



**TEXAS WATER DEVELOPMENT BOARD**

**REPORT 302**

**WATER QUALITY OF CANYON LAKE  
CENTRAL TEXAS**

By

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U.S. Geological Survey

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U.S. Geological Survey under cooperative agreement  
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## FOREWORD

Effective September 1, 1985, the Texas Department of Water Resources was divided to form the Texas Water Commission and the Texas Water Development Board. A number of publications prepared under the auspices of the Department are being published by the Texas Water Development Board. To minimize delays in producing these publications, references to the Department will not be altered except on their covers and title pages.



## ABSTRACT

The volume-weighted average concentrations of the principal dissolved constituents in Canyon Lake on the Guadalupe River in central Texas are usually less than 240 milligrams per liter of dissolved solids, 20 milligrams per liter of chloride, and 30 milligrams per liter of sulfate. The water, which is very hard, has a volume-weighted average concentration of hardness of about 200 milligrams per liter. There is little seasonal variation in the volume-weighted average concentrations of the principal dissolved constituents.

Thermal stratification of the lake usually begins during March and persists until September or October. Stratification results in significant seasonal and areal variations in dissolved oxygen, which in turn result in higher concentrations of dissolved iron, dissolved manganese, and total ammonia during the summer. Oxygen used in the stabilization of unoxidized material in the lake is not replaced during summer stagnation. The depth-integrated concentration of dissolved oxygen averaged less than 4.0 milligrams per liter during summer stagnation and about 9.0 milligrams per liter during winter circulation.

The concentrations of dissolved iron and dissolved manganese, which varied seasonally, were closely related to the concentrations of dissolved oxygen. Reducing conditions in the hypolimnion often result in the dissolution of iron and manganese from bottom sediments in the deep parts of the lake. At site D<sub>C</sub>, a deep site on an arm of Canyon Lake, the summer concentrations of dissolved iron averaged 860 micrograms per liter and the concentration of dissolved manganese averaged 390 micrograms per liter. The concentrations of total ammonia in the lake usually were less than 0.2 milligram per liter except in the hypolimnion (bottom stratum) during summer stagnation when nitrate and nitrite are reduced to ammonia.

The closure of Canyon Dam resulted in a change in the monthly average water temperature of the Guadalupe River downstream from the dam. Prior to closure, the maximum monthly average water temperature for the Guadalupe River near Sattler, which was 29.0 degrees Celsius, occurred during June or July. Since closure of the dam, the maximum monthly average water temperature, which is 19.0 degrees Celsius, occurs during September or November.



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# **WATER QUALITY OF CANYON LAKE**

## **CENTRAL TEXAS**

By

W. R. Roddy and Kidd M. Waddell  
U.S. Geological Survey

### **INTRODUCTION**

#### **Purpose of This Report**

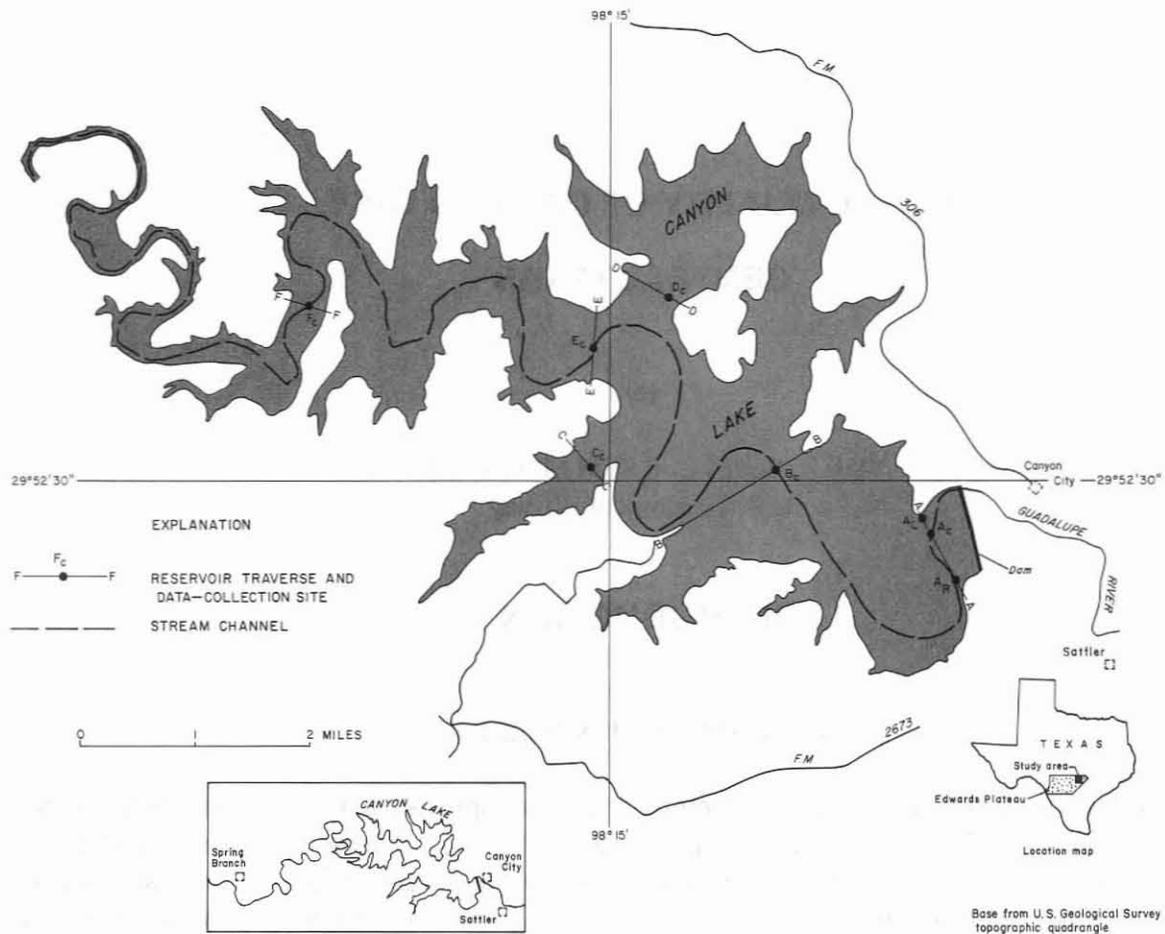
The U.S. Geological Survey has conducted periodic comprehensive water-quality surveys of selected reservoirs in Texas since 1961 as part of a continuing cooperative program with State, Federal, and local agencies to inventory the surface-water resources of Texas. Water samples for chemical analyses were collected from Canyon Lake (Figure 1) soon after its impoundment on June 16, 1964. During 1971-76, 11 comprehensive water-quality surveys were conducted in cooperation with the Texas Department of Water Resources. The first two water-quality surveys were conducted during April and July 1971. The other surveys were conducted during the 1974-76 water years. Sampling sites were located within five traverses, A through F. Sites at the deepest point within the traverse were subscripted "C" for channels. Sites to the left and right of the channel were subscripted "L" and "R", respectively.

The purpose of this report is to summarize the water-quality records collected during the 11 surveys and to explain the seasonal and areal variations in the concentrations of selected chemical constituents. Other reports containing hydrologic data for Canyon Lake and surrounding areas are listed in the section "Selected References."

#### **Description of Canyon Lake and Its Environment**

Canyon Lake, in Comal County, Texas, is owned and operated by the U.S. Army Corps of Engineers for conservation and flood control. Construction of the dam began during June 1958 and was completed during August 1964. Impoundment began on June 16, 1964, and normal conservation capacity was first achieved on April 13, 1968.

The top of the conservation pool of Canyon Lake is 909.0 feet above sea level. At this elevation, the capacity of the lake is 386,200 acre-feet, and the shoreline length is about 80 miles.



**Figure 1.—Location of Water-Quality Data-Collection Sites on Canyon Lake**

The length of the drowned river channel is approximately 19.5 miles. The width of the lake varies from approximately 20 feet in its upper reaches to a maximum of about 1.5 miles near the dam. Other features of the lake and dam, as compiled by Dowell and Petty (1971), are given in the following table:

<u>Feature</u>	<u>Elevation (feet above sea level)</u>	<u>Capacity (acre-feet)</u>	<u>Surface area (acres)</u>
Top of dam	974.0	—	—
Maximum design water surface	969.1	1,129,300	17,120
Top flood-control storage space	943.0	740,900	12,890
Top conservation storage space	909.0	386,200	8,240
Intake of lowest invert	775.0	240	54
Streambed	750.0	—	—

The drainage area of Canyon Lake is about 1,430 square miles in the rugged hills and narrow valleys of the southeastern part of the Edwards Plateau. Massive limestones, which underlie most of the region, are exposed in many areas where the thin soils have been eroded. The limestones are faulted and very porous to cavernous, and many seeps and springs occur in the drainage basin. Grasses, western red juniper, and live oak are the predominant flora in the hills; black walnut and bald cypress commonly occur in the valleys.

## Metric Conversions

Factors for converting inch-pound units to metric equivalents are given in the following table:

<u>From</u>	<u>Multiply by</u>	<u>To obtain</u>
acre	4,047	square meter (m <sup>2</sup> )
acre-foot (acre-ft)	0.001233	cubic hectometer (hm <sup>3</sup> )
foot	0.3048	meter (m)
inch	25.4	millimeter (mm)
micromho per centimeter ( $\mu$ mho/cm)	1.00	microsiemen per centimeter ( $\mu$ S/cm)
mile	1.609	kilometer (km)
square mile	2.590	square kilometer (km <sup>2</sup> )

Temperature data in this report are in degrees Celsius (°C) and may be converted to degrees Fahrenheit (°F) by the following formula:

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

*National Geodetic Vertical Datum of 1929 (NGVD of 1929):* A geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "mean sea level." NGVD of 1929 is referred to as "sea level" in this report.

## WATER QUALITY OF CANYON LAKE

### Thermal Stratification

Impoundment of water in a lake or reservoir may result in beneficial as well as detrimental changes in the quality of the water. Some of the factors controlling the quality of water in a lake or

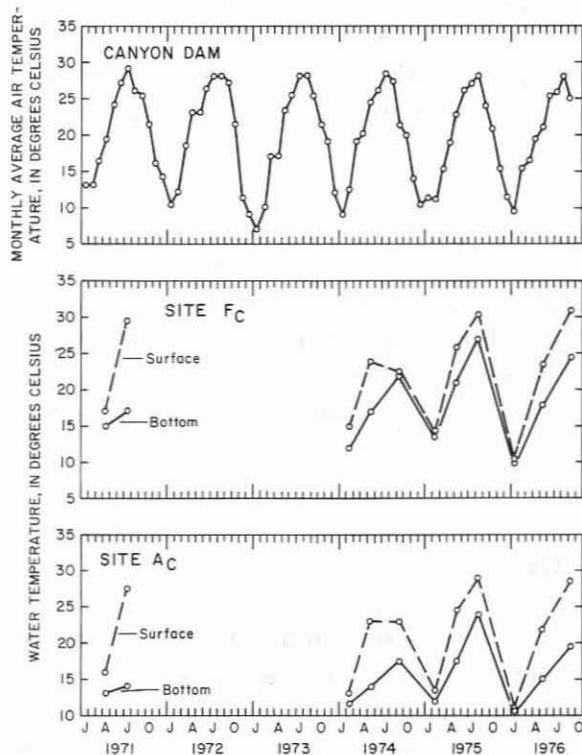
reservoir include the quality of inflow, the circulation pattern of the lake, the chemical reactions of the water with the bed material, the annual rainfall, and the evaporation rate. Many of the detrimental effects of impoundment can be attributed to thermal stratification due to temperature-induced density differences. The density of pure water is greatest at a temperature of about 4°C, and the difference in density per 1°C is much greater at high temperatures than at low temperatures as shown in the following table (Weast, 1975, p. F-5):

<u>Temperature</u> <u>(degrees Celsius)</u>	<u>Density</u> <u>(grams per milliliter)</u>
0.0	0.999868
4.0	1.000000
5.0	.999992
10.0	.999728
15.0	.999129
20.0	.998234
25.0	.997075
30.0	.995678
35.0	.994063

For example, a change in temperature from 29° to 30°C results in a change in density of about 0.0003 g/mL (gram per milliliter); a change in temperature from 10° to 11°C results in a density change of about 0.0001 g/mL. Stable stratification is common in lakes and reservoirs where the density of the upper and lower strata of water differs by as little as 0.001 to 0.002 g/mL. Therefore, temperature differences of 3° to 4°C during the summer may result in stable stratification.

Thermal stratification may occur in many patterns, depending upon the geographical location, climatological conditions, depth, surface area, and configuration of the lake or reservoir. During the winter, lakes and reservoirs in Texas are well mixed by strong north winds, and the water is uniform in temperature (isothermal) and density. With the onset of spring, solar heating warms the water at the lake or reservoir surface, causing a decrease in density. This warm surface water tends to float on the colder and denser water, and the mixing actions of spring winds, usually the strongest of the year, are diminished. As the surface water becomes progressively warmer, the density gradient increases and the depth to which wind can mix the water decreases. Typically, by late summer the winds are weakest, density differences are greatest, and the reservoir is separated into three fairly distinct strata:

- (1) The epilimnion—a warm, freely circulating surface stratum,
- (2) the metalimnion—a middle stratum characterized by a rapid decrease in temperature with increases in depth, and
- (3) the hypolimnion—a cold, stagnant lower stratum.



**Figure 2.—Variations in Air and Water Temperatures at Selected Sites, 1971-76**

$C_C$ , ranging from  $10.5^{\circ}$  to  $31.0^{\circ}\text{C}$ . The lake was virtually isothermal during the winter surveys, when the water temperatures ranged from  $10.0^{\circ}$  to  $15.0^{\circ}\text{C}$ . During the spring surveys, water temperatures ranged from  $14.0^{\circ}$  to  $26.0^{\circ}\text{C}$ , and significant differences were noted between the surface and bottom temperatures, indicating the onset of thermally induced stratification. Summer temperatures ranged from  $17.5^{\circ}$  to  $31.0^{\circ}\text{C}$ , and a definite three-layer stratification pattern was evident during the summer surveys.

## Specific Conductance

Specific conductance, which is a measure of the capacity of water to conduct an electrical current, is related to the concentrations and types of ionized substances in the water. Because of the simplicity of determination, specific conductance commonly is often used to estimate the concentration of dissolved solids and the concentrations of individual chemical constituents. For example, the dissolved-solids concentration (in milligrams per liter) in water in Canyon Lake is approximately 60 percent of the specific conductance (in micromhos per centimeter at  $25^{\circ}\text{C}$ ).

Specific-conductance data for Canyon Lake are given in Tables 1-11. Differences in specific-conductance values were greatest between surface and bottom samples during summer stratification. During the summer, water entering the lake generally is cooler and more mineralized than the water in the lake, and this denser water settles towards the bottom. Some inorganic constitu-

Thermal stratification in deep lakes or reservoirs usually persists until fall, when a decrease in atmospheric temperature cools both the surface water in the reservoir and inflow from streams. When the temperatures and densities of the epilimnion and metalimnion approach those of the hypolimnion, the resistance to mixing is reduced, and complete mixing or overturn of the water occurs.

As shown in Figure 2, water temperatures of Canyon Lake varied with air temperatures, and surface-water temperatures were nearly always warmer than bottom-water temperatures. Summer temperature gradients at site  $A_C$  near the dam ranged from  $5^{\circ}$  to  $13.5^{\circ}\text{C}$ .

Water-temperature data for Canyon Lake are given in Tables 1-11. Water temperatures were most variable at site  $F_C$ , where the maximum water temperature recorded during the surveys was  $31.0^{\circ}\text{C}$ , and the minimum water temperature recorded was  $10.0^{\circ}\text{C}$ . Water temperatures also were variable at site

ents, which also cause the specific conductance to increase, are released from the bed material during periods of summer stagnation. For example, at site A<sub>C</sub> during the summer, the specific conductance averaged about 450 micromhos near the bottom and about 360 micromhos near the surface. During the winter at this site, the specific conductance averaged about 460 micromhos near the bottom and about 410 micromhos near the surface.

Specific-conductance values were most variable at site F<sub>C</sub>, where the maximum measured value was 565 micromhos on February 20, 1975, and the minimum was 245 micromhos on May 22, 1975. Specific conductance tended to be higher at site F<sub>C</sub> than at site A<sub>C</sub> near the dam during periods of low inflow. For example, on February 14, 1974, the depth-integrated average at site A<sub>C</sub> was 422 micromhos and the average at site F<sub>C</sub> was 465 micromhos. During periods of high inflow, site F<sub>C</sub> had lower specific-conductance values than site A<sub>C</sub> because the runoff was less mineralized than the lake water.

## Dissolved Oxygen

Dissolved oxygen is required by fish and other aquatic organisms to maintain the metabolic processes that produce energy for growth and reproduction. Moreover, the concentrations of some of the chemical constituents dissolved in water are related to the concentrations of dissolved oxygen; therefore, dissolved oxygen is one of the most important factors that affect the quality of water in a lake or reservoir.

Water entering a lake or reservoir contains organic material derived from natural sources and from man's waste. Bacterial stabilization of this organic material requires oxygen. Decaying trees, brush, and other oxidizable material within the inundated area, as well as decaying algae and other organic material produced within the lake or reservoir, exert an oxygen demand.

The distribution of dissolved oxygen in a lake or reservoir is related to thermal stratification. Oxygen enters the surface stratum by plant photosynthesis and by absorption from the atmosphere. During winter circulation, the water is exposed to the atmosphere repeatedly, and dissolved oxygen used in the decomposition of organic matter is replenished. However, during spring and summer, thermal stratification results in a decrease of vertical circulation of the water. Oxygen used in the decomposition of organic material is not replaced in the hypolimnion, and a vertical dissolved-oxygen gradient develops.

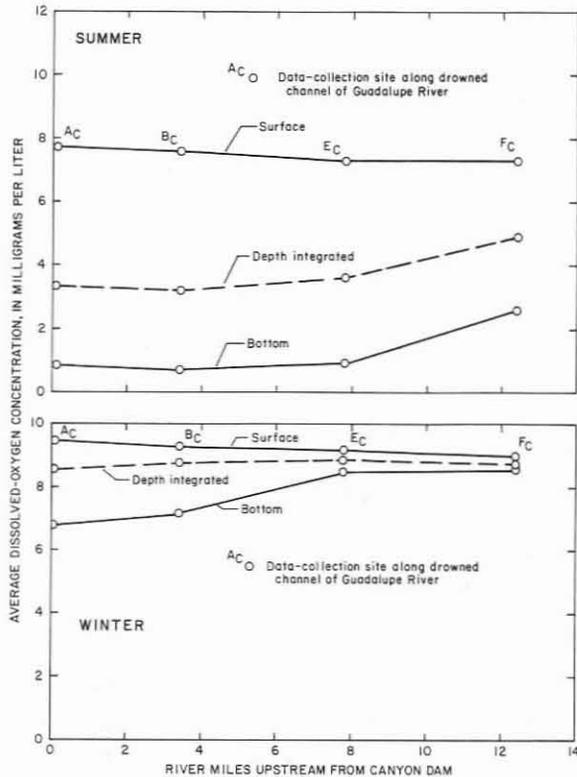
Dissolved-oxygen concentrations in Canyon Lake (Tables 1-11) ranged from 0.2 mg/L (milligram per liter) during the summer of 1976 to 9.9 mg/L during the winters of 1975 and 1976. Dissolved-oxygen concentrations were least during the summer, averaging about 4 mg/L, and greatest during the winter, averaging about 9 mg/L (Figure 3). Significant differences in the average concentrations of dissolved oxygen between the surface and the bottom during periods of summer stagnation also are shown in Figure 3. Slight differences are noted at deep-water sites A<sub>C</sub> and B<sub>C</sub> during the winter. Depths at these sites commonly exceed 120 feet and circulation or mixing is not as rapid or pronounced during the winter as it is in the shallower areas (sites E<sub>C</sub> and F<sub>C</sub>).

## Circulation Patterns During the 1976 Water Year

The seasonal variations in water temperature, specific conductance, and the concentration of dissolved oxygen for Canyon Lake are the result of thermal stratification, wind action, and the magnitude and quality of inflow and outflow. The data from the surveys during the 1976 water year illustrate these variations at times when no major inflow or outflow preceded the surveys.

During the January 1976 survey (Figure 4), the lake was well mixed throughout. Water temperatures ranged from about 10°C at site  $F_C$  to about 12°C at site  $A_C$ . Specific conductance ranged from 416 micromhos at site  $A_C$  to 431 micromhos at site  $F_C$ . The dissolved-oxygen concentrations were near saturation, ranging from 9.2 mg/L at site  $A_C$  to 9.9 mg/L at site  $C_C$  (Table 9).

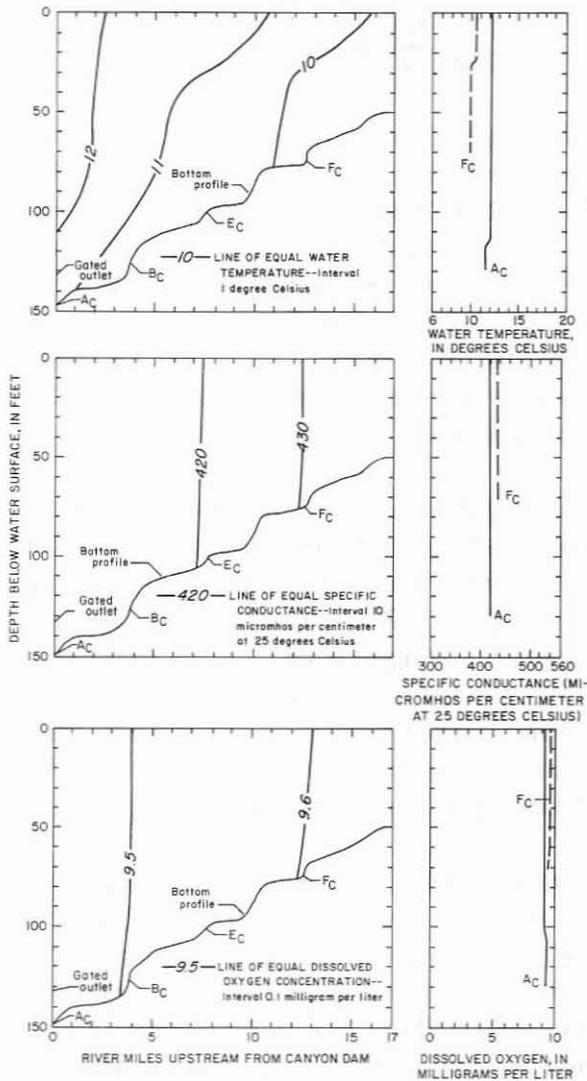
During the May 19, 1976, survey (Figure 5), the lake had warmed considerably and stratification had begun to occur.



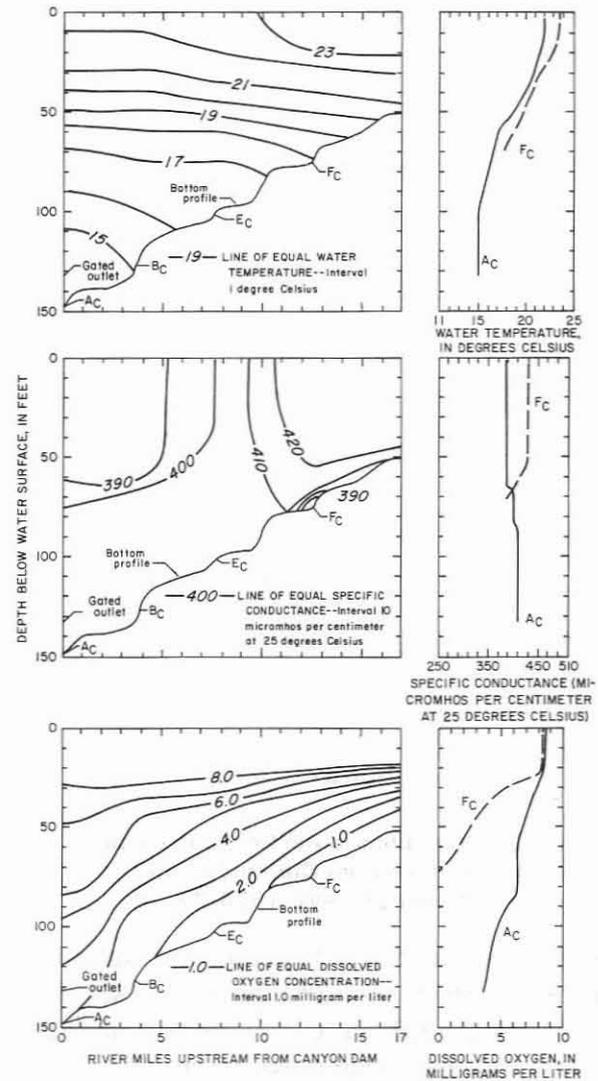
**Figure 3.—Variations in the Concentrations of Dissolved Oxygen During Summer and Winter Surveys, 1974-76**

The water temperature at site  $A_C$  gradually increased from 15°C near the bottom to 22°C near the surface. Similarly, the dissolved-oxygen concentration increased from 3.6 mg/L near the bottom to 8.5 mg/L near the surface. The specific conductance at site  $A_C$  gradually decreased from 407 micromhos near the bottom to 387 micromhos near the surface.

By September 1976 (Figure 6), a definite three-layer stratification had developed. The epilimnion at site  $A_C$  was a freely circulating 30-foot layer in contact with the atmosphere. The water temperature and dissolved-oxygen concentration were greatest in this layer. The water temperature in the epilimnion decreased slightly with depth from 28.5° to 27.5°C, and the dissolved-oxygen concentration decreased from 8.2 to 6.6 mg/L. The specific conductance was lowest in the epilimnion, increasing slightly with depth from 351 micromhos near the surface to 360 micromhos 30 feet below the surface. The metalimnion at site  $A_C$  was an approximately 20-foot layer in which the water temperature decreased from 27.5° to 25.5°C and the dissolved-oxygen concentrations decreased to less than 1.0 mg/L. The specific conductance in the metalimnion increased with depth from 360 to 418 micromhos. These rapid changes indicate that little or no mixing occurred between the epilimnion and the hypolimnion. The hypolimnion was about 95 feet thick at site  $A_C$  and was characterized by a dissolved-oxygen concentration of 0.2 mg/L and a specific conductance of 418 micromhos. Temperatures in the hypolimnion decreased from 25.5° to 19.5°C.



**Figure 4.—Distribution of Water Temperature, Specific Conductance, and Dissolved Oxygen, January 1976**



**Figure 5.—Distribution of Water Temperature, Specific Conductance, and Dissolved Oxygen, May 1976**

The data for the 1976 water year, a period of low inflow and outflow, illustrate the annual limnologic cycle of Canyon Lake. A different pattern is most evident at site F<sub>C</sub> after periods of high flow through the lake. Lake water at this site reflects the quality of the inflow water. The concentrations of dissolved solids may be much less than the rest of the lake as for May 1974 and May 1975 or much higher as for February 1975.

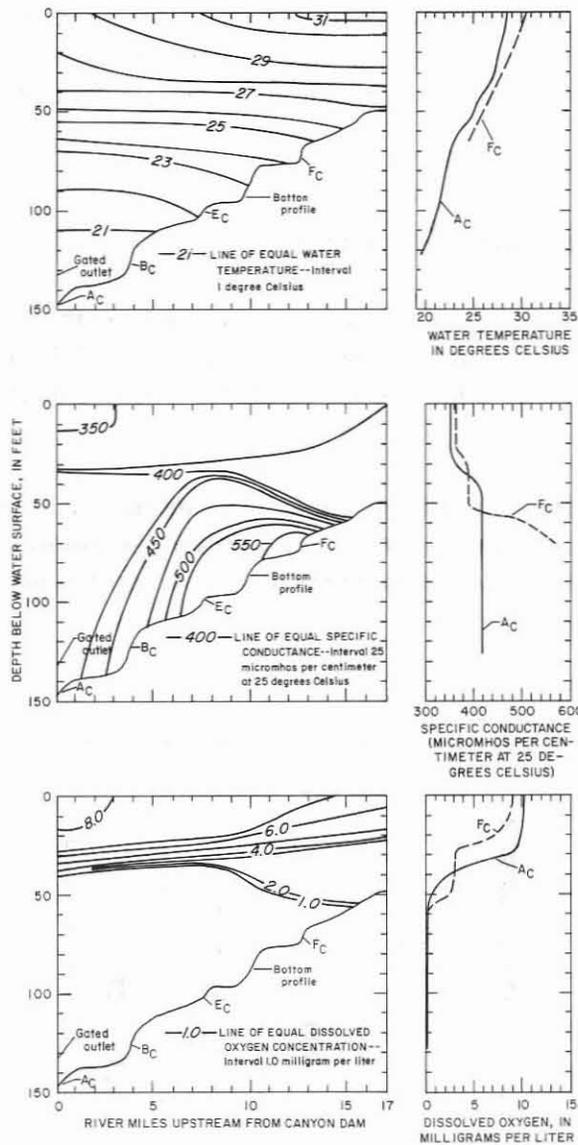
The ranges in inflow and outflow and the amounts of rainfall during the 30 days preceding each survey are shown in Figure 7. The greatest flow-through occurred before the survey of February 20, 1975. During this time, there was an inflow of 99,300 acre-feet and an outflow of 103,800 acre-feet, and more than one-quarter of the lake water was replaced.

Large amounts of inflow were correlated with rainfall amounts, and 5 of the 11 surveys were preceded by significant 30-day rainfall totals of 4 inches or more. This frequency of large amounts of rainfall and substantial flow-through indicates these factors significantly affect mixing patterns of Canyon Lake.

## Dissolved Iron and Dissolved Manganese

Iron and manganese are essential trace elements for both plants and animals. Large amounts of either element, however, are objectionable in municipal water supplies and may be toxic to aquatic life. The occurrence and distribution of dissolved iron and dissolved manganese in Canyon Lake can be related to the annual circulation pattern. Typically, during summer stratification, the hypolimnion is unable to replenish dissolved oxygen used in the decomposition of organic matter and reducing conditions develop, resulting in the dissolution of iron and manganese from the bottom sediments. The concentrations of dissolved iron and dissolved manganese in the hypolimnion generally increase throughout the duration of summer stagnation and may have significantly large concentrations before the fall overturn. During late fall or early winter, after circulation begins, oxygen is replenished throughout the lake and most of the dissolved iron and dissolved manganese in the hypolimnion is oxidized to less soluble forms that precipitate to the bottom.

The concentrations of dissolved iron and dissolved manganese in Canyon Lake (Tables 1-11), which were determined at sites  $A_C$ ,  $C_C$ ,  $D_C$ , and  $F_C$ , varied seasonally. During the 1976 winter survey, water near the surface and bottom at sites  $A_C$  and  $F_C$  contained less than  $30 \mu\text{g/L}$  (micrograms per liter) of both



**Figure 6.—Distribution of Water Temperature, Specific Conductance, and Dissolved Oxygen, September 1976**

dissolved iron and dissolved manganese (Figure 8). Dissolved-oxygen concentrations were relatively uniform from top to bottom at both locations. During the spring survey, the lake had begun to stratify and increases in the concentration of both dissolved iron and dissolved manganese were noted near the bottom. Dissolved-oxygen concentrations decreased from top to bottom at both locations and were less than 1 mg/L near the bottom at site  $F_C$ . By late summer, dissolved-oxygen concentrations at both sites had decreased to 0.2 mg/L, and the concentrations of both iron and manganese near the bottom equaled or exceeded  $300 \mu\text{g/L}$ .

The average summer concentrations of dissolved iron (Figure 9) near the surface ranged from  $10 \mu\text{g/L}$  at site  $A_C$  to  $50 \mu\text{g/L}$  at site  $F_C$ . The average summer concentrations of dissolved manganese near the surface (Figure 10) did not exceed  $20 \mu\text{g/L}$ . The average summer

concentrations of dissolved iron in water near the bottom exceeded  $300 \mu\text{g/L}$  at all locations and averaged  $850 \mu\text{g/L}$  at site  $D_C$  (Figure 9). The average summer concentrations of dissolved manganese near the bottom ranged from approximately  $340 \mu\text{g/L}$  at site  $A_C$  to  $390 \mu\text{g/L}$  at site  $D_C$  (Figure 10).

### Total Inorganic Nitrogen and Total Phosphorus

Nitrogen and phosphorus are nutrients necessary for plant growth, and one or the other is usually a limiting factor, inhibiting an overgrowth of algae and consequent "algal bloom." Both nutrients, therefore, should be present in a range that supports an adequate but not over-abundant plant growth.

Sources that may contribute nitrogen, phosphorus, or both to a lake or reservoir include overland wastes, precipitation, decomposing plant and animal debris, and bottom sediments. Both total nitrogen and total phosphorus in the inflow may consist of dissolved and particulate

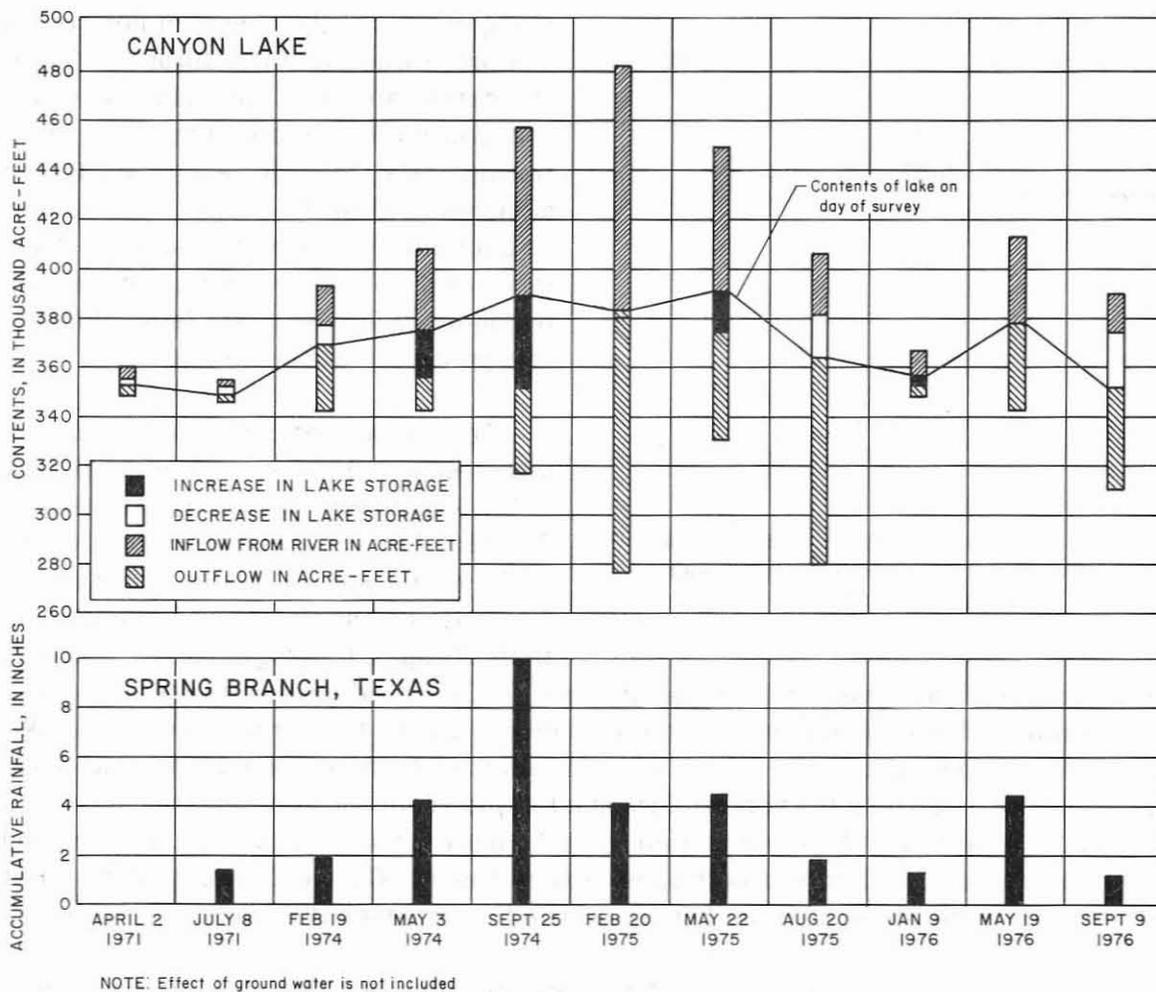
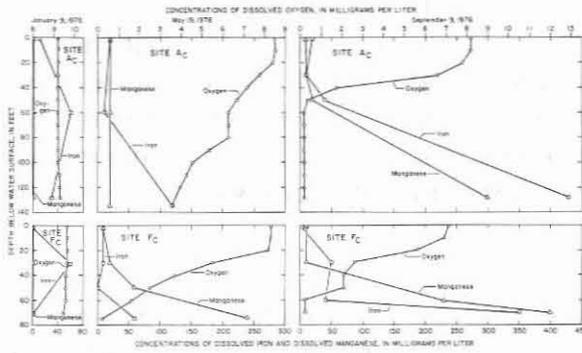


Figure 7.—Relation of Rainfall to the Inflow and Outflow of Canyon Lake During 30 Days Preceding Date of Survey



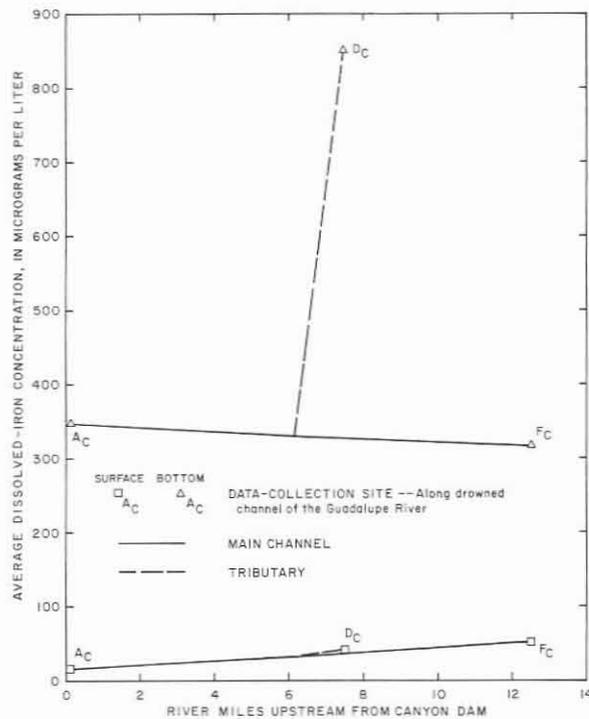
**Figure 8.—Seasonal Profiles of Dissolved Iron, Dissolved Manganese, and Dissolved Oxygen at Sites A<sub>C</sub> and F<sub>C</sub>**

hypolimnion and release nitrogen and phosphorus to the water, where they remain until the fall overturn. As nutrients in the inflowing water are incorporated into this seasonal cycle, the concentrations available for release from bottom sediments during summer stagnation may increase through the years.

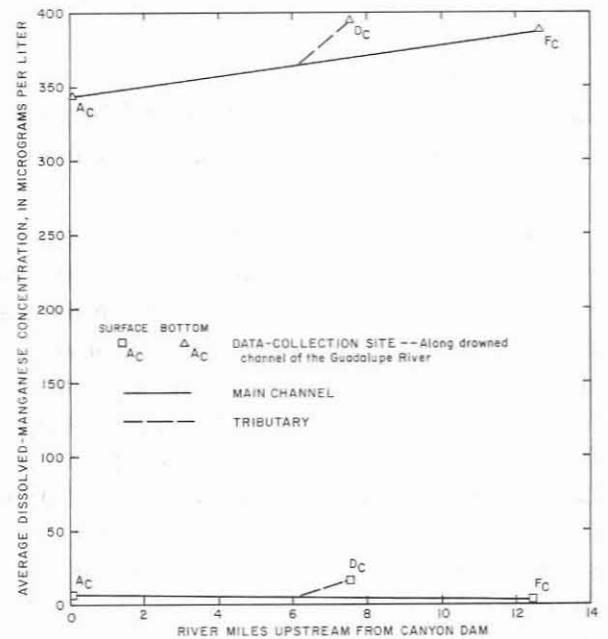
The concentrations of total inorganic nitrogen (ammonia, nitrite, and nitrate nitrogen), as determined at sites A<sub>C</sub>, C<sub>C</sub>, D<sub>C</sub>, and F<sub>C</sub> (Tables 1-11), are relatively low in Canyon Lake. The concentrations of total nitrite plus nitrate ranged from 0.00 mg/L at several locations to 1.1 mg/L at site F<sub>C</sub> on February 20, 1975. Although these two nitrogen species were not analyzed separately, nitrate should be predominant because under aerobic conditions, nitrite is rapidly

inorganic forms and dissolved and particulate organic forms. As the water enters the lake or reservoir, most of the particulate nutrients settle to the bottom, while the dissolved nutrients are used by algae and other aquatic organisms as primary sources of energy. As these aquatic organisms die, they settle to the bottom and carry their cellular nitrogen and phosphorus with them.

Typically, during summer stagnation, the decay of aquatic organisms and the chemical oxidation of bottom sediments decrease the concentration of dissolved oxygen in the



**Figure 9.—Variations in the Concentrations of Dissolved Iron During Summer Surveys**



**Figure 10.—Variations in the Concentrations of Dissolved Manganese During Summer Surveys**

oxidized to nitrate in most natural waters. Ammonia concentrations ranged from 0.0 mg/L at many locations to 1.1 mg/L at the bottom at site D<sub>C</sub> on September 25, 1974. Total inorganic nitrogen concentrations ranged from 0.0 mg/L at several locations to 1.23 mg/L at site F<sub>C</sub> on February 20, 1975. Data collected during the 1974-76 water years show that the highest total inorganic nitrogen concentrations occur during the winter and spring because of greater inflow to the lake, and that the lowest concentrations occur during the summer months at site A<sub>C</sub> near the dam.

Concentrations of total inorganic nitrogen at site A<sub>C</sub> (Figure 11) did not vary as expected. Concentrations decreased from 1974 to 1976 and concentrations in bottom samples were sometimes less than those in samples collected near the surface. These anomalies indicate that little inorganic nitrogen is released from the bottom sediments. Nitrogen-contributing sources such as inflowing particulate matter and decaying biota may not be significant; or other factors such as pH, Eh (redox potential), and biological activity may be limiting the release of inorganic nitrogen.

Although the concentration of total inorganic nitrogen does not increase significantly near the bottom during summer stagnation, the concentration of total ammonia does increase (Figure 12). In the near anaerobic conditions in the hypolimnion, most of the nitrite and nitrate are reduced to ammonia; and although the concentration of total inorganic nitrogen does not change significantly, the relative concentrations of nitrite, nitrate, and ammonia change considerably.

Total phosphorus concentrations in Canyon Lake were extremely low, exceeding 0.08 mg/L in only one sample. Although the concentrations are slightly higher in the bottom samples (Figure 11), little phosphorus is released from the bottom sediments.

### Dissolved Solids, Dissolved Chloride, Dissolved Sulfate, and Hardness

The dissolved-solids concentrations (Tables 1-11) usually are higher in the headwaters at site F<sub>C</sub> than near the dam at site A<sub>C</sub> during periods of normal inflow. The dissolved-solids concentration at site F<sub>C</sub> ranged from 199 to 321 mg/L and averaged 255 mg/L. The dissolved-solids concentrations at site A<sub>C</sub> ranged from 193 to 275 mg/L and averaged 229 mg/L. The slightly higher dissolved-solids concentrations at site F<sub>C</sub> probably result from the higher concentration in the base inflow because the concentrations were lower at site F<sub>C</sub> after periods of intense rainfall and higher inflow.

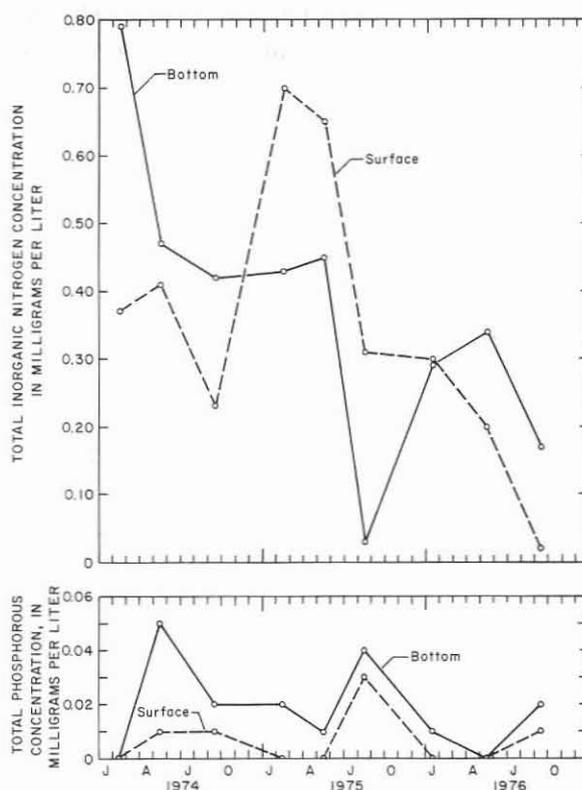
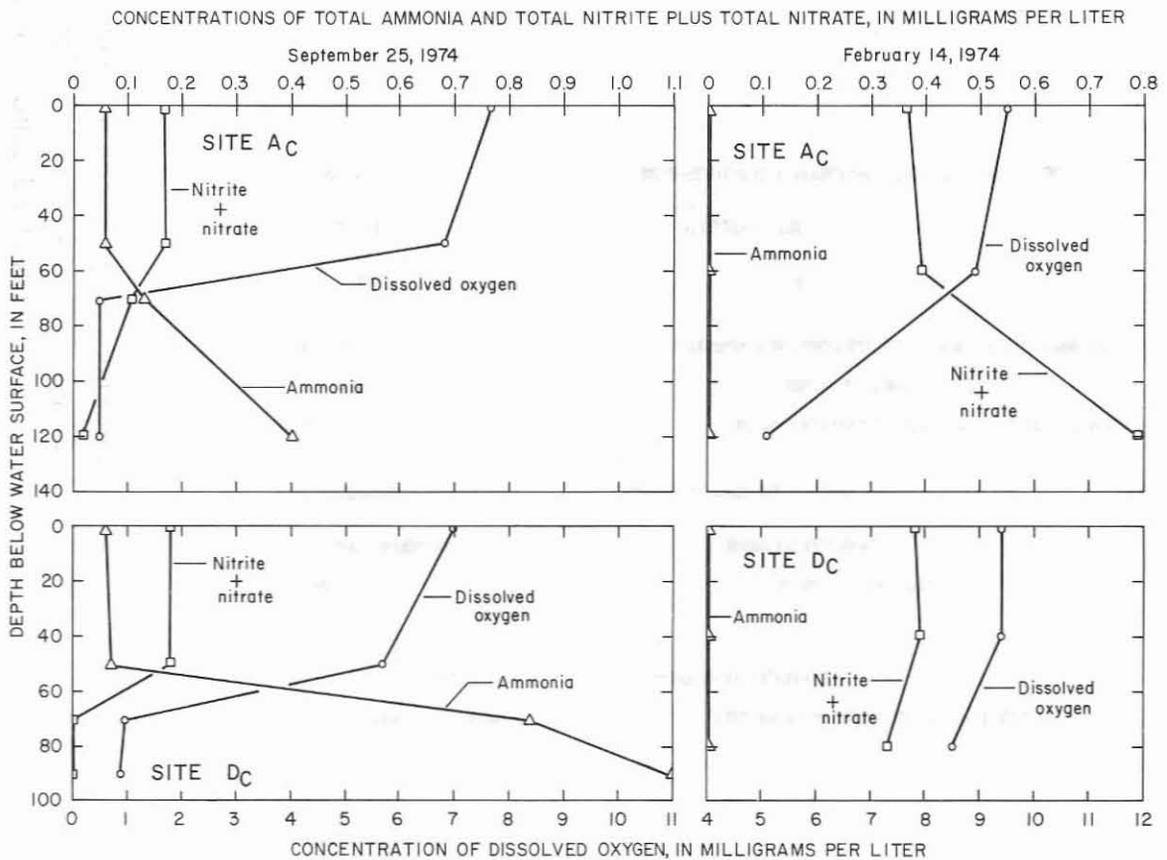


Figure 11.—Variations in the Concentrations of Total Inorganic Nitrogen and Total Phosphorus at Site A<sub>C</sub>

The dissolved-solids concentrations at both sites generally were higher in samples from near the bottom than in samples from near the surface. At site A<sub>C</sub>, the average dissolved-solids concentration near the surface was 216 mg/L, and the average dissolved-solids concentration near the bottom was 239 mg/L. At site F<sub>C</sub>, the dissolved-solids concentration averaged 236 mg/L near the surface and 273 mg/L near the bottom.

The water in Canyon Lake is hard to very hard. Hardness concentrations ranged from 160 mg/L at the surface during several summer surveys to 290 mg/L at site F<sub>C</sub> on February 20, 1975. The concentrations of dissolved chloride and dissolved sulfate were relatively low. The concentration of chloride ranged from 12 to 22 mg/L and the concentration of sulfate ranged from 7.1 to 36 mg/L. The lowest concentrations of sulfate generally were observed near the bottom during summer stagnation, where the reducing conditions result in the conversion of sulfate ions to sulfide or hydrogen sulfide.

Little seasonal variation was noted in the volume-weighted average concentrations of dissolved solids, dissolved chloride, dissolved sulfate, and hardness during 1971-76 (Figure 13). During the winter and spring, the volume-weighted average concentration of dissolved solids was about 230 mg/L; during the summer, the concentrations generally were lower by about 10 to 25 mg/L. The volume-weighted average concentrations of dissolved chloride ranged from 14 to 20 mg/L, and the volume-weighted concentrations of dissolved sulfate ranged from 14 to 30 mg/L.



**Figure 12.—Summer and Winter Profiles of Total Ammonia, Total Nitrite Plus Nitrate, and Dissolved Oxygen at Sites A<sub>C</sub> and D<sub>C</sub>**

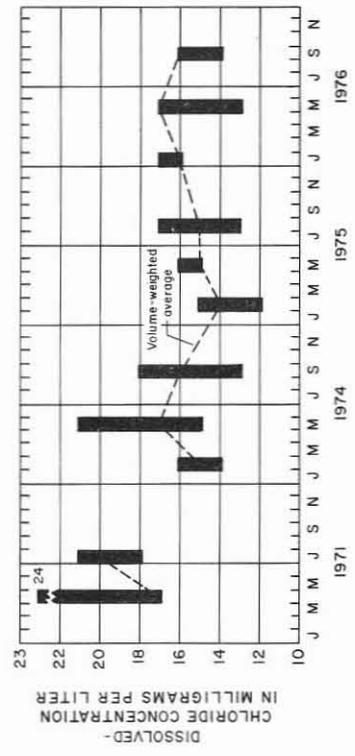
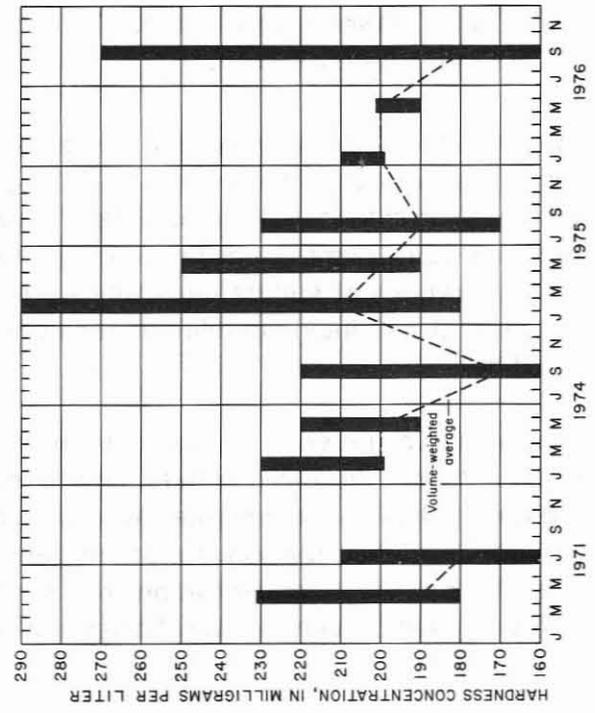
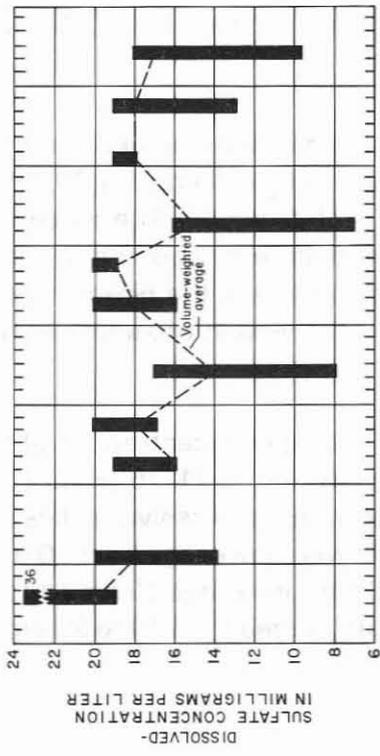
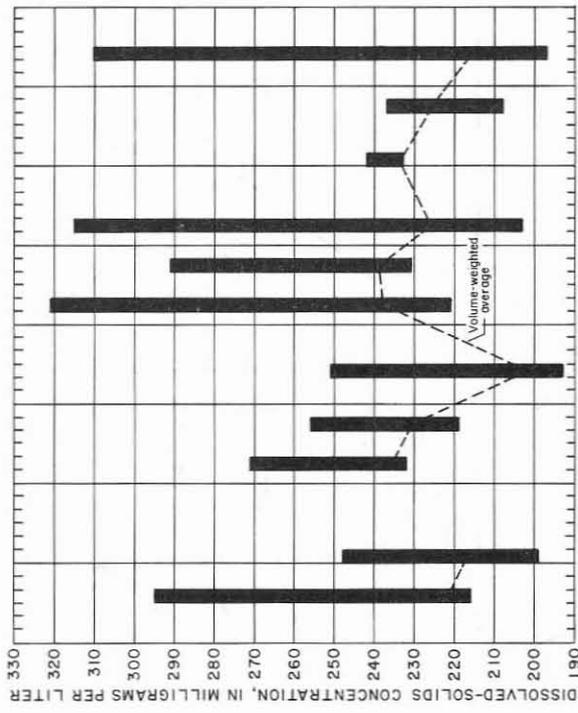


Figure 13  
 Variations in the Range and Volume-Weighted Average  
 Concentrations of Dissolved Solids, Dissolved Chloride,  
 Dissolved Sulfate, and Hardness

The volume-weighted average concentrations of hardness ranged from 170 to 210 mg/L and were about 180 mg/L during the summer and about 200 mg/L during the winter.

## TEMPERATURE OF THE GUADALUPE RIVER

Although several water-quality samples have been collected downstream from Canyon Dam, data to determine the downstream effects of Canyon Dam are limited to temperature measurements at the station Guadalupe River at Sattler (Figure 14). The monthly average temperature of the Guadalupe River downstream from Canyon Lake has been decreased from a range of 11.5° to 29.0°C before closure of the dam to a range of 11.5° to 19.0°C after closure of the dam. The time period of the annual extreme temperature has also changed. Prior to closure, the lowest temperatures were recorded during December and January and the highest were recorded during June-August. Since closure, the lowest temperatures occur during February and the highest temperatures occur during September-November.

### SUMMARY OF CONCLUSIONS

The concentrations of chemical constituents in Canyon Lake vary seasonally as a result of thermal stratification. During the winter, the lake is well mixed with respect to dissolved solids, dissolved oxygen, and water temperature. During the spring, the thermally-induced stratification pattern develops and continues through the summer. By late summer, three distinct layers occur in the deep areas of the lake. The hypolimnion is a cold, anaerobic lower stratum with a comparatively high concentration of dissolved solids. The epilimnion is a warm, freely circulating, aerobic surface stratum that has the lowest concentration of dissolved solids. The metalimnion is a middle stratum characterized by a rapid decrease in temperature and dissolved oxygen and an increase in the dissolved-solids concentration with an increase in depth. The concentrations of chemical constituents in the headwaters of the lake vary seasonally and with the quality and quantity of inflow.

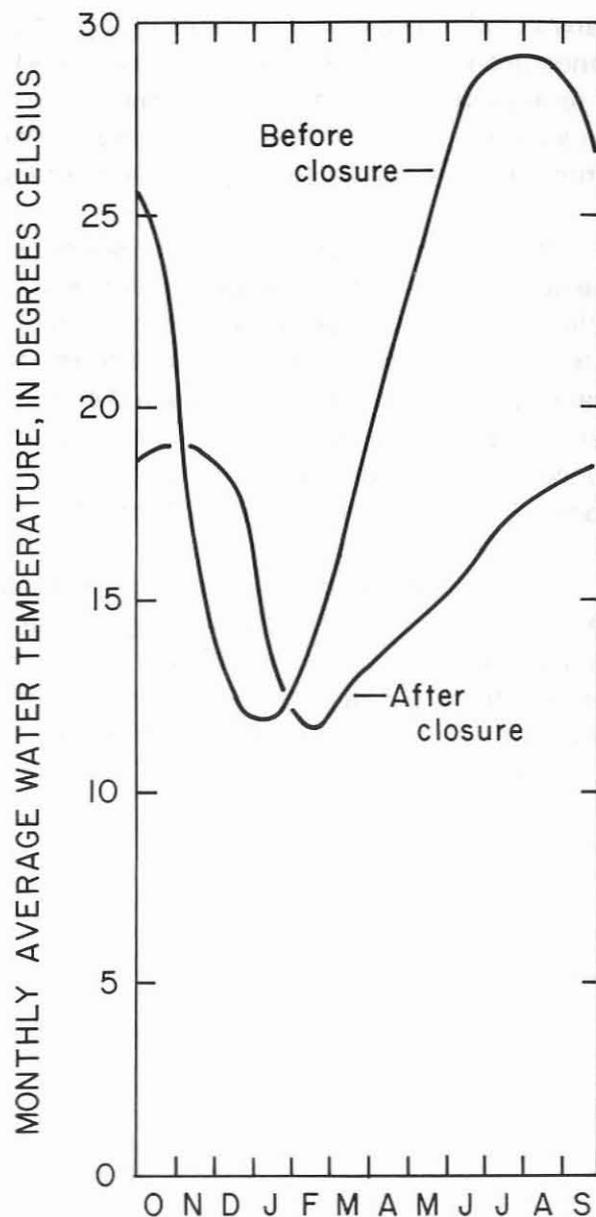


Figure 14.—Monthly Average Water Temperature of the Guadalupe River Downstream From Canyon Lake Before and After Closure of the Dam

The concentrations of dissolved oxygen are related to the pattern of thermal stratification. The depth-integrated concentration of dissolved oxygen averaged less than 4.0 mg/L during summer stagnation and about 9.0 mg/L during winter circulation.

The occurrence and distribution of dissolved iron and dissolved manganese in Canyon Lake are closely related to the concentration of dissolved oxygen. The concentrations of both constituents in water near the bottom at deep sites increase greatly during summer stagnation. The average summer concentrations of dissolved iron in water near the bottom exceeded 300  $\mu\text{g}/\text{L}$  at all locations and averaged 850  $\mu\text{g}/\text{L}$  at site D<sub>C</sub> during the summer, and the concentrations of dissolved manganese near the bottom averaged from 340  $\mu\text{g}/\text{L}$  at site A<sub>C</sub> to 390  $\mu\text{g}/\text{L}$  at site D<sub>C</sub>.

The concentrations of total inorganic nitrogen and total phosphorus are relatively low in Canyon Lake. The concentrations of total inorganic nitrogen did not exceed 1.23 mg/L and the concentrations of total phosphorus exceeded 0.08 mg/L in only one sample. The concentrations of total inorganic nitrogen were greater during the winter and spring than during the summer because of greater inflow to the lake during winter and spring. The concentrations of total ammonia increased in the hypolimnion during the summer as nitrates and nitrites were reduced.

The concentrations of dissolved solids generally were slightly higher in deeper water and in the headwaters of the lake during periods of normal inflow. Little seasonal variation was noted in volume-weighted average concentrations of dissolved solids, dissolved chloride, dissolved sulfate, and hardness, but summer concentrations generally were slightly lower. The volume-weighted concentrations of dissolved solids were about 230 mg/L. The volume-weighted concentrations of dissolved chloride ranged from 14 to 20 mg/L, and the volume-weighted average concentrations of dissolved sulfate ranged from 14 to 30 mg/L. The volume-weighted concentrations of hardness ranged from 170 to 210 mg/L.

The closure of Canyon Dam resulted in a change in water temperature downstream from the dam. The maximum monthly average water temperature in the Guadalupe River downstream from the dam is now about 19.0°C rather than 29.0°C. The maximum average monthly water temperature now occurs during September-November rather than during June-July, and the minimum average monthly water temperature now occurs during February rather than during December-January.

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TABLE 1.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE APRIL 2, 1971

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; DEG C = degrees Celsius;  
M = meters; MG/L = milligrams per liter; UG/L = micrograms per liter

295206098115501 SITE AC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
APR												
02...	0930	1.0	380	8.2	16.0	8.8	88	180	22	46	17	10
02...	0932	10.0	380	8.2	16.0	8.8	88	--	--	--	--	--
02...	0934	20.0	380	8.2	16.0	8.8	88	--	--	--	--	--
02...	0936	30.0	380	8.2	15.5	8.8	87	--	--	--	--	--
02...	0938	40.0	380	8.2	15.5	8.7	86	--	--	--	--	--
02...	0940	50.0	390	8.1	14.5	8.3	81	--	--	--	--	--
02...	0942	60.0	390	8.1	13.5	8.0	76	--	--	--	--	--
02...	0944	70.0	390	8.1	13.5	7.8	74	--	--	--	--	--
02...	0946	80.0	400	8.0	13.0	7.8	74	--	--	--	--	--
02...	0948	90.0	400	8.0	13.0	7.5	71	--	--	--	--	--
02...	0950	100	400	8.0	13.0	7.2	68	--	--	--	--	--
02...	0952	110	400	8.0	13.0	7.0	66	--	--	--	--	--
02...	0954	120	400	8.0	13.0	7.0	66	--	--	--	--	--
02...	0956	129	400	8.0	13.0	7.2	68	190	25	49	17	9.2

DATE	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
APR												
02...	.3	198	19	17	.2	9.1	216	.10	.000	.000	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	.3	204	19	17	.2	9.7	222	.20	.000	.000	0	0

295241098132101 -SITE BC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
APR							
02...	1015	1.0	380	8.3	16.5	8.5	87
02...	1017	5.0	380	8.3	16.5	8.5	87
02...	1019	15.0	380	8.3	16.0	8.5	85
02...	1021	25.0	380	8.3	16.0	8.5	85
02...	1023	35.0	380	8.3	16.0	8.5	85
02...	1025	45.0	380	8.2	15.0	7.8	76
02...	1027	55.0	390	8.0	14.0	7.4	71
02...	1029	65.0	390	8.0	14.0	7.3	70
02...	1031	75.0	400	8.0	14.0	7.4	71
02...	1033	85.0	400	8.0	14.0	7.4	71
02...	1035	95.0	400	8.0	14.0	7.2	69
02...	1037	105	400	8.0	14.0	7.2	69
02...	1039	115	400	8.0	14.0	7.3	70
02...	1041	124	400	8.0	13.5	7.8	74

TABLE 1.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE APRIL 2, 1971--Continued

295240098152001 SITE CC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
APR												
02...	1100	1.0	380	8.3	17.0	8.7	90	180	19	--	--	--
02...	1102	5.0	380	8.4	16.5	8.7	89	--	--	--	--	--
02...	1104	15.0	380	8.4	16.5	8.6	88	--	--	--	--	--
02...	1106	25.0	380	8.4	16.0	8.6	86	--	--	--	--	--
02...	1108	35.0	380	8.3	16.0	8.5	85	--	--	--	--	--
02...	1110	45.0	380	8.3	16.0	8.4	84	--	--	--	--	--
02...	1112	55.0	390	8.2	15.5	7.4	73	--	--	--	--	--
02...	1114	65.0	400	8.1	14.0	6.0	58	--	--	--	--	--
02...	1116	75.0	400	8.1	12.5	6.0	57	200	22	50	17	11

DATE	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
APR												
02...	--	201	--	17	--	--	--	.10	.000	.030	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	.3	211	20	17	.2	9.9	230	.10	.000	.000	0	0

295349098143101 SITE DC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
APR																	
02...	1135	1.0	380	8.4	16.5	8.6	88	--	--	--	--	--	--	--	--	--	--
02...	1137	10.0	380	8.4	16.0	8.6	86	--	--	--	--	--	--	--	--	--	--
02...	1139	20.0	380	8.3	16.0	8.6	86	--	--	--	--	--	--	--	--	--	--
02...	1141	30.0	380	8.3	16.0	8.5	85	--	--	--	--	--	--	--	--	--	--
02...	1143	40.0	390	8.2	14.5	7.6	74	--	--	--	--	--	--	--	--	--	--
02...	1145	50.0	400	8.2	14.0	7.0	67	--	--	--	--	--	--	--	--	--	--
02...	1147	60.0	400	8.1	14.0	6.6	63	--	--	--	--	--	--	--	--	--	--
02...	1149	70.0	400	8.1	13.5	6.2	59	--	--	--	--	--	--	--	--	--	--
02...	1151	82.0	400	8.1	13.5	6.1	58	200	--	--	--	--	--	--	--	--	--

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
APR									
02...	--	--	--	--	--	205	--	17	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	25	51	17	9.7	.3	210	20	17	.2

TABLE 1.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE APRIL 2, 1971--Continued

295349098143101 SITE DC--Continued

DATE	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
APR 02...	--	--	.000	.10	.000	--	0	0
02...	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	0	0
02...	10	228	.000	.20	.000	.020	0	0

295329098151001 SITE EC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
APR 02...	1205	1.0	380	8.4	17.0	8.7	90
02...	1207	5.0	380	8.4	17.0	8.6	89
02...	1209	15.0	380	8.4	16.5	8.5	87
02...	1211	25.0	380	8.4	16.5	8.5	87
02...	1213	35.0	380	8.4	16.0	8.3	83
02...	1215	45.0	390	8.2	15.0	6.8	67
02...	1217	55.0	400	8.1	14.0	6.1	59
02...	1219	65.0	400	8.1	13.5	5.7	54
02...	1221	75.0	400	8.1	13.5	5.6	53
02...	1223	85.0	400	8.1	13.5	5.6	53
02...	1225	94.0	390	8.0	13.5	5.4	51

295349098173701 SITE FC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
APR 02...	1250	1.0	380	8.4	17.0	8.4	87	200	20	50	17	12
02...	1252	5.0	380	8.4	17.0	8.4	87	--	--	--	--	--
02...	1254	15.0	380	8.4	16.0	8.3	83	--	--	--	--	--
02...	1256	25.0	380	8.3	16.0	8.1	81	--	--	--	--	--
02...	1258	35.0	400	8.1	15.5	6.5	64	--	--	--	--	--
02...	1300	45.0	420	7.8	15.0	4.9	48	--	--	--	--	--
02...	1302	55.0	440	7.7	15.0	3.4	33	--	--	--	--	--
02...	1305	65.0	440	7.7	15.0	3.0	29	230	35	64	18	16

DATE	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
APR 02...	.4	213	20	17	.2	7.8	229	.10	.000	.010	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	0
02...	--	--	--	--	--	--	--	--	--	--	0	20
02...	.5	242	36	24	.2	18	295	.30	.270	1.800	0	40

TABLE 2.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE JULY 8, 1971

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; DEG C = degrees Celsius;  
M = meters; MG/L = milligrams per liter; UG/L = micrograms per liter

295206098115501 SITE AC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUL												
08...	1047	1.0	349	8.3	27.5	7.6	95	160	21	37	17	13
08...	1050	10.0	354	8.3	27.5	7.7	96	--	--	--	--	--
08...	1052	20.0	354	8.2	27.0	8.0	99	--	--	--	--	--
08...	1054	30.0	368	7.8	25.0	5.1	61	--	--	--	--	--
08...	1056	35.0	397	7.6	24.0	3.5	41	--	--	--	--	--
08...	1058	40.0	397	7.6	20.0	2.7	29	--	--	--	--	--
08...	1100	50.0	400	7.7	18.0	3.5	37	--	--	--	--	--
08...	1102	55.0	400	7.7	17.0	3.8	39	--	--	--	--	--
08...	1104	60.0	399	7.8	16.5	4.2	43	--	--	--	--	--
08...	1106	70.0	400	7.8	16.0	3.9	39	--	--	--	--	--
08...	1108	80.0	406	7.8	15.5	3.4	34	--	--	--	--	--
08...	1110	90.0	405	7.6	15.0	2.9	28	--	--	--	--	--
08...	1112	100	407	7.7	15.0	2.9	28	--	--	--	--	--
08...	1114	110	410	7.6	15.0	2.3	23	--	--	--	--	--
08...	1116	120	406	7.5	15.0	1.6	16	--	--	--	--	--
08...	1118	130	413	7.4	14.5	1.0	10	--	--	--	--	--
08...	1120	143	411	7.4	14.0	.4	4	200	28	51	18	9.5

DATE	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JUL												
08...	.4	172	18	21	.2	9.6	201	.00	.000	.010	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	0
08...	--	--	--	--	--	--	--	.10	.000	.000	--	--
08...	--	--	--	--	--	--	--	--	--	--	0	0
08...	--	--	--	--	--	--	--	.20	.000	.000	--	--
08...	--	--	--	--	--	--	--	--	--	--	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	10
08...	--	--	--	--	--	--	--	--	--	--	0	40
08...	.3	212	18	20	.2	12	234	.20	.000	.010	0	110

295241098132101 SITE BC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)
JUL							
08...	1146	1.0	355	8.2	28.0	8.2	104
08...	1148	10.0	370	8.2	28.0	8.2	104
08...	1150	20.0	370	8.2	27.5	8.0	100
08...	1152	30.0	370	8.0	25.5	7.0	84
08...	1154	35.0	390	7.4	23.0	1.6	18
08...	1156	40.0	410	7.4	20.0	1.2	13
08...	1158	50.0	410	7.5	18.0	1.4	15
08...	1200	60.0	410	7.5	17.0	.8	8
08...	1202	70.0	410	7.5	16.0	.2	2
08...	1204	80.0	410	7.5	15.0	.2	2
08...	1206	90.0	410	7.5	15.0	.2	2
08...	1208	100	410	7.5	15.0	.2	2
08...	1210	110	410	7.5	15.0	.2	2
08...	1213	120	410	7.5	15.0	.2	2
08...	1215	128	412	7.5	15.0	.5	5

TABLE 2.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE JULY 8, 1971--Continued

295240098152001 SITE CC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUL												
08...	1234	1.0	354	8.4	29.0	7.5	96	--	--	--	--	--
08...	1236	10.0	355	8.3	28.0	7.4	94	--	--	--	--	--
08...	1238	20.0	356	8.1	27.0	6.8	84	--	--	--	--	--
08...	1240	30.0	359	7.8	26.0	4.9	60	--	--	--	--	--
08...	1242	35.0	380	7.4	24.0	4.9	11	--	--	--	--	--
08...	1244	40.0	399	7.4	21.0	.4	4	--	--	--	--	--
08...	1246	50.0	407	7.4	18.0	.2	2	--	--	--	--	--
08...	1248	60.0	407	7.4	17.0	.2	2	--	--	--	--	--
08...	1250	70.0	408	7.4	16.5	.3	3	200	24	51	18	9.1

DATE	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JUL												
08...	--	--	--	--	--	--	--	.10	.000	.000	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	10
08...	--	--	--	--	--	--	--	--	--	--	0	30
08...	--	--	--	--	--	--	--	.20	.000	.010	--	--
08...	--	--	--	--	--	--	--	--	--	--	0	170
08...	--	--	--	--	--	--	--	--	--	--	0	330
08...	--	--	--	--	--	--	--	--	--	--	10	360
08...	.3	216	16	19	.2	13	233	.00	.000	.020	0	500

295349098143101 SITE DC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUL												
08...	1310	1.0	353	8.2	29.0	8.0	103	--	--	--	--	--
08...	1312	10.0	351	8.3	28.5	8.0	103	--	--	--	--	--
08...	1314	20.0	351	8.2	28.0	7.4	94	--	--	--	--	--
08...	1316	30.0	365	7.8	25.5	4.6	55	--	--	--	--	--
08...	1318	35.0	380	7.5	23.0	2.0	23	--	--	--	--	--
08...	1320	40.0	393	7.5	19.5	.2	2	--	--	--	--	--
08...	1322	50.0	407	7.5	17.5	.2	2	--	--	--	--	--
08...	1324	60.0	408	7.5	17.0	.2	2	--	--	--	--	--
08...	1326	70.0	410	7.6	16.0	.2	2	--	--	--	--	--
08...	1328	80.0	414	7.6	15.0	.3	3	--	--	--	--	--
08...	1330	87.0	412	7.6	15.5	.5	5	200	23	51	18	9.8

DATE	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JUL												
08...	--	--	--	--	--	--	--	--	--	--	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	10
08...	--	--	--	--	--	--	--	--	--	--	0	30
08...	--	--	--	--	--	--	--	.30	.000	.000	--	--
08...	--	--	--	--	--	--	--	--	--	--	0	120
08...	--	--	--	--	--	--	--	--	--	--	0	270
08...	--	--	--	--	--	--	--	--	--	--	0	440
08...	--	--	--	--	--	--	--	--	--	--	10	500
08...	--	--	--	--	--	--	--	--	--	--	180	460
08...	.3	218	17	18	.2	12	234	.10	.000	.020	0	360

TABLE 2.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE JULY 8, 1971--Continued

295329098151001 SITE EC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUL							
08...	1345	1.0	349	8.2	29.5	8.3	108
08...	1347	10.0	349	8.2	29.0	8.0	103
08...	1349	20.0	370	8.2	28.0	7.3	92
08...	1351	30.0	390	7.7	25.5	4.2	51
08...	1353	35.0	400	7.4	23.5	1.4	16
08...	1355	40.0	415	7.4	20.0	.4	4
08...	1357	50.0	415	7.4	17.5	.2	2
08...	1359	60.0	415	7.4	17.0	.3	3
08...	1401	70.0	415	7.4	16.0	.3	3
08...	1403	80.0	415	7.4	15.5	.3	3
08...	1405	92.0	416	7.4	15.5	.3	3

295349098173701 SITE FC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUL												
08...	1430	1.0	348	8.3	29.5	8.4	109	160	20	34	18	14
08...	1432	10.0	350	8.3	29.0	8.0	103	--	--	--	--	--
08...	1434	20.0	361	8.0	27.5	6.0	75	--	--	--	--	--
08...	1436	25.0	360	7.5	27.0	1.7	21	--	--	--	--	--
08...	1438	30.0	393	7.4	25.5	.3	3	--	--	--	--	--
08...	1440	35.0	410	7.3	23.0	.4	4	--	--	--	--	--
08...	1442	40.0	444	7.3	20.5	.2	2	--	--	--	--	--
08...	1444	50.0	448	7.2	18.0	.2	2	--	--	--	--	--
08...	1446	60.0	440	7.2	17.0	.2	2	--	--	--	--	--
08...	1448	65.0	435	7.2	17.0	.2	2	210	18	54	19	11

DATE	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JUL												
08...	.5	170	20	30	.2	8.7	199	.00	.000	.010	0	0
08...	--	--	--	--	--	--	--	--	--	--	0	10
08...	--	--	--	--	--	--	--	--	--	--	0	70
08...	--	--	--	--	--	--	--	.00	.000	.010	--	--
08...	--	--	--	--	--	--	--	--	--	--	20	210
08...	--	--	--	--	--	--	--	.00	.000	.020	--	--
08...	--	--	--	--	--	--	--	--	--	--	300	380
08...	--	--	--	--	--	--	--	--	--	--	320	430
08...	--	--	--	--	--	--	--	--	--	--	290	400
08...	.3	238	14	19	.2	13	248	.10	.000	.010	70	410

TABLE 3.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE FEBRUARY 14, 1974

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; DEG C = degrees Celsius;  
M = meters; MG/L = milligrams per liter; UG/L = micrograms per liter

295206098115501 SITE AC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB									
14...	1030	1.0	418	8.1	13.0	5.5	9.5	9.5	90
14...	1032	10.0	418	8.1	12.5	--	9.4	9.4	88
14...	1034	20.0	418	8.1	12.0	--	9.2	9.2	85
14...	1036	30.0	418	8.1	11.5	--	9.1	9.1	83
14...	1038	40.0	418	8.1	11.5	--	9.0	9.0	82
14...	1040	50.0	418	8.0	11.5	--	9.0	9.0	82
14...	1042	60.0	418	8.0	11.5	--	8.9	8.9	81
14...	1044	70.0	418	8.0	11.5	--	8.9	8.9	81
14...	1046	80.0	418	8.0	11.5	--	8.8	8.8	80
14...	1048	90.0	418	7.9	11.5	--	8.5	8.5	77
14...	1050	100	418	7.9	11.5	--	8.0	8.0	73
14...	1052	110	430	7.8	11.5	--	7.0	7.0	64
14...	1054	120	480	7.5	11.5	--	5.1	5.1	46

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
FEB									
14...	200	14	52	16	12	.4	222	16	15
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	230	16	62	18	14	.4	260	19	16

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
14...	.2	10	232	.37	.000	.000	0	0
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	.39	.000	.000	0	0
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	.2	10	271	.79	.000	.000	10	0

TABLE 3.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE FEBRUARY 14, 1974--Continued

295241098132101 SITE BC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB							
14...	1120	1.0	418	8.1	13.0	9.5	90
14...	1122	10.0	418	8.1	13.0	9.5	90
14...	1124	20.0	418	8.1	12.5	9.5	89
14...	1126	30.0	418	8.1	12.0	9.4	87
14...	1128	40.0	418	8.1	12.0	9.4	87
14...	1130	50.0	418	8.1	11.5	9.3	85
14...	1132	60.0	418	8.1	11.5	9.2	84
14...	1134	70.0	418	8.1	11.5	9.2	84
14...	1136	80.0	418	8.1	11.5	9.0	82
14...	1138	90.0	418	8.1	11.5	8.8	80
14...	1140	100	418	8.0	11.5	8.6	78
14...	1142	110	445	7.8	11.5	6.6	60
14...	1144	120	455	7.7	11.5	6.6	60
14...	1146	128	471	7.6	11.5	5.2	47

295240098152001 SITE CC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
14...	1205	1.0	424	8.1	13.5	2.65	9.4	90
14...	1207	10.0	424	8.1	12.5	--	9.4	88
14...	1209	20.0	424	8.1	12.5	--	9.4	88
14...	1211	30.0	424	8.1	12.0	--	9.2	85
14...	1213	40.0	424	8.1	12.0	--	8.9	82
14...	1215	55.0	424	8.1	12.0	--	8.8	81

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
FEB									
14...	200	12	54	16	13	.4	230	17	14
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	200	11	53	16	12	.4	228	16	14

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
14...	.2	10	239	.35	.000	.010	0	0
14...	--	--	--	--	--	--	--	--
14...	--	--	--	.38	.000	.000	0	0
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	.2	10	235	.34	.000	.040	10	0

295349098143101 SITE DC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
14...	1230	1.0	424	8.1	14.5	5.8	9.4	91
14...	1232	10.0	424	8.1	13.5	--	9.4	90
14...	1234	20.0	424	8.1	13.5	--	9.4	90
14...	1236	30.0	424	8.1	13.0	--	9.4	89
14...	1238	40.0	424	8.1	12.5	--	9.4	88
14...	1240	50.0	424	8.1	12.0	--	9.3	86
14...	1242	60.0	424	8.1	12.0	--	9.1	84
14...	1244	70.0	424	8.1	12.0	--	9.0	83
14...	1246	80.0	424	8.1	12.0	--	8.5	79

TABLE 3.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE FEBRUARY 14, 1974--Continued

295349098143101 SITE DC--Continued

DATE	HARD-NESS (MG/L AS CaCO3)	HARD-NESS, NONCARBONATE (MG/L CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	BICARBONATE (MG/L AS HCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)
FEB 14...	200	13	53	16	12	.4	226	16	15
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	200	11	53	16	14	.4	228	17	15

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGANESE, DIS-SOLVED (UG/L AS MN)
FEB 14...	.2	10	235	.38	.000	.010	0	0
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	.40	.000	--	0	0
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	.2	10	239	.33	.000	.020	0	0

295329098151001 SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PERCENT SATURATION)
FEB 14...	1310	1.0	425	8.1	13.5	9.5	90
14...	1312	10.0	425	8.1	13.0	9.5	90
14...	1314	20.0	425	8.1	12.5	9.5	89
14...	1316	30.0	425	8.1	12.5	9.4	88
14...	1318	40.0	425	8.1	12.0	9.3	86
14...	1320	50.0	425	8.1	12.0	9.2	85
14...	1322	60.0	425	8.1	12.0	9.1	84
14...	1324	70.0	425	8.1	12.0	8.9	82
14...	1326	80.0	425	8.1	12.0	8.8	81
14...	1328	90.0	425	8.0	12.0	8.0	74
14...	1330	101	425	8.0	12.0	8.0	74

295349098173701 SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK (M))	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PERCENT SATURATION)
FEB 14...	1400	1.0	455	8.0	15.0	4.6	9.2	90
14...	1402	10.0	455	8.0	14.0	--	9.2	88
14...	1404	20.0	455	8.0	13.5	--	9.2	88
14...	1406	30.0	455	8.0	12.0	--	8.8	81
14...	1408	40.0	470	8.0	12.0	--	8.8	81
14...	1410	50.0	470	7.9	12.0	--	8.7	81
14...	1412	60.0	480	7.9	12.0	--	8.5	79
14...	1415	70.0	480	7.9	12.0	--	8.4	78

TABLE 3.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE FEBRUARY 14, 1974--Continued

295349098173701 SITE FC--Continued

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
FEB									
14...	220	21	59	18	9.9	.3	244	18	15
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	230	16	62	18	14	.4	260	19	16

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
14...	.2	9.6	253	.67	.000	.010	0	0
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	.73	.000	.000	0	0
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	.2	9.7	271	.91	.000	.010	40	0

TABLE 4.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE MAY 3, 1974

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; DEG C = degrees Celsius;  
M = meters; MG/L = milligrams per liter; UG/L = micrograms per liter

295206098115501 SITE AC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAY								
03...	1030	1.0	397	8.2	23.0	2.93	8.4	97
03...	1032	10.0	397	8.2	22.5	--	8.4	95
03...	1034	20.0	397	8.1	21.0	--	8.4	93
03...	1036	30.0	405	8.1	20.0	--	8.1	88
03...	1038	40.0	405	8.0	19.0	--	7.8	83
03...	1040	50.0	420	8.0	18.5	--	7.4	79
03...	1042	60.0	431	8.0	17.0	--	6.8	70
03...	1044	70.0	431	7.9	15.5	--	6.8	67
03...	1046	80.0	431	7.9	15.0	--	6.6	65
03...	1048	90.0	431	7.9	14.5	--	6.4	62
03...	1050	100	431	7.9	14.5	--	6.3	61
03...	1052	110	431	7.8	14.5	--	5.9	57
03...	1054	120	431	7.7	14.5	--	4.4	43
03...	1056	130	431	7.6	14.0	--	3.6	35
03...	1058	140	431	7.6	14.0	--	3.6	35
03...	1100	150	431	7.6	14.0	--	3.6	35

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
MAY									
03...	190	18	48	16	9.3	.3	2.1	204	17
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	210	26	57	16	9.0	.3	2.0	222	20

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY								
03...	15	11	219	.24	.170	.010	10	0
03...	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--
03...	--	--	--	.22	--	.010	--	--
03...	--	--	--	--	.110	--	10	10
03...	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--
03...	--	--	--	.18	.150	.020	10	10
03...	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--
03...	21	11	245	.35	.120	.050	10	30

TABLE 4.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE MAY 3, 1974--Continued

295241098132101 SITE BC							
DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAY							
03...	1130	1.0	396	8.2	23.0	8.2	94
03...	1132	10.0	396	8.2	22.5	8.2	93
03...	1134	20.0	396	8.2	21.0	8.2	91
03...	1136	30.0	405	8.2	20.5	8.1	89
03...	1138	40.0	405	8.2	19.5	8.0	86
03...	1140	50.0	431	8.1	18.0	6.9	73
03...	1142	60.0	431	7.9	16.5	5.8	59
03...	1144	70.0	431	7.9	16.5	4.8	49
03...	1146	80.0	431	7.9	16.5	4.1	42
03...	1148	90.0	431	7.8	16.0	4.1	41
03...	1150	100	431	7.8	15.5	3.6	36
03...	1152	110	431	7.8	15.0	3.6	35
03...	1154	120	431	7.7	15.0	3.0	29
03...	1156	130	431	7.7	15.0	2.5	25

295240098152001 SITE CC								
DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAY								
03...	1200	1.0	396	8.3	23.0	2.01	8.3	95
03...	1202	10.0	396	8.2	22.0	--	8.3	94
03...	1204	20.0	396	8.2	21.5	--	8.0	90
03...	1206	30.0	405	8.1	20.5	--	6.9	76
03...	1208	40.0	410	7.9	20.0	--	4.4	48
03...	1210	50.0	431	7.7	18.0	--	2.8	29
03...	1212	60.0	431	7.7	17.5	--	2.4	25

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
MAY									
03...	190	21	48	17	9.3	.3	2.0	206	17
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	210	24	56	17	9.4	.3	2.2	227	18

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY								
03...	16	11	222	.28	.120	.010	0	0
03...	--	--	--	--	--	--	--	--
03...	--	--	--	.19	.160	.020	0	0
03...	--	--	--	--	--	--	--	--
03...	--	--	--	.28	.180	.020	0	10
03...	--	--	--	--	--	--	--	--
03...	16	12	243	.28	.210	.020	20	40

TABLE 4.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE MAY 3, 1974--Continued

295349098143101 SITE DC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAY								
03...	1230	1.0	401	8.2	23.5	2.01	8.0	93
03...	1232	10.0	401	8.2	23.0	--	8.0	93
03...	1234	20.0	401	8.2	22.0	--	8.0	91
03...	1236	30.0	401	8.2	20.5	--	8.0	88
03...	1238	40.0	410	8.1	19.5	--	7.2	77
03...	1240	50.0	429	7.9	18.0	--	5.7	60
03...	1242	60.0	429	7.8	16.5	--	3.6	37
03...	1244	70.0	429	7.7	16.0	--	2.6	26
03...	1246	84.0	429	7.7	16.0	--	2.3	23

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
MAY									
03...	190	14	48	17	9.6	.3	2.1	214	18
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	210	26	57	17	9.0	.3	2.0	227	17

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY								
03...	16	10	226	.25	.140	.030	0	0
03...	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--
03...	--	--	--	.19	.180	.020	0	0
03...	--	--	--	.17	.150	.030	0	0
03...	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--
03...	16	12	242	.35	.050	.030	10	40

295329098151001 SITE EC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAY							
03...	1315	1.0	430	8.2	23.5	8.0	93
03...	1317	10.0	430	8.2	22.5	8.0	91
03...	1319	20.0	430	8.2	21.5	8.0	91
03...	1321	30.0	430	8.1	20.5	7.7	85
03...	1323	40.0	430	8.1	19.0	7.4	79
03...	1325	50.0	430	8.0	18.0	5.9	62
03...	1327	60.0	430	7.7	16.5	3.7	38
03...	1329	70.0	430	7.7	15.5	3.4	34
03...	1331	80.0	430	7.7	15.5	3.1	31
03...	1333	90.0	430	7.7	15.5	3.0	30
03...	1335	100	430	7.7	15.5	3.0	30

TABLE 4.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE MAY 3, 1974--Continued

295349098173701 SITE FC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAY								
03...	1400	1.0	443	8.1	24.0	1.40	7.2	85
03...	1402	10.0	443	8.1	22.5	--	7.0	80
03...	1404	20.0	400	7.8	21.0	--	4.9	54
03...	1406	30.0	280	7.8	20.0	--	5.4	59
03...	1408	40.0	250	7.8	20.0	--	5.6	61
03...	1410	50.0	270	7.7	19.5	--	4.4	47
03...	1412	60.0	462	7.6	17.5	--	1.0	10
03...	1414	74.0	462	7.6	17.0	--	.8	8

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
MAY									
03...	220	26	56	19	11	.3	1.9	234	19
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	220	17	61	17	9.4	.3	1.8	250	17

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY								
03...	18	10	250	.28	.190	.020	20	0
03...	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--
03...	--	--	--	.49	.160	.080	50	0
03...	--	--	--	--	--	--	--	--
03...	--	--	--	.38	.060	.080	--	--
03...	--	--	--	--	--	--	--	--
03...	16	11	256	.33	.090	.070	170	0

TABLE 5.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE SEPTEMBER 25, 1974

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; DEG C = degrees Celsius;  
M = meters; MG/L = milligrams per liter; UG/L = micrograms per liter

295206098115501 SITE AC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP								
25...	1045	1.0	350	7.8	23.0	4.7	7.7	89
25...	1047	10.0	350	7.8	23.0	--	7.4	85
25...	1049	20.0	350	7.8	23.0	--	7.2	83
25...	1051	30.0	350	7.8	23.0	--	7.1	82
25...	1053	40.0	350	7.7	23.0	--	7.0	80
25...	1055	50.0	350	7.7	23.0	--	6.8	78
25...	1057	60.0	350	7.0	22.5	--	5.8	66
25...	1059	70.0	400	7.0	21.0	--	.5	6
25...	1101	80.0	410	7.0	19.5	--	.5	5
25...	1103	90.0	415	6.9	19.0	--	.5	5
25...	1105	100	420	6.9	18.5	--	.5	5
25...	1107	110	420	6.9	18.0	--	.5	5
25...	1109	120	433	6.9	17.5	--	.5	5

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
25...	160	19	38	17	8.5	.3	2.2	178	16
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	220	23	57	18	12	.4	2.4	236	13

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
SEP								
25...	13	11	193	.17	.060	.010	20	0
25...	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--
25...	--	--	--	.17	.060	.010	30	0
25...	--	--	--	--	--	--	--	--
25...	--	--	--	.11	.130	.010	20	90
25...	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--
25...	18	13	251	.02	.400	.020	360	450

295224098115901 SITE AL

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
25...	1300	1.0	350	7.9	23.0	7.0	80
25...	1302	10.0	350	7.9	23.0	7.0	80
25...	1304	20.0	350	7.9	23.0	6.9	79
25...	1306	30.0	350	7.9	23.0	6.8	78
25...	1308	40.0	350	7.9	23.0	7.0	80
25...	1310	50.0	350	7.9	23.0	6.9	79
25...	1312	60.0	350	7.9	22.5	6.8	77
25...	1314	70.0	370	7.2	22.0	.6	7

TABLE 5.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE SEPTEMBER 25, 1974--Continued

295241098132101 SITE BC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
25...	1345	1.0	350	7.9	23.0	8.4	97
25...	1347	10.0	350	7.5	23.0	8.3	95
25...	1349	20.0	350	7.5	23.0	8.2	94
25...	1351	30.0	350	7.9	23.0	8.0	92
25...	1353	40.0	350	7.9	23.0	7.8	90
25...	1355	50.0	350	7.9	23.0	7.4	85
25...	1357	60.0	360	7.3	22.0	2.0	23
25...	1359	70.0	400	7.2	21.0	.5	6
25...	1401	80.0	410	7.1	20.0	.4	4
25...	1403	90.0	415	7.1	19.0	.4	4
25...	1405	100	425	7.1	18.5	.4	4
25...	1407	110	425	7.1	18.0	.4	4
25...	1409	123	425	7.0	18.0	.4	4

295240098152001 SITE CC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP								
25...	1425	1.0	355	8.0	23.0	2.19	8.5	98
25...	1427	10.0	355	7.9	23.0	--	8.5	98
25...	1429	20.0	355	7.9	23.0	--	8.5	98
25...	1431	30.0	355	7.9	22.5	--	8.5	97
25...	1433	40.0	355	7.9	22.5	--	8.0	91
25...	1435	55.0	355	7.9	22.5	--	8.0	91

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
25...	160	17	38	17	8.7	.3	2.1	180	17
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	170	18	42	16	8.3	.3	2.1	186	17

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
SEP								
25...	14	11	197	.13	.080	.030	40	0
25...	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--
25...	--	--	--	.12	.080	.010	40	0
25...	--	--	--	--	--	--	--	--
25...	14	11	202	.11	.100	.010	20	30

TABLE 5.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE SEPTEMBER 25, 1974--Continued

295349098143101 SITE DC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
SEP												
25...	1615	1.0	343	7.9	22.5	7.0	80	160	17	39	16	8.4
25...	1617	10.0	343	7.9	22.5	6.8	77	--	--	--	--	--
25...	1619	20.0	343	7.9	22.5	6.4	73	--	--	--	--	--
25...	1621	30.0	343	7.9	22.5	6.4	73	--	--	--	--	--
25...	1623	40.0	343	7.8	22.5	6.3	72	--	--	--	--	--
25...	1625	50.0	343	7.8	22.5	5.7	65	--	--	--	--	--
25...	1627	60.0	343	7.8	22.0	5.7	65	--	--	--	--	--
25...	1629	70.0	410	7.6	21.0	1.0	11	--	--	--	--	--
25...	1631	80.0	430	7.1	20.0	.9	10	--	--	--	--	--
25...	1633	90.0	432	7.0	19.5	.9	10	200	0	52	17	9.2

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
SEP												
25...	.3	2.0	178	17	15	11	196	.18	.060	.010	20	40
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	.18	.070	.010	50	0
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	.00	.840	.020	300	570
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	.3	2.0	250	8.0	15	15	243	.00	1.100	.060	610	560

295329098151001 SITE EC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
25...	1700	1.0	358	7.9	22.5	7.7	88
25...	1702	10.0	358	7.9	22.5	7.7	88
25...	1704	20.0	358	7.9	22.5	7.6	86
25...	1706	30.0	358	7.9	22.5	7.6	86
25...	1708	40.0	358	7.9	22.5	7.5	85
25...	1710	50.0	358	7.7	22.5	6.8	77
25...	1712	60.0	379	7.5	21.5	5.7	64
25...	1714	70.0	420	7.1	20.5	.5	5
25...	1716	80.0	440	7.1	19.5	.4	4
25...	1718	90.0	459	7.1	19.5	.4	4
25...	1720	98.0	459	7.1	19.0	.4	4

295349098173701 SITE FC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP								
25...	1800	1.0	381	7.9	22.5	1.40	8.0	91
25...	1802	10.0	381	7.9	22.5	--	7.9	90
25...	1804	20.0	381	7.9	22.5	--	7.8	89
25...	1806	30.0	381	7.9	22.5	--	7.7	88
25...	1808	40.0	400	7.8	22.0	--	7.6	86
25...	1810	50.0	437	7.7	22.0	--	7.6	86
25...	1812	60.0	437	7.7	22.0	--	5.5	62
25...	1814	72.0	437	7.7	22.0	--	5.5	62

TABLE 5.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE SEPTEMBER 25, 1974--Continued

295349098173701 SITE FC--Continued

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
25...	170	12	39	18	8.9	.3	2.1	195	17
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	210	17	55	17	8.1	.2	2.2	232	17

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
SEP								
25...	15	12	208	.29	.090	.030	20	0
25...	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--
25...	--	--	--	.52	.110	.020	80	0
25...	--	--	--	--	--	--	--	--
25...	14	13	241	.55	.120	.050	20	20

TABLE 6.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE FEBRUARY 20, 1975

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; DEG C = degrees Celsius;  
M = meters; MG/L = milligrams per liter; UG/L = micrograms per liter

295206098115501 SITE AC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
FEB									
20...	1520	1.0	401	8.4	13.5	4.9	9.8	93	190
20...	1522	10.0	401	8.4	13.5	--	9.8	93	--
20...	1524	20.0	401	8.3	13.5	--	9.9	94	--
20...	1526	30.0	400	8.3	13.0	--	9.8	93	--
20...	1528	40.0	400	8.3	13.0	--	9.8	92	--
20...	1530	50.0	400	8.3	13.0	--	9.6	91	--
20...	1532	60.0	400	8.2	13.0	--	9.6	91	--
20...	1534	70.0	400	8.2	13.0	--	9.6	91	--
20...	1536	80.0	400	8.2	13.0	--	9.6	91	--
20...	1538	90.0	400	8.2	13.0	--	9.2	87	--
20...	1540	100	405	8.2	12.5	--	8.2	77	--
20...	1542	110	415	8.0	12.0	--	6.8	63	--
20...	1544	120	450	7.8	12.0	--	6.0	56	--
20...	1546	130	480	7.7	12.0	--	6.2	57	--
20...	1548	145	404	7.8	12.0	--	6.0	56	180

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
FEB									
20...	16	49	16	8.5	.3	2.4	210	19	15
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	10	49	15	8.7	.3	2.5	212	18	14

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
20...	.2	9.6	223	.34	.360	.000	20	0
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	.32	.110	.000	10	0
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	.2	9.4	221	.35	.080	.020	10	0

TABLE 6.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE FEBRUARY 20, 1975--Continued

295241098132101 SITE BC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB							
20...	1620	1.0	405	8.0	13.5	9.0	86
20...	1622	10.0	405	8.1	13.5	9.0	86
20...	1624	20.0	405	8.0	13.5	9.0	86
20...	1626	30.0	403	8.1	13.5	9.2	88
20...	1628	40.0	400	8.1	13.5	9.2	88
20...	1630	50.0	400	8.0	13.0	9.2	87
20...	1632	60.0	400	8.0	13.0	9.0	85
20...	1634	70.0	400	8.0	13.0	8.8	83
20...	1636	80.0	400	8.0	13.0	8.4	79
20...	1638	90.0	405	7.8	13.0	8.2	77
20...	1640	100	408	7.0	13.0	7.9	75
20...	1642	110	420	7.0	12.5	7.0	65
20...	1644	120	450	7.0	12.5	7.0	65
20...	1646	130	450	7.0	12.5	7.0	65

295240098152001 SITE CC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRAN- SPAR- ENCY (SECCHI DISK (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
FEB									
20...	1705	1.0	413	8.0	13.5	3.1	8.3	79	200
20...	1707	10.0	413	8.0	13.5	--	8.2	78	--
20...	1709	20.0	413	8.0	13.0	--	8.2	77	--
20...	1711	30.0	411	8.0	13.0	--	8.0	75	--
20...	1713	40.0	409	8.0	13.0	--	7.9	75	--
20...	1715	50.0	409	7.9	13.0	--	7.8	74	--
20...	1717	60.0	407	7.8	13.0	--	7.8	74	--
20...	1719	66.0	407	7.8	13.0	--	7.8	74	200

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
FEB									
20...	14	54	16	8.0	.2	2.6	228	17	14
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	18	52	16	8.8	.3	2.5	217	18	14

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
20...	.2	9.3	234	.36	.180	.000	10	0
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	.38	.220	.000	10	0
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	.2	9.4	228	.36	.110	.000	10	0

TABLE 6.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE FERRUARY 20, 1975--Continued

295349098143101 SITE DC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
FEB								
20...	1730	1.0	440	8.0	13.5	8.8	84	220
20...	1732	10.0	440	8.0	13.5	8.8	84	--
20...	1734	20.0	440	8.0	13.5	8.6	82	--
20...	1736	30.0	430	8.0	13.5	8.6	82	--
20...	1738	40.0	420	8.0	13.0	8.4	79	--
20...	1740	50.0	414	8.0	13.0	8.2	77	--
20...	1742	60.0	414	8.0	13.0	8.0	75	--
20...	1744	70.0	422	7.9	13.0	8.0	75	--
20...	1746	80.0	480	7.9	13.0	7.8	74	--
20...	1748	92.0	547	7.9	13.0	8.0	75	270

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
FEB									
20...	15	61	16	7.9	.2	2.0	248	16	12
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	11	80	18	8.0	.2	1.6	320	18	13

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
20...	.2	9.4	247	.49	.280	.010	20	0
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	.41	.130	.000	10	0
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	.2	11	308	.80	.230	.010	10	0

295329098151001 SITE EC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB							
20...	1800	1.0	450	8.0	13.5	8.8	84
20...	1802	10.0	450	8.0	13.5	8.8	84
20...	1804	20.0	450	8.0	13.5	8.8	84
20...	1806	30.0	448	8.0	13.5	8.6	82
20...	1808	40.0	442	8.0	13.5	8.4	80
20...	1810	50.0	440	7.8	13.0	8.0	75
20...	1812	60.0	440	7.8	13.0	8.0	75
20...	1814	70.0	456	7.8	13.0	7.8	74
20...	1816	80.0	495	7.8	13.0	7.8	74
20...	1818	94.0	540	7.7	13.0	8.0	75

TABLE 6.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE FEBRUARY 20, 1975--Continued

295349098173701 SITE FC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)
FEB									
20...	1825	1.0	565	7.8	14.5	1.37	8.0	78	290
20...	1827	10.0	565	7.8	14.5	--	8.0	78	--
20...	1829	20.0	565	7.8	14.0	--	8.0	77	--
20...	1831	30.0	540	7.8	14.0	--	8.0	77	--
20...	1833	40.0	532	7.8	13.5	--	7.8	74	--
20...	1835	50.0	532	7.8	13.5	--	7.2	69	--
20...	1837	60.0	550	7.8	13.5	--	7.0	67	--
20...	1839	68.0	562	7.8	13.5	--	8.0	76	299

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
FEB									
20...	26	83	20	9.0	.2	1.9	322	20	15
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	22	85	19	8.5	.2	2.0	327	20	14

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
20...	.2	10	318	1.1	.130	.000	80	0
20...	--	--	--	--	--	--	--	--
20...	--	--	--	.97	.200	.010	10	0
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	.2	11	321	.85	.040	.010	10	0

TABLE 7.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE MAY 22, 1975

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; DEG C = degrees Celsius;  
M = meters; MG/L = milligrams per liter; UG/L = micrograms per liter

295206098115501 SITE AC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
MAY									
22...	0945	1.0	397	7.8	24.5	5.8	7.5	89	190
22...	0947	10.0	400	7.8	24.0	--	7.4	87	--
22...	0949	20.0	405	7.8	23.5	--	7.3	85	--
22...	0951	30.0	410	7.7	22.0	--	6.8	77	--
22...	0953	40.0	415	7.7	21.5	--	6.8	76	--
22...	0955	50.0	415	7.7	20.0	--	6.8	74	--
22...	0957	60.0	415	7.7	19.5	--	6.7	72	--
22...	0959	70.0	415	7.8	18.5	--	6.7	71	--
22...	1001	80.0	415	7.7	17.5	--	6.0	62	--
22...	1003	90.0	415	7.7	17.5	--	5.5	57	--
22...	1005	100	420	7.7	17.5	--	5.1	53	--
22...	1007	110	425	7.7	18.5	--	4.8	51	--
22...	1009	120	426	7.6	18.0	--	4.0	42	--
22...	1011	135	428	7.6	17.5	--	3.8	40	210

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
MAY									
22...	7	50	16	9.2	.3	2.0	224	19	15
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	14	56	16	9.1	.3	2.1	234	19	16

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY								
22...	.2	9.6	231	.57	.080	.000	20	0
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	.2	10	244	.44	.010	.010	60	20

TABLE 7.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE MAY 22, 1975--Continued

295224098115901 SITE AL								
DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	
MAY								
22...	1030	1.0	400	7.8	24.5	7.7	92	
22...	1032	10.0	400	7.8	24.5	7.7	92	
22...	1034	20.0	400	7.8	23.0	7.4	85	
22...	1036	30.0	405	7.7	22.5	7.2	82	
22...	1038	40.0	410	7.7	21.5	7.0	79	
22...	1040	50.0	415	7.7	20.5	7.0	77	
22...	1042	60.0	415	7.7	19.5	6.9	74	
22...	1044	70.0	415	7.8	18.5	6.6	70	
22...	1046	80.0	415	7.8	18.0	6.5	68	
22...	1048	90.0	415	7.8	17.5	6.3	66	
22...	1050	100	415	7.8	17.5	5.8	60	
22...	1052	115	420	7.7	17.5	4.8	50	

295241098132101 SITE BC								
DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	
MAY								
22...	1115	1.0	400	7.9	24.5	7.6	90	
22...	1117	10.0	400	7.9	24.0	7.6	89	
22...	1119	20.0	400	7.9	24.0	7.5	88	
22...	1121	30.0	405	7.8	23.5	7.5	87	
22...	1123	40.0	415	7.7	21.0	6.7	74	
22...	1125	50.0	420	7.7	20.5	6.2	68	
22...	1127	60.0	420	7.7	19.5	6.2	67	
22...	1129	70.0	420	7.6	18.5	4.9	52	
22...	1131	80.0	420	7.7	18.5	4.4	47	
22...	1133	90.0	420	7.7	18.5	4.4	47	
22...	1135	100	420	7.6	17.5	3.6	38	
22...	1137	110	420	7.6	17.5	3.6	38	
22...	1139	120	420	7.6	17.0	3.2	33	
22...	1141	132	420	7.6	16.5	2.3	23	

295240098152001 SITE CC									
DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
MAY									
22...	1200	1.0	406	8.0	25.5	2.44	7.7	93	190
22...	1202	10.0	410	7.9	25.0	--	7.7	92	--
22...	1204	20.0	410	7.9	24.0	--	7.5	88	--
22...	1206	30.0	410	7.8	24.0	--	6.0	71	--
22...	1208	40.0	420	7.5	21.5	--	2.7	30	--
22...	1210	54.0	422	7.6	21.0	--	2.4	27	210

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
MAY									
22...	13	50	17	9.7	.3	2.1	222	20	16
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	10	56	17	9.3	.3	2.0	244	19	15

TABLE 7.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE MAY 22, 1975--Continued

295240098152001 SITE CC--Continued

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGANESE, DIS-SOLVED (UG/L AS MN)
MAY 22...	.2	9.4	234	.55	.010	.000	20	10
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	.53	.040	.000	20	10
22...	--	--	--	.50	.020	.000	10	20
22...	.2	11	250	.48	.110	.040	40	40

295349098143101 SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, SATURATION (%)	HARDNESS, AS CaCO3 (MG/L)
MAY 22...	1230	1.0	410	7.9	25.5	2.68	7.8	94	190
22...	1232	10.0	410	7.9	25.0	--	7.8	93	--
22...	1234	20.0	410	7.9	25.0	--	7.7	92	--
22...	1236	30.0	410	7.9	24.0	--	7.5	88	--
22...	1238	40.0	420	7.6	21.5	--	5.3	60	--
22...	1240	50.0	430	7.6	20.5	--	4.8	53	--
22...	1242	60.0	435	7.7	19.5	--	3.8	41	--
22...	1244	70.0	435	7.7	19.0	--	2.7	29	--
22...	1246	86.0	436	7.7	18.0	--	2.0	21	220

DATE	HARDNESS, NONCARBONATE (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)
MAY 22...	12	49	17	9.8	.3	2.1	220	20	15
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	19	60	17	9.7	.3	2.1	245	20	15

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGANESE, DIS-SOLVED (UG/L AS MN)
MAY 22...	.2	9.6	231	.57	.010	.000	20	0
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	.58	.030	.000	10	10
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	.2	11	255	.47	.030	.040	20	30

TABLE 7.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE MAY 22, 1975--Continued

295329098151001 SITE EC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAY							
22...	1300	1.0	410	7.9	25.5	7.5	90
22...	1302	10.0	410	7.9	25.0	7.4	88
22...	1304	20.0	420	7.8	25.0	7.2	86
22...	1306	30.0	450	7.7	24.5	6.8	81
22...	1308	40.0	450	7.4	23.0	4.1	47
22...	1310	50.0	450	7.4	20.5	3.8	42
22...	1312	60.0	450	7.5	19.5	3.8	41
22...	1314	70.0	435	7.6	18.5	3.8	40
22...	1316	80.0	440	7.6	18.0	3.4	36
22...	1318	90.0	430	7.6	18.0	3.0	32
22...	1320	101	430	7.6	19.0	2.8	30

295349098173701 SITE FC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)
MAY									
22...	1400	1.0	437	7.9	26.0	1.83	7.4	90	220
22...	1402	10.0	438	7.9	26.0	--	7.3	89	--
22...	1404	20.0	440	7.9	25.0	--	7.2	86	--
22...	1406	30.0	460	7.6	24.0	--	5.2	61	--
22...	1408	40.0	285	7.4	22.0	--	5.0	57	--
22...	1410	50.0	260	7.4	22.0	--	5.0	57	--
22...	1412	60.0	245	7.5	21.5	--	5.0	56	--
22...	1414	75.0	505	7.4	21.0	--	.8	9	250

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
MAY									
22...	18	57	18	10	.3	1.9	242	20	16
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	8	66	20	11	.3	2.2	292	20	15

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY								
22...	.2	11	253	.68	.020	.010	30	10
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	.58	.060	.000	40	0
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	--	.38	.110	.070	80	50
22...	.2	12	291	.52	.140	.020	70	350

TABLE 8.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE AUGUST 20, 1975

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; DEG C = degrees Celsius;  
M = meters; MG/L = milligrams per liter; UG/L = micrograms per liter

295206098115501 SITE AC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
AUG									
20...	1100	1.0	373	8.3	29.0	3.8	7.3	94	180
20...	1102	10.0	373	8.3	29.0	--	7.3	94	--
20...	1104	20.0	373	8.3	29.0	--	7.2	92	--
20...	1106	30.0	373	8.2	28.5	--	7.0	90	--
20...	1108	40.0	410	7.6	28.0	--	3.0	38	--
20...	1110	50.0	444	7.5	27.0	--	1.6	20	--
20...	1112	60.0	444	7.5	26.5	--	1.6	20	--
20...	1114	70.0	444	7.5	25.5	--	1.6	19	--
20...	1116	80.0	444	7.5	25.0	--	1.6	19	--
20...	1118	90.0	444	7.4	24.5	--	1.6	19	--
20...	1120	100	460	7.4	24.0	--	1.6	19	--
20...	1122	110	460	7.3	24.0	--	1.6	19	--
20...	1124	118	492	7.1	24.0	--	1.6	19	240

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
AUG									
20...	--	43	18	9.4	.3	1.8	194	16	15
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	4	68	17	8.5	.2	1.9	288	11	13

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
AUG								
20...	.2	10	209	.31	.000	.030	10	10
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	.31	.000	.040	130	0
20...	--	--	--	.52	.000	.040	0	10
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	.2	13	275	.00	.030	.040	250	280

295224098115901 SITE AL

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
AUG							
20...	1220	1.0	373	8.2	30.5	7.1	93
20...	1222	10.0	373	8.2	30.0	7.1	93
20...	1224	20.0	373	8.3	29.5	7.1	92
20...	1226	30.0	373	8.0	29.0	6.5	83
20...	1228	40.0	410	7.5	28.5	3.5	45
20...	1230	50.0	444	7.5	28.0	1.9	24
20...	1232	60.0	444	7.4	27.5	1.8	22
20...	1234	70.0	444	7.4	26.5	1.7	21
20...	1236	80.0	444	7.4	26.0	1.7	21
20...	1238	90.0	444	7.4	25.0	1.7	20
20...	1240	100	460	7.4	24.5	1.7	20
20...	1242	115	460	7.4	24.5	1.7	20

TABLE 8.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE AUGUST 20, 1975--Continued

295241098132101 SITE BC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
AUG							
20...	1315	1.0	373	7.9	30.5	6.7	88
20...	1317	10.0	373	7.9	30.5	6.7	88
20...	1319	20.0	373	7.9	30.0	6.5	86
20...	1321	30.0	380	7.6	29.5	6.0	78
20...	1323	40.0	430	7.2	28.5	1.9	24
20...	1325	50.0	458	7.1	28.0	1.6	20
20...	1327	60.0	458	7.1	27.5	1.6	20
20...	1329	70.0	458	7.1	26.5	1.6	20
20...	1331	80.0	458	7.1	26.5	1.6	20
20...	1333	90.0	458	7.1	26.0	1.6	20
20...	1335	100	480	7.1	25.0	1.6	19
20...	1337	110	490	7.0	25.0	1.6	19
20...	1339	125	518	6.9	25.0	1.6	19

295240098152001 SITE CC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRAN- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)
AUG									
20...	1415	1.0	373	8.2	31.0	2.16	6.4	85	190
20...	1417	10.0	373	8.2	30.0	--	6.4	84	--
20...	1419	20.0	373	7.9	30.0	--	6.0	79	--
20...	1421	30.0	380	7.4	29.0	--	4.0	51	--
20...	1423	40.0	410	7.4	29.0	--	2.0	26	--
20...	1425	50.0	432	7.4	30.5	--	1.8	24	200

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
AUG									
20...	19	41	18	9.2	.3	1.8	192	15	15
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	8	51	18	9.1	.3	1.8	236	13	15

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
AUG								
20...	.2	10	205	.25	.000	.030	30	0
20...	--	--	--	--	--	--	--	--
20...	--	--	--	.25	.000	.040	20	0
20...	--	--	--	--	--	--	--	--
20...	--	--	--	.01	.080	.030	110	160
20...	.2	12	237	.00	.070	.030	110	170

TABLE 8.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE AUGUST 20, 1975--Continued

295349098143101 SITE DC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
AUG									
20...	1440	1.0	367	8.2	31.0	2.23	6.5	87	170
20...	1442	10.0	367	8.1	29.5	--	6.4	83	--
20...	1444	20.0	367	8.1	29.5	--	6.4	83	--
20...	1446	30.0	367	7.4	29.0	--	6.0	77	--
20...	1448	40.0	470	7.3	28.5	--	2.0	26	--
20...	1450	50.0	470	7.3	28.0	--	2.0	25	--
20...	1452	60.0	470	7.3	27.5	--	1.8	22	--
20...	1454	70.0	479	7.2	26.5	--	1.8	22	--
20...	1455	80.0	479	7.2	26.5	--	1.8	22	--
20...	1456	88.0	479	7.2	26.5	--	1.7	21	230

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
AUG									
20...	17	39	18	9.3	.3	1.9	188	16	16
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	0	62	18	9.6	.3	1.9	282	7.1	15

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
AUG								
20...	.2	10	203	.21	.000	.040	10	0
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	.25	.000	.040	40	30
20...	--	--	--	.53	.000	.040	80	50
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	.2	15	270	.00	.270	.050	1600	340

295329098151001 SITE EC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
AUG							
20...	1530	1.0	367	8.2	30.0	7.0	92
20...	1532	10.0	367	8.2	29.5	6.7	87
20...	1534	20.0	367	8.1	29.0	6.4	82
20...	1536	30.0	367	7.9	29.0	6.3	81
20...	1538	40.0	470	7.5	28.0	2.0	25
20...	1540	50.0	480	7.4	27.0	2.0	25
20...	1542	60.0	480	7.4	26.5	2.2	27
20...	1544	70.0	480	7.3	26.0	2.0	24
20...	1546	80.0	480	7.1	25.5	2.0	24
20...	1548	90.0	559	7.0	25.5	2.0	24
20...	1550	100	559	6.9	25.5	2.0	24

TABLE 8.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE AUGUST 20, 1975--Continued

295349098173701 SITE FC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
AUG									
20...	1600	1.0	367	8.3	30.5	1.71	6.8	89	170
20...	1602	10.0	367	8.2	30.0	--	6.6	87	--
20...	1604	20.0	367	8.1	30.0	--	6.1	80	--
20...	1606	30.0	367	7.7	29.5	--	4.5	58	--
20...	1608	40.0	480	7.4	28.5	--	2.2	28	--
20...	1610	50.0	500	7.2	27.5	--	2.0	25	--
20...	1612	60.0	559	7.2	27.0	--	2.0	25	--
20...	1614	70.0	559	7.1	27.0	--	2.0	25	270

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
AUG									
20...	14	39	18	9.8	.3	1.9	192	16	16
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	9	77	20	11	.3	2.1	324	12	17

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
AUG								
20...	.2	11	207	.16	.000	.020	130	0
20...	--	--	--	--	--	--	--	--
20...	--	--	--	.21	.000	.040	40	10
20...	--	--	--	--	--	--	--	--
20...	--	--	--	.80	.000	.040	60	60
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	.2	15	315	.00	.870	.020	580	740

TABLE 9.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE JANUARY 9, 1976

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; DEG C = degrees Celsius;  
M = meters; MG/L = milligrams per liter; UG/L = micrograms per liter

295206098115501 SITE AC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JAN									
09...	1115	1.0	416	8.0	12.0	3.4	9.2	85	200
09...	1117	10.0	416	8.0	12.0	--	9.2	85	--
09...	1119	20.0	416	8.0	12.0	--	9.2	85	--
09...	1121	30.0	416	8.0	12.0	--	9.2	85	--
09...	1123	40.0	416	8.0	12.0	--	9.2	85	--
09...	1125	50.0	416	8.0	12.0	--	9.2	85	--
09...	1127	60.0	416	8.0	12.0	--	9.2	85	--
09...	1129	70.0	416	8.0	12.0	--	9.2	85	--
09...	1131	80.0	416	8.0	12.0	--	9.2	85	--
09...	1133	90.0	416	8.0	12.0	--	9.2	85	--
09...	1135	100	416	8.0	12.0	--	9.2	85	--
09...	1137	110	416	8.0	12.0	--	9.3	86	--
09...	1139	120	416	8.0	11.5	--	9.3	85	--
09...	1141	128	416	8.0	11.5	--	9.3	85	200

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
09...	23	49	19	10	.3	2.0	216	18	16
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	28	50	19	10	.3	2.0	214	18	16

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
09...	.2	12	233	.29	.010	.000	10	0
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	.29	.010	.000	60	0
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	.2	12	233	.29	.010	.010	30	0

295148098115201 SITE AR

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
09...	1200	1.0	416	8.1	12.0	9.3	86
09...	1202	10.0	416	8.1	12.0	9.3	86
09...	1204	20.0	416	8.1	12.0	9.3	86
09...	1206	30.0	416	8.1	12.0	9.3	86
09...	1208	40.0	416	8.1	12.0	9.2	85
09...	1210	50.0	416	8.1	12.0	9.2	85
09...	1212	60.0	416	8.1	12.0	9.2	86
09...	1214	70.0	416	8.1	12.0	9.4	87

TABLE 9.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE JANUARY 9, 1976--Continued

295241098132101 SITE BC									
DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)		
JAN									
09...	1445	1.0	416	8.1	11.5	9.5	86		
09...	1447	10.0	416	8.1	11.5	9.5	86		
09...	1449	20.0	416	8.1	11.5	9.5	86		
09...	1451	30.0	416	8.1	11.5	9.5	86		
09...	1453	40.0	416	8.1	11.5	9.5	86		
09...	1455	50.0	416	8.1	11.5	9.5	86		
09...	1457	60.0	416	8.1	11.5	9.5	86		
09...	1459	70.0	416	8.1	11.5	9.5	86		
09...	1501	80.0	416	8.1	11.5	9.5	86		
09...	1503	90.0	416	8.1	11.5	9.5	86		
09...	1505	100	416	8.1	11.0	9.5	86		
09...	1507	110	416	8.1	11.0	9.5	86		

295240098152001 SITE CC									
DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JAN									
09...	1245	1.0	416	8.1	11.5	3.8	9.5	86	200
09...	1247	10.0	416	8.1	11.5	--	9.6	87	--
09...	1249	20.0	416	8.1	11.5	--	9.6	87	--
09...	1251	30.0	416	8.1	11.0	--	9.6	86	--
09...	1253	40.0	416	8.1	10.5	--	9.8	88	--
09...	1255	50.0	416	8.1	10.5	--	9.9	88	210

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
09...	26	50	19	10	.3	2.2	216	19	16
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	31	52	19	10	.3	2.0	216	19	16

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
09...	.2	12	235	.29	.010	.000	50	0
09...	--	--	--	--	--	--	--	--
09...	--	--	--	.17	.010	.000	10	0
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	.2	12	237	.13	.010	.010	110	10

295349098143101 SITE DC									
DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JAN									
09...	1315	1.0	416	8.1	11.5	4.1	9.5	86	200
09...	1317	10.0	416	8.1	11.5	--	9.6	87	--
09...	1319	20.0	416	8.1	11.0	--	9.6	86	--
09...	1321	30.0	416	8.1	11.0	--	9.6	86	--
09...	1323	40.0	416	8.1	11.0	--	9.6	86	--
09...	1325	50.0	416	8.1	11.0	--	9.6	86	--
09...	1327	60.0	416	8.1	11.0	--	9.6	86	--
09...	1329	70.0	416	8.1	11.0	--	9.6	86	--
09...	1331	84.0	416	8.1	11.0	--	9.6	86	200

TABLE 9.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE JANUARY 9, 1976--Continued

295349098143101 SITE DC--Continued

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
09...	24	50	19	10	.3	1.9	218	18	16
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	22	49	19	10	.3	1.9	218	18	16

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
09...	.2	12	235	.11	.010	.000	0	0
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	.14	.000	.000	150	10
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	.2	12	234	.10	.010	.010	0	0

295329098151001 SITE EC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
09...	1345	1.0	420	8.1	11.5	9.4	85
09...	1347	10.0	420	8.1	11.5	9.4	85
09...	1349	20.0	420	8.1	11.5	9.4	85
09...	1351	30.0	420	8.1	11.0	9.4	85
09...	1353	40.0	420	8.1	11.0	9.4	85
09...	1355	50.0	420	8.1	11.0	9.4	85
09...	1357	60.0	420	8.1	11.0	9.4	85
09...	1359	70.0	420	8.1	11.0	9.4	85
09...	1401	80.0	420	8.1	11.0	9.4	85
09...	1403	90.0	420	8.1	11.0	9.4	85
09...	1405	100	420	8.1	11.9	9.5	86

295349098173701 SITE FC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JAN									
09...	1415	1.0	431	8.1	10.5	2.53	9.7	87	210
09...	1417	10.0	431	8.1	10.5	--	9.7	87	--
09...	1419	20.0	431	8.1	10.5	--	9.7	87	--
09...	1421	30.0	431	8.1	10.0	--	9.7	85	--
09...	1423	40.0	431	8.1	10.0	--	9.6	85	--
09...	1425	50.0	431	8.1	10.0	--	9.6	85	--
09...	1427	60.0	431	8.1	10.0	--	9.6	85	--
09...	1429	70.0	431	8.1	10.0	--	9.5	84	210

TABLE 9.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE JANUARY 9, 1976--Continued

295349098173701 SITE FC--Continued

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN 09...	23	51	19	10	.3	1.9	222	18	16
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	20	51	19	11	.3	1.9	226	18	17

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN 09...	.2	12	233	.18	.010	.010	0	0
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	.17	.010	.010	60	0
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	.3	12	242	.15	.010	.010	0	0

TABLE 10.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE MAY 19, 1976

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; DEG C = degrees Celsius;  
M = meters; MG/L = milligrams per liter; UG/L = micrograms per liter

295206098115501 SITE AC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
MAY									
19...	1030	1.0	387	8.3	22.0	5.2	8.5	97	190
19...	1032	10.0	387	8.3	22.0	--	8.5	97	--
19...	1034	20.0	387	8.3	21.5	--	8.4	94	--
19...	1036	30.0	387	8.2	21.0	--	7.8	87	--
19...	1038	40.0	387	8.1	20.0	--	7.2	78	--
19...	1040	50.0	387	8.1	19.0	--	6.7	71	--
19...	1042	60.0	387	8.0	17.5	--	6.3	66	--
19...	1044	70.0	400	8.0	17.0	--	6.3	65	--
19...	1046	80.0	400	8.0	16.5	--	6.3	64	--
19...	1048	90.0	407	7.8	16.0	--	5.4	54	--
19...	1050	100	407	7.7	15.5	--	4.6	46	--
19...	1052	110	407	7.7	15.0	--	4.3	42	--
19...	1054	120	407	7.7	15.0	--	4.0	39	--
19...	1055	134	407	7.7	15.0	--	3.6	35	200

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
MAY									
19...	22	46	18	10	.3	1.9	203	18	17
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	23	48	19	10	.3	1.8	214	19	17

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY								
19...	.2	11	222	.20	.000	.000	20	20
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	.15	.000	.000	10	20
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	.2	12	233	.32	.020	.000	120	20

295148098115201 - CANYON LAKE SITE AR

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAY							
19...	1130	1.0	387	8.3	22.0	8.6	98
19...	1131	10.0	387	8.3	21.5	8.6	97
19...	1132	20.0	387	8.3	21.0	8.4	93
19...	1133	30.0	387	8.2	20.0	7.6	83
19...	1134	40.0	387	8.1	20.0	7.1	77
19...	1135	50.0	387	8.0	19.5	6.7	72
19...	1136	60.0	387	8.0	18.0	6.5	68
19...	1137	70.0	400	8.0	17.5	6.5	68
19...	1138	82.0	400	7.9	17.5	6.2	65

TABLE 10.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE MAY 19, 1976--Continued

295241098132101 SITE BC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAY							
19...	1145	1.0	387	8.3	22.5	8.5	97
19...	1147	10.0	387	8.3	22.0	8.5	97
19...	1149	20.0	387	8.2	21.5	8.4	94
19...	1151	30.0	387	8.2	21.0	7.9	88
19...	1153	40.0	387	7.8	20.0	6.0	65
19...	1155	50.0	387	7.8	19.0	6.0	64
19...	1157	60.0	387	7.8	18.0	5.6	59
19...	1159	70.0	407	7.7	17.5	5.0	52
19...	1201	80.0	407	7.6	16.5	4.0	41
19...	1203	90.0	407	7.6	16.0	3.0	30
19...	1205	100	407	7.5	16.0	2.7	27
19...	1207	110	407	7.5	16.0	2.6	26
19...	1209	128	407	7.4	15.5	2.5	25

295240098152001 SITE CC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
MAY									
19...	1245	1.0	403	8.4	23.5	2.19	8.4	98	200
19...	1247	10.0	403	8.4	23.0	--	8.4	97	--
19...	1249	20.0	403	8.3	22.0	--	8.1	92	--
19...	1251	30.0	403	8.2	21.5	--	7.3	82	--
19...	1253	40.0	412	8.0	21.0	--	5.9	66	--
19...	1255	53.0	412	7.8	21.0	--	3.8	42	200

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
MAY									
19...	27	47	19	10	.3	1.8	206	18	17
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	24	49	18	9.9	.3	1.8	210	18	17

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY								
19...	.3	10	225	.21	.010	.000	20	10
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	.22	.010	.000	10	20
19...	--	--	--	--	--	--	--	--
19...	.3	11	229	.24	.010	.020	10	20

295349098143101 SITE DC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
MAY									
19...	1300	1.0	400	8.4	22.5	4.3	8.4	95	200
19...	1302	10.0	400	8.4	22.5	--	8.4	95	--
19...	1304	20.0	400	8.3	22.0	--	8.2	93	--
19...	1306	30.0	400	8.3	21.5	--	7.7	87	--
19...	1308	40.0	400	8.2	21.0	--	7.0	78	--
19...	1310	50.0	400	7.9	19.0	--	4.7	50	--
19...	1312	60.0	400	7.8	18.0	--	3.7	39	--
19...	1314	70.0	400	7.7	17.5	--	2.5	26	--
19...	1316	85.0	410	7.7	17.5	--	1.2	12	200

TABLE 10.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE MAY 19, 1976--Continued

295349098143101 SITE DC--Continued

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
MAY 19...	28	47	19	10	.3	1.9	204	18	17
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	26	50	19	10	.3	1.9	216	18	17

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY 19...	.2	11	225	.28	.000	.000	20	10
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	.27	.010	.000	10	20
19...	--	--	--	.28	.000	.000	20	50
19...	--	--	--	--	--	--	--	--
19...	.3	12	235	.25	.020	.010	20	90

295329098151001 SITE EC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAY 19...	1330	1.0	400	8.4	22.5	8.4	95
19...	1332	10.0	400	8.4	22.5	8.3	94
19...	1334	20.0	400	8.3	22.0	8.3	94
19...	1336	30.0	400	8.2	21.5	7.5	84
19...	1338	40.0	410	8.0	20.5	5.8	64
19...	1340	50.0	410	7.8	19.5	4.4	47
19...	1342	60.0	410	7.8	18.0	4.0	42
19...	1344	70.0	410	7.8	17.5	3.9	41
19...	1346	80.0	410	7.7	16.5	2.8	29
19...	1348	90.0	410	7.6	16.5	1.9	19
19...	1350	102	410	7.6	16.5	1.8	18

295349098173701 SITE FC

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
MAY 19...	1400	1.0	427	8.3	23.5	2.44	8.3	97	200
19...	1402	10.0	427	8.3	23.5	--	8.3	97	--
19...	1404	20.0	427	8.3	23.0	--	8.2	94	--
19...	1406	30.0	427	8.0	21.5	--	5.5	62	--
19...	1408	40.0	427	7.7	21.0	--	3.7	41	--
19...	1410	50.0	427	7.5	20.0	--	2.5	27	--
19...	1412	60.0	410	7.4	19.0	--	1.6	17	--
19...	1414	74.0	388	7.4	18.0	--	.2	2	190

TABLE 10.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE MAY 19, 1976--Continued

295349098173701 SITE FC--Continued

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
MAY									
19...	18	51	18	10	.3	1.9	224	18	16
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	15	51	15	8.3	.3	2.1	212	13	13

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY								
19...	.2	11	237	.27	.010	.000	10	10
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	.37	.030	.000	10	20
19...	--	--	--	--	--	--	--	--
19...	--	--	--	.28	.010	.010	0	60
19...	--	--	--	--	--	--	--	--
19...	.2	11	218	.20	.170	.010	60	240

TABLE 11.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE SEPTEMBER 9, 1976

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; DEG C = degrees Celsius  
 M = meters; MG/L = milligrams per liter; UG/L - micrograms per liter

295206098115501 SITE AC

DATE	TIME	SAM-PLING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED SATUR-ATION)	HARD-NESS (MG/L AS CAC03)
SEP									
09...	1015	1.0	351	8.4	28.5	4.5	8.2	106	170
09...	1017	10.0	351	8.4	28.5	--	8.2	106	--
09...	1019	20.0	351	8.3	28.0	--	7.8	100	--
09...	1021	30.0	360	8.2	27.5	--	6.6	85	--
09...	1023	40.0	400	7.6	27.0	--	1.8	23	--
09...	1025	50.0	418	7.5	25.5	--	.4	5	--
09...	1027	60.0	418	7.5	24.5	--	.2	2	--
09...	1029	70.0	418	7.5	23.0	--	.2	2	--
09...	1031	80.0	418	7.5	22.5	--	.2	2	--
09...	1033	90.0	418	7.4	22.0	--	.2	2	--
09...	1035	100	418	7.4	21.5	--	.2	2	--
09...	1037	110	418	7.4	21.0	--	.2	2	--
09...	1039	127	418	7.3	19.5	--	.2	2	200

DATE	HARD-NESS, NONCAR-BONATE (MG/L CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
SEP									
09...	25	37	18	9.8	.3	1.9	170	18	16
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	20	52	18	9.8	.3	1.9	224	13	16

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP								
09...	.2	11	197	.02	.000	.010	20	10
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	.02	.000	.000	10	10
09...	--	--	--	--	--	--	--	--
09...	--	--	--	.23	.000	.000	40	20
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	.2	13	235	.00	.170	.020	430	300

295148098115201 SITE AR

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED SATUR-ATION)
SEP							
09...	1050	1.0	351	8.4	28.5	8.2	106
09...	1052	10.0	351	8.4	28.5	8.2	106
09...	1054	20.0	351	8.3	28.5	8.1	105
09...	1056	30.0	360	8.2	28.0	6.8	87
09...	1058	40.0	400	7.6	27.0	1.8	23
09...	1100	50.0	418	7.6	26.0	1.1	14
09...	1102	60.0	418	7.5	25.0	.2	2
09...	1104	74.0	418	7.5	24.0	.2	2

TABLE 11.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE SEPTEMBER 9, 1976--Continued

295241098132101 SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PERCENT SATURATION)
SEP							
09...	1115	1.0	351	8.3	29.5	7.8	103
09...	1117	10.0	351	8.3	29.0	7.8	103
09...	1119	20.0	351	8.3	28.5	7.6	99
09...	1121	30.0	360	8.1	28.5	5.3	69
09...	1123	40.0	410	7.6	27.0	.6	8
09...	1125	50.0	410	7.5	26.0	.2	2
09...	1127	60.0	420	7.5	24.5	.2	2
09...	1129	70.0	420	7.4	23.5	.2	2
09...	1131	80.0	420	7.3	22.5	.2	2
09...	1133	90.0	440	7.3	22.0	.2	2
09...	1135	100	450	7.2	21.5	.2	2
09...	1137	110	458	7.2	21.0	.2	2
09...	1139	122	458	7.2	20.5	.2	2

295240098152001 SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PERCENT SATURATION)
SEP								
09...	1145	1.0	359	8.4	30.5	2.13	7.4	99
09...	1147	10.0	359	8.4	29.0	--	7.8	103
09...	1149	20.0	359	8.2	28.5	--	6.2	81
09...	1151	30.0	359	7.9	28.0	--	3.6	46
09...	1153	40.0	390	7.5	27.5	--	.2	3
09...	1155	50.0	420	7.4	26.5	--	.2	3
09...	1157	54.0	420	7.4	26.5	--	.2	3

DATE	HARDNESS (MG/L AS CAC03)	HARDNESS, NONCARBONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HC03)	SULFATE DIS-SOLVED (MG/L AS S04)
SEP									
09...	170	23	38	18	10	.3	1.9	178	18
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	200	15	50	18	9.6	.3	1.9	224	13

DATE	CHLORIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGANESE, DIS-SOLVED (UG/L AS MN)
SEP								
09...	16	11	201	.01	.000	.000	60	10
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	.00	.140	.010	70	130
09...	--	--	--	--	--	--	--	--
09...	15	14	232	.00	.260	.010	270	200

TABLE 11.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE SEPTEMBER 9, 1976--Continued

295349098143101 SITE DC

DATE	TIME	SAM-PLING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)
SEP								
09...	1215	1.0	356	8.4	30.0	2.28	7.4	99
09...	1217	10.0	356	8.3	29.5	--	7.4	97
09...	1219	20.0	360	8.3	29.0	--	6.6	87
09...	1221	30.0	370	8.0	28.5	--	4.2	55
09...	1223	40.0	450	7.5	27.5	--	.2	3
09...	1225	50.0	450	7.5	26.5	--	.2	3
09...	1227	60.0	458	7.4	25.0	--	.2	2
09...	1229	71.0	458	7.3	25.0	--	.2	2

DATE	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
SEP									
09...	160	18	37	17	10	.3	1.9	176	18
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	230	13	61	18	9.4	.3	1.9	260	9.4

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP								
09...	16	11	198	.00	.000	.010	20	10
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	.13	.020	.000	20	60
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	14	15	258	.00	.370	.010	370	280

295329098151001 SITE EC

DATE	TIME	SAM-PLING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)
SEP								
09...	1240	1.0	360	8.5	30.0	2.62	7.3	97
09...	1242	10.0	360	8.4	29.5	--	7.3	96
09...	1244	20.0	360	8.4	29.0	--	7.1	93
09...	1246	30.0	370	8.1	28.5	--	4.5	58
09...	1248	40.0	470	7.6	27.0	--	.2	3
09...	1250	50.0	470	7.5	26.0	--	.2	2
09...	1252	60.0	480	7.4	24.5	--	.2	2
09...	1254	70.0	490	7.3	24.0	--	.2	2
09...	1256	80.0	530	7.2	23.0	--	.2	2
09...	1258	90.0	530	7.1	22.5	--	.2	2
09...	1300	99.0	530	7.1	22.5	--	.2	2

TABLE 11.--CHEMICAL-QUALITY SURVEY OF CANYON LAKE SEPTEMBER 9, 1976--Continued

295349098173701 SITE FC

DATE	TIME	SAM-PLING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)
SEP								
09...	1310	1.0	364	8.4	31.0	2.29	7.1	96
09...	1312	10.0	364	8.3	30.0	--	6.9	92
09...	1314	20.0	364	8.1	29.5	--	5.6	74
09...	1316	30.0	383	7.8	28.5	--	2.6	34
09...	1318	40.0	390	7.6	27.5	--	2.1	22
09...	1320	50.0	390	7.6	26.5	--	2.1	27
09...	1322	60.0	490	7.4	25.5	--	.2	2
09...	1324	70.0	558	7.2	24.5	--	.2	2

DATE	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HC03)	SULFATE DIS-SOLVED (MG/L AS S04)
SEP									
09...	170	22	39	18	10	.3	1.9	182	18
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	270	1	75	19	10	.3	1.8	322	15

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS S102)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP								
09...	16	11	204	.01	.000	.000	0	10
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	.08	.000	.010	50	10
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	.15	.160	.020	40	230
09...	15	15	310	.33	.470	.010	350	400

