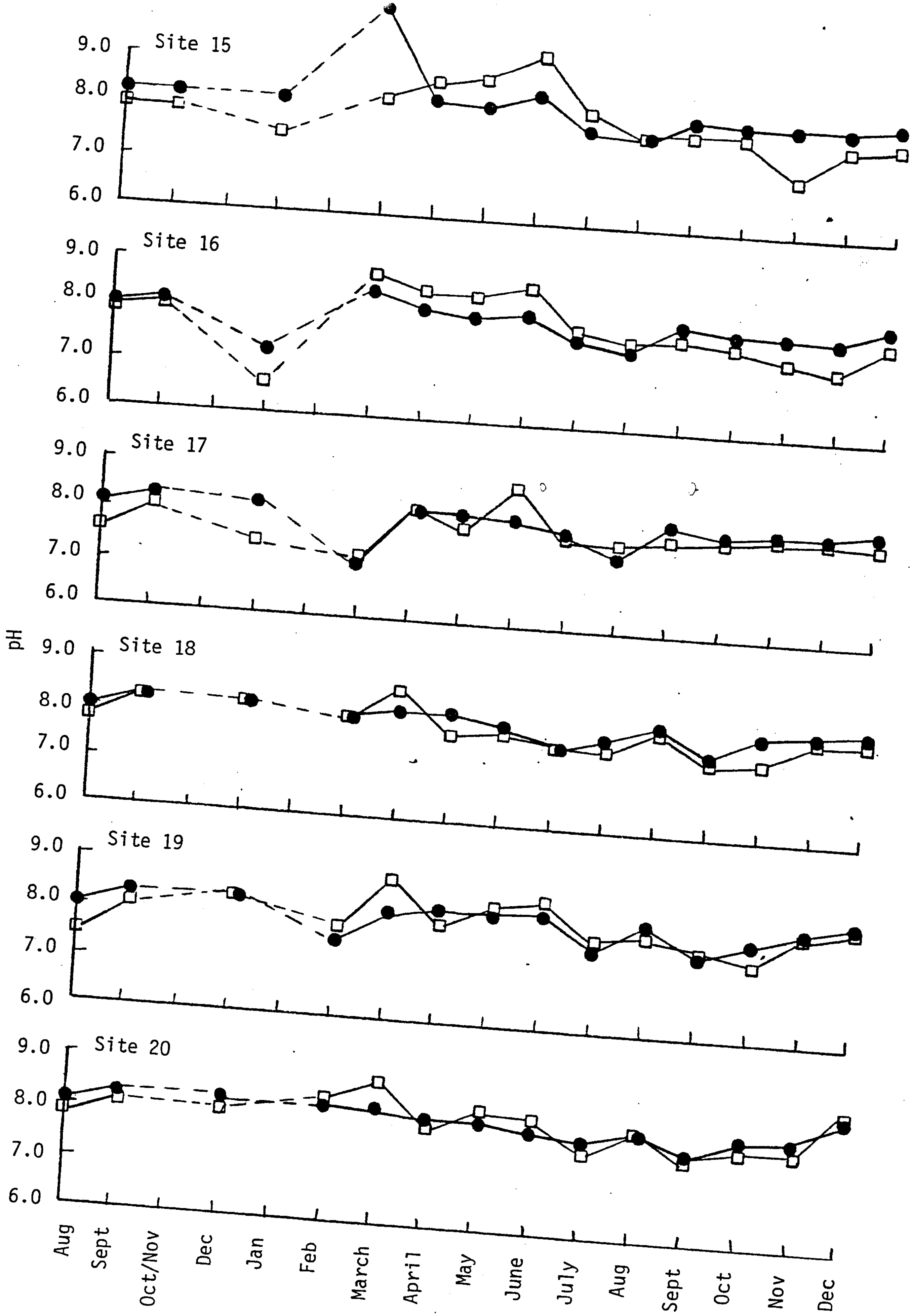


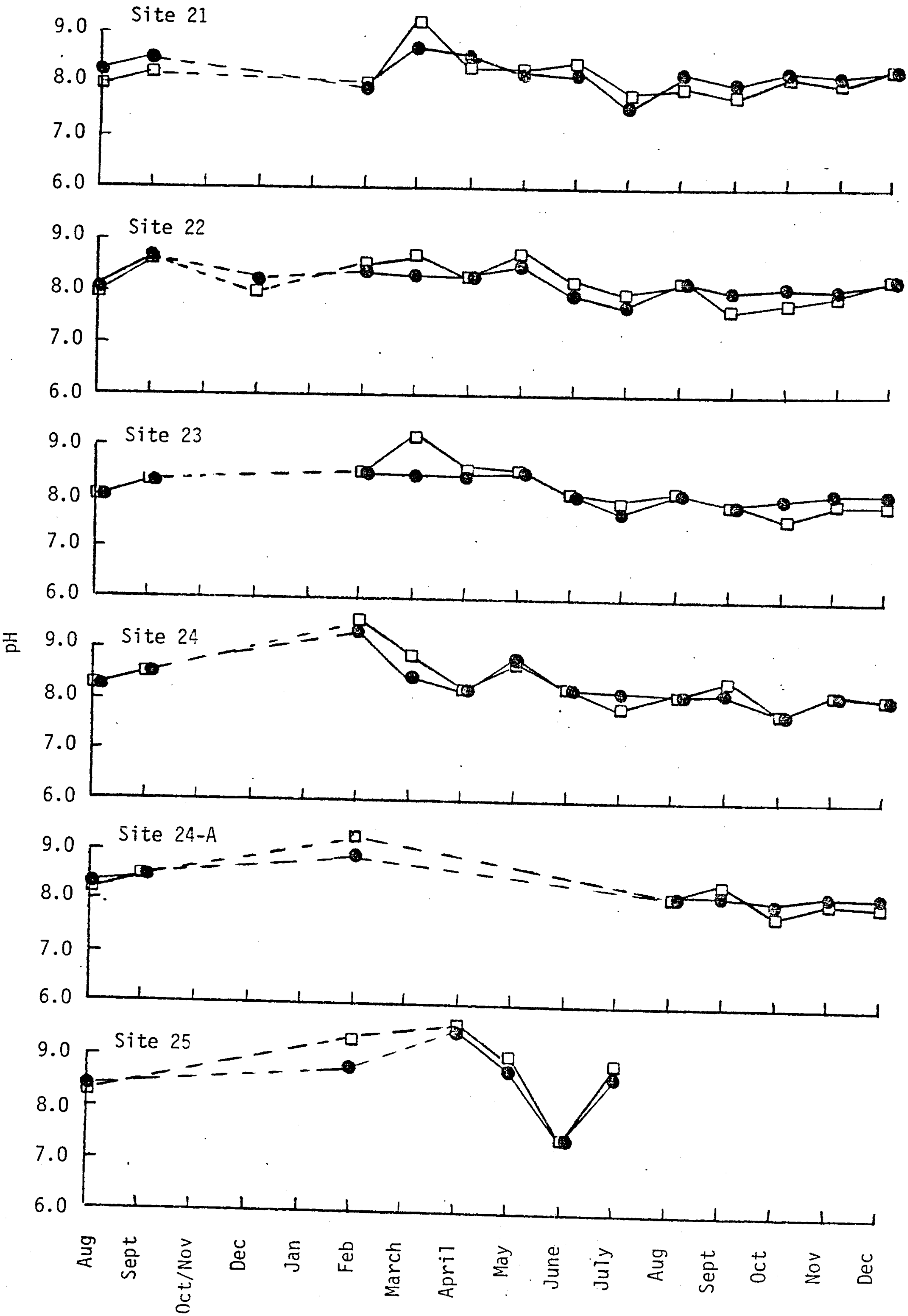
Site 26
Site 27
12
10
8
6
4
2
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
DISSOLVED OXYGEN, mg/l

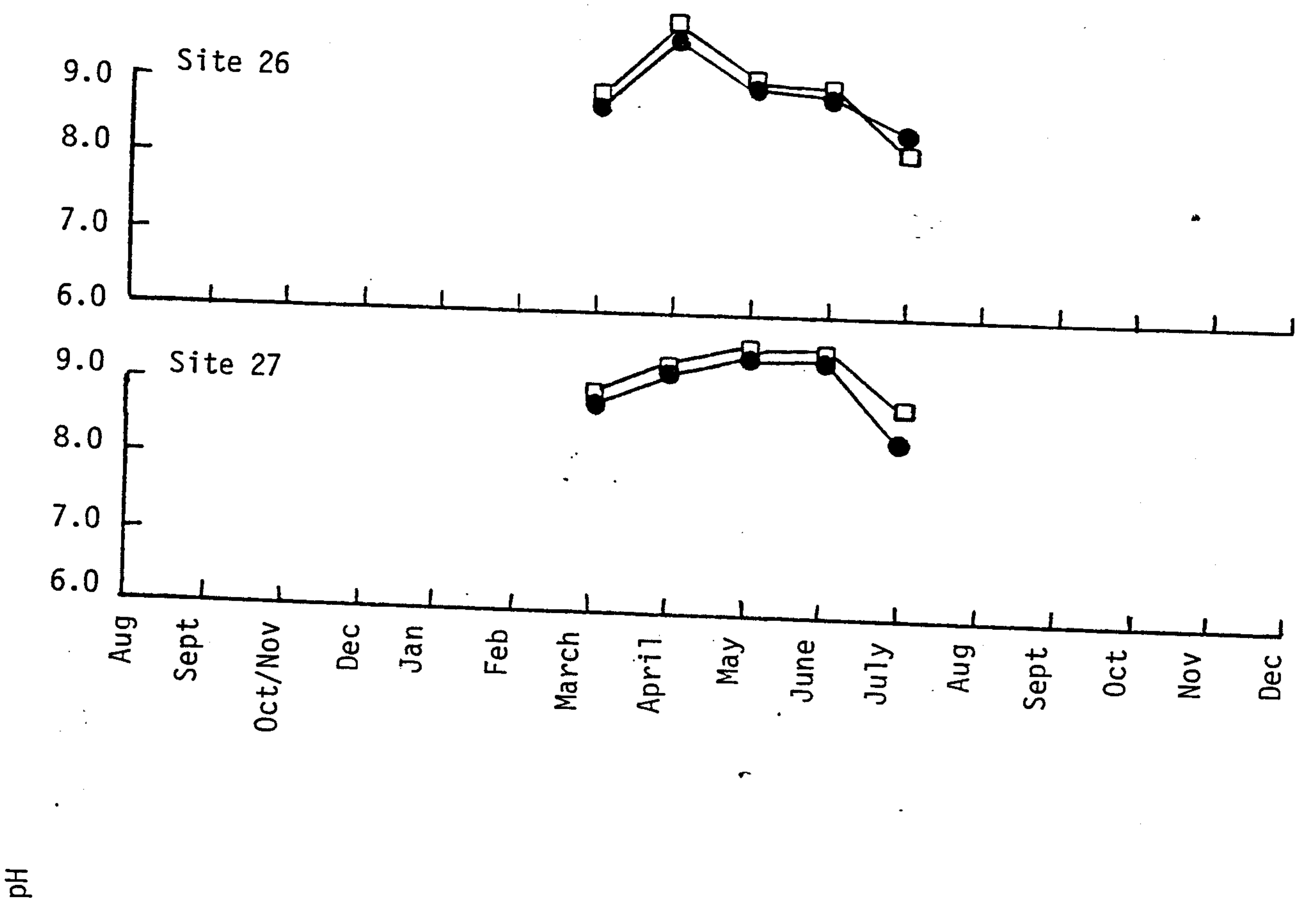


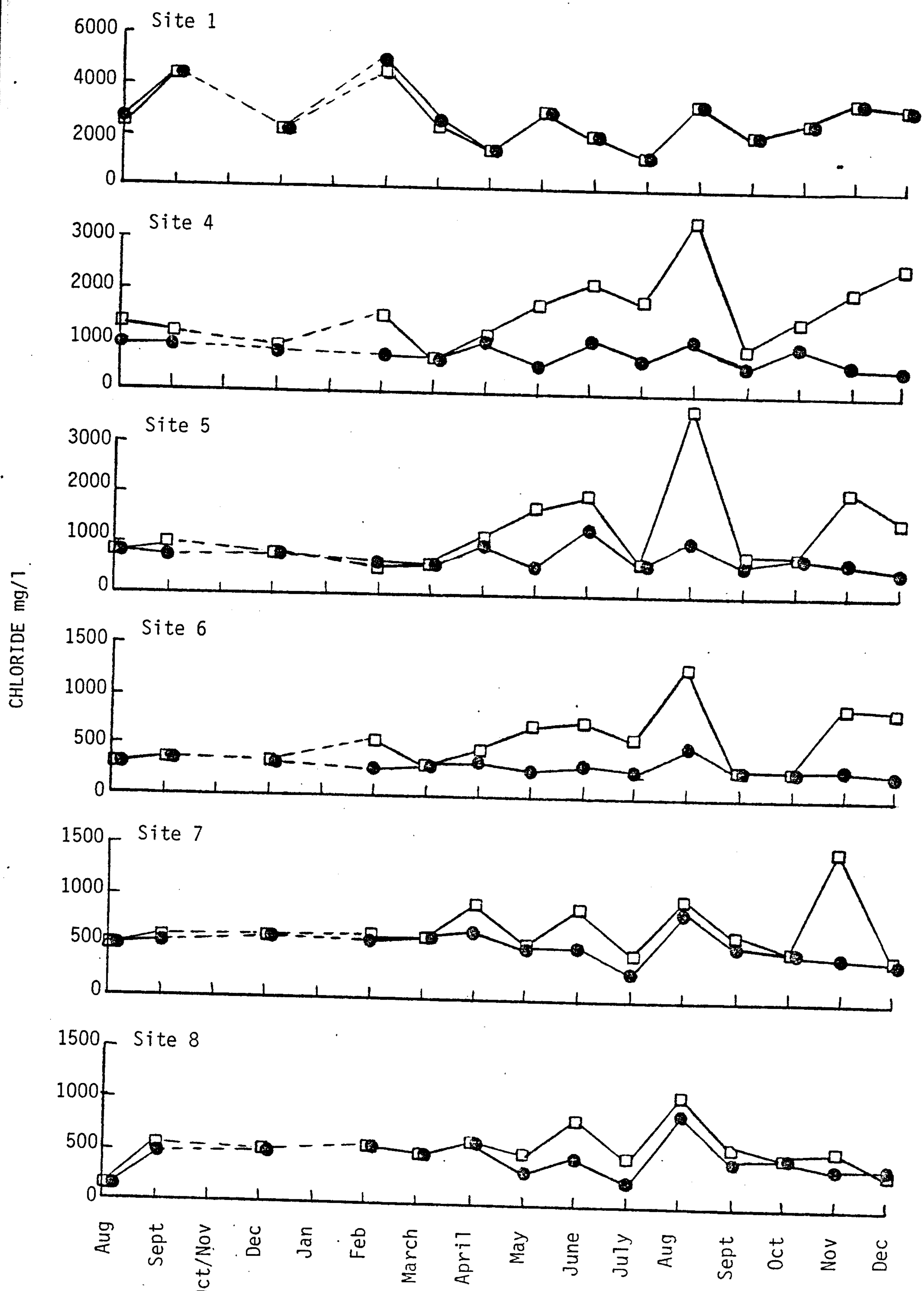
Site 1
Site 4
Site 5
Site 6
Site 7
Site 8
pH
9.0
8.0
7.0
6.0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec


Site 9
Site 10
Site 11
Site 12
Site 13
Site 14
9.0
8.0
7.0
6.0
pH
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

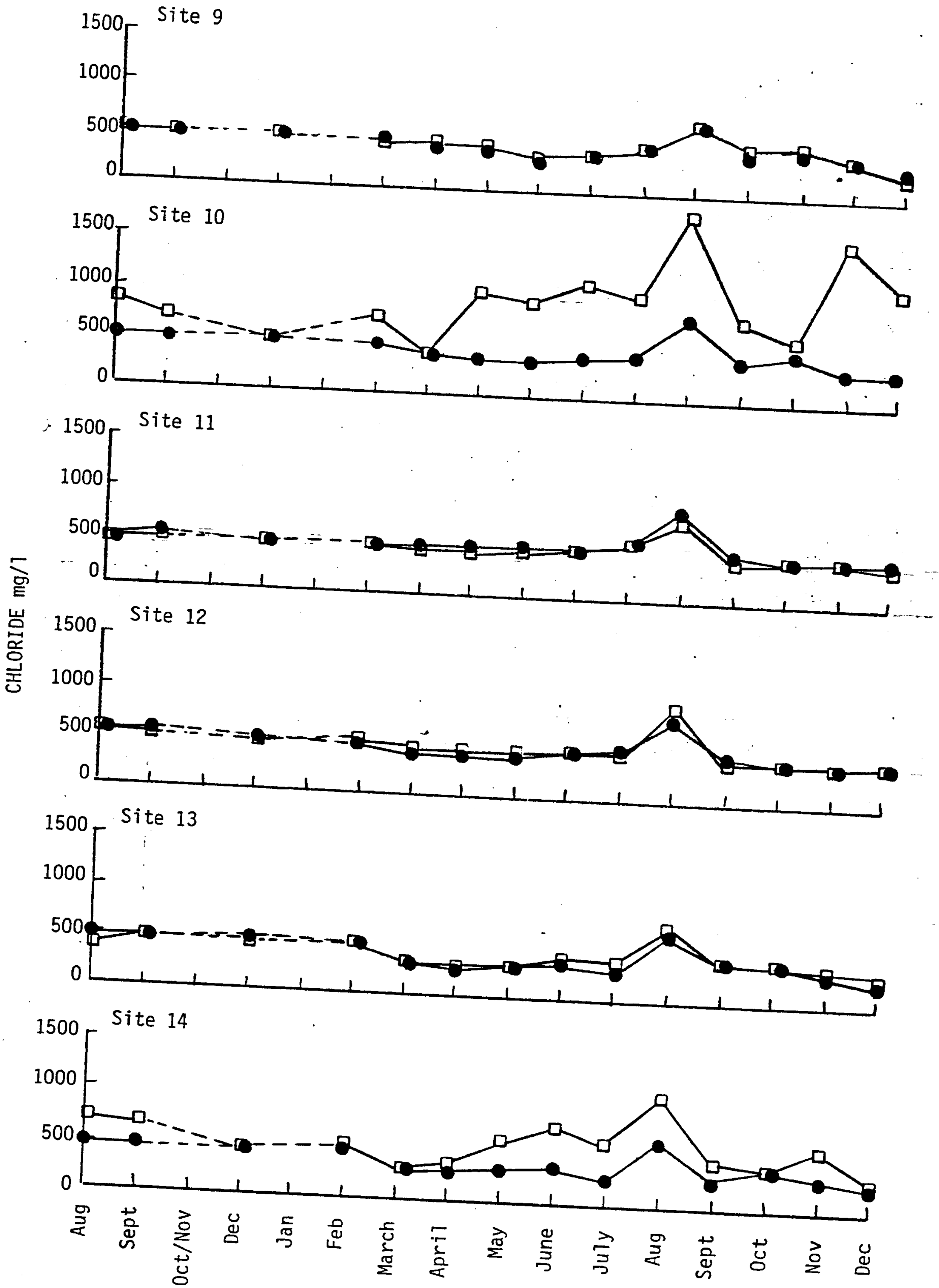

Site 15
Site 16
Site 17
Site 18
Site 19
Site 20
pH
9.0
8.0
7.0
6.0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec


Site 21
Site 22
Site 23
Site 24
Site 24-A
Site 25
pH
9.0
8.0
7.0
6.0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

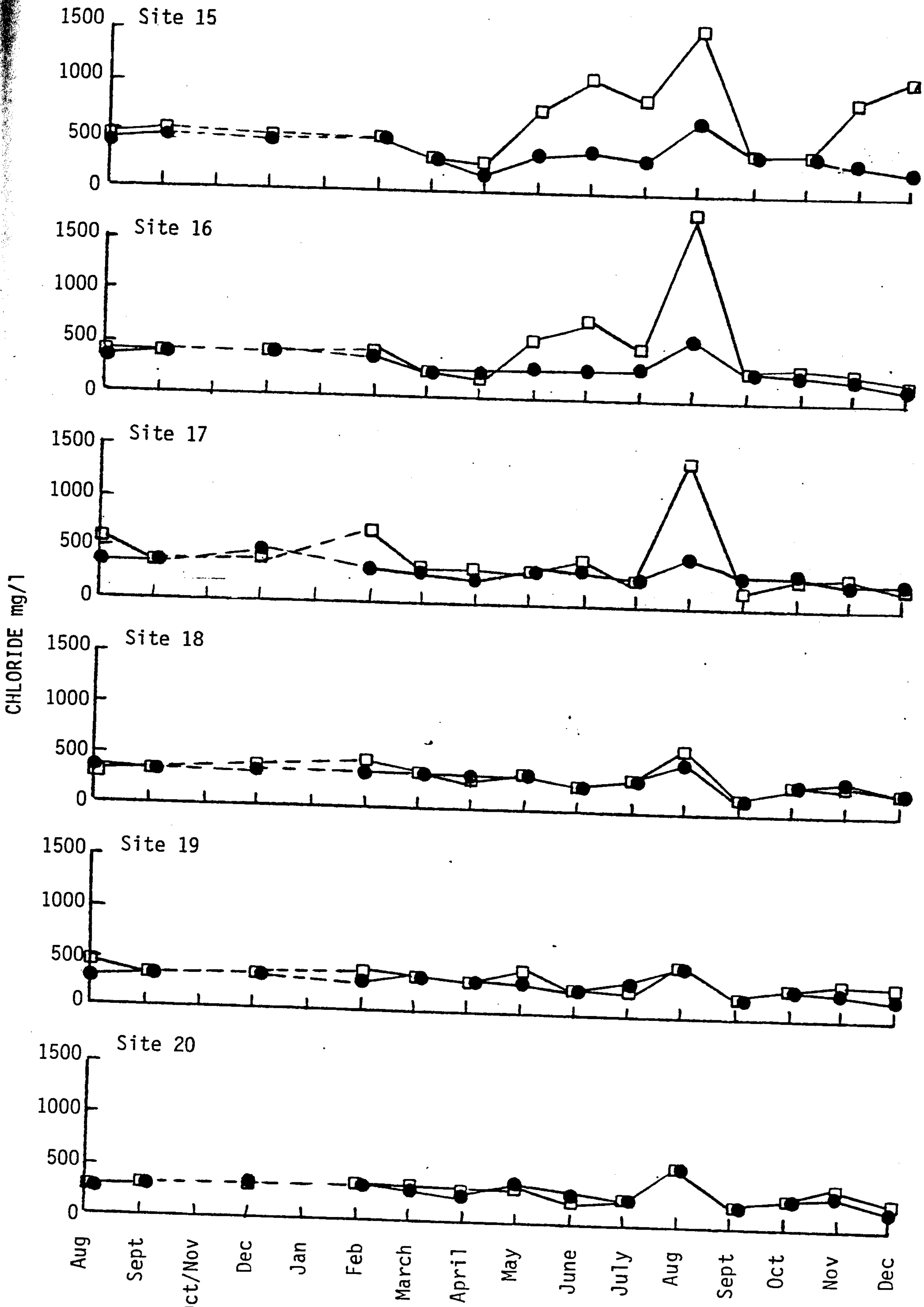

Site 26
9.0
8.0
7.0
6.0
Site 27
9.0
8.0
7.0
6.0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
pH

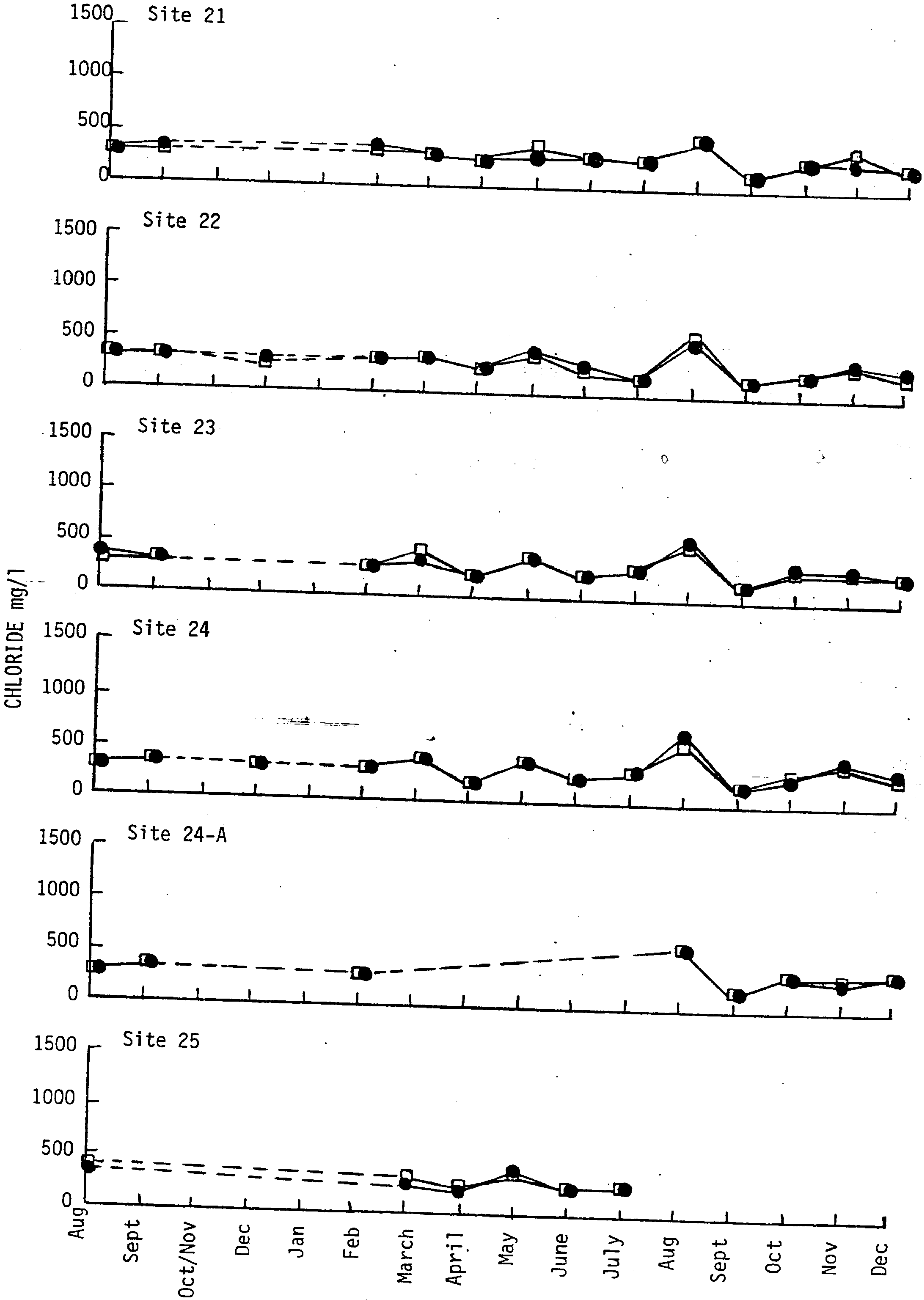


CHLORIDE mg/l
Site 1
6000
4000
2000
0
Site 4
3000
2000
1000
0
Site 5
3000
2000
1000
0
Site 6
1500
1000
500
0
Site 7
1500
1000
500
0
Site 8
1500
1000
500
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

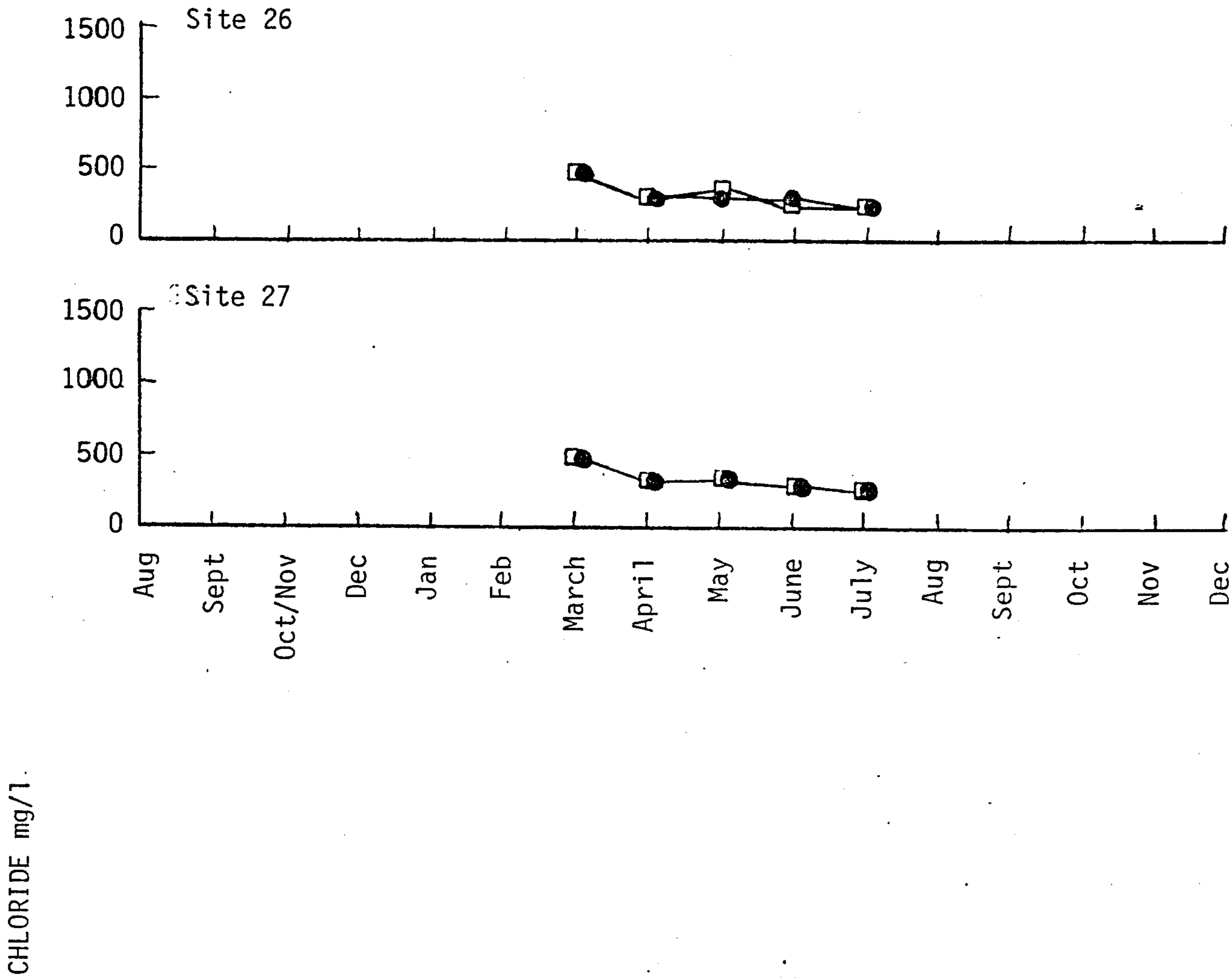


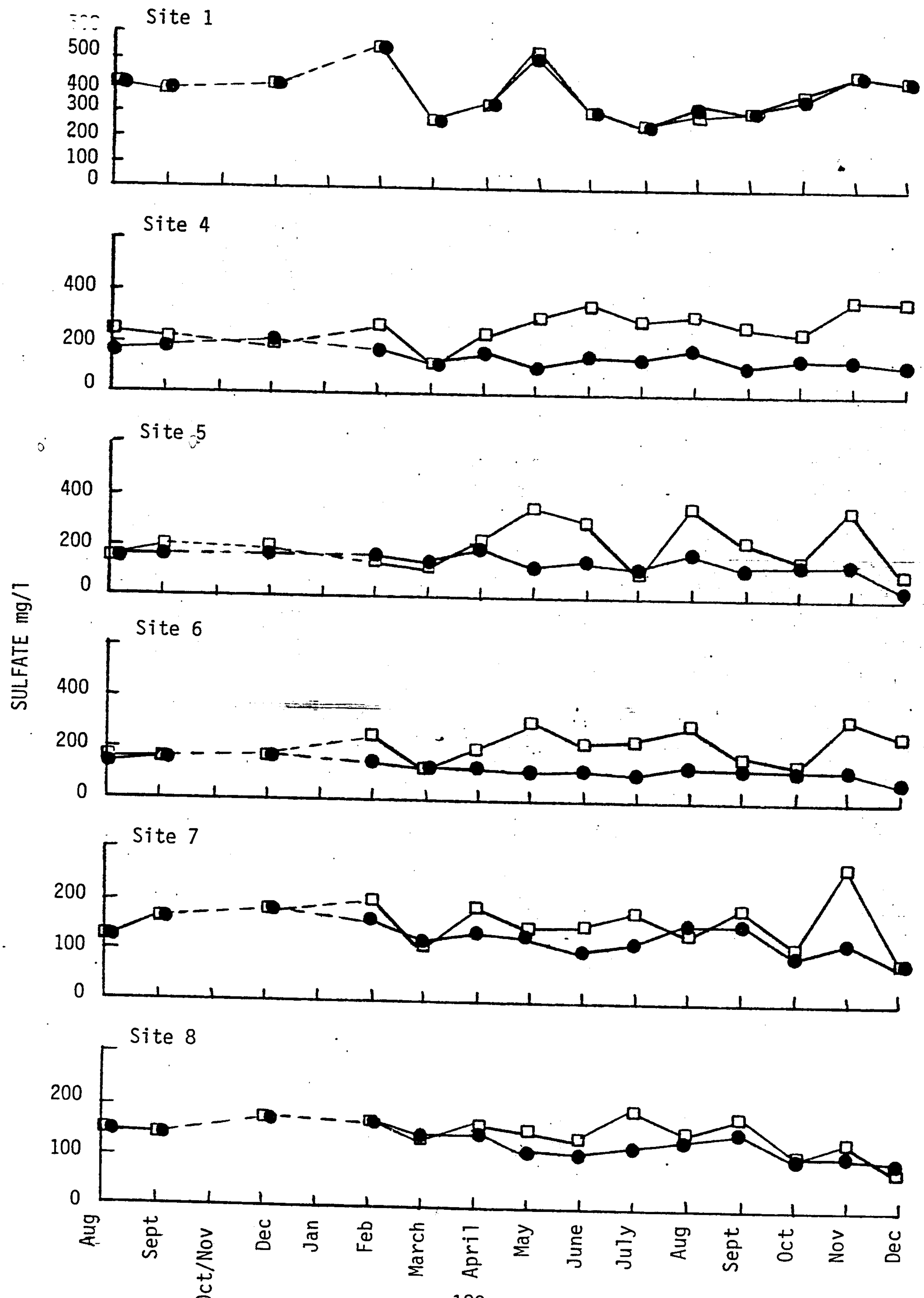
Site 9
Site 10
Site 11
Site 12
Site 13
Site 14
1500
1000
500
0
CHLORIDE mg/l
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

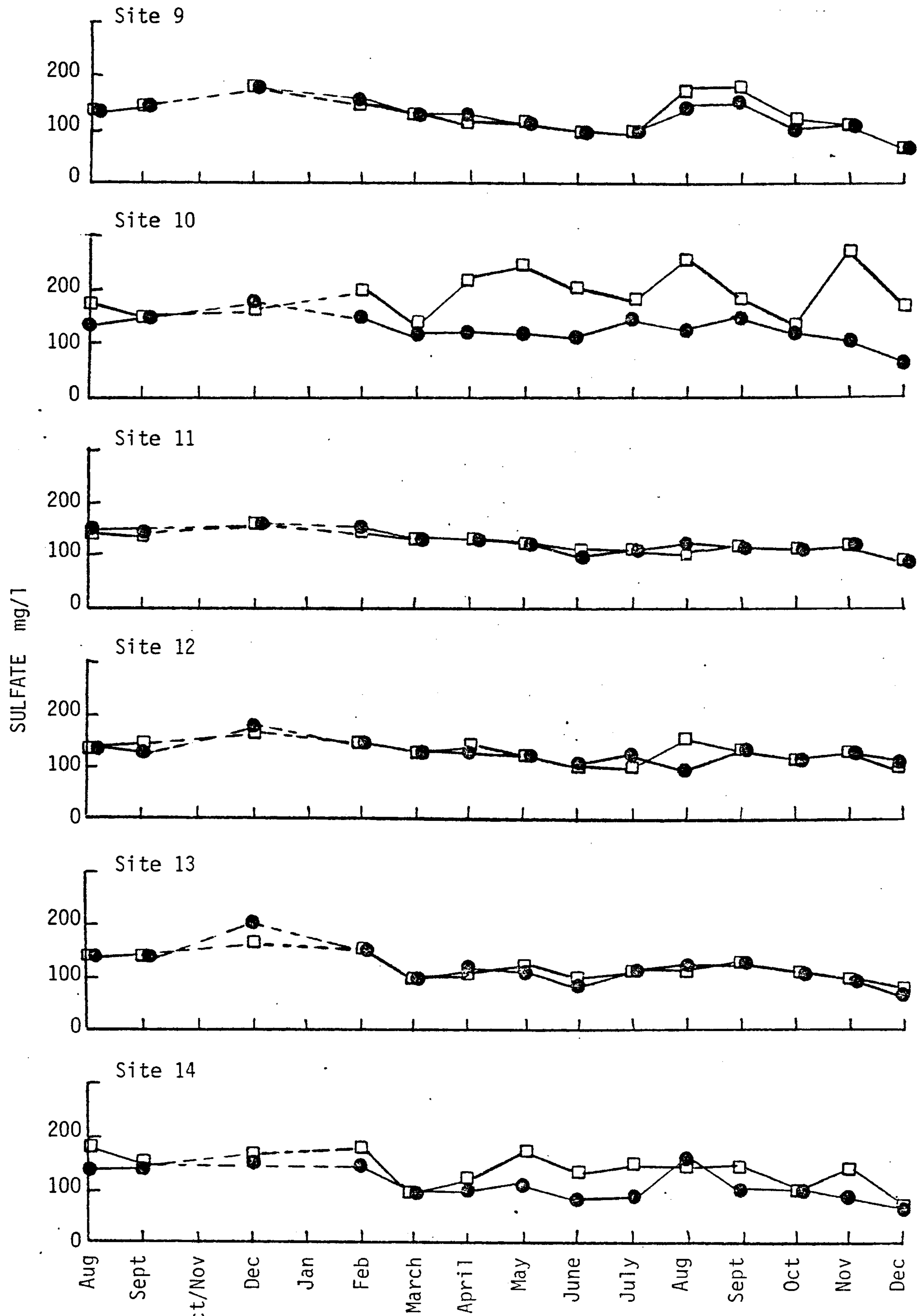

CHLORIDE mg/l
Site 15
Site 16
Site 17
Site 18
Site 19
Site 20
1500
1000
500
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec



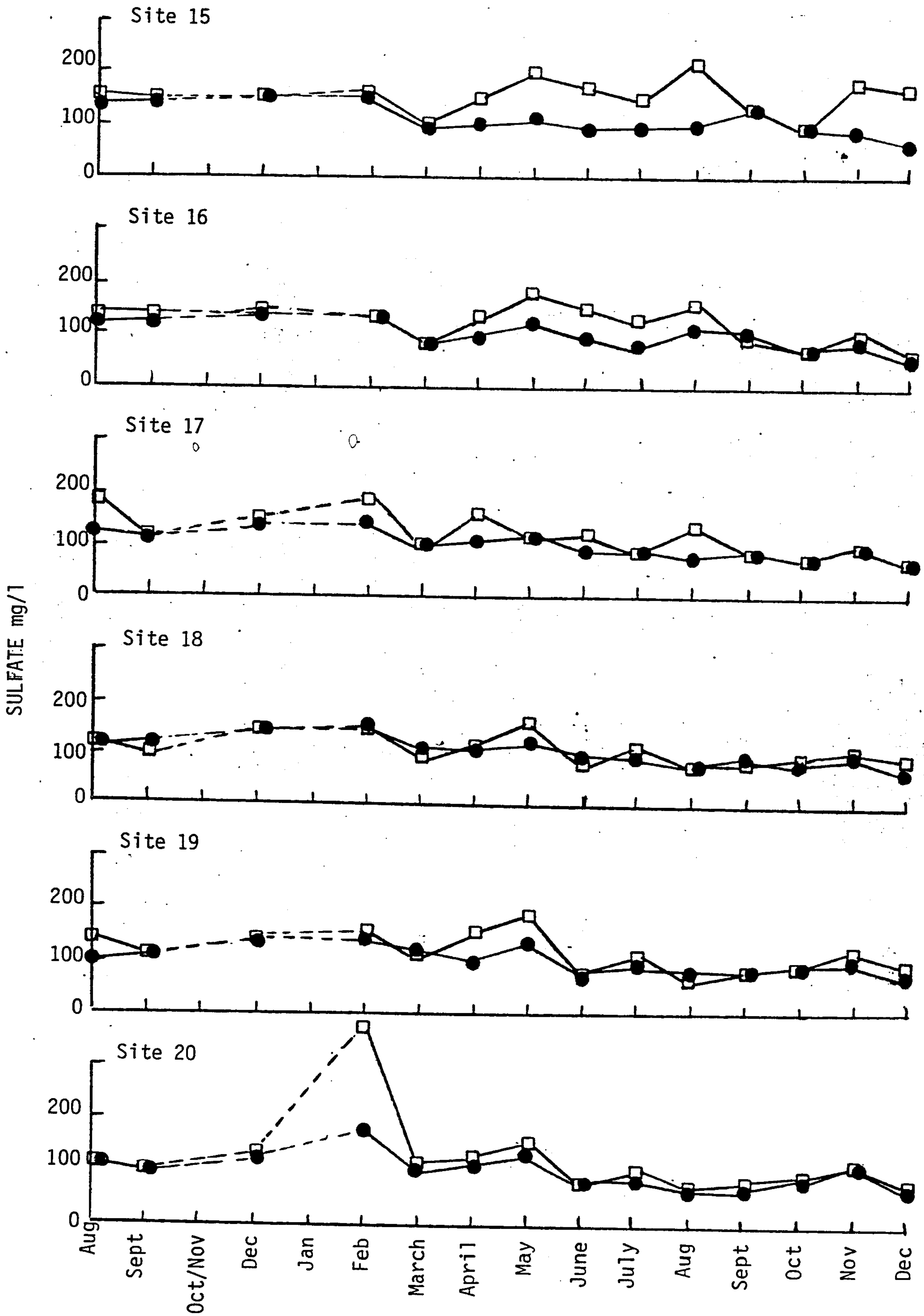
Site 21
Site 22
Site 23
Site 24
Site 24-A
Site 25
1500
1000
500
0
CHLORIDE mg/l
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

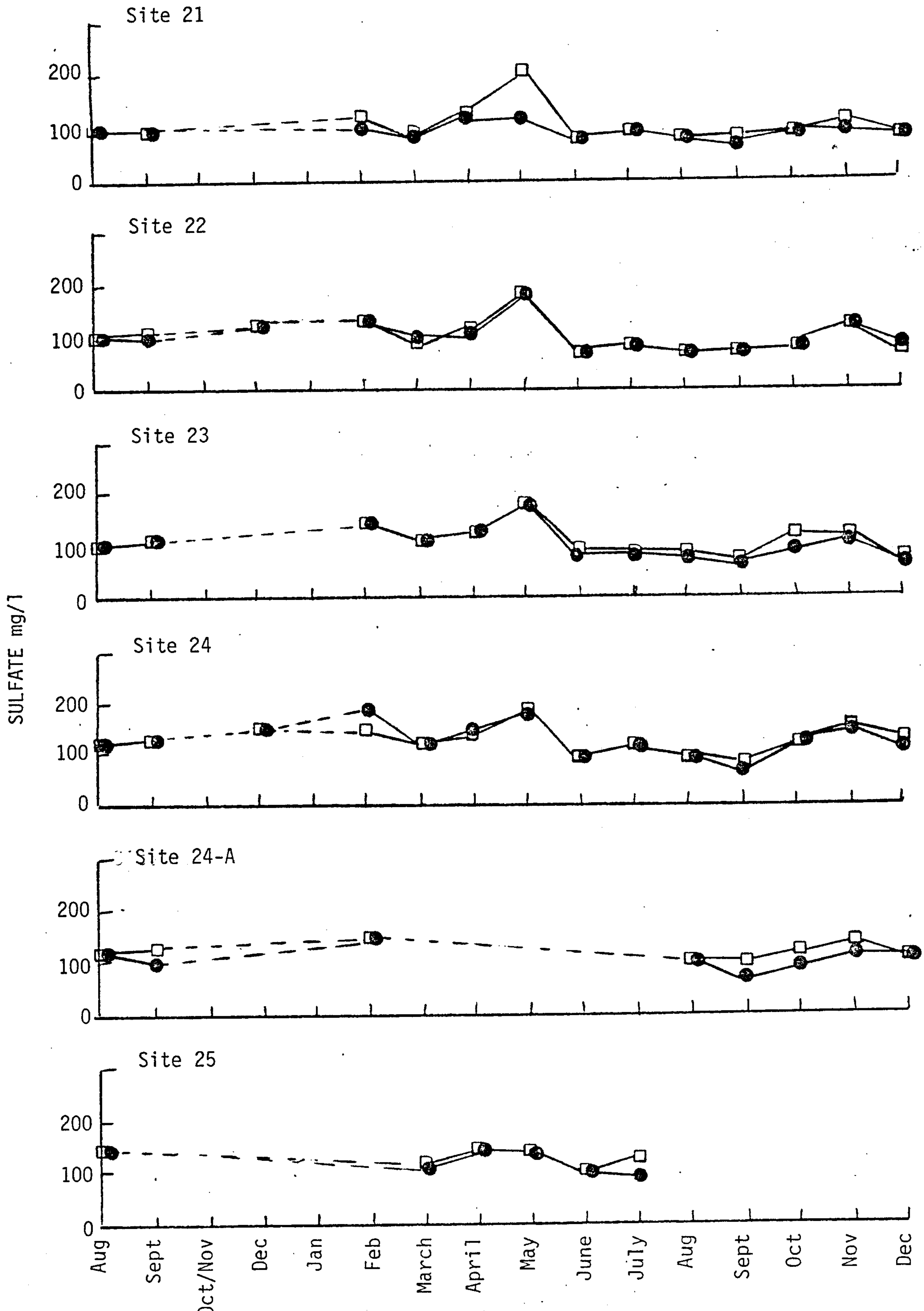

Site 26
1500
1000
500
0
Site 27
1500
1000
500
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
CHLORIDE mg/l

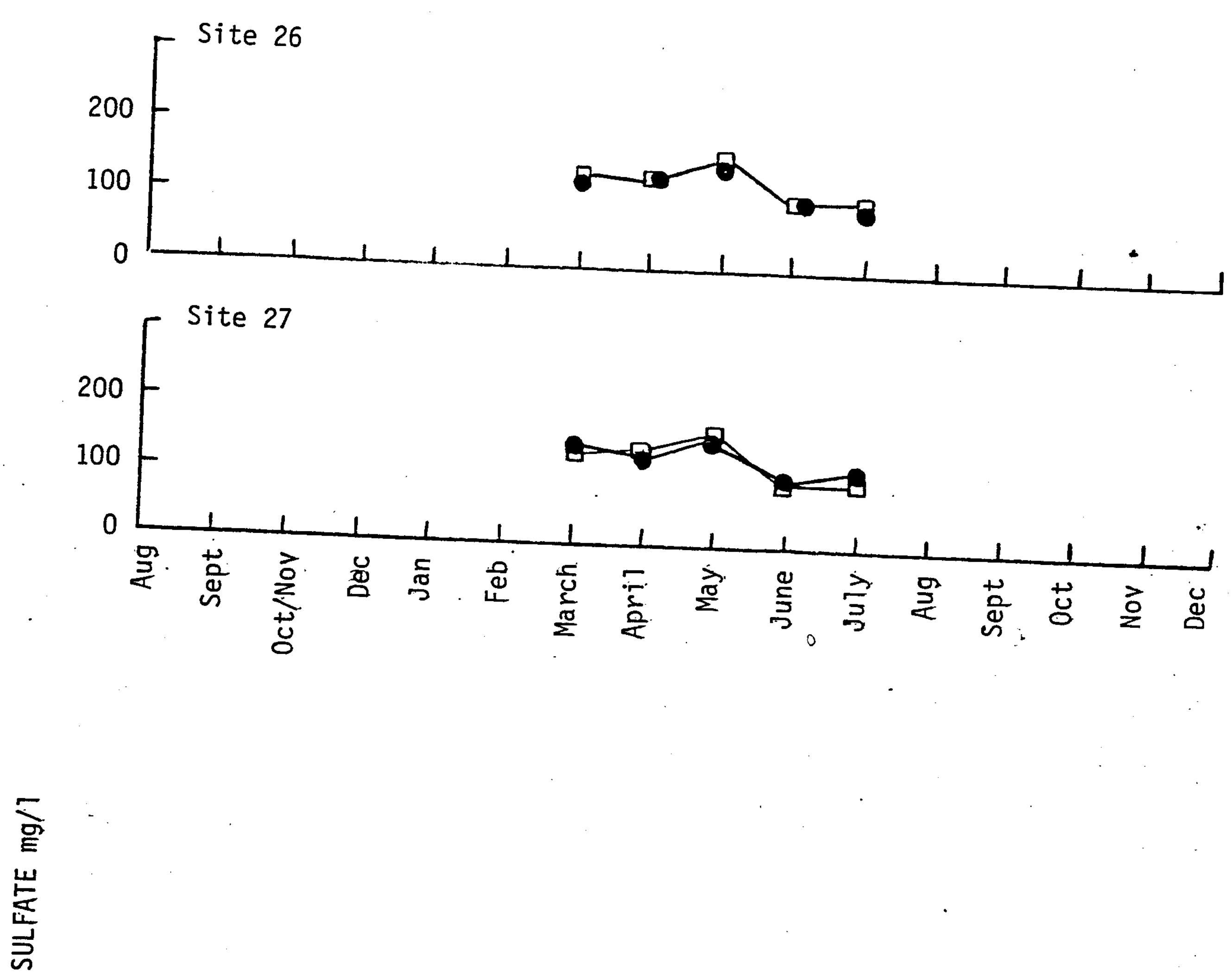

Site 1
Site 4
Site 5
Site 6
Site 7
Site 8
SULFATE mg/l
500
400
300
200
100
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

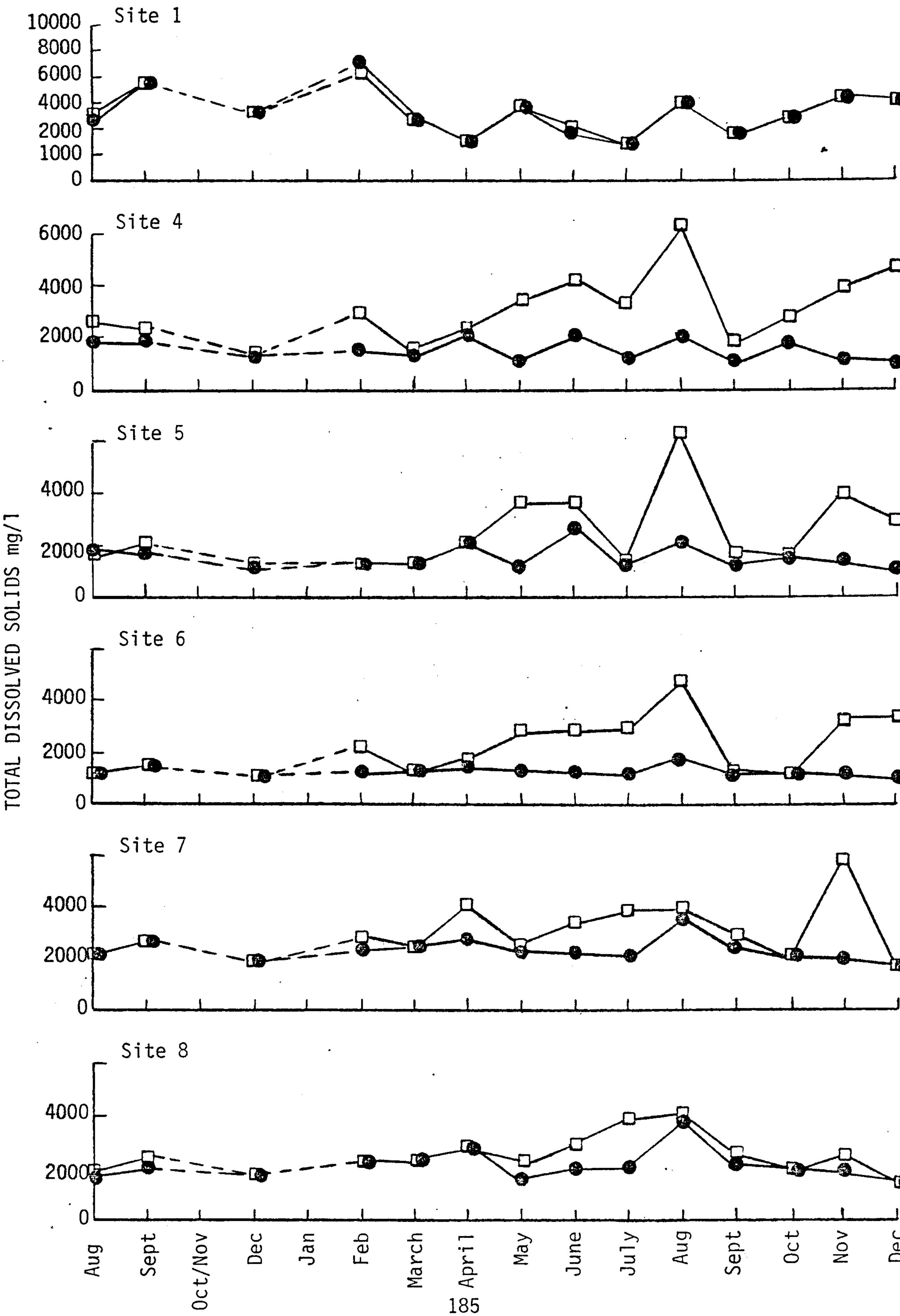


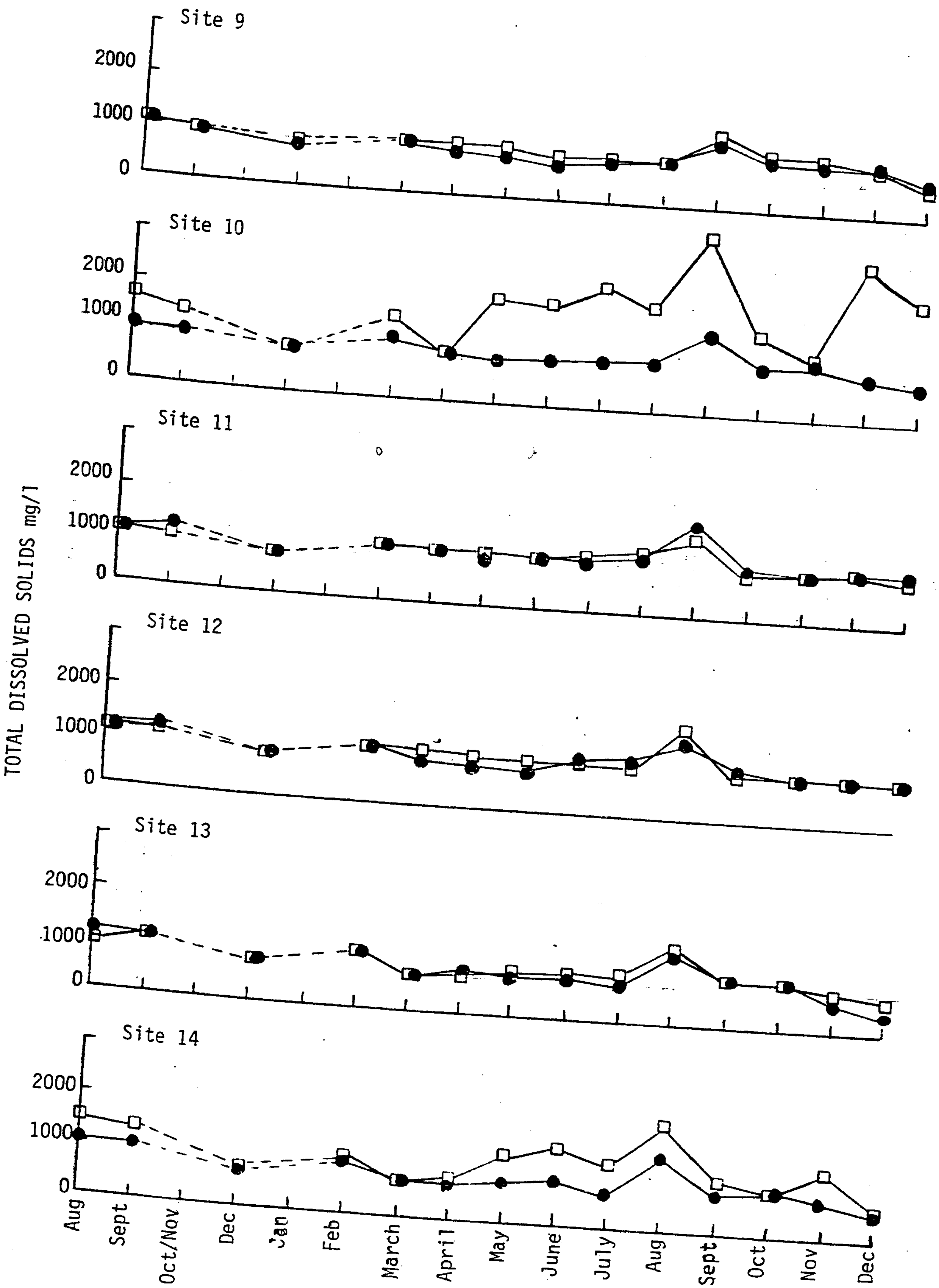
Site 9
Site 10
Site 11
Site 12
Site 13
Site 14
200
100
0
SULFATE mg/l
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec


Site 15
Site 16
Site 17
Site 18
Site 19
Site 20
SULFATE mg/l
200
100
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

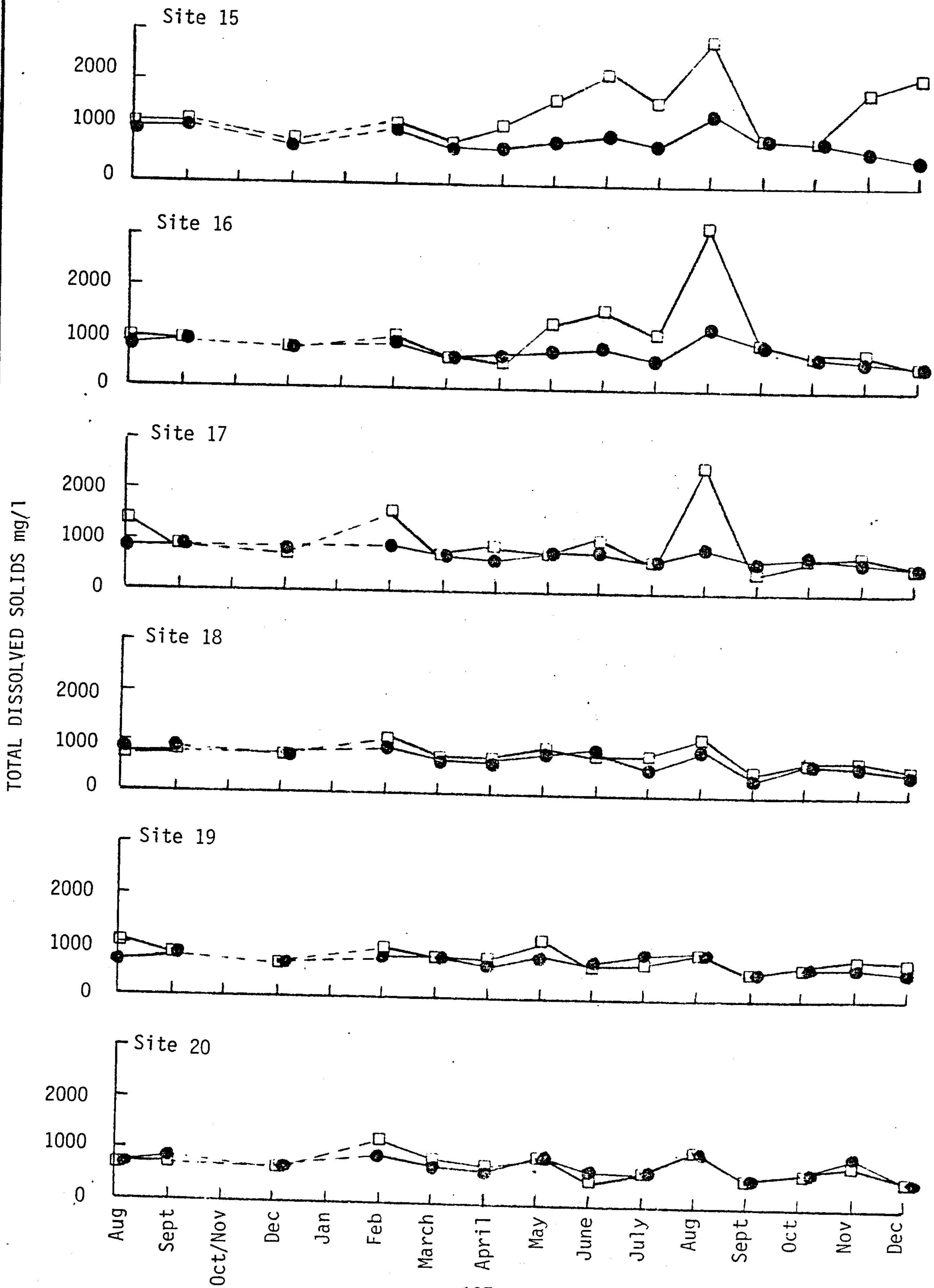

SULFATE mg/l
Site 21
Site 22
Site 23
Site 24
Site 24-A
Site 25
0
100
200
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

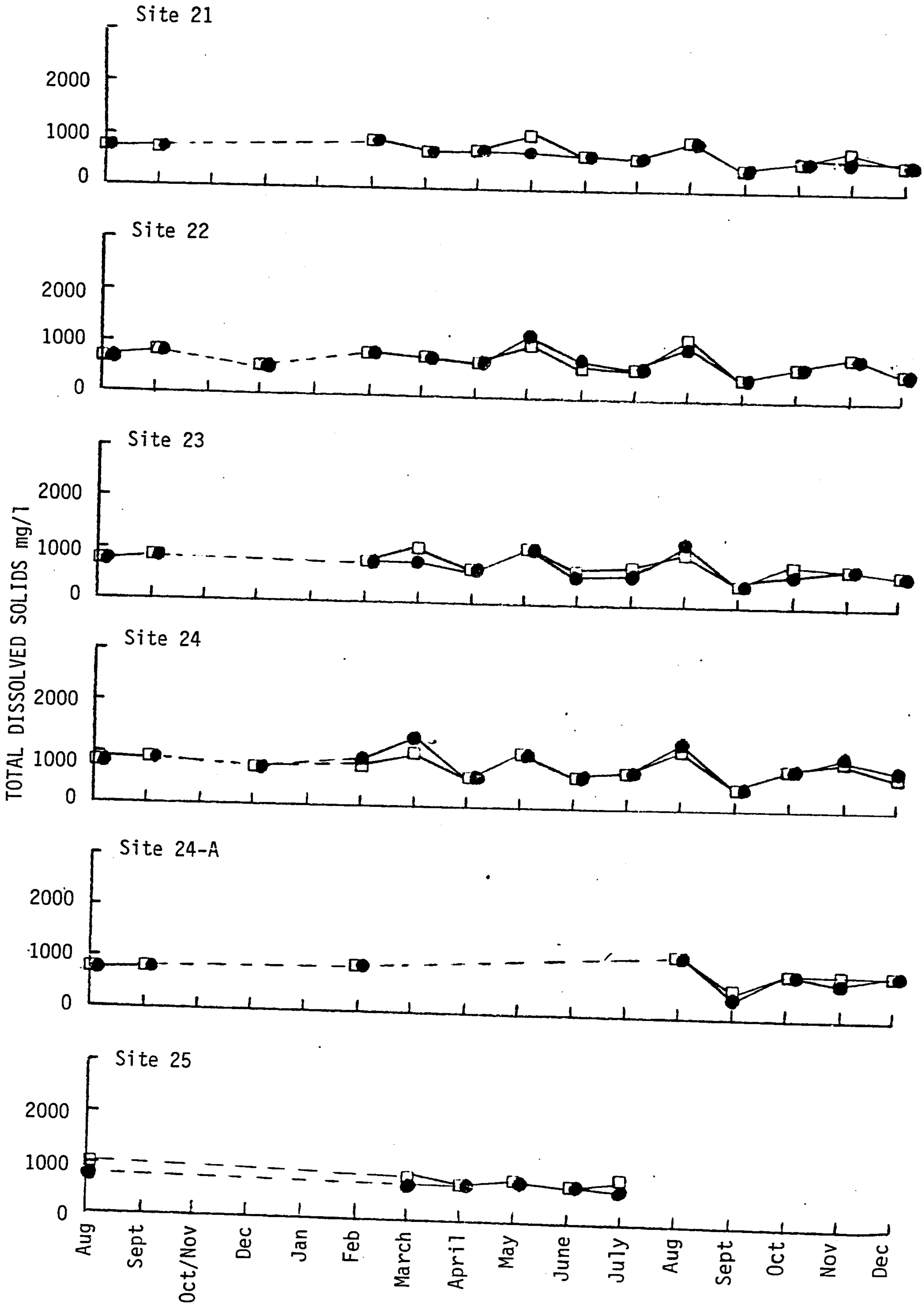

Site 26
200
100
0
Site 27
200
100
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
SULFATE mg/l


Site 1
10000
8000
6000
4000
2000
1000
0
Site 4
6000
4000
2000
0
Site 5
4000
2000
0
Site 6
4000
2000
0
Site 7
4000
2000
0
Site 8
4000
2000
0
TOTAL DISSOLVED SOLIDS mg/l
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

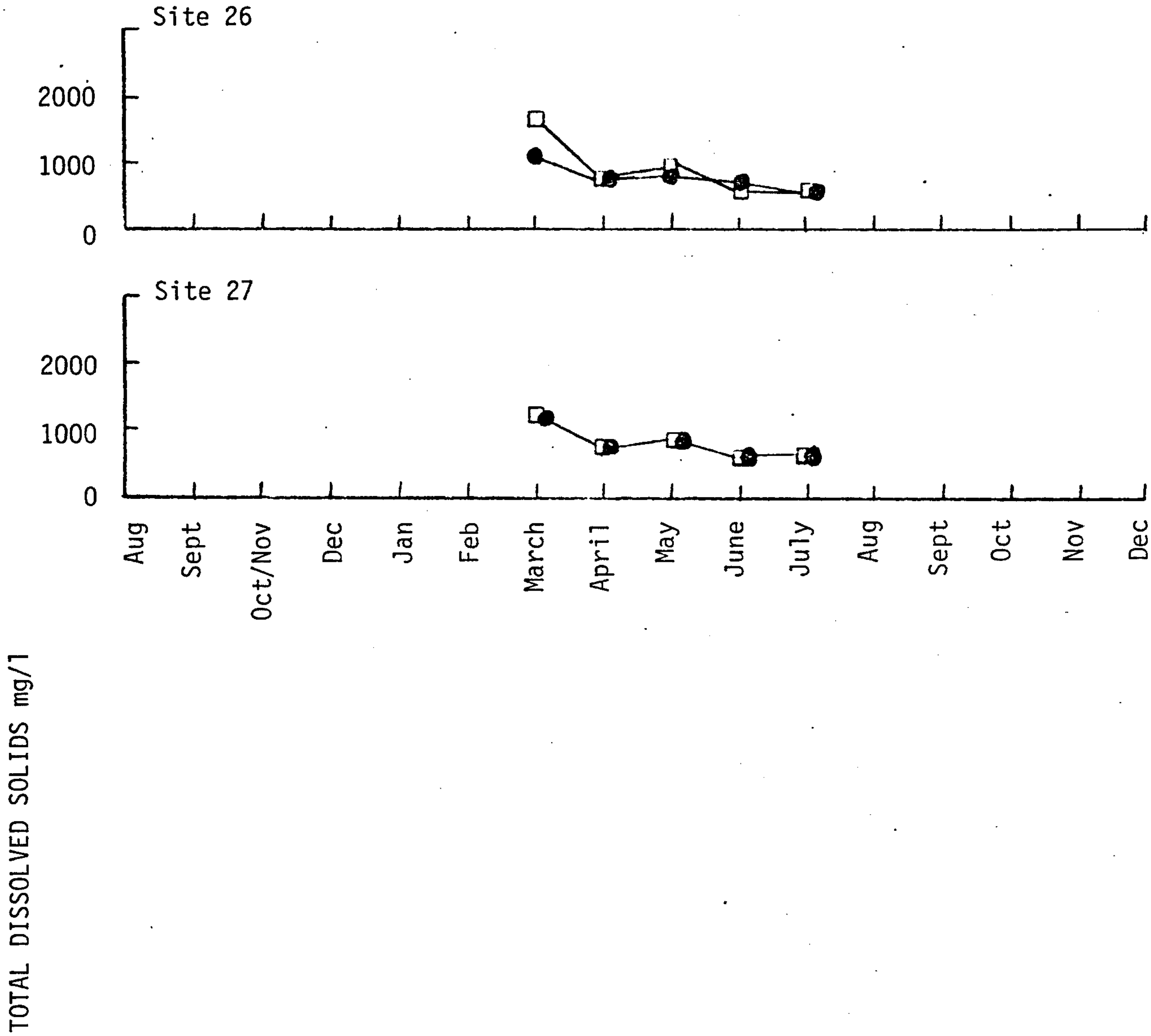


TOTAL DISSOLVED SOLIDS mg/l
Site 9
Site 10
Site 11
Site 12
Site 13
Site 14
2000
1000
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec


Site 15
Site 16
Site 17
Site 18
Site 19
Site 20
2000
1000
0
TOTAL DISSOLVED SOLIDS mg/l
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec



Site 21
2000
1000
0
Site 22
2000
1000
0
Site 23
2000
1000
0
Site 24
2000
1000
0
Site 24-A
2000
1000
0
Site 25
2000
1000
0
TOTAL DISSOLVED SOLIDS mg/l
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec


Site 26
2000
1000
0
Site 27
2000
1000
0
Aug
Sept
Oct/Nov
Dec
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
TOTAL DISSOLVED SOLIDS mg/l