AVAILABILITY OF WATER SUPPLIES IN NORTHWEST GEORGIA

by

Charles W. Cressler, Marvin A. Franklin and Willis G. Hester

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
Joe D. Tanner, Commissioner

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Sam M. Pickering, State Geologist and Division Director

ATLANTA
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PREPARED IN COOPERATION WITH THE U.S. GEOLOGICAL SURVEY

BULLETIN 91

For convenience in selecting our reports from your bookshelves, they will be color-keyed across the spine by subject as follôws:

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FACTORS FOR CONVERTING ENGLISH UNITS TO INTERNATIONAL SYSTEM (SI) UNITS

The following factors may be used to convert the English units published herein to the International System of Units (SI).

Multiply English units	By	To obtain SI units
Feet (ft)	.3048	metres (m)
Miles (mi)	1.609	kilometres (km)
Square miles (mi^2)	2.590	square kilometres (km^2)
Gallons (gal)	3.785	litres (l)
Million gallons (10^6 gal)	3785	cubic metres (m^3)
	3.785×10^{-3}	cubic hectometres (hm^3)
Gallons per minute (gal/min)	.06309	litres per second (l/s)
	.6309	cubic decimetres per second (dm^3/s)
	6.309×10^{-5}	cubic metres per second (m^3/s)
Million gallons per day (Mgal/d)	43.81	cubic decimetres per second (dm^3/s)
	.04381	cubic metres per second (m^3/s)

CONTENTS

ILLUSTRATIONS

TABLES

TABLES—Continued

TABLES—Continued

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ABSTRACT

Northwest Georgia includes 10 counties that lie mainly in the Valley and Ridge Province and partly in the Cumberland Plateau. The most common rocks there are limestone, dolomite, shale, sandstone, mudstone, and chert. The east edge of the area extends into the Blue Ridge and Piedmont Provinces and is underlain by a variety of metasedimentary and igneous rocks.

The 10-county area has abundant supplies of both ground water and surface water. All the counties have carbonate aquifers that will supply 25 to 500 gallons per minute to wells less than 350 feet deep. Most of them have aquifers that can yield 100 to 1,000 gallons per minute. Wells in Polk County yield as much as 1,500 gallons per minute. The well water is moderately mineralized and can be used for many purposes without treatment.

Springs in each of the 10 counties discharge hundreds of gallons of water per day. Some of the springs discharge more than 5,000 gallons per minute, most of which is unused. The spring water generally is moderately hard to hard and has a low iron concentration. Several industries use the water untreated.

Most of the area's towns and industrial centers lie along streams or rivers that have large enough flows to supply future needs. The Dalton area is a major exception; Dalton now pumps 40 million gallons of surface water per day during the average work week. This pumpage is approaching the combined low flows of the Conasauga River, Coahulla Creek, and Mill Creek, as they flow by Dalton.

INTRODUCTION

The 10 counties that make up northwest Georgia are populous and growing areas (Fig. 1). They are all important centers of business, industry, and agriculture. Textiles and carpets are among their leading products. Indeed, Dalton, in Whitfield County, is known as "the carpet capitol of the world."

For several years after 1960, northwest Georgia experienced a rapid influx of industry that created an unprecedented demand for water supplies. Consequently, new supplies had to be developed. The development and management of ground-water supplies were hampered, however, by a lack of knowledge about the area's ground water resources. To obtain the needed information, the U. S. Geological Survey, in cooperation with the Earth and Water Division of the Georgia Department of Natural Resources (formerly the Department of Mines, Mining and Geology), made studies of the geology and hydrology of the area. The results of these studies were published in seven reports.

Because these seven reports relied heavily on geology as a base for understanding the occurrence of ground water, many people found them difficult to use in locating and developing water supplies. Indeed, experience has now shown that most persons responsible for developing municipal or industrial ground-water supplies in the area of northwest Georgia have limited understanding of technical geologic reports. Therefore, in the present report the use of geologic terms has been kept to a minimum. If detailed geologic data are required, the reader is referred to geohydrologic reports listed in references and in the section dealing with previous investigations.

PURPOSE AND SCOPE

The purpose of this report is to indicate the quantity and chemical quality of the water that is available from wells, springs, and streams in northwest Georgia.

To do this, the report gives: (1) the general availability of well water in each county by delineating the aquifers according to their potential yield, (2) the location and rate of flow of the springs in each county and the chemical quality of the water from representative springs, (3) the average and the 7-day, 10-year minimum flows for 98 stream sites across the area, and (4) detailed maps of the important aquifers for each population center and area of industrial growth, showing drilling sites where geologic, topographic, and hydrologic conditions indicate high-yielding wells that probably can be developed.

HOW TO USE THIS REPORT

The report is divided into two main parts. The first part contains general hydrologic information

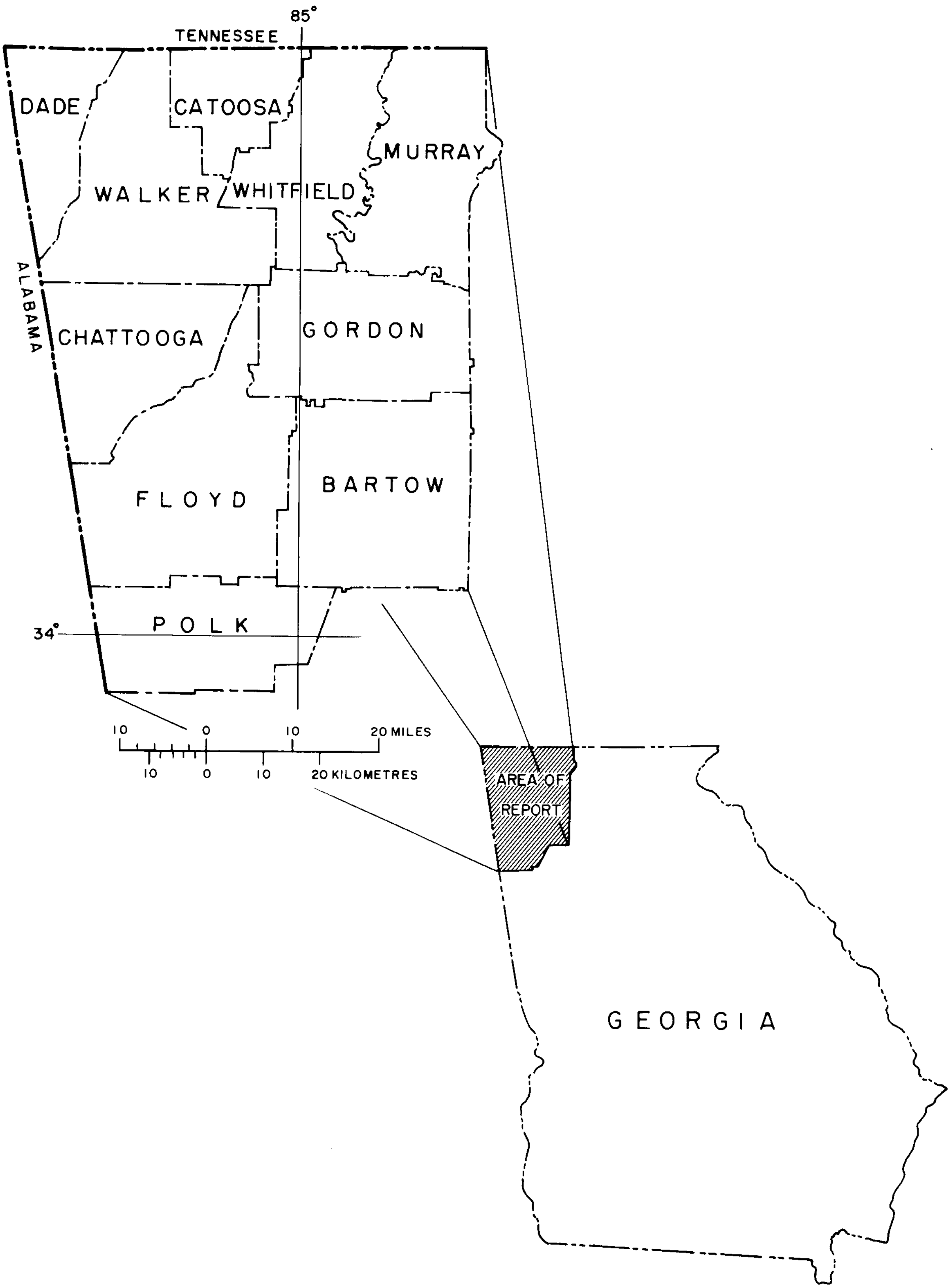


Figure 1.—Location of report area.

that applies to all of northwest Georgia. It includes such topics as: (1) occurrence of ground water, (2) chemical quality of water, (3) fluctuations of spring flow, (4) pollution of wells and springs, (5) land subsidence and sinkhole formation, and (6) high-yielding wells.

The second part of the report deals individually with the 10 counties that make up northwest Georgia, arranged alphabetically. Tables and maps in this part give the quantity and chemical quality of water that is available from wells, springs, and surface streams in each county. Persons desiring detailed information about a particular county will find it in the second part of the report.

CLIMATE, PHYSIOGRAPHY, AND DRAINAGE

The report area has a mild climate, with a frost-free season of about 190 days. The average annual precipitation is about 54 inches, including a small amount of snow. Rainfall is heaviest in winter and mid-summer and lightest in autumn.

Most of the report area lies within the Valley and Ridge Province. The terrain consists of northeast-trending parallel valleys separated by ridges. The valleys are between 600 and 900 feet above sea level. The highest ridges rise to an altitude of about 1,600 feet.

Dade County and parts of Walker and Chattooga Counties lie in the Cumberland Plateau Province. This is a large tableland of nearly flat-lying rocks, having an altitude of more than 2,000 feet. Occasionally, where a stream has eroded through the rocks, a deep flat valley stretches for miles in a northeast-southwest direction. The valley floors are about 1,200 feet below the top of the plateau.

Eastern Murray County extends across the Great Smoky Fault into the Blue Ridge Province. The area is dominated by rugged mountain peaks that rise about 3,000 feet above sea level and stand 2,000 feet above the adjacent Valley and Ridge Province.

Eastern Gordon County and eastern and southern Bartow County lie in the Piedmont Physiographic Province. This area is an irregular and deeply dissected upland characterized by rounded interstream areas that range from 1,000 to 1,500 feet above sea level.

The report area is drained by two river systems. The northwestern part is drained by the Tennessee River and its tributaries. The rest of the area is drained by the Coosa River system, which includes the Etowah, Oostanaula, Coosawattee, and Conasauga Rivers. During dry weather, the base flow of the area's streams is maintained by ground-water discharge and by springs. Many of the streams are actively down-cutting and have erosional flood plains where bedrock is covered by only a few feet of alluvium.

PREVIOUS INVESTIGATIONS

A variety of reports dealing with the hydrology and geology of northwest Georgia have been published since 1890. The most recent reports about the counties are: Bartow (Croft, 1963), Catoosa (Cressler, 1963), Chattooga (Cressler, 1964a), Dade (Croft, 1964), Floyd and Polk (Cressler, 1970), Gordon, Whitfield, and Murray (Cressler, 1974), and Walker (Cressler, 1964b). These reports are listed in the references along with publications of the U. S. Geological Survey, which contain basic data about streamflow characteristics and water-quality parameters.

ACKNOWLEDGMENTS

The writers are indebted to many people who helped gather information for this report, especially Mr. Harry E. Blanchard.

Particular recognition is due John Fernstrom, Environmental Protection Division, Georgia Department of Natural Resources, who provided equipment and instructions needed for the bacteriological sampling of spring water and the subsequent analyses.

Mr. Herb Barnum provided flow data on Dickson Spring in Walker County and information on several wells.

The project was conducted in cooperation with the Georgia Department of Natural Resources, Earth and Water Division.

WATER SUPPLIES

Water supplies in northwest Georgia can be divided into two main categories: (1) ground water derived from wells and springs, and (2) surface water obtained from streams and surface reservoirs. Ground-water and surface-water supplies are widely used in northwest Georgia and have a large potential for additional development.

WELLS

Ground water is used by most of the rural residents and by many municipalities throughout northwest Georgia. Rural residents in every county depend on well water for domestic and farm supplies. Good quality well water can be obtained nearly everywhere and the availability of these supplies has fostered the agricultural development of the area.

Well supplies are used by industries in all 10 northwest Georgia counties. The wells yield from 100 to 3,500 gal/min (gallons per minute). Many industries use wells because they offer the most economical source of water, provide water of constant temperature and chemical quality, and offer freedom from the location limitations of springs and streams.

SPRINGS

Springs provide the largest single source of ground water in northwest Georgia. Many springs discharge between 200 and 5,000 gal/min and are used by a number of large industries and by several municipal and county water systems. Springs supply part or all of the water distributed by the cities of Cedartown, LaFayette, Chickamauga, Adairsville, Cave Springs, Chatsworth, Kensington, and Summerville.

Spring water offers the advantages of being readily available, inexpensive to develop, and fairly constant in temperature and chemical quality. Most of the springs being used for water supply have a dependable flow and rarely become turbid enough to require filtration. The large unused springs in the area represent a valuable undeveloped resource.

STREAMFLOW

The U. S. Geological Survey has systematically collected streamflow data in the 10-county area, including low-flow measurements on many of the streams. These data have been analyzed to determine the 7-day, 10-year minimum flow, which is defined as the annual minimum average flow for 7 consecutive days with a recurrence interval of 10 years.

For streamflow stations in the Tennessee Valley, low-flow data were furnished by the Tennessee Valley Authority. For each surface-water site the following information is given in the appendix: (1) the drainage area tributary to the site, (2) the long-term average flow, in million gallons per day (Mgal/d), and (3) the 7-day, 10-year minimum flow, in Mgal/d.

OCCURRENCE OF GROUND WATER

Ground water in northwest Georgia occupies joints, fractures, and solution openings in bedrock and pore spaces in the overlying soil. Water enters these underground openings by seeping through the soil or by flowing directly into cracks in exposed bedrock. The source of this water is precipitation that falls in the general area and not in some distant place.

The quantity of water that any rock unit can store and release to wells and springs is limited by the capacity of its fracture systems and by the extent to which the fractures are interconnected. The capacity and interconnection of fractures vary greatly according to the type of rock. Fractures in soft rock, such as shale, tend to be tight and have small capacity. For this reason, shale generally yields less than 10 gal/min to wells. On the other hand, joints in brittle rocks, such as sandstone, remain open. As a result, sandstone may yield 20, 50, or rarely 200 gal/min to wells. Still larger and more extensive fracture systems are found in carbonate rocks, which include limestone and dolomite. Because carbonate rocks are soluble, their fracture systems have commonly been greatly enlarged by solution, and are therefore capable of transmitting large quantities of water. Wells in carbonate rocks yield as much as 3,500 gal/min; some springs discharge more than 5,000 gal/min. Carbonates are the most productive aquifers in northwest Georgia.

The capacity and the amount of interconnection of rock fractures also varies with the depth below land surface: fractures generally become fewer, smaller, and more poorly connected as the depth increases. Although a few sizeable openings are known to extend deeper, most of the water-bearing fractures in carbonate rocks occur at depths less than 350 feet. In other kinds of rock, they generally occur at depths less than 250 feet. Therefore, when drilling for water it seldom is worthwhile to go deeper than 350 feet in limestone and dolomite, or more than 250 feet in other kinds of rock. If a well has not produced the desired yield by the time it is drilled to these depths, it generally is best to try a new location.

In moving to a new location, one should keep in mind that the availability of water in any type of rock also depends, to a large extent, on the local topography. Wells in broad, low areas and on gentle slopes normally yield more water than ones on hilltops, steep slopes, or in "V"-shaped valleys. The reason for this is that low and gently sloping areas are covered by thick permeable soil, which is capable of storing a much larger volume of water than can be held in the rock openings alone. Water in the soil is available to drain into the underlying fractures and sustain large yields to wells.

HIGH-YIELDING WELLS

High-yielding wells, ones that supply 100 to 3,500 gal/min, can be developed only where

Figure 2.-- Typical intermittent stream valley.

ground water occurs in unusual concentrations. This happens locally where aquifers develop greater than average storage capacity.

Zones of large storage capacity are produced in sandstone, quartzite, and other brittle rocks by faulting, by the development of zones of closely spaced fractures, and by deep weathering. These favorable zones may be indicated by natural surface features such as straight stream segments, straight valley segments, abrupt changes in valley alignment, and gulley development. Yields of 100 to 200 gal/min may be obtained by drilling into favorable zones in brittle rock.

The largest concentrations of ground water are found in carbonate rocks (limestone and dolomite). Reservoir zones in these rocks carry large volumes of water and can yield 300 to 3,500 gal/min to wells. Such large concentrations of ground water are possible because carbonate rocks have numerous, well-interconnected joints, many of which are open and admit water. Because carbonates are soluble, water moving through these joints enlarges them by solution to produce larger and larger openings that ultimately expand into a master conduit or cavern. It is these master conduits that yield large volumes of water to wells.

Studies have shown that zones of closely spaced fractures tend to localize the development of valleys. This localization is especially pronounced in carbonate rocks, but it also occurs in other types of rock. The greatest amount of rock weathering takes place along these zones of high capacity, because they carry the greatest quantities of moving ground water. This weathering, coupled with the erosive action of surface water, localizes the valley over the fractured zone. High-yielding wells can best be obtained by drilling into the floors of valleys developed over a fractured zone (Parizek, 1971, pp. 28-56).

In northwest Georgia, valley localization by solution along fractured zones is the most common in limestone and dolomite rocks that are covered by a thick, cherty residual soil. The valleys are typically well rounded, and the streamflow is intermittent (Fig. 2). Most of the rainfall in these valleys and their drainage basins is quickly absorbed by the residual soil, enters a ground-water conduit, and travels beneath the stream bed. Many such sites are shown on the maps in the second part of this report.

LAND SUBSIDENCE AND SINKHOLE FORMATION

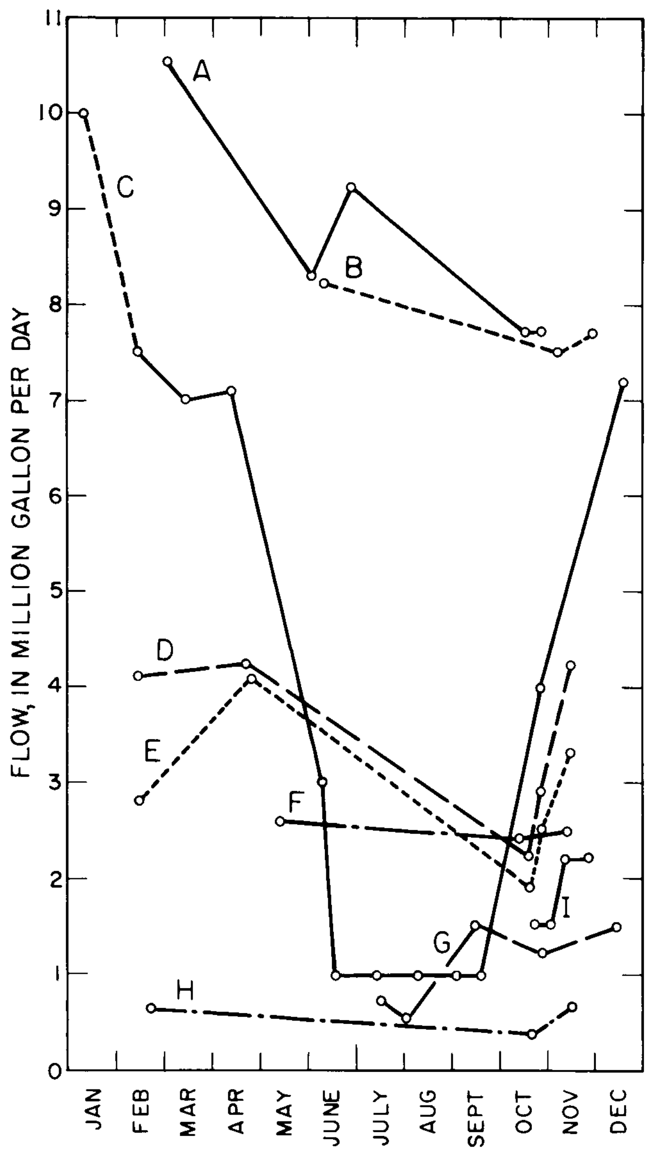
The major underground reservoirs or aquifers in northwest Georgia are found in limestone and dolomite, blanketed by a thick layer of residual soil. The top of the carbonate aquifer is highly irregular, particularly where the relief favors deep weathering. Solution by ground water produces cavities in the bedrock and some of these have thin roofs. Many of these cavities are below the water table and their roofs are partially supported by the ground water. Any decline in the water table that removes this support can result in an immediate collapse. A lowering of the water table also can cause a general downward migration of soil through openings in the underlying carbonate rocks, leaving a dome-shaped cavity between the bedrock and the land surface. Enlargement of this cavity by the continued loss of soil will result in the eventual collapse of the surface and the formation of a sinkhole.

The possibility of creating conditions that will lead to ground collapse must be considered in the development of ground-water supplies. Land subsidence may result where large quantities of sediment or rock fragments are removed from water-yielding formations during drilling, well development, and production pumping. This is most likely to occur where: (1) the water table stands within the residual soil, or near the top of highly weathered bedrock, (2) well casing does not extend deep enough into the top of the bedrock, (3) large volumes of water are reached at shallow depths, and the surging action produced by the drilling is violent, and (4) pumping rates during construction and testing are measured in hundreds of gallons per minute. Collapse resulting from drilling is more common where the water table stands in residual soils (Parizek, 1971, (p. 141-142).

FLUCTUATIONS IN SPRING FLOW

Springs in northwest Georgia do not flow at a constant rate, but fluctuate throughout the year in response to seasonal variations in precipitation. Most springs reach a period of maximum discharge sometime during the winter or early spring and decline steadily to a period of minimum flow that generally occurs in autumn. Depending on the individual spring, the minimum annual flow may be 20 to 90 percent less than the maximum flow. Because a spring's discharge may decrease drastically during the low-flow period, a potential user needs to know its minimum annual flow in order to determine if it will meet his needs.

Discharge measurements (or estimates) for most springs in the 10-county area are given in the second part of this report. Nearly all of these measurements were made in late summer or autumn, so the smallest amount listed for a spring generally will be an approximation of its minimum annual flow. However, where the smallest flow listed is



EXPLANATION

A. Trion Spring, Chattooga County
B. Yates Spring, Catoosa County
C. Dickson Spring, Walker County
D. Perennial Spring, Chattooga County
E. Moses Spring, Chattooga County
F. Cave Spring, Floyd County
G. Buzzard Roost Spring, Walker County
H. Cohutta Fish Hatchery, Whitfield County
I. Deep Spring, Whitfield County

Figure 3.—Annual variation in spring flow in northwest Georgia. Notice how the lowest flow of seven of the springs occurs in October or November.

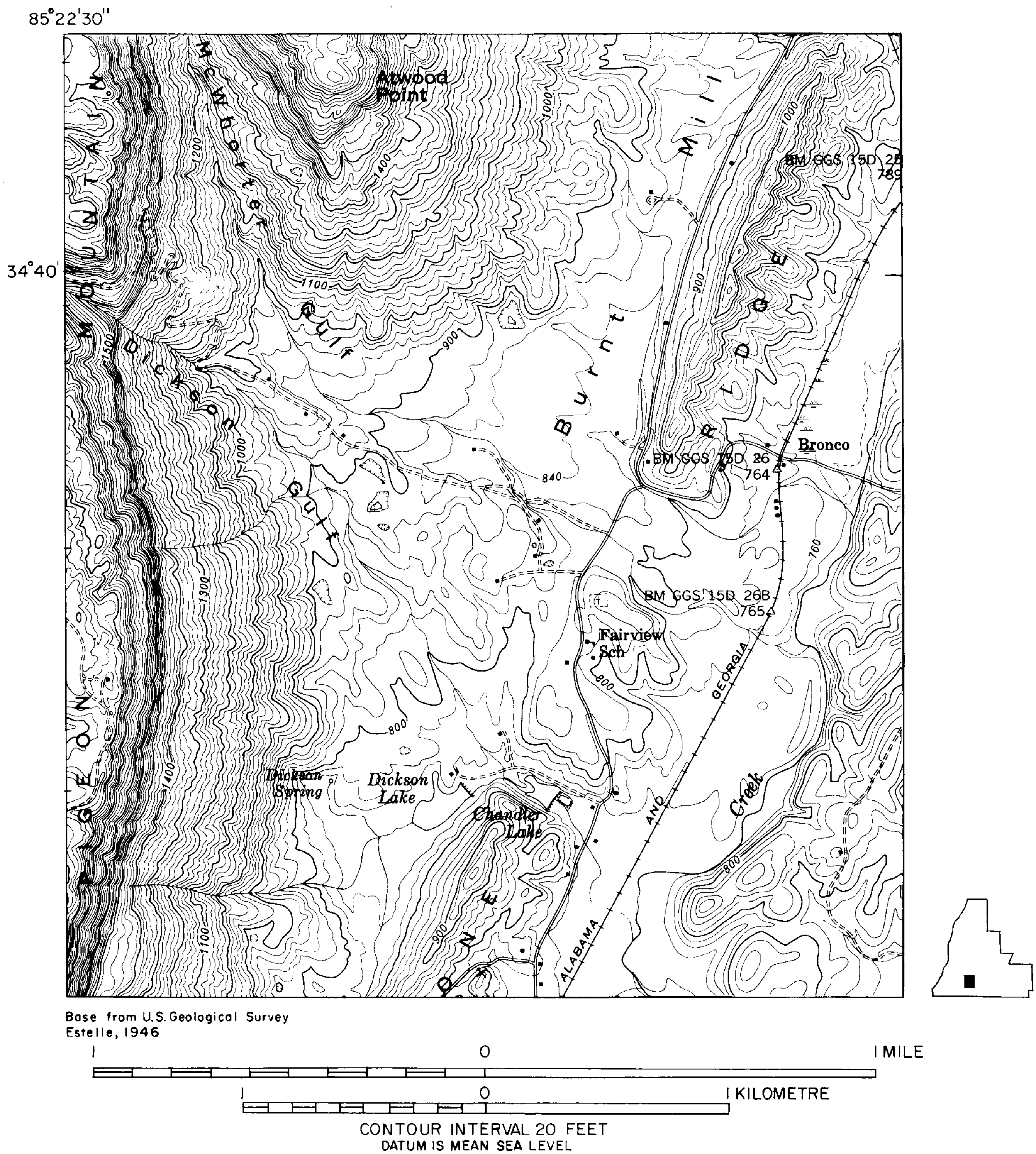


Figure 4.—Location of Dickson Spring in Walker County.

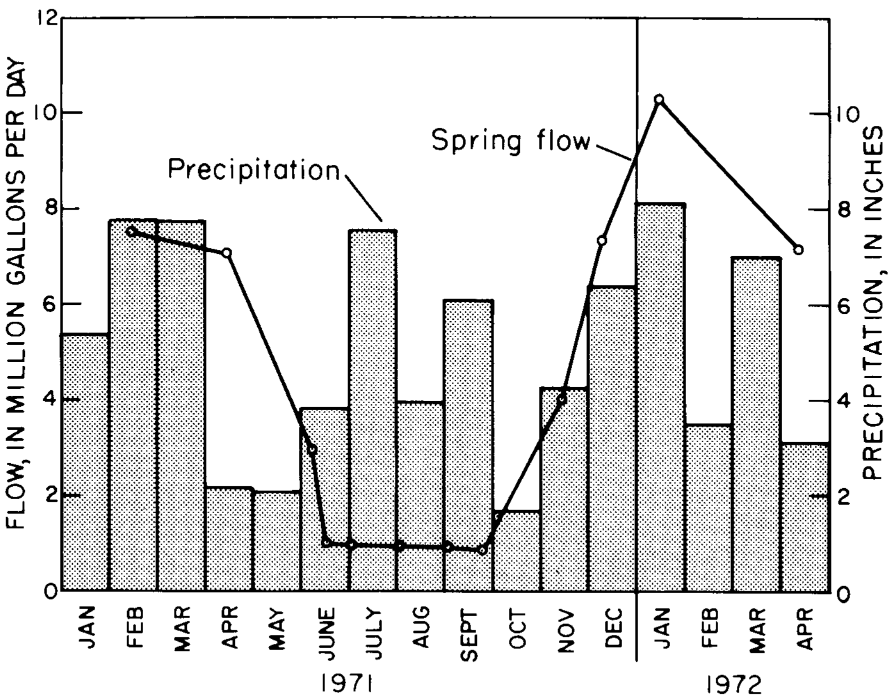


Figure 5.—Discharge from Dickson Spring and rainfall recorded at Lafayette.

nearly the same size as that required by a user, additional measurements should be made to insure that the supply will remain adequate all year. Measurements conducted bi-weekly, from the first of August through December, will either indicate the low flow for that year or show that it occurred earlier and would have to be determined the following year. Some variation in low flow can be expected from year to year, but the amount of variation generally will be small unless rainfall is much heavier or lighter than normal.

Routine measurements conducted over a period of years indicate that the annual low-flow period of some springs comes much earlier than for others. Figure 3 shows a plot of discharge measurements for nine of the area's major springs. All but two of the springs are at low flow during late October or early November. Springs "C" and "G", on the other hand, experience low flow much earlier. Indeed, spring "C" has a low-flow period that begins in June and continues into September. Consequently, before any spring is developed as a water supply where the minimum flow will be critical, it may be advisable to measure its discharge bi-weekly from the first of May through December. This should accurately determine the low-flow period of any spring and indicate its true minimum annual flow. Then, by allowing for further reduction in flow that may result from periods of prolonged drought, a user can assure himself that the supply will be dependable.

The time of the year that a spring experiences low flow, and the duration of its low-flow period, is largely determined by the character and thickness of the soil layer that overlies the spring's source. In general, the thicker the soil over an aquifer, the longer it takes for changes in precipitation to be reflected by changes in spring discharge. The lag time between an increase or decrease in precipitation and the corresponding change in spring flow may be as long as several months or as short as a few hours.

Springs that are affected very slowly by changes in precipitation have relatively smooth flow cycles, fluctuate comparatively little throughout the year, and experience low flow in October or November. Most of the springs in Figure 3 fit this category. Ones that are affected rapidly by changes in precipitation have flow cycles that correspond more closely to the precipitation cycle: discharge is heavy during times of abundant rainfall and declines markedly when rainfall is light. Spring "C", Dickson Spring in Figure 3, is a good example of a spring whose flow cycle corresponds closely to the precipitation cycle, probably the result of its being in an unusual geologic setting.

Dickson Spring is located in a limestone aquifer at the base of Pigeon Mountain in Walker County (Fig. 4). Limestone that supplies the spring is overlain by a thin permeable soil and by an alluvial fan. Recharge to the aquifer comes largely from surface water that flows from Pigeon Mountain, down McWhorter and Dickson Gulfs, and empties onto the alluvial fan. Stream water enters the fan, seeps into the underlying limestone, and follows solution openings southward along the strike to the spring. Thus, discharge from Dickson Spring is closely related to the quantity of surface water that flows off Pigeon Mountain, hence to the precipitation cycle.

Figure 5 compares discharge from Dickson Spring for 1971 and part of 1972 with a bar graph of precipitation for the same period at LaFayette, about 6 miles to the northeast. The highest discharge occurs during the winter, when rainfall is abundant and the loss of water by evaporation and transpiration is low. With the decrease of rainfall during April and the increase in evaporation and transpiration, the spring flow diminishes and declines to a low-flow period that begins in June. The flow remains low until October, when plant die-off reduces transpiration and streamflow resumes. Thus, the annual flow cycle of Dickson Spring seems to correspond closely to both the precipitation and the plant cycles.

Cohutta Fish Hatchery Spring, in Whitfield County, is an example of a spring that reacts slowly to deficient rainfall. (See Figure 3.) In the summer of 1969, discharge of the hatchery spring dropped nearly 50 percent below normal for that time of year. Officials at the hatchery thought the spring had become plugged and proposed cleaning it out. Rainfall records showed, however, that rainfall for the previous year was about 8 inches below normal in the vicinity of the spring. A reduction in spring flow did not become noticeable until the following summer because of the lag time produced by the thick residual soil that overlies the spring's source. With the resumption of normal rainfall, the spring returned to its regular flow sometime during the following year.

POLLUTION OF WELLS AND SPRINGS

The ground-water reservoir throughout most of the report area is protected from pollution by a soil cover that filters out bacteria and other contaminants. Ground-water pollution rarely is reported where the soil remains undisturbed. Unless pollutants gain access to the ground through a natural breach, such as a sinkhole or joints in the exposed bedrock, pollution is nearly always associated with activities of man that disturb the protective soil cover.

In areas where the soil layer is very thin, septic tanks may be a common source of ground-water pollution, because construction necessitates placing the field lines on or very near bedrock. Under these conditions, bacteria can pass unfiltered into bedrock channels where they may travel hundreds of feet to a well or spring. In carbonate rocks, they can be swept along by fast-moving water and appear several thousand feet away.

Roe's Spring, in Gordon County, is an example of pollution that may have been carried a long distance. The only potential source of pollution that could be identified during a field investigation was a septic tank more than a quarter of a mile away. Although the spring water has a reputation for being good to drink, tests conducted by the Laboratory Services Section, Environmental Protection Division, Georgia Department of Natural Resources, showed it to be excessively polluted. The bacteria content of the water was so high that health department regulations would not permit its use as a public supply without the same treatment required for surface water (Cressler, 1974).

Tests made by the Laboratory Services Section show that spring pollution is widespread in northwest Georgia. All pool springs should be considered polluted, because they are favorite drinking areas for livestock. Chandler Spring in Walker County and Deep Spring in Whitfield County are examples of polluted pool springs. In general, springs that issue from rock fractures, seep through gravel, or flow from caves are the least likely to contain dangerous bacteria. Since springs are subject to being polluted, they should be tested before use and periodically retested. (See the County Health Department for information.) Spring water that for years has been safe to drink may unexpectedly become polluted when cattle, septic tanks, or other sources of contamination are located upgradient from them.

Although it is not generally recognized, well pollution is more common than spring pollution. A large number of wells are polluted because they are located too close to septic tanks, barnyards, hog lots, and chicken houses. Faulty well construction and deterioration of plumbing are other causes of well pollution. A study of domestic water supplies in Bartow County showed that of 194 private water supplies sampled, 50.5 percent were polluted (Davis and Stephenson, 1970). In other counties, a similar high percentage of wells probably is polluted.

Pollution is widespread, partly because it is general practice to locate wells for convenience and economy rather than for safety of the water supply. Wells are commonly placed as close as possible to houses or barns without regard to the proximity of septic tanks or other potential sources of pollutants. Many wells located in this manner eventually become polluted.

The safest drilling sites generally are ones located as far as practicable uphill from sources of contamination. In most of the area, because the rocks trend in a north-south direction, it is also best to place a well east or west of such sources. Sealing wells against the entry of surface water and fitting pump caps tightly to keep out insects, rodents, and other impurities are efficient safety measures.

A fairly standard practice in the area is to sterilize a well as soon as it is completed and test it for bacterial contamination. Nearly all new wells are found to be safe. The danger of pollution, however, is greater after the well has been used for a while, because lowering of the water table by pumping may eventually draw septic-tank effluent or other contaminants to the well. Furthermore, lowering of the water table in limestone terrane may cause sinkholes to form, thereby allowing surface water to reach the ground-water reservoir. Some sinks begin as holes so small they go unnoticed. A sink of this kind developing in a barnyard can quickly contaminate a water supply. Periodic testing is the best means of assuring that well water remains safe.

CHEMICAL QUALITY OF WATER

Ground water in northwest Georgia is generally of good chemical quality. It is only moderately mineralized and can be used for most purposes without treatment. A few domestic and farm wells yield mineralized water that needs treatment to improve its taste, but most water is safe to drink untreated. The mineral content of well water rarely exceeds the drinking water standards set by the Public Health Service (1962).

The reader is referred to the second part of this report for further data on water quality.

Chemical analyses of spring water and well water are given for the most important aquifers in each county. Chemical analyses of water from some of the streams in the study area are also included. It must be stressed that these analyses represent the quality of the stream only at the time and place the sample was taken. It is suggested that the reader refer to the U. S. Geological Survey Water-Supply Paper Series and the Water Resources Data for Georgia, 1968 through 1973, for more analyses.

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APPENDIX

LOCATION, QUANTITY, AND CHEMICAL QUALITY OF WELL, SPRING, AND SURFACE WATER IN THE 10-COUNTY AREA OF NORTHWEST GEORGIA

The 10-county area has abundant supplies of ground water and surface water. All the counties have carbonate aquifers that will supply 25 to 500 gal/min to wells generally less than 350 feet deep, but occasionally as much as 500 feet deep. Drilling deeper than 350 feet in limestone or dolomite, or more than 250 feet in other kinds of rock, is seldom successful. Most of the counties have aquifers that can yield 100 to 1,000 gal/min. The well water is only moderately mineralized and can be used for most purposes without treatment.

Springs in each of the 10 counties discharge hundreds of gallons of water per day. A few of the springs flow more than 5,000 gal/min. Most of the springs are unused. The natural quality of the spring water is moderately hard to hard and has a low iron concentration.

Most of the area's towns and industrial centers lie along streams or rivers that carry large quantities of water. Streamflows are generally sufficient to supply the needs of the immediate future.

This part of the report contains information about the quantity and chemical quality of available water and gives the locations of wells, springs, and streams in northwest Georgia. The principal water-bearing rock units in the 10-county area are designated on the maps that follow by the letters A through H. Criteria used for this designation are the range of yields normally obtained from wells and the yields that can be expected from favorable well sites.

The locations of springs and stream-gaging stations are shown on individual county maps. The springs are numbered sequentially in each county, and the same numbers are used on the spring tables. The springs also are coded on the county maps to indicate what percentage of their water is being used.

The stream-gaging stations are numbered sequentially and are identified as either low-flow partial-record or continuous-record stations. These same numbers are used in the stream tables, which give the drainage area, the average flow, and the 7-day, 10-year minimum flow for each site.

Water-quality data for wells, springs, and streams in each county are presented in tabular form. This information is intended to show the general water quality available from the principal water-bearing units and the springs. The analyses of stream samples reflect the general water quality at the time of sampling.

EXPLANATION

BARTOW COUNTY MAPS

PRINCIPAL WATER-BEARING UNITS

A Yields generally range from 5 to 50 gal/min. Yields as large as 1,000 gal/min may be obtained at favorable sites. Aquifer is dolomite and limestone. Water quality generally meets drinking-water standards and is suitable for many industrial uses.

C Yields generally range from 0 to 20 gal/min. Yields as large as 50 gal/min may be obtained at favorable sites. Aquifers include shale, limestone, sandstone, slate, and dolomite. Water quality generally meets drinking-water standards, although some constituents may approach upper limits. Iron content is excessive in some areas.

D Yields generally are less than 20 gal/min; a few exceed 50 gal/min. Yields as large as 300 gal/min may be obtained at favorable sites. Aquifer is limestone or dolomite units interlayered with shale units. Water quality generally meets drinking-water standards, although some contains excessive iron.

F Yields generally range from 50 to 200 gal/min. Yields as large as 3,500 gal/min may be obtained at favorable sites. Aquifer is dolomite, probably containing thin units of shale. Water quality generally meets drinking-water standards and is suitable for many industrial uses. Some water contains sediment and does not clear after prolonged pumping.

G Yields generally range from 2 to 30 gal/min. Yields of 50 to 200 gal/min may be obtained from favorable sites in brittle rock. Aquifers include quartzite, phyllite, slate, granite, and other metamorphic and igneous rocks. Water quality generally meets drinking-water standards except for water from phyllite and slate, which commonly contains excessive iron and manganese.

FAVORABLE WELL SITES—number indicates expected yield in gal/min

1 As much as 50

3 As much as 1,000

SPRINGS—number refers to tables 2 and 3

1 Unused

10 At least half of flow unused

19 Entire flow in use

GAGING STATIONS—number refers to tables 4 and 5

1 Low-flow partial record

3 Continuous record

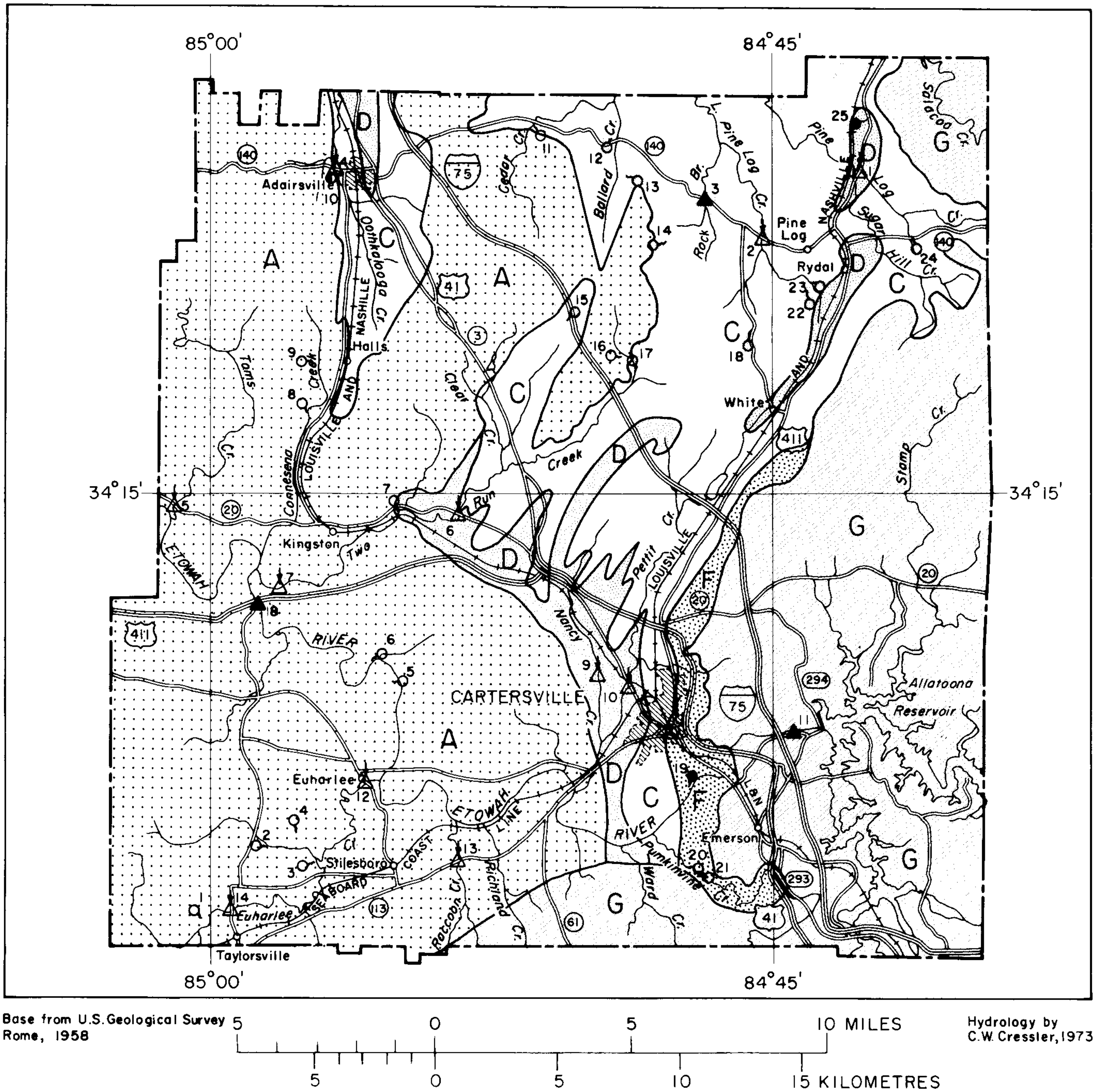


Figure 6.—Principal water-bearing units and location of springs and stream-gaging stations, Bartow County. For Explanation see page 14.

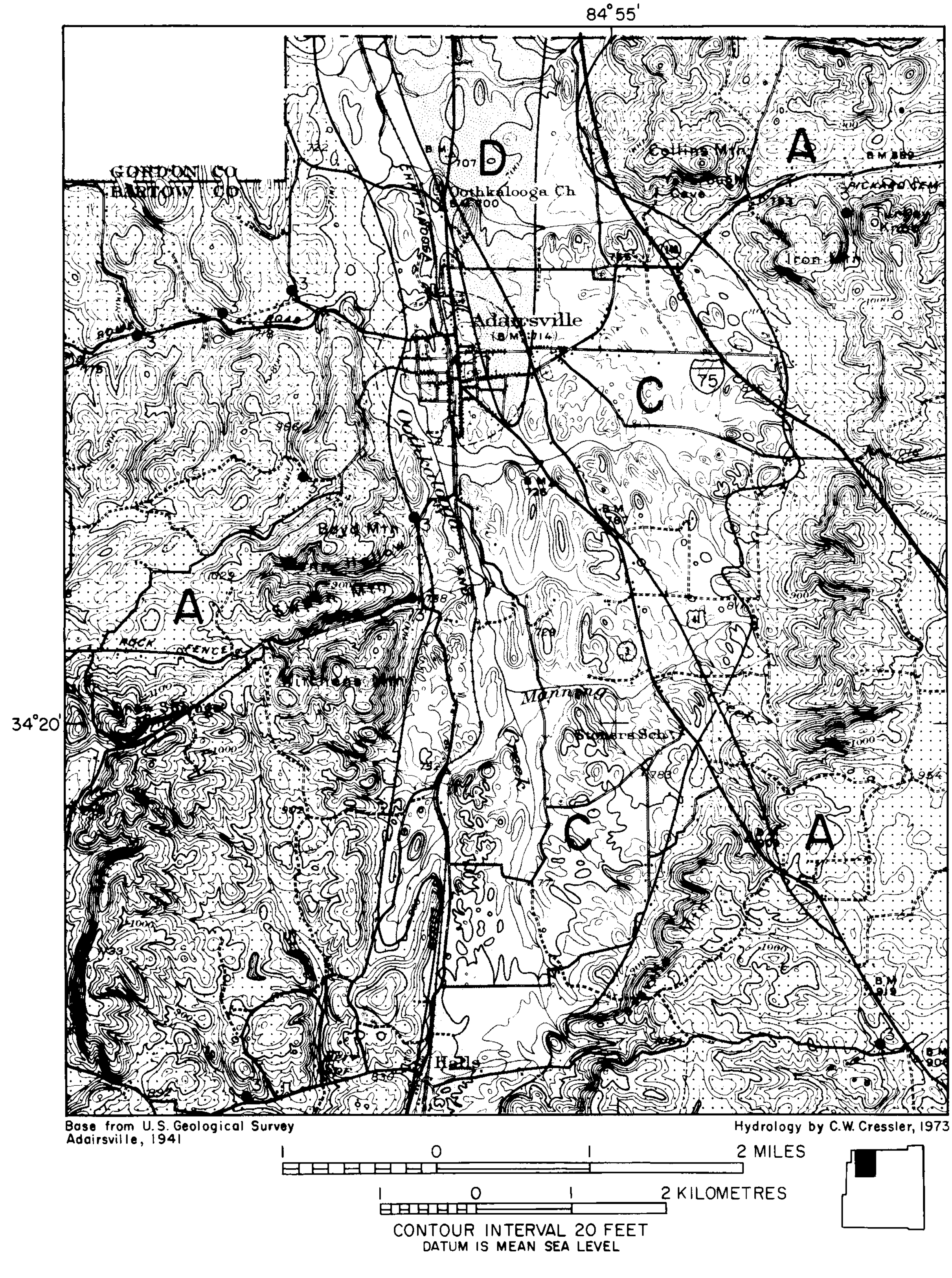


Figure 7.— Principal water-bearing units and location of favorable well sites, Adairsville and vicinity, Bartow County. For Explanation see page 14.

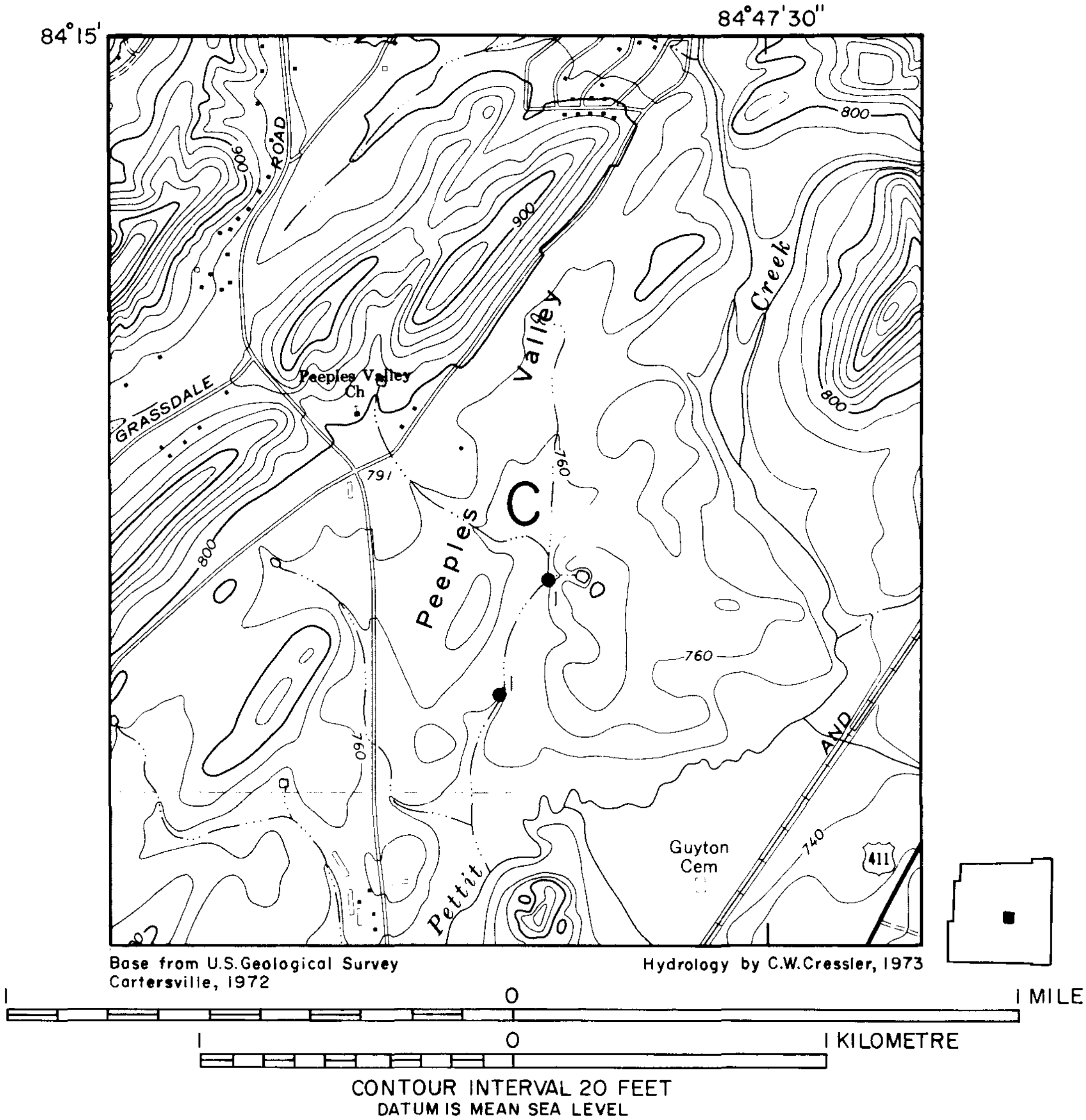


Figure 8.— Principal water-bearing unit and location of favorable well sites, Peeples Valley area, Bartow County. For Explanation see page 14.

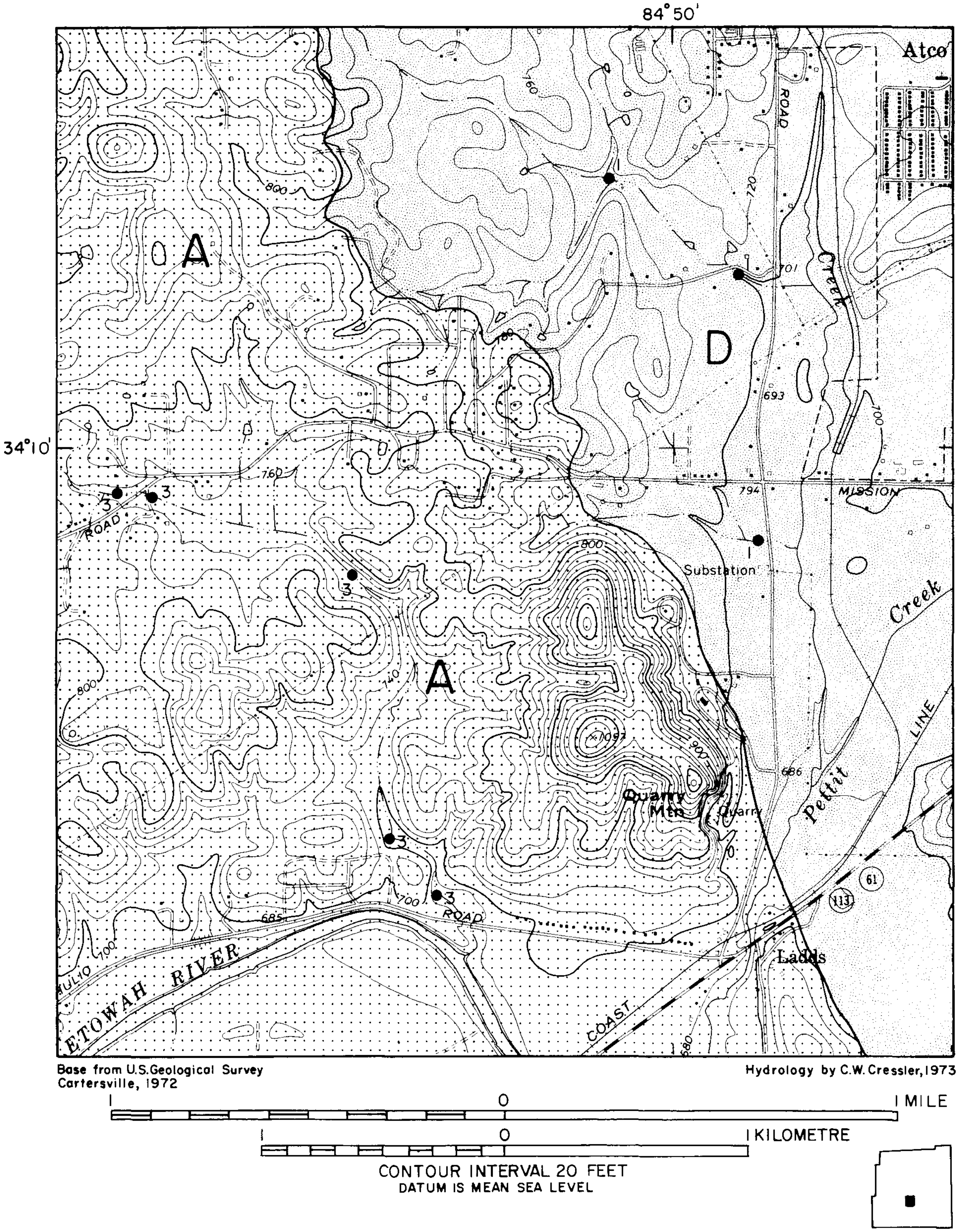


Figure 9.— Principal water-bearing units and location of favorable well sites, Ladds and vicinity, Bartow County. For Explanation see page 14.

Table 1.--Chemical analyses[1] of well water, Bartow County.

Owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS				0.3		125				250	250	1.0	45	500						15
Bartow Consolidated School (Taylorsville)	3-21-47	A	-	-	-	-	-	-	172	3.0	2	0.2	3	-		-			-	
Joe Brandon	3-21-47		-	-	-	-	-	-	233	7.0	4	.2	7.2	-		-			-	
Buford Kay	12-31-59		8.3	0.04	41	20	2.6	0.6	212	8.0	5.0	.2	2.4	201		184			7.6	
J. E. King	1- 4-60		13	.04	54	4.3	1.9	2.6	174	5.6	3.0	.1	6.8	180		152			7.8	
City of Kingston	9-22-52		6.0	-	50	Tr.	1	-	117	1.0	Tr.	.01	-	252		125			7.0	
Dolph Nelson	1- 4-60		12	.07	34	19	3.5	1.9	204	2.0	4.5	.1	2.0	188		163			7.4	
J. W. Pickelsimer	3-27-48		10	.05	33	26	2.0		153	2.0	1.5	-	-	203		180			8.4	
C. C. Strain	1- 5-60		7.9	.01	41	12	1.4	.4	172	3.2	2.0	.2	6.2	166		152			7.5	
City of Taylorsville	1- 4-60		7.2	1.6	96	5.5	9.4	2.4	301	14	16	.2	3.3	337		262			7.0	
Rubberoid Co.	3-19-47	C	-	-	-	-	-	-	118	9.0	4	.2	1.6	-		-			-	
M. C. Watts	12-31-59		8.6	.04	10	4.1	.5	.3	52	4.4	2.0	.2	.2	63		42			6.9	
Goodyear Clearwater Mill	9-22-52	D	6.0	-	43	25	.2	.1	178	10	4	-	1	163		210			7.4	
Do.	9-22-52		7.0	-	44	29	Tr.	Tr.	210	8.0	3	-	.5	182		229			7.8	
Visking Co.	12-22-59	F	8.9	.07	26	12	6.6	.7	128	2.4	11	-	8.9	146		114			8.0	
Do.	--		10.4	.07	22.3	16	-	-	-	-	14.5	.1	-	151		121.5			8.3	
Thompson Weinman Co.	12-30-59		8.8	.05	27	16	2.9	.7	148	3.2	4.0	.1	7.4	153		134			7.7	
City of Emerson	9-22-52	G	6	.25	30	2.0	Tr.	Tr.	127	-	3	-	-	225		83			7.7	
Hoyt Green	12-30-59		30	.04	30	7.5	9.2	1.6	144	7.6	5.0	.2	.8	167		106			7.1	
L. N. Jenkins	3- 2-50		20	.45	15	6.0	Tr.	Tr.	60	14	3	-	-	83		62			7.1	
Do.	5- -54		-	-	-	-	-	-	-	1.0	-	-	-	104		-			-	
T. A. Jenkins	12-30-59		48	.05	3.2	.7	8.1	4.0	39	.4	1.0	.2	-	94		11			6.2	
Frank McEver	12-30-59		39	.09	6.4	1.0	7.8	2.0	38	.4	1.0	.1	13	103		20			6.6	
Red Top Mountain State Park	9-30-58		26	-	6.8	1.2	3.3	2.4	36	.4	1.0	.1	.7	65		22			6.4	
Otto Townsend	12-31-59		22	.10	53	6.3	5.5	3.6	188	11	2.5	.1	1.8	205		158			7.6	
Effie White	12-30-59		42	.04	13	8.1	6.1	.3	78	9.2	5.5	.2	4.9	136		66			7.1	

[1] Analyses by U.S. Geological Survey.
[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".
[3] Water was sampled from wells tapping water-bearing units shown in figure 6.

Data from Cressler (1973)

Table 2.--Minimum measured or estimated flow of springs, Bartow County.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow Mgal/d	Flow Gal/min	Water-bearing unit	Remarks
1	Davis Estate	1.5 miles NW. of Taylorsville, 1.1 miles N. of Polk County line.	9-26-50	1.73	1,200	A	
2	C. C. Cox	2.8 miles N. of Taylorsville, E. side of road.	9-26-50	1.4	960	A	
3	Wallace Moore	2.7 miles NE. of Taylorsville, 2.1 miles N. of Polk County line.	9-26-50	.25	170	A	
4	Blue Spring	3.65 miles NNE. of Taylorsville, 3.42 miles N. of Polk County line.	9-26-50	4.6	3,200	A	
5	Boiling Spring	2.6 miles NNE. of Euharlee, N. bank of Euharlee River.	9-27-50	.72	500	A	
6	Gillam Spring	3.0 miles N. of Euharlee, N. bank of Etowah River.	9-27-50	1.08	750	A	
7	Roger Gordon	1.97 miles NNE. of Kingston, N. side of Ga. Highway 20.	9-27-50	2.9	2,000	A	
8	Connesena Spring	1.45 miles SW. of Halls, 0.2 mile N. of road.	9-27-50	1.44	1,000	A	
9	Kerr Spring	0.6 mile W. of Halls, N. of road.	12- -59	.29e	200	A	
10	City of Adairsville	0.9 mile NW. of center of Adairsville at city waterworks.	9-27-50	5.9	4,100	A	Public supply.
11	Mosteller Spring	5.05 miles ENE. of Adairsville, 0.2 mile S. of Ga. Highway 140.	9-28-50	3.0	2,100	A	
12	Hayes Spring	6.64 miles ENE. of Adairsville, N. side of Ga. Highway 140.	9- -59	.07e	50	C	
13	Orma Adcock	4.72 miles NW. of Pine Log, 0.93 mile S. of Ga. Highway 140.	12- -59	.29e	200	A	
14	Harvey Lewis	3.9 miles W. of Pine Log, 2.05 miles S. of Ga. Highway 140.	9- -59	.07e	50	A	
15	Pratt Spring	8.2 miles NE. of center of Kingston, 3.4 miles E. of U.S. Highway 41, and E. side of Mud Creek.	9-28-50	.34	235	C	
16	Crowe Spring Church	5.5 miles WSW. of Pine Log, 8.34 miles SE. of Adairsville.	9-28-50	1.44	1,000	A	
17	Crowe Spring	5.21 miles WSW. of Pine Log, 8.7 miles SE. of Adairsville.	9-28-50	.74	517	A	
18	H. H. Lipscomb	2.95 miles SW. of Pine Log, 1.8 miles W. of U.S. Highway 411.	8- -59	.86	60	C	
19	Cartersville Spring	1.99 miles NW. of Emerson, NW. bank of Etowah River.	11- -74	.5e	350	F	Dry when Thompson-Weinman Co. well is pumping.
20	Mrs. W. B. Moss	1.7 miles SW. of Emerson, 2.0 miles N. of Paulding County line.	12- -59	.29e	200	F	
21	Mrs. W. B. Moss	1.6 miles SW. of Emerson, 1.99 miles N. of Paulding County line.	12- -59	.29e	200	F	
22	W. M. Vaughan	1.25 miles SSE. of Pine Log, 0.7 mile W. of U.S. Highway 411.	8- -59	.07e	50	D	
23	Wiley Vaughan	1.0 mile SSE. of Pine Log, 0.7 mile W. of U.S. Highway 411.	8- -59	.07e	50	D	
24	Copper Hill Mining Co.	2.75 miles ENE. of Pine Log, 0.08 mile S. of Ga. Highway 140.	8- -59	1.0e	700	C	
25	Funkhouser Spring	3.74 miles NNE. of Pine Log, 0.35 mile W. of U.S. Highway 411.	9-29-50	.32	220	D	Industrial supply.

e Estimated.

Table 3.--Chemical analyses[1] of spring water, Bartow County.

Spring no.	Name or owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS					0.3		125				250	250	1.0	45	500						15
10[4]	City of Adairsville	9-22-52	A	6.0	Tr.	31	14	0.1		142	4.0	2	-	0.5	112	-	134	-	-	7.7	-
10	Do.	3-12-59	A	8.8	0.04	24	12	0.6	-	133	2.4	1.0	-	1.4	124	-	110	-	-	8.2	-
13	Orma Adcock	10-16-44	A	14	.15	58	13	Tr.	Tr.	-	9.0	3	-	-	207	-	-	-	-	7.1	-
5	Ted Dunken	7-26-43	A	18	.1	31	14	<1	<1	-	4.0	6	-	-	150	-	-	-	-	8.0	-
24	Copper Hill Mining Co.	12-31-59	C	17	.04	33	12	1.8	2.6	152	6.4	1.0	0.3	.5	150	-	132	-	-	7.7	-
19	Cartersville Spring	5- 3-38	F	9.1	.01	24	14	1.7	1.7	136	2.5	2.6	-	6	126	-	117	-	-	-	-

Data from Croft (1963)

[1] Analyses by U.S. Geological Survey.
[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".
[3] Water was sampled from springs that discharge from water-bearing units shown in figure 6.
[4] Analyses by Georgia Dept. of Natural Resources.

Table 4.--Summary of streamflows, Bartow County.

Site no.	Stream name	Gage type	Location	Drainage area (sq mi)	Estimated average flow (Mgal/d)	Estimated 7-day,10-year minimum flow (Mgal/d)	Water use (1970) (Mgal/d)
1	Pine Log Creek	PR	Lat 34°22', long 84°43', at U.S. Highway 411, 2 miles northeast of Pine Log.	24.2	21	3.3	
2	Little Pine Log Creek	M	Lat 34°21', long 84°45', at Ga. Highway 140, 1.2 miles west of Pine Log.	11.1	9.7	.6	
3	Rock Creek	C	Lat 34°22', long 84°47', at Ga. Highway 140, 2.9 miles northwest of Pine Log.	5.61	4.3a	.3a	
4	Oothkalooga Creek	M	Lat 34°22', long 84°57', at Old Ga. Highway 140, at Adairsville.	15	14	3.9	
5	Toms Creek	M	Lat 34°15', long 85°01', at Ga. Highway 20, 4 miles west of Kingston.	17	14	2.3	
6	Two Run Creek	M	Lat 34°15', long 84°53', at Ga. Highway 20, 3 miles east of Kingston.	32.0	27	5.3	
7	Two Run Creek	M	Lat 34°13', long 84°58', at county road, 2 miles southwest of Kingston.	50.0	42	5.9	
8	Etowah River	C	Lat 34°12', long 84°59', at U.S. Highway 411, 2.6 miles southeast of Kingston.	1,630	1,570b	313b,c	
9	Nancy Creek	M	Lat 34°11', long 84°50', at county road, 2.2 miles northwest of Cartersville.	10.9	9.0	.6	
10	Pettit Creek	PR	Lat 34°11', long 84°49', at Ga. Highway 293, 1.2 miles northeast of Cartersville.	37.8	32	2.3	
11	Etowah River	C	Lat 34°10', long 84°44', 3 miles east of Cartersville.	1,110	1,150b,d	148b,c	3 - 5
12	Euharlee Creek	M	Lat 34°08', long 84°56', at county road, at Euharlee.	181	152	24	
13	Raccoon Creek	M	Lat 34°07', long 84°53', at Ga. Highway 113, 1.6 miles east of Stilesboro.	55	46	3.7	
14	Euharlee Creek	PR	Lat 34°06', long 84°59', at county road, 0.6 mile north of Taylorsville.	125	105	19	

C Continuous record
M Miscellaneous site
PR Low-flow partial-record

a Based on continuous daily flow, 1952-68.
b Based on continuous daily flow, 1951-66.
c Regulated.
d Adjusted for storage.

Table 5.--Chemical analyses[1] of streams, Bartow County.

Date	Time	Discharge (ft^3/s)	Total iron (Fe) (μg/l)	Total manganese (Mn) (μg/l)	Milligrams per litre: Dissolved calcium (Ca)	Dissolved magnesium (Mg)	Sodium (Na)	Potassium (K)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Nitrite plus nitrate (N)	Ammonia nitrogen (N)	Total phosphorus (P)	Total filtrable residue	Total nonfiltrable residue	Hardness (Ca,Mg)	Specific conductance (Micromhos)	pH (Units)	Temperature (Degree C)	Color (Platinum cobalt units)	Dissolved oxygen (Mg/l)	Biochemical oxygen demand (Mg/l)	Fecal coliform (MPN)
SITE 1 - Figure 6. Pine Log Creek near Pine Log.																								
6-16-71	1300	10	<100	<50	27	11	1.4	1.4	108	10	1.5	0.18	<0.02	<0.02	154	11	108	230	8.0	19.0	5	9.1	0.4	4,300
SITE 8 - Figure 6. Etowah River near Kingston.																								
1-29-73	1030	1,500	900	90					52			.40	.08	.05			55	130	7.9	4.0	75	10.3	.8	15,000
7-16-73	1100	795	260	<50					22			.17	.02	.04			60	150	8.0		5	8.2	.6	4,300
SITE 10 - Figure 6. Pettit Creek near Cartersville.																								
6-16-71	1140	--	300	<50	31	12	1.2	1.6	121	5.0	2.6	.65	<.02	.04	180	56	125	255	7.7	20.5	5	7.6	.3	2,300
SITE 11 - Figure 6. Etowah River at Allatoona Dam, above Cartersville.																								
1-31-73	1540	283	900	<50					13			.23	.02	.03			10	38		7.0	40	12.4	.5	230
7-16-73	1000	283	260	90					15			.12	.02	.02			10	37	6.8		10	5.4	.5	930
SITE 14 - Figure 6. Euharlee Creek at Taylorsville.																								
6-16-71	1050	--	250	<50	31	9.0	1.7	7.4	110	10	2.2	.44	<.02	.11	172	33	110	248	7.6	20.5	5	7.4	.6	3,900

[1] Analyses by Georgia Dept. of Natural Resources.

EXPLANATION

CATOOSA COUNTY MAPS

PRINCIPAL WATER-BEARING UNITS

A — Yields generally range from 5 to 50 gal/min. Yields as large as 1,000 gal/min may be obtained at favorable sites. Aquifer is dolomite and limestone. Water quality meets drinking-water standards and is suitable for many industrial uses.

B — Yields generally are less than 50 gal/min. Yields as large as 500 gal/min may be obtained at favorable sites. Aquifer is limestone and bedded chert. Water quality generally meets drinking-water standards and is suitable for many industrial uses. Water from lower part of unit may contain excessive iron.

C — Yields generally range from 0 to 20 gal/min. Yields as large as 100 gal/min may be obtained at favorable sites. Aquifers include sandstone, shale, bedded chert and limestone. Water quality from most rock units meets drinking-water standards. Water from shale and limestone may contain excessive iron, sulfate, or salt.

D — Yields generally are less than 20 gal/min; a few exceed 50 gal/min. Yields as large as 300 gal/min may be obtained at favorable sites. Aquifer is limestone or dolomite units interlayered with shale units. Water quality meets drinking-water standards, although some contains excessive iron.

FAVORABLE WELL SITES—number indicates expected yield in gal/min

●1 As much as 50

●2 As much as 500

●3 As much as 1,000

SPRINGS—numbers 1 to 22 indicate flows of less than 0.1 Mgal/d.
Numbers 23 to 48 indicate flows of more than 0.1 Mgal/d.
Number refers to tables 7, 8, and 9.

7 Unused

15 At least half of flow unused

10 Entire flow in use

GAGING STATIONS—number refers to tables 10 and 11.

△10 Low-flow partial record

▲1 Continuous record

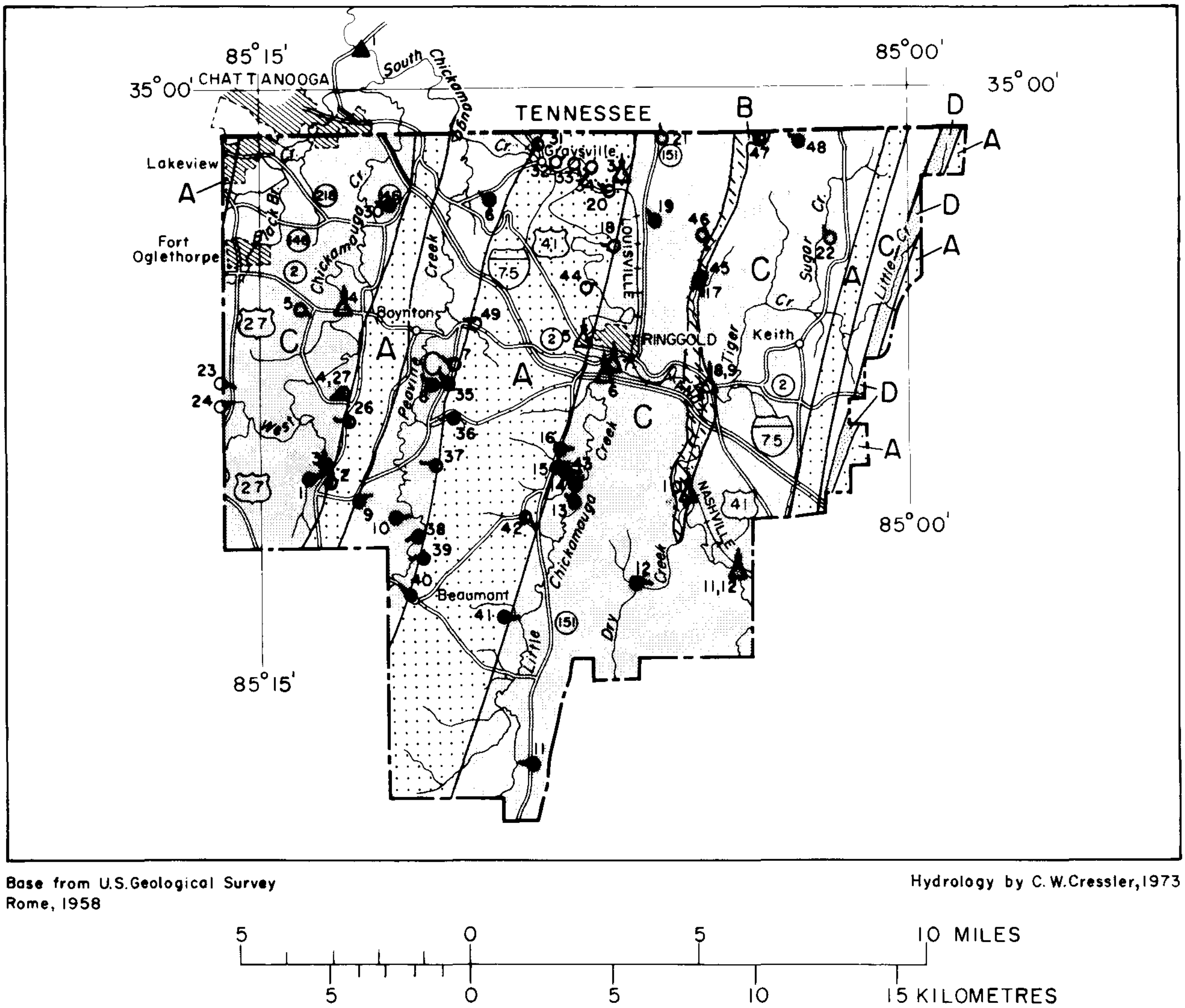
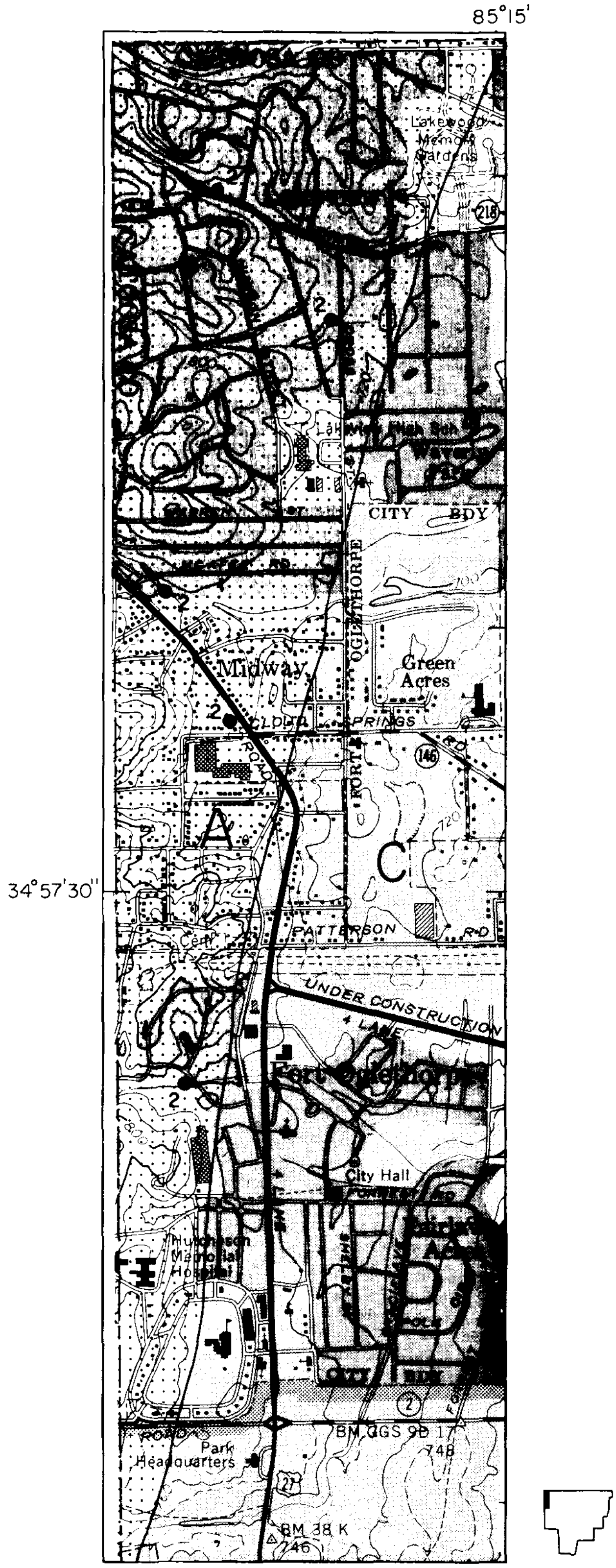


Figure 10.—Principal water-bearing units and location of springs and stream-gaging stations, Catoosa County. For Explanation see page 24.



Base from U.S. Geological Survey Fort Oglethorpe, 1969

Hydrology by C. W. Cressler, 1973

0 — 1 MILE

0 — 1 KILOMETRE

CONTOUR INTERVAL 20 FEET
DOTTED LINES REPRESENT 10-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

Figure 11.— Principal water-bearing units and location of favorable well sites, Fort Oglethorpe and Lakeview area, Catoosa County. For Explanation see page 24.

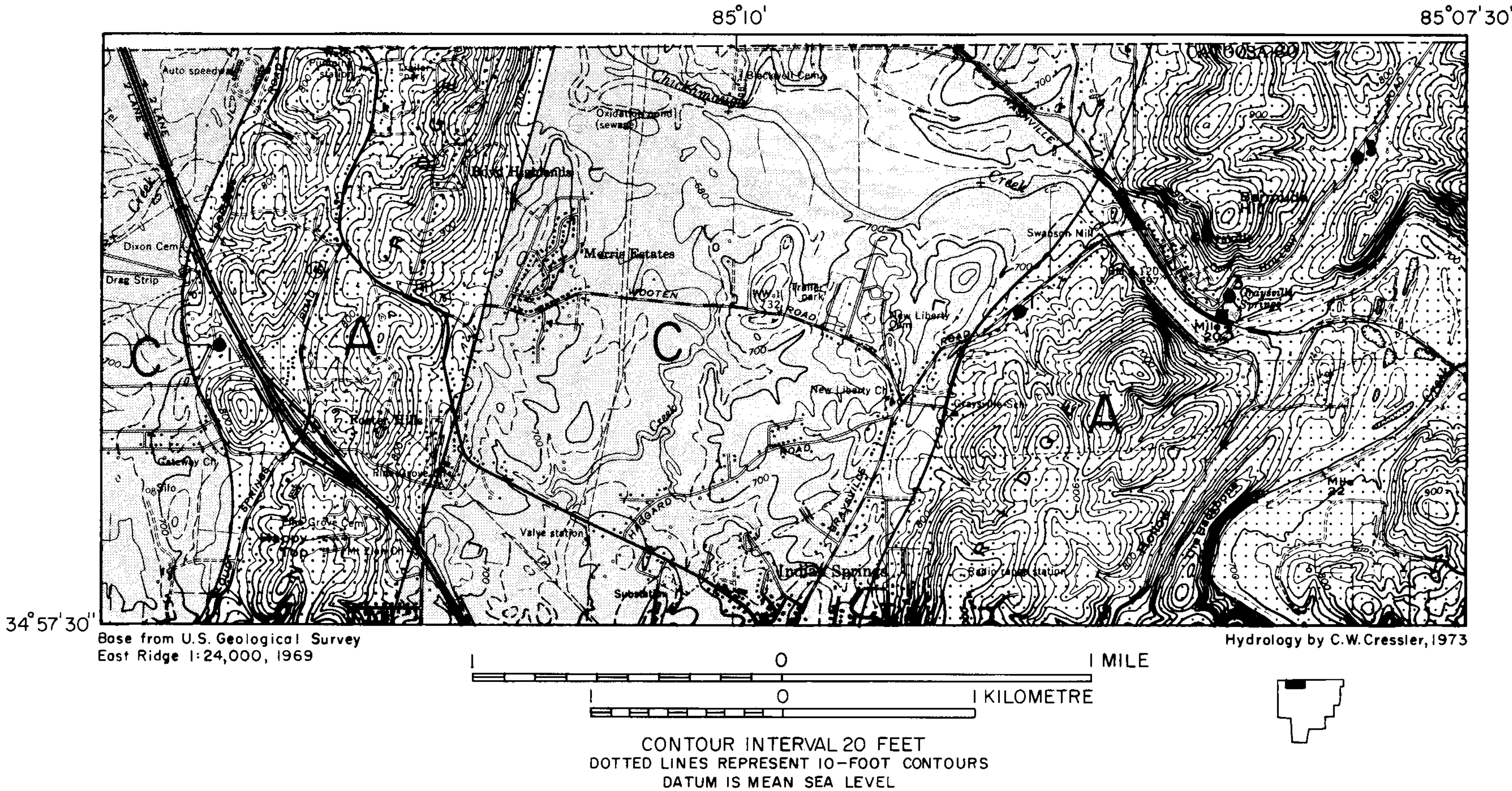


Figure 12.— Principal water-bearing units and location of favorable well sites, Graysville and vicinity, Catoosa County. For Explanation see page 24.

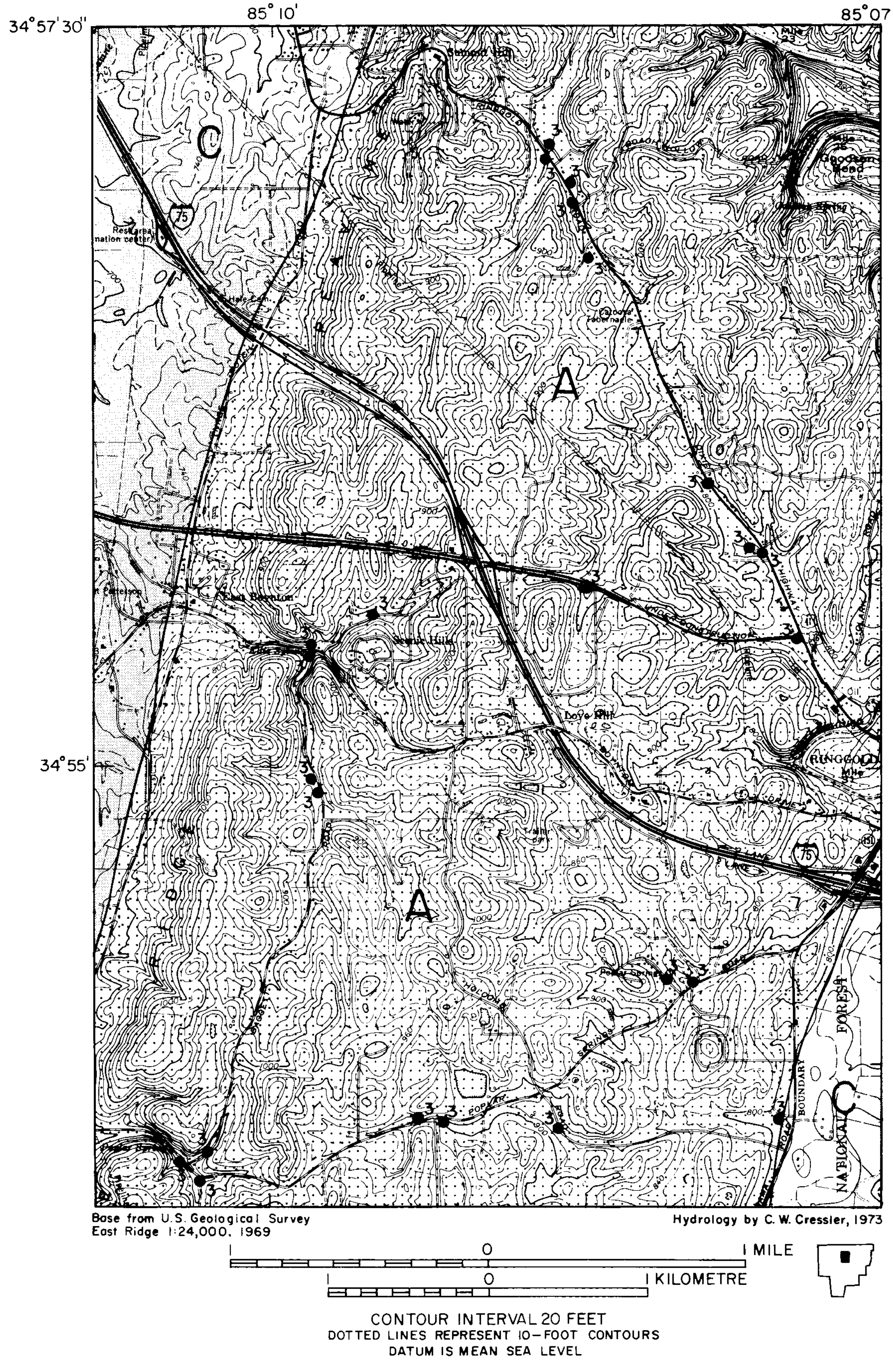


Figure 13.— Principal water-bearing units and location of favorable well sites, East Boynton and vicinity, Catoosa County. For Explanation see page 24.

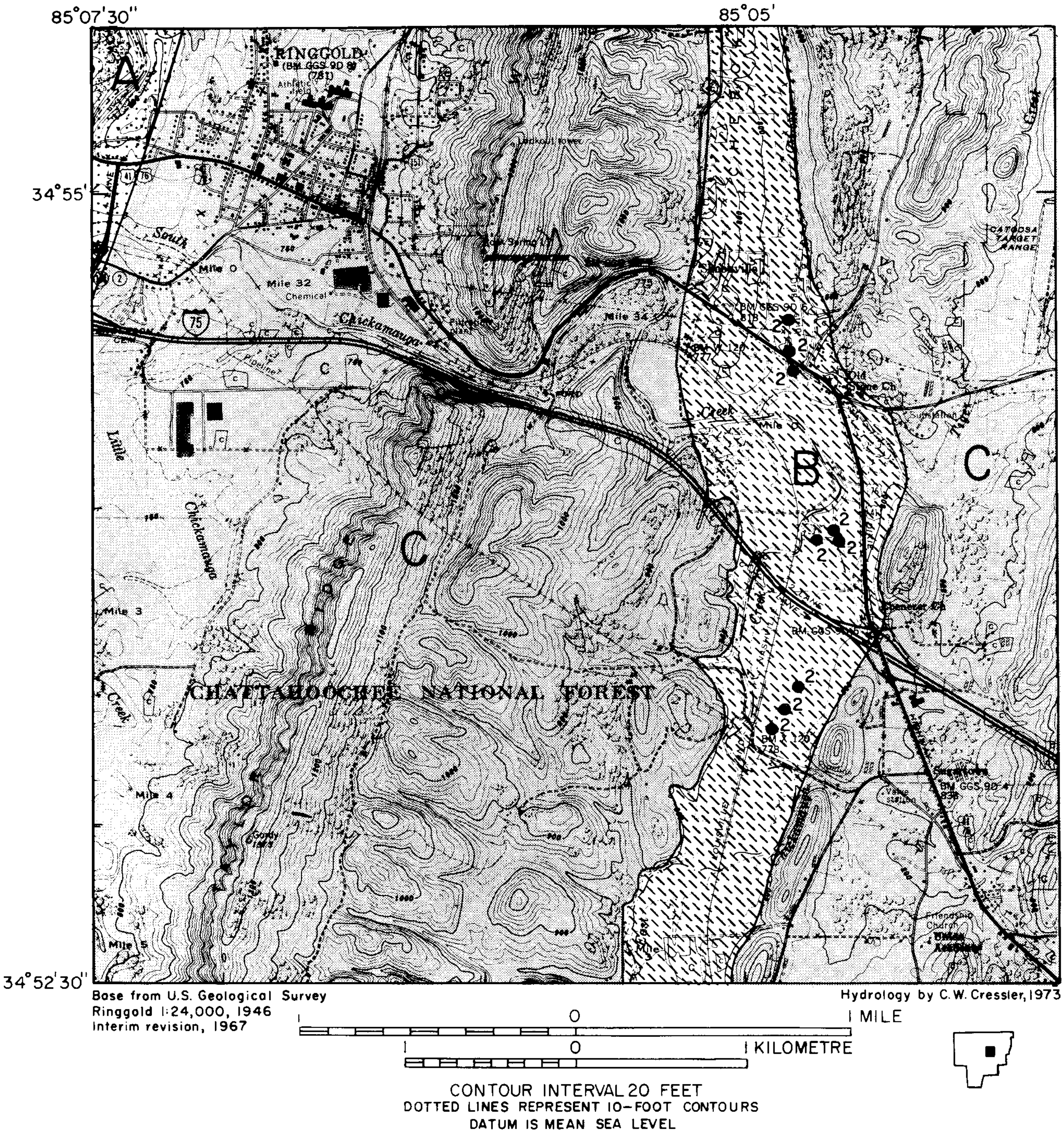


Figure 14.— Principal water-bearing units and location of favorable well sites, Ringgold and Shookville area, Catoosa County. For Explanation see page 36.

Table 6.--Chemical analyses[1] of well water, Catoosa County.

Owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS				0.3		125				250	250	1.0	45	500						15
W. M. Hill, Jr.	9- 2-58	A	10	-	40	18	0.6	0.4	186	8.8	4.0	0.1	18	202		174	22	335	7.7	3
Mt. Pisgah Baptist	9- 2-58	A	9.2	0.02	39	18	.7	.4	205	.8	1.5	.1	.4	169		172	4	313	7.5	2
Ira Warren	9- 2-58	A	8.6	.02	29	13	1.7	.3	147	.2	2.5	-	7.4	125		124	4	245	7.4	6
H. A. Wells	9- 2-58	A	9.3	.05	31	18	1.0	1.0	177	-	-	.1	.6	152		148	3	281	7.9	0
K. R. Bandy	8-26-58	B	11	.49	46	6.1	2.0	.8	149	18	2.0	.2	.3	160		140	18	275	7.4	4
S. H. Bonds	5- 7-58	C	18	.01	79	3.6	6.4	1.4	280	9.2	3.0	.1	.2	265		212	-	432	7.9	2
Sam Greeson	8-25-58	C	9.4	.02	68	5.0	1.5	.2	216	6.2	4.5	.1	6.5	213		190	13	365	7.6	6
Post Ice & Coal	5- 5-58	C	8.7	.01	55	12	2.9	1.0	217	11	4.5	.1	2.9	209		186	8	362	7.4	1
Wes Tudor	6-29-59	C	10	.07	32	12	195	4.3	498	84	32	1.0	1.6	630		130	-	999	8.0	5
Handy White	5- 1-58	C	30	.01	28	6.8	6.4	1.4	108	20	5.0	.3	.5	146		98	10	226	7.2	0

[1] Analyses by U.S. Geological Survey.

[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

[3] Water was sampled from wells tapping water-bearing units shown in figure 10.

Data from Cressler (1963)

Table 7.--Minimum measured or estimated flow of springs, Catoosa County, that discharge more than 0.1 million gallons per day.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow		Water-bearing unit	Remarks
				Mgal/d	Gal/min		
23	Olston Spring (U.S. Government)	0.1 mile W. of U.S. Highway 27, 3.8 miles N. of Walker County line.	1-15-58	0.1e	50	C	Seep spring.
24	Scott Spring (U.S. Government)	0.1 mile W. of U.S. Highway 27, 3.04 miles N. of Walker County line.	1-15-58	.1	70	C	Enclosed. Unused.
25	Blue Spring	3.28 miles NW. of Beaumont, 2.33 miles E. of the W. edge of the county.	11-30-50 10-20-54 10- 9-58	1.2 .48 1.0	830 30 700	A	Flows into lake.
26	E. R. Crane	2.6 miles SSW. of Boynton, E. side of road.	10- 9-58	.1e	50	A	Domestic supply.
27	Simms Spring	2.2 miles SSW. of Boynton, 0.1 mile W. of road.	10- 9-58	.1e	50	A	Stock supply.
28	Hills Spring	1.48 miles WSW. of Boynton, E. bank W. Chickamauga Creek.	10- 9-58	.72	500	A	
29	R. C. Talley	0.8 mile SSW. of Boynton, 0.4 mile W. of Peavine Creek.	10-22-58	.3	200	A	Flows into lake.
30	Childers Spring	2.9 miles NNW. of Boynton, W. of Ga. Highway 146.	12- 1-50	.8	550	A	
31	J. R. Graham	W. part of Graysville, N. of road.	12- 1-50 10- 9-58	.54 .44	370 300	A	Domestic supply.
32	Graysville Spring	0.4 mile SE. of Graysville, N. bank S. Chickamauga Creek.	12- 1-50 2- 7-58	.53 .2e	370 140	A	Enclosed. Used.
33	A. C. Hames	0.80 mile E. of Graysville, S. bank S. Chickamauga Creek.	11-20-58	.1e	50	A	
34	McKinney Spring	1.2 miles ESE. of Graysville, E. side S. Chickamauga Creek.	9-11-70	.14	100	A	
35	Hoit Wite	1.6 miles SSE. of Boynton, E. side of road.	2-11-58	.2	140	A	Domestic supply.
36	Poplar Spring	2.2 miles SE. of Boynton, S. side of road.	10- 9-58	.1	64	A	Domestic supply.
37	M. O. Davis	2.9 miles NNE. of Beaumont, 4.6 miles E. of Walker County line.	10- 9-58	.1e	50	A	Domestic supply.
38	Waters Spring	1.35 miles NNE. of Beaumont, 4.37 miles E. of Walker County line.	10- 9-58	.23	160	A	Stock supply.
39	T. S. Potts	0.9 mile NNE. of Beaumont, 0.68 mile E. of Walker County line.	10- 9-58	.1e	70	A	Domestic supply.
40	Leitz (Beaumont) Spring	In Beaumont.	11-30-50 6-10-58 10- 9-58	.3 .44 .25	210 300 170	A	Domestic supply.
41	Yates Spring	2.25 miles ESE. of Beaumont, 0.78 mile W. of Ga. Highway 151.	11-30-50 10-27-54 6-11-58 10- 8-58	7.7 6.15 8.2 7.5	5,350 4,270 5,700 5,200	A	Public supply.
42	Williams Spring	3.1 miles NE. of Beaumont, 0.28 mile W. of Ga. Highway 151.	1-23-58	.1	70	A	Stock supply.
43	Paul Young	4.8 miles NE. of Beaumont, 0.45 mile E. of Ga. Highway 151.	1-28-58	.1e	50	C	Stock supply.
44	Brock Farm	4.05 miles ENE. of Boynton, 1.0 mile W. of Ga. Highway 151.	10- 9-58	.1e	50	A	
45	J. L. Bryson	2.55 miles NW. of Keith, 1.4 miles E. of Ga. Highway 151.	10- 9-58	.1e	50	B	Domestic supply.
46	M. C. Evans	3.7 miles NW. of Keith, 0.08 mile E. of Ga. Highway 151.	10- 9-58	.1e	50	B	
47	C. R. Mills	0.1 mile S. of Tennessee line, 2.45 miles E. of Ga. Highway 151.	10- 9-58	.1e	50	B	Stock supply.
48	W. R. Ensley	0.25 mile S. of Tennessee line, 3.1 miles E. of Ga. Highway 151.	10- 9-58	.1e	50	C	Domestic supply.
49	Ellis Spring	1.5 miles E. of Boynton, N. side of Ga. Highway 2.	1-17-51 8- 8-58 10- 9-58	.56 .99 .80	390 690 550	A	Unused. Reported to be polluted.

e Estimated.

Table 8.--Minimum estimated flows of springs, Catoosa County, that discharge less than 0.1 million gallons per day.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow		Water-bearing unit	Remarks
				Mgal/d	Gal/min		
1	Sweet Spring	4.08 miles SSW. of Boynton, 2.05 miles E. of Walker County line.	12- 7-58	.03e	20	C	Domestic supply.
2	Whiteoak Spring	4.07 miles SSW. of Boynton, 2.3 miles E. of Walker County line.	12- 7-58	.03e	20	A	Stock supply.
3	Indian Spring	3.7 miles SSW. of Boynton, E. side of road.	12- 7-58	.03e	20		Domestic supply.
4	Mr. Simms	2.2 miles SW. of Boynton, NW. of road intersection.	12- 7-58	.04e	30	A	Stock supply.
5	U.S. Government	2.38 miles WNW. of Boynton, 1.95 miles E. of Walker County line.	12-16-58	.01e	7	C	Unused.
6	Indian Springs	1.62 miles SW. of Graysville, E. side of road.	9-24-58	.01e	7	C	Domestic supply.
7	R. L. Bowman	1.1 miles SE. of Boynton, E. side of road.	2-13-58	.03e	20	C	Unused.
8	F. M. Nation	1.41 miles SSE. of Boynton, W. side of road.	2-11-58	.03e	20	C	Domestic supply.
9	A. S. Gracy	4.04 miles SSW. of Boynton, SE. side of road.	1- 7-58	.01e	7	C	do.
10	J. L. Heald	1.87 miles NNW. of Beaumont, 3.77 miles E. of Walker County line.	1- 7-58	.01e	7	C	do.
11	F. W. Garland	4.6 miles SE. of Beaumont, E. side or road.	6- 5-58	.01e	7	C	do.
12	Bubbling Spring	4.76 miles ENE. of Beaumont, 2.81 miles N. of Whitfield County line.	8-25-58	.01e	7	C	do.
13	E. Silvers	4.28 miles NE. of Beaumont, 0.15 mile E. of Little Chickamauga Creek.	1-29-58	.03e	20	C	Stock supply.
14	E. Silvers	4.35 miles NE. of Beaumont, 0.2 mile E. of Little Chickamauga Creek.	1-29-58	.03e	20	C	do.
15	W. M. Tatum	4.33 miles SE. of Boynton, 2.8 miles E. of Ga. Highway 151.	1-29-58	.03e	20	A	Domestic supply.
16	W. V. Crisp	4.08 miles SE. of Boynton, E. of Ga. Highway 151.	1-28-58	.01e	7	A	Stock supply.
17	F. Bryson	2.55 miles NW. of Keith, 3.4 miles S. of Tennessee State line.	2-28-58	.03e	20	B	Domestic supply.
18	Robert Childers	2.56 miles SE. of Graysville, E. side of Chickamauga Creek.	1-27-58	.01e	7	C	Unused.
19	M. C. Evans	3.25 miles SE. of Graysville, 2.18 miles S. of Tennessee State line.	1-17-58	.03e	20	C	Domestic supply.
20	---	1.9 miles ESE. of Graysville, 1.35 miles S. of Tennessee State line.	1- 9-58	.01e	7	A	Unused.
21	G. Swanson	0.3 mile E. of Ga. Highway 151, 0.15 mile S. of Tennessee State line.	1- 8-58	.01e	7	C	do.
22	R. S. Spivey	2.33 miles NNE. of Keith, 1.9 miles W. of Whitfield County line.	1- 3-58	.01e	7	C	do.

e Estimated

Table 9.--Chemical analyses[1] of spring water, Catoosa County.

Spring no.	Name or owner	Date of collection	Water-bearing unit[3]	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
				Milligrams per litre																	
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS					0.3		125				250	250	1.0	45	500						15
25	Blue Spring	8-28-58	A	6.5	-	37	12	0.8	0.2	167	2.7	1.5	0.3	0.5	136	142	-	5	260	7.7	2
49	Ellis Spring	5- 7-58	A	7.6	.15	20	9.0	1.2	.7	110	1.2	2.0	.1	1.6	92	87	-	-	170	7.6	2
31	J. R. Graham	9-25-58	A	7.4	.01	43	5.5	.8	.6	161	.8	2.5	.1	-	138	130	-	-	248	7.9	3
32	Graysville Spring	8-25-58	A	9.1	.02	27	12	.6	.6	136	.8	.5	.1	.3	112	117	-	6	213	7.2	6
40	Leitz Spring (Beaumont)	5- 5-58	A	7.3	.01	29	12	.6	.4	155	.2	1.5	.1	.1	129	122	-	-	232	7.8	1
36	Poplar Spring	8-20-58	A	6.9	-	26	13	1.0	.1	141	.4	1.5	.1	.7	116	118	-	4	220	7.6	3
41	Yates Spring	5- 2-58	A	9.5	.01	26	10	.5	.5	129	1.2	1.5	-	1.3	110	106	-	-	209	7.5	0

[1] Analyses by U.S. Geological Survey.

[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

[3] Water was sampled from springs that discharge from water-bearing units shown in figure 10.

Data from Cressler (1963)

Table 10.--Summary of streamflows, Catoosa County.

Site no.	Stream name	Gage type	Location	Drainage area (sq mi)	Estimated average flow (Mgal/d)	Estimated 7-day,10-year minimum flow (Mgal/d)	Water use (1970) (Mgal/d)
1	South Chickamauga Creek	C	Lat 35°01', long 85°12', 0.3 mile upstream from bridge on U.S. Highway 11, and 6.0 miles east of city hall in Chattanooga.	428	443a	53a	
2	Peavine Creek	T	Lat 34°58', long 85°10', at county road, 1.4 miles west of Graysville.	34.3	36	2.9	
3	Hurricane Creek	T	Lat 34°58', long 85°07', at county road, 3.8 miles north of Ringgold.	17.6	18	.6	
4	West Chickamauga Creek	T	Lat 34°56', long 85°13', at State Highway 2, 0.6 mile east of Chickamauga National Park boundary, and 2.7 miles southeast of Fort Oglethorp.	144	149	18	
5	South Chickamauga Creek	PR	Lat 34°55', long 85°08', at U.S. Highway 41, at Ringgold.	169	174	23	
6	Little Chickamauga Creek	T	Lat 34°54', long 85°07', above mouth, at Ringgold.	48.3	50	10	
7	South Chickamauga Creek	T	Lat 34°55', long 85°07', 300 ft upstream from Little Chickamauga Creek, at Ringgold.	117	121	12	2
8	Tiger Creek	T	Lat 34°54', long 85°05', at U.S. Highway 41, 2 miles southeast of Ringgold.	43.2	45	4.5	
9	East Chickamauga Creek	T	Lat 34°54', long 85°05', at county road, 2 miles southeast of Ringgold.	66.3	68	6.5	
10	East Chickamauga Creek	T	Lat 34°52', long 85°05', 100 ft downstream from Dry Creek, and 3.4 miles southeast of Ringgold.	60.6	63	5.9	
11	East Chickamauga Creek	T	Lat 34°51', long 85°04', 40 ft downstream from Tanyard Creek, and 5.4 miles southeast of Ringgold.	42.1	43	4.1	
12	Tanyard Creek	T	Lat 34°51', long 85°04', upstream from mouth, and 5.5 miles southeast of Ringgold.	9.62	9.7	.6	

C Continuous record
PR Low-flow partial-record
T TVA site

a Based on continuous daily flow, 1929-68.

Table 11.--Chemical analyses[1] of streams, Catoosa County.

Date	Time	Discharge (ft^3/s)	Total iron (Fe) (µg/l)	Total manganese (Mn) (µg/l)	Milligrams per litre													Specific conductance (Micromhos)	pH (Units)	Temperature (Degree C)	Color (Platinum cobalt units)	Dissolved oxygen (Mg/l)	Biochemical oxygen demand (Mg/l)	Fecal coliform (MPN)
					Dissolved calcium (Ca)	Dissolved magnesium (Mg)	Sodium (Na)	Potassium (K)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Nitrite plus nitrate (N)	Ammonia nitrogen (N)	Total phosphorus (P)	Total filtrable residue	Total nonfiltrable residue	Hardness (Ca,Mg)							
SITE 5 - Figure 10. South Chickamauga Creek at Ringgold.																								
6-17-71	0915		400	<50	35	10	1.2	1.4	117	30	1.8	0.32	0.04	0.07	176	39	130	270	7.8	21.0	10	6.5	0.6	4,300

[1] Analysis by Georgia Dept. of Natural Resources.

EXPLANATION

CHATTOOGA COUNTY MAPS

PRINCIPAL WATER-BEARING UNITS

A — Yields generally range from 5 to 50 gal/min. Yields as large as 1,000 gal/min may be obtained at favorable sites. Aquifer is dolomite and limestone. Water quality generally meets drinking-water standards and is suitable for many industrial uses.

B — Yields generally are less than 50 gal/min. Yields as large as 500 gal/min may be obtained at favorable sites. Aquifer is limestone and bedded chert. Water quality generally meets drinking-water standards and is suitable for many industrial uses. Water from lower part of unit may contain excessive iron.

C — Yields generally range from 0 to 20 gal/min. Yields as large as 50 gal/min may be obtained at favorable sites. Aquifers are sandstone, shale, limestone, mudstone, and bedded chert. Water quality generally meets drinking-water standards except for excessive iron.

FAVORABLE WELL SITES—number indicates expected yield in gal/min

●1 As much as 50

●2 As much as 500

●3 As much as 1,000

SPRINGS—number refers to tables 13 and 14.

4 Unused

3 At least half of flow unused

7 Entire flow in use

GAGING STATIONS—number refers to tables 15 and 16.

2 Low-flow partial record

▲1 Continuous record

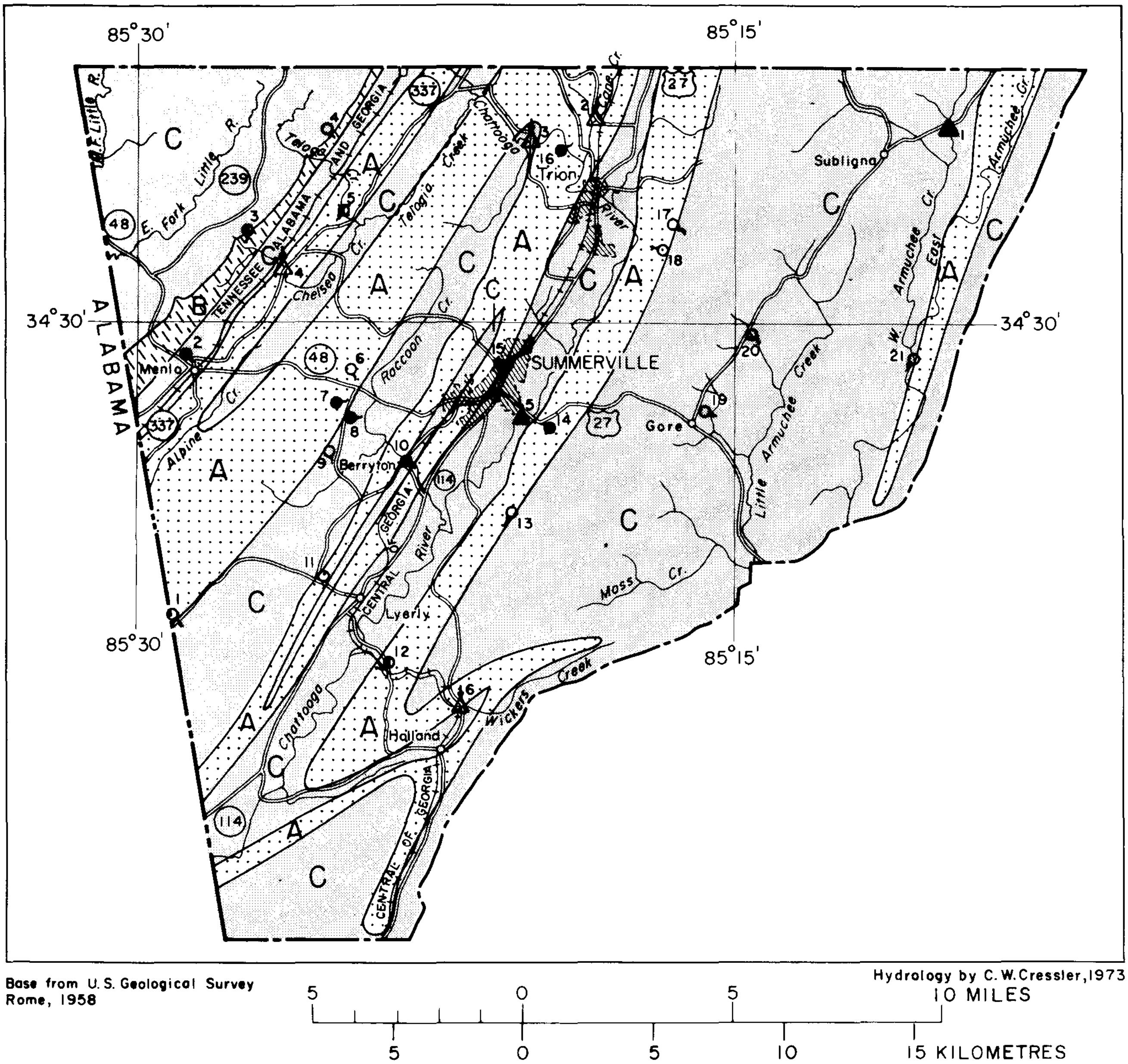


Figure 15.— Principal water-bearing units and location of favorable well sites, north Trion and vicinity, Chattooga County. For Explanation see page 36.

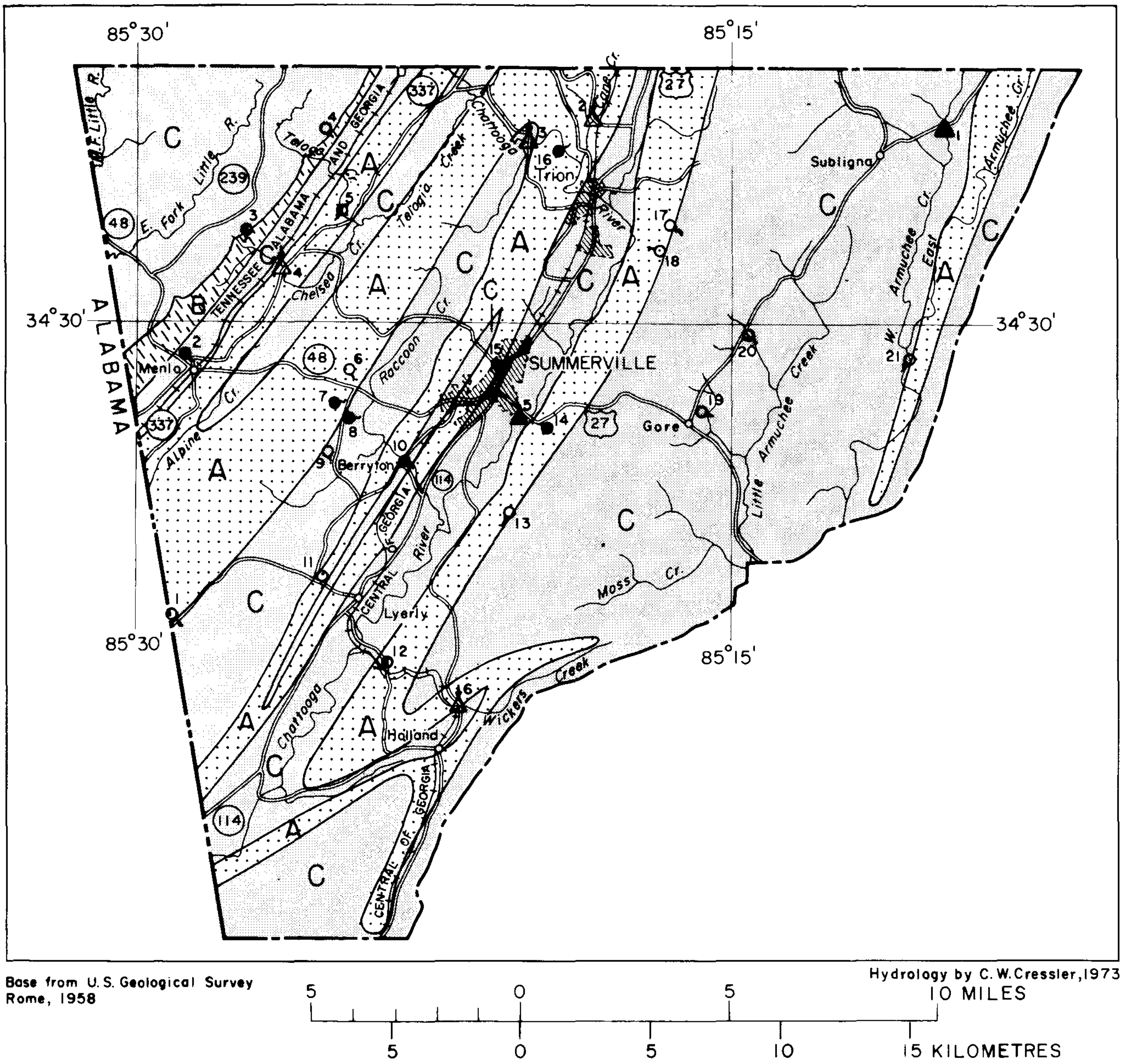


Figure 15.— Principal water-bearing units and location of favorable well sites, north Trion and vicinity, Chattooga County. For Explanation see page 36.

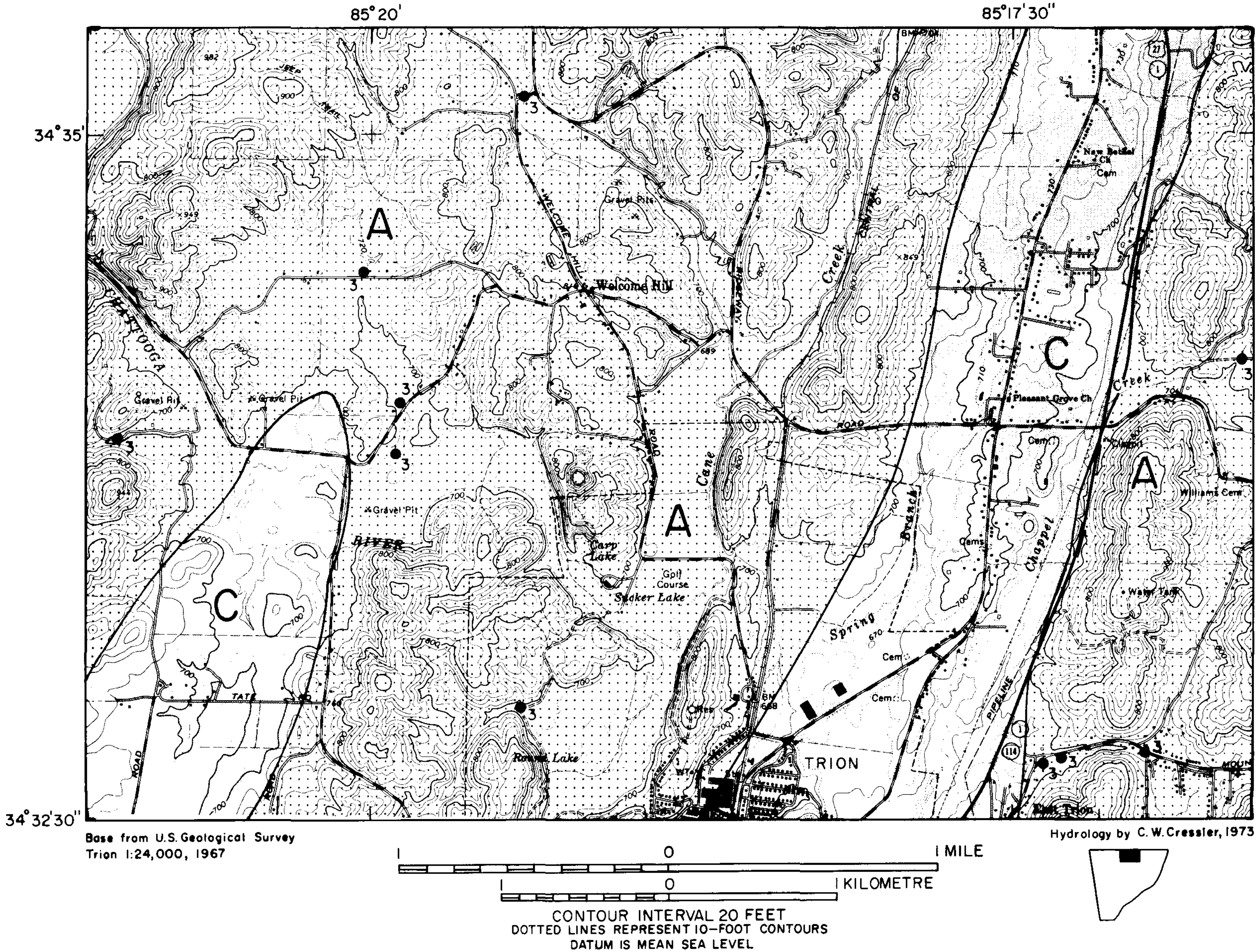


Figure 16.—Principal water-bearing units and location of favorable well sites, north Trion and vicinity. For Explanation see page 36.

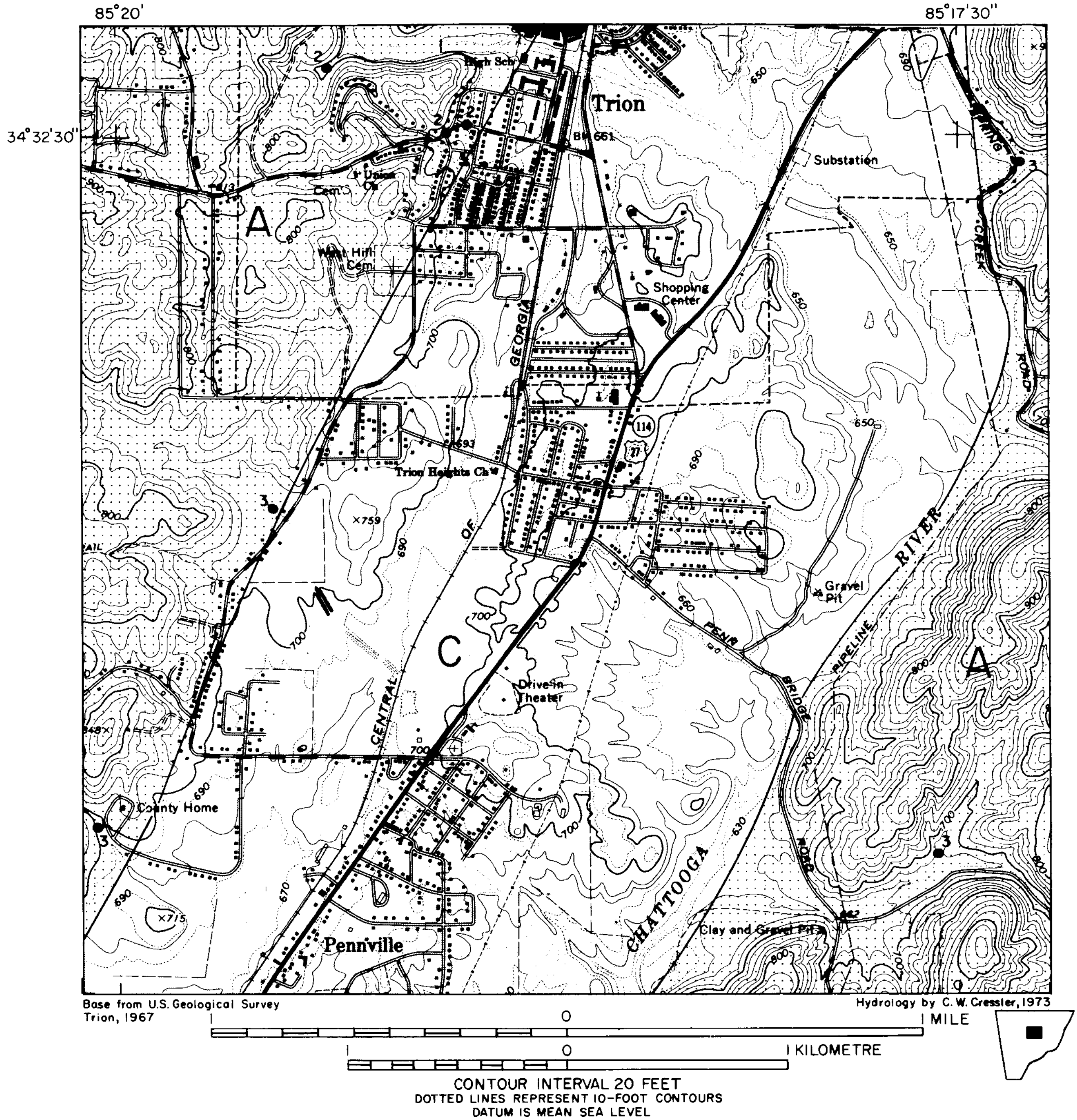


Figure 17.— Principal water-bearing units and location of favorable well sites, south Trion and Pennville area, Chattooga County. For Explanation see page 36.

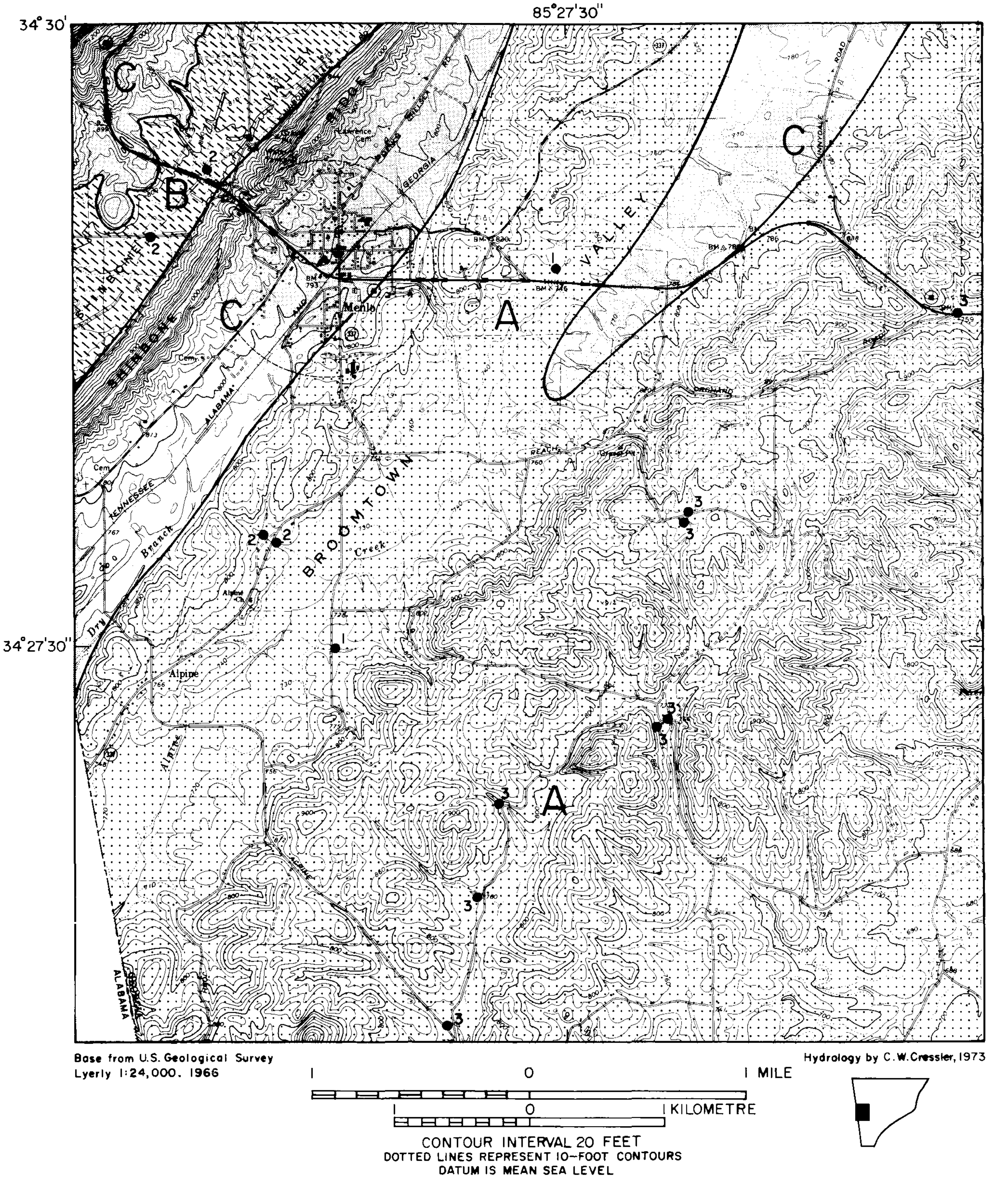


Figure 18.— Principal water-bearing units and location of favorable well sites, Menlo and vicinity, Chattooga County. For Explanation see page 36.

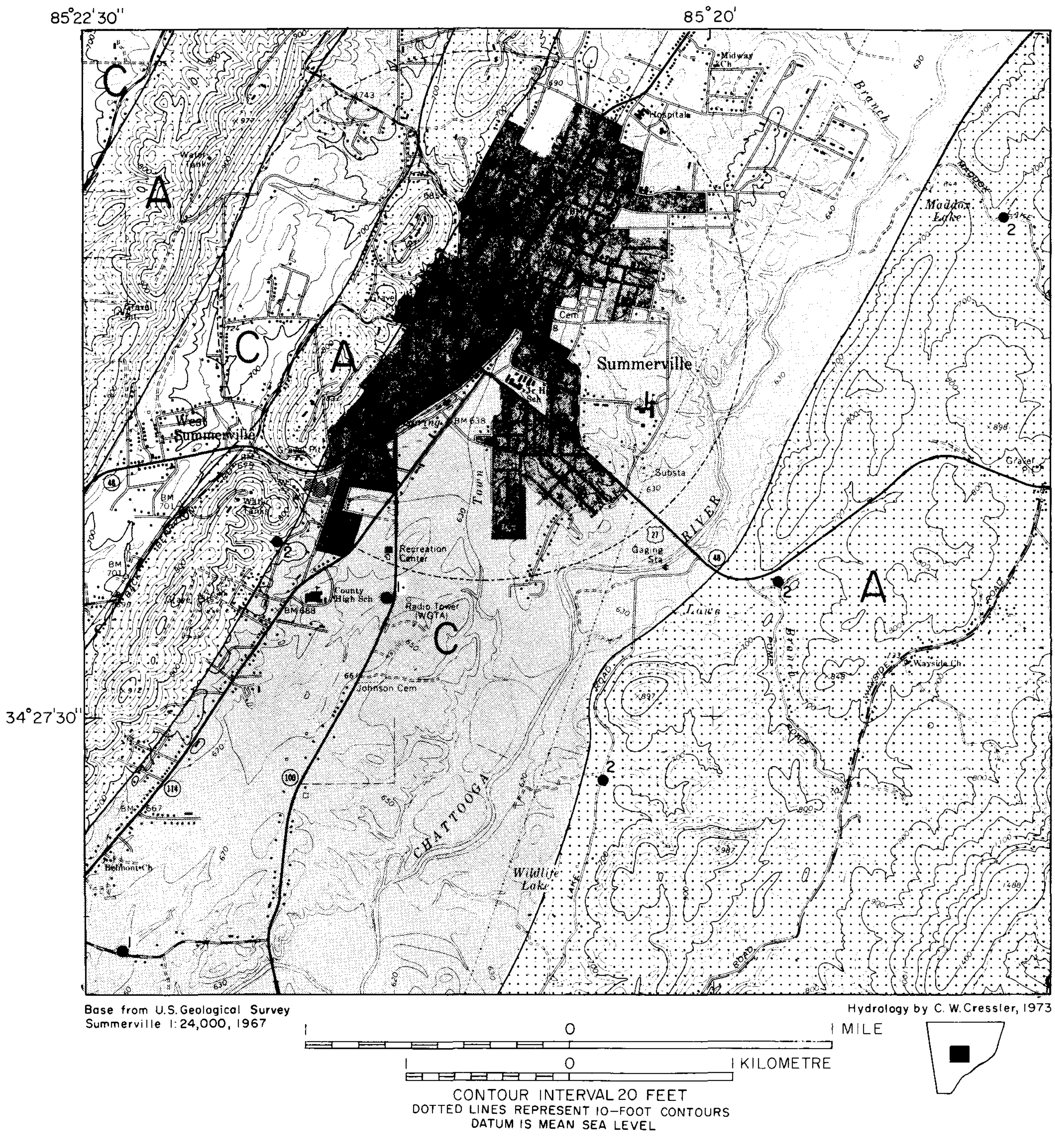


Figure 19.— Principal water-bearing units and location of favorable well sites, Summerville and vicinity, Chattooga County. For Explanation see page 36.

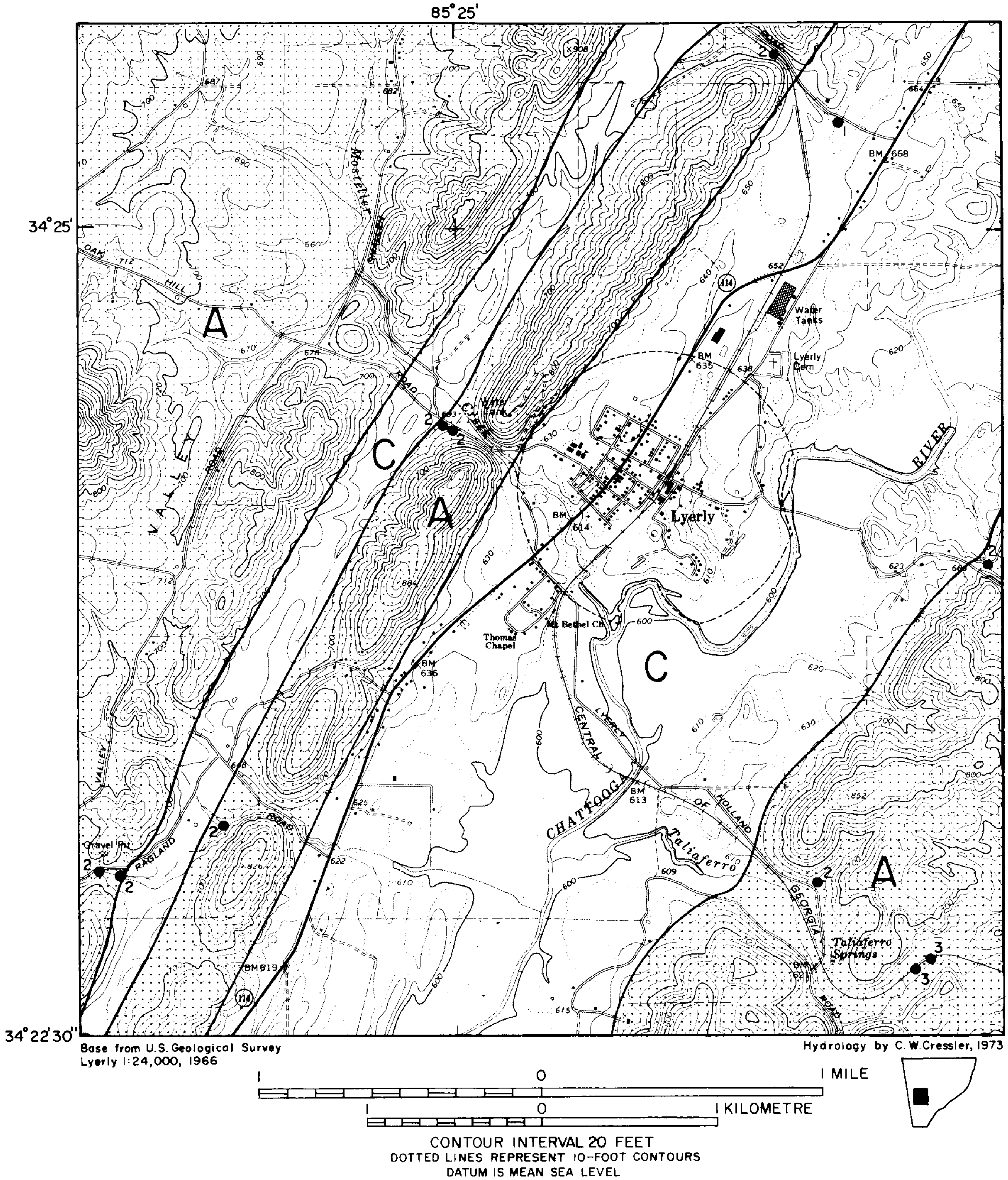


Figure 20.— Principal water-bearing units and location of favorable well sites, Lyerly and vicinity, Chattooga County. For Explanation see page 36.

Table 12.--Chemical analyses[1] of well water, Chattooga County.

Owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS				0.3		125				250	250	1.0	45	500						15
Ollie McGraw	2-28-61	A	8.2	0.04	50	0.2	3.6	0.1	141	5.2	6.0	0.1	6.3	158	168	126	-	257	7.6	
D. P. Brown	2-28-61	B	5.9	.12	2.4	-	1.8	.1	16	.4	3.2	-	.8	30	22	6	-	42	6.2	
Earl Copeland	2-28-61	B	6.7	.08	31	1.6	1.6	.2	92	1.2	3.0	-	9.0	106	99	84	8	173	7.4	
Chattooga County	2-27-61	C	16	.02	44	1.5	2.5	.1	129	13	1.0	.1	1.3	143	144	116	10	232	7.2	
Do.	2-28-61	C	13	.02	47	1.6	2.6	.6	146	.8	3.5	-	9.1	154	150	124	4	241	7.7	
E. C. Galloway	2-28-61	C	24	1.9	23	3.8	5.1	.7	72	22	-	.1	.6	118	114	73	14	167	6.9	
William Hughes	2-28-61	C	19	1.2	92	8.9	9.7	.3	332	22	2.0	.1	.6	326	319	266	-	546	8.2	
Juliette Lowe Girl Scout Camp	2-28-61	C	5.4	.07	6.8	1.1	1.1	.3	26	3.6	.8	-	.9	39	33	22	-	56	6.8	
City of Lyerly	9-22-52	C	13	-	73	-	-	-	184	-	7.0	-	3	-	225	170	-	-	7.3	
Do.	9-28-61	C	14	.02	69	1.9	5.3	.5	194	13	8.0	.1	12	220	220	180	21	369	7.5	
O. B. Millican	2-27-61	C	4.1	2.9	38	3.6	26	9.3	144	29	11	.1	20	213	212	110	-	365	6.8	
Furman M. Owens	2-27-61	C	28	.64	39	4.0	7.9	.2	154	1.6	1.0	.1	.7	159	158	114	-	245	7.3	

[1] Analyses by U.S. Geological Survey.

[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

[3] Water was sampled from wells tapping water-bearing units shown in figure 15.

Data from Cressler (1964)

Table 13.--Minimum measured or estimated flow of springs, Chattooga County.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow		Water-bearing unit	Remarks
				Mgal/d	Gal/min		
1	Moses Spring	6.1 miles S. of Menlo, 0.1 mile E. of Alabama State line, W. side of road.	11- 8-50	3.3	2,300	A	
			10-20-54	1.9	1,320		
			2-13-61	2.8	1,940		
			4-25-61	4.1	2,840		
			10-25-61	2.5	1,730		
2	P. V. Yound	N. part of Menlo, at waterworks.	11- 7-50		6	C	Public supply.
3	Blowing Spring	4.02 miles NNE. of Menlo, at base of Lookout Mountain.	10-31-50	.06	42	C	Domestic supply.
			3- 3-61	1.4	970		
			4-28-61	.44	300		
4	Hemphill Spring	6.7 miles NNE. of Menlo, at base of Lookout Mountain.	4-28-61	.01e	10	C	
5	Knox Spring	5.45 miles NE. of Menlo, W. side of road.	11- 2-50	.87	600	A	Domestic supply.
			2-13-61	2.1	1,450		
			4-28-61	3.4	2,260		
			10-25-61	1.7	1,180		
6	Gamble Spring	2.35 miles NW. of Berryton, 0.3 mile N. of Ga. Highway 48.	11- 2-50	.68	470	A	
7	Montgomery Spring	2.05 miles NW. of Berryton, 0.3 mile S. of Ga. Highway 148.	11- 2-50	2.8	1,940	A	Supplies water to fish hatchery.
			10-19-54	1.0	700		
			2-15-61	1.3	900		
8	Summerville Fish Hatchery	1.75 miles NW. of Berryton, 0.4 mile S. of Ga. Highway 148.	10-19-54	1.0	700	A	Fish hatchery.
			2-15-61	.8	550		
9	Perennial Spring (Hurley Spring)	1.7 miles WNW. of Berryton, W. side of road.	11- 8-50	4.2	2,800	A	
			10-20-54	2.2	1,530		
			2-15-61	4.1	2,840		
			4 25-61	4.2	2,900		
			10-25-61	2.9	2,000		
10	Berryton Mills	In Berryton.	11- 8-50	.01	10	C	Industrial supply.
11	Vernon Spring	1.0 mile WNW. of Lyerly, 0.2 mile N. of road.	11- 8-50	.42	290	A	Unused.
12	Taliaferro Spring	1.85 miles SE. of Lyerly, E. of road.	11- 8-50	.85	590	A	Domestic supply.
			10-20-54	.58	400		
13	Marble Spring	3.4 miles ESE. of Berryton, 2.1 miles S. of U.S. Highway 27.	11- 7-50	.27	186	A	
14	City of Summerville	3.75 miles ENE. of Berryton, 0.2 mile S. of U.S. Highway 27.	3- 3-61	1.5	1,040	A	City supply.
			6-12-61	.7	490		
			10-25-61	.4	280		
15	Cleghorn Spring	N. of business district in Summerville, W. of U.S. Highway 27.	8-22-50	2.6	1,800	A	Developed.
			11- 2-50	1.6	1,100		
			10-19-54	.46	320		
16	Trion Spring	W. bank of Chattooga River, N. part of Trion.	10-19-54	7.7	5,350	A	Industrial supply.
			3- 3-61	10.5	7,300		
			6- 5-61	8.3	5,750		
			10-25-61	7.7	5,350		
			6-28-67	9.2	6,400		
17	Rider Spring	4.9 miles N. of Gore, 2.0 miles E. of U.S. Highway 27.	11- 1-50	.29	200	A	
18	Phillip's Spring	3.35 miles N. of Gore, 1.75 miles E. of U.S. Highway 27.	11- 1-50	.19	130	A	Flows into lake.
19	---	0.3 mile NE. of Gore, at head of lake.	6-12-61	.7	480	C	Flows into lake.
20	Hick's Spring	2.45 miles NE. of Gore, 0.16 mile E. of Subligna road.	11- 9-50	.29	200	C	
21	Water's Spring	E. bank of Armuchee Creek, 5.9 miles NE. of Gore, and 5.18 miles SSE. of Subligna.	11- 9-50	11.0	7,700	A	Tests indicate this spring may be polluted by stream water. Flooded during high water.
			10-25-61	13.9	9,700		

e Estimated

Table 14.--Chemical analyses[1] of spring water, Chattooga County.

Spring no.	Name or owner	Date of collection	Water-bearing unit[3]	Milligrams per litre													Hardness[2] as $CaCO_3$		Specific conductance (micromhos per cm at 25°C)	pH	Color
				Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Calcium, magnesium	Non-carbonate			
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS					0.3		125				250	250	1.0	45	500						15
14	City of Summerville	2-10-47	A	12	0.15	32	4.0	-	-	144	10	3.7	-	-	-	125	86	-	-	7.9	
	Do.	3-23-61	A	8.1	.11	26	6.8	15	0.3	110	.8	2.0	-	2.0	108	102	93	3	183	7.6	
5	J. S. Knox	2-13-61	A	7.2	.10	44	4.1	1.1	.4	149	2.0	2.0	.1	5.1	142	139	127	5	249	7.5	
1	Moses Spring	2-13-61	A	8.9	.05	24	10	.8	.2	117	.8	1.0	-	2.6	105	106	101	5	189	7.5	
9	Perennial Spring	2-15-61	A	10	.10	26	9.0	.6	.1	120	.8	1.0	-	1.2	107	108	102	4	193	7.6	
8	Summerville Fish Hatchery	5-20-53	A	6.0	-	35	1.0	-	-	117	-	2.5	-	-	-	134	86	-	-	8.5	
	Do.	2-15-61	A	8.2	.03	29	7.9	.4	.2	126	.8	.5	-	1.1	106	110	105	2	204	7.6	
16	Trion Spring	4-20-38	A	7.0	.01	23	11	1.1	.6	118	1.4	1.5	-	2.4	-	103	103	-	-	-	
	Do.	2-28-61	A	6.7	.04	23	8.9	.7	.1	112	-	1.0	-	2.2	97	98	94	2	180	7.6	
3	Blowing Spring	2-28-61	C	7.3	.29	18	.2	1.0	.4	57	.8	.8	-	-	61	56	46	-	96	7.3	

[1] Analyses by U.S. Geological Survey.

[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

[3] Water was sampled from springs that discharge from water-bearing units shown in figure 15.

Data from Cressler (1964)

Table 15.--Summary of streamflows, Chattooga County.

Site no.	Stream name	Gage type	Location	Drainage area (sq mi)	Estimated average flow (Mgal/d)	Estimated 7-day,10-year minimum flow (Mgal/d)	Water use (1970) (Mgal/d)
1	West Armuchee Creek	C	Lat 34°34', long 85°09', at county road, 2 miles east of Subligna.	34.5	40a	4.1a	
2	Cane Creek	PR	Lat 34°34', long 85°19', at county road, 1.4 miles north of Trion.	38	41	.4	
3	Chattooga River	M	Lat 34°32', long 85°26', at county road, 13 miles northwest of Trion.	119	130	5.4	
4	Chelsea Creek	M	Lat 34°31', long 85°26', at Ga. Highway 337, 3.2 miles northeast of Menlo.	3.56	3.9	.1	
5	Chatooga River	C	Lat 34°28', long 85°20', 600 ft downstream from U.S. Highway 27, at Summerville.	193	222b	41b	
6	Wickers Creek	M	Lat 34°22', long 85°22', at Ga. Highway 100, 3.5 miles southeast of Lyerly.	6.0	6.4	.8	

C Continuous record
PR Low-flow partial-record
M Miscellaneous site

a Based on continuous daily flows, 1961-69.
b Based on continuous daily flows, 1937-68.

Table 16.--Chemical analyses[1] of streams, Chattooga County.

Date	Time	Discharge (ft^3/s)	Total iron (Fe) (µg/l)	Total manganese (Mn) (µg/l)	Milligrams per litre: Dissolved calcium (Ca)	Dissolved magnesium (Mg)	Sodium (Na)	Potassium (K)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Nitrite plus nitrate (N)	Ammonia nitrogen (N)	Total phosphorus (P)	Total filtrable residue	Total nonfiltrable residue	Hardness (Ca,Mg)	Specific conductance (Micromhos)	pH (Units)	Temperature (Degree C)	Color (Platinum cobalt units)	Dissolved oxygen (Mg/l)	Biochemical oxygen demand (Mg/l)	Fecal coliform (MPN)
SITE 5 - Figure 15. Chattooga River at Summerville.																								
1-29-73	1540	650					18		92		3.4	0.36	0.05	0.10			66	200	10.2	8.0	75	9.9	2.5	4,300
7-17-73	1500	187					14		167		53	<.02	.12	.53			112	500	9.2	22.5	30	.6	8.4	93,000

[1] Analyses by Georgia Dept. of Natural Resources.

EXPLANATION

DADE COUNTY MAPS

PRINCIPAL WATER-BEARING UNITS

A — Yields generally range from 5 to 50 gal/min. Yields as large as 1,000 gal/min may be obtained at favorable sites. Aquifer is dolomite and limestone. Water quality generally meets drinking-water standards and is suitable for many industrial uses.

B — Yields generally are less than 50 gal/min. Yields as large as 500 gal/min may be obtained at favorable sites. Aquifer is limestone and bedded chert. Water quality generally meets drinking-water standards and is suitable for many industrial uses. Water from lower part of unit may contain excessive iron.

C — Yields generally range from 0 to 20 gal/min. Yields as large as 50 gal/min may be obtained at favorable sites. Aquifers are sandstone, shale, limestone, mudstone, and bedded chert. Water quality generally meets drinking-water standards except for excessive iron.

H — Yields generally range from 5 to 25 gal/min. Aquifer is thin bedded limestone. Water quality generally meets drinking-water standards except for high sulfate content.

FAVORABLE WELL SITES—number indicates expected yield in gal/min.

●1 As much as 25

●2 As much as 500

SPRINGS—number refers to tables 18 and 19

1 Unused

2 At least half of flow unused

8 Entire flow in use

GAGING STATIONS—number refers to table 20

2 Low-flow partial record

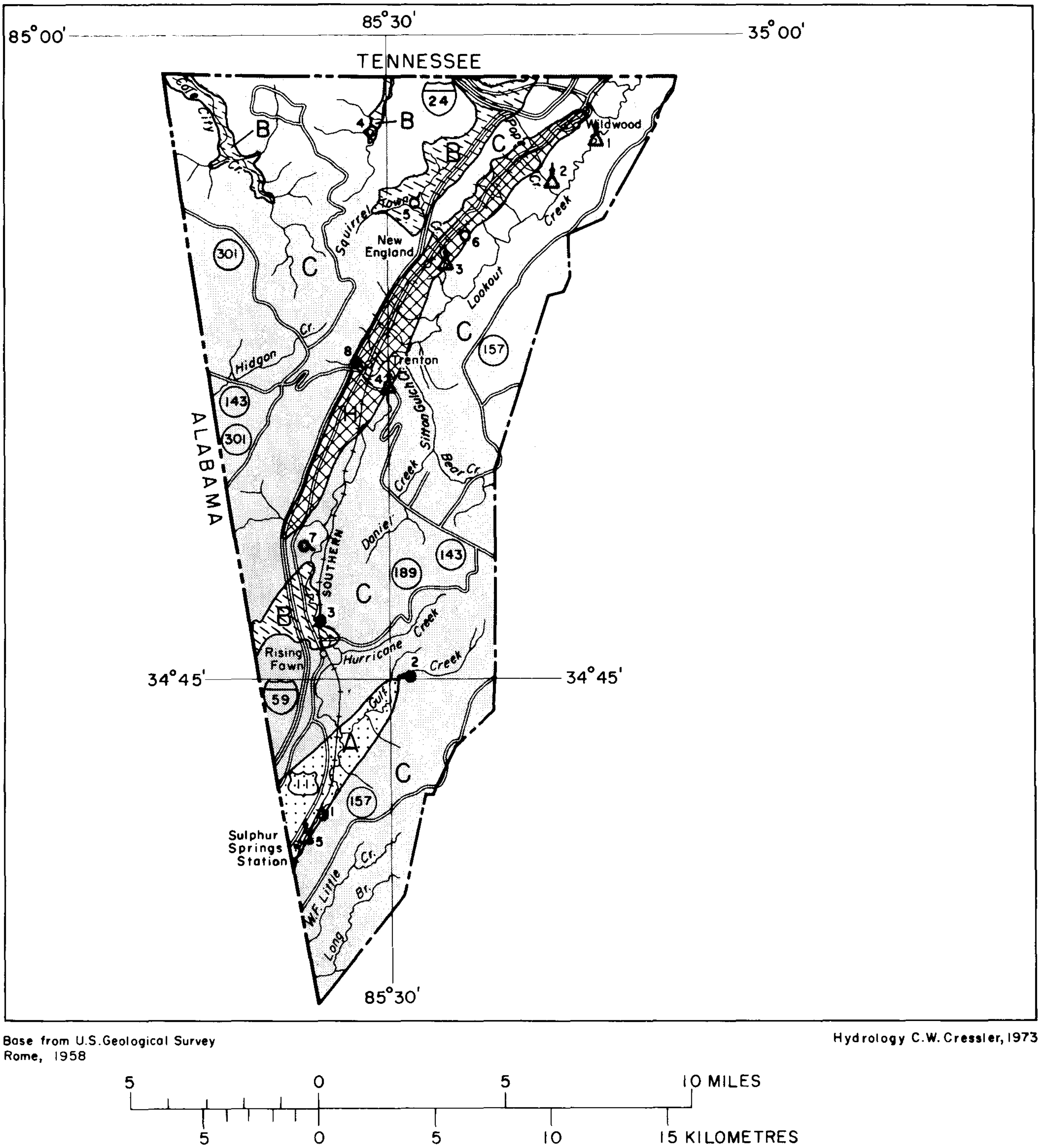


Figure 21.—Principal water-bearing units and location of springs and stream-gaging stations, Dade County. For Explanation see page 48.

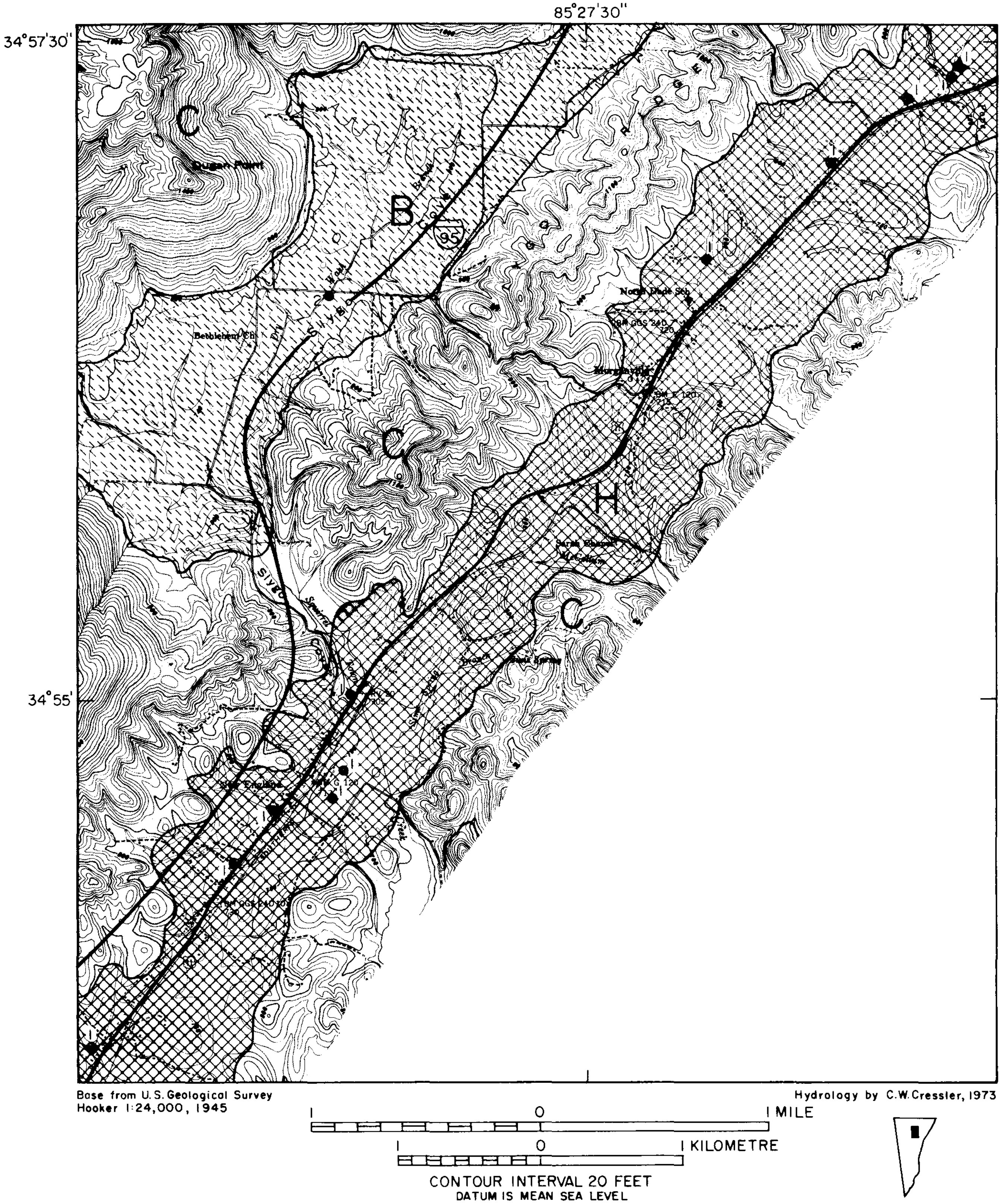


Figure 22.— Principal water-bearing units and location of favorable well sites, New England and vicinity, Dade County. For Explanation see page 48.

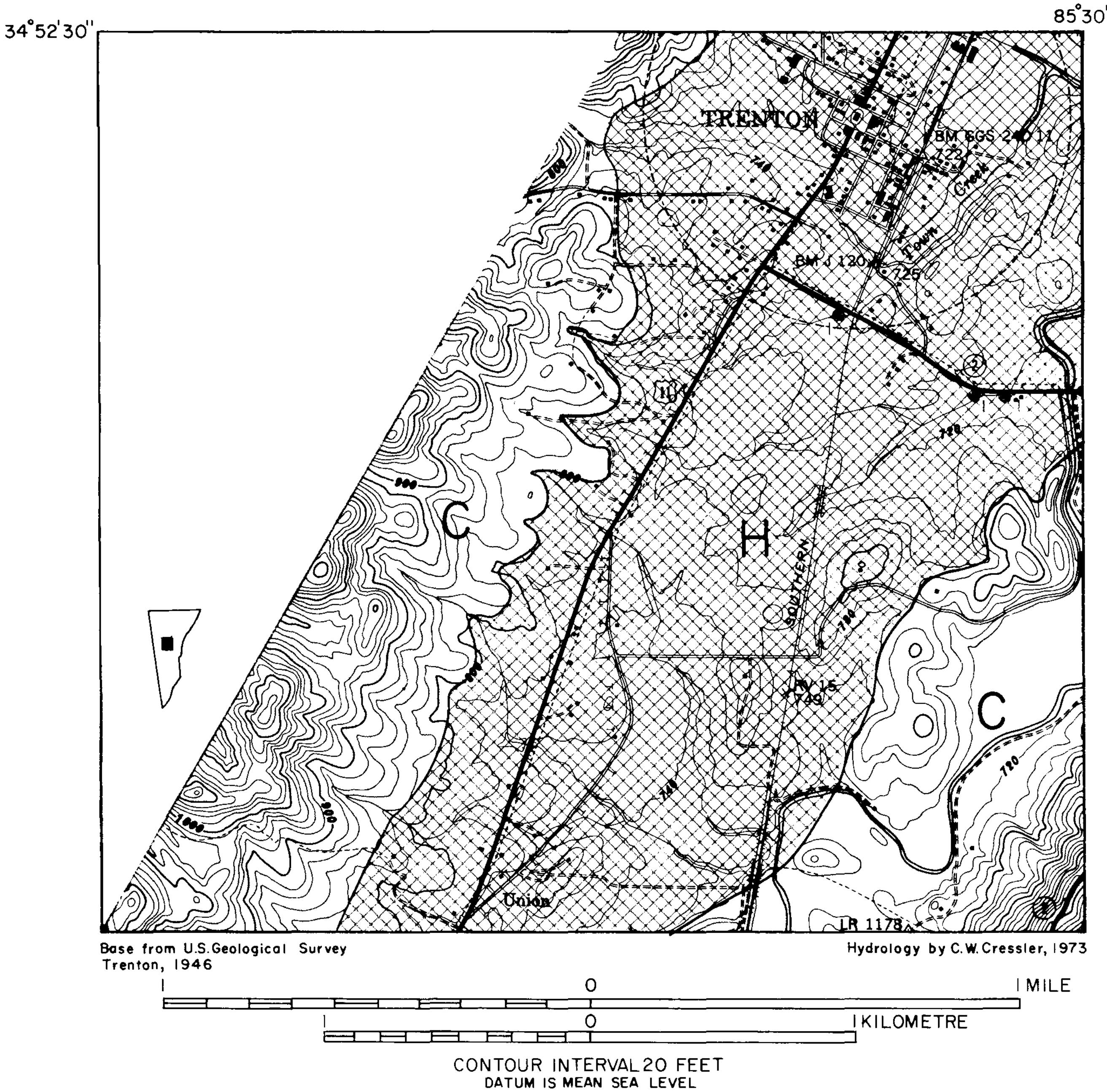


Figure 23.— Principal water-bearing units and location of favorable well sites, south Trenton, Dade County. For Explanation see page 48.

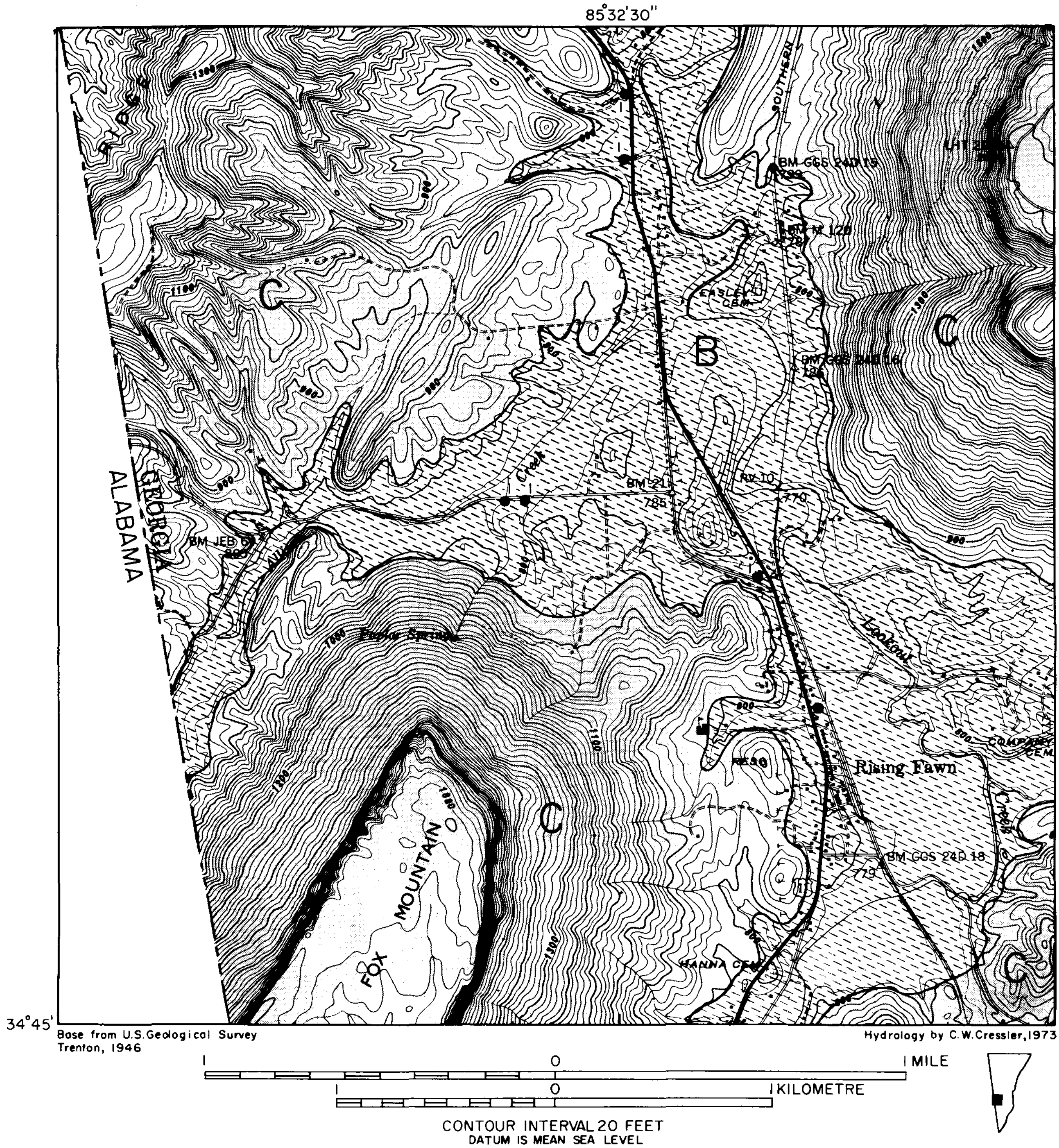


Figure 24.— Principal water-bearing units and location of favorable well sites, Rising Fawn and vicinity, Dade County.

Table 17.--Chemical analyses[1] of well water, Dade County.

Owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS				0.3		125				250	250	1.0	45	500						15
B. Forrester	12-29-58	A	8.0	0.01	38	17	3.2	0.8	162	6.8	7.0	0.1	22	194		165			7.9	
H. G. Hawkins	12-29-58	A	8.6	.03	63	16	1.8	.2	253	3.4	5.5	.1	11	241		223			7.6	
D. T. Brown Lumber Co.	12-29-58	B	7.9	.08	74	6.2	6.0	2.7	224	31	8.5	.1	2.4	260		210			7.2	
O. Reeves	12-29-58	B	13	-	118	37	7.5	1.6	475	28	36	.1	2	510		446			7.3	
L. F. Shelton	10-27-11	B	32	1.4	8	3.1	.660	-	476	227	1,394	-	.4	-		-			-	
L. C. Adams	12-29-58	C	12	1.3	3.0	2.1	1.3	.8	24	3.4	1.8	.1	.2	39		16			6.0	
L. L. Bridgeman	12-29-58	C	7.6	.05	4	1.6	1.0	.1	24	.6	6.8	-	.4	37		17			6.8	
W. R. Fuller	12-29-58	C	11	.12	54	3.8	1.7	.6	181	4.8	1.5	.2	-	163		150			7.7	
L. Gray	12-30-58	C	15	1.3	2	1.3	2.2	.2	28	1.5	.8	-	-	32		10			7.5	
W. H. Kimsey	12-29-58	C	8.9	.10	43	6.4	1.4	.3	150	.5	3.0	.1	13	142		134			7.7	
L. R. Moore	12-30-58	C	11	.4	19	1.6	1.4	.2	66	3.7	1.0	.1	.5	60		54			7.1	
W. W. Tinker	12-29-58	C	5.5	.09	21	2.8	1	.4	74	4.7	1.0	.1	.4	76		64			7.7	
J. E. Tittle	12-29-58	C	13	.22	85	21	23	5.0	352	52	7.5	.2	1.2	370		298			7.4	
J. O. Veazey	12-30-58	C	13	2.2	5	2.9	1.8	.2	26	9.6	.2	.1	-	48		24			6.3	

Data from Croft (1964)

[1] Analyses by U.S. Geological Survey.
[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".
[3] Water was sampled from wells tapping water-bearing units shown in figure 21.

Table 18.--Minimum measured or estimated flow of springs, Dade County.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow		Water-bearing unit	Remarks
				Mgal/d	Gal/min		
1	Sulphur Springs	0.82 mile NE. of Sulphur Springs Station, 0.08 mile east of Alabama line.	10-25-73	0.33	220	A	Flows into lake.
2	Cedar Grove Forester Spring	2.48 miles ESE. of Rising Fawn, 4.06 miles east of Alabama line.	10-25-73	.065e	45	C	Domestic supply.
3	Trenton	0.76 mile N. of center of Rising Fawn, 0.25 mile east of U.S. Highway 11.	10-25-73	.05e	35	B	Unused.
4	Shellmound Murphy Spring	5.38 miles E. of Alabama line, 1.56 miles south of Tennessee line, east side of road.	10-25-73	--	5	B	Unused.
5	Hooker	1.41 miles NNW. of New England, 1.53 miles west of U.S. Highway 11.	10-25-73	.03e	20	B	Enclosed. Unused.
6	Sims Spring	1.22 miles NE. of New England, 0.62 mile east of U.S. Highway 11.	10-25-73	dry	--	H	Feeds lake.

e Estimated

Table 19.--Chemical analyses[1] of spring water, Dade County.

Spring no.	Name or owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS					0.3		125				250	250	1.0	45	500						15
5	O. R. Haswell	12-29-58	B	8.7	0.04	42	5.1	1.0	0.1	142	5.6	1.5	0.1	2.5	132	-	126	-	-	7.6	-
8	City of Trenton	6- 3-59	C	7.8	.02	45	4.7	.4	.5	157	4.6	1.5	-	.5	143	-	132	-	-	7.4	-
7	M. Cureton (Poplar Spring)	8-22-52	C	11	-	48	-	-	-	150	3.0	2.0	-	-	165	-	105	-	-	7.7	-
2	P. Forester (Forester Spring)	12-29-58	C	4.5	.04	6	.5	.6	.5	18	3.6	1.2	-	.1	26	-	18	-	-	6.8	-

[1] Analyses by U.S. Geological Survey.

[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

[3] Water was sampled from springs that discharge from water-bearing units shown in figure 21.

Data from Croft (1964)

Table 20.--Summary of streamflows, Dade County.

Site no.	Stream name	Gage type	Location	Drainage area (sq mi)	Estimated average flow (Mgal/d)	Estimated 7-day,10-year minimum flow (Mgal/d)	Water use (1970) (Mgal/d)
1	Lookout Creek	T	Lat 34°55', long 85°24', 1 mile southeast of Wildwood.	165	181	10	
2	Pope Creek	T	Lat 34°56', long 85°25', at county road, 1.5 miles south of Wildwood.	8.21	9.0	.3	
3	Squirrel Town Creek	T	Lat 34°55', long 85°28', at county road, 0.4 mile east of New England.	9.41	10	.3	
4	Lookout Creek	T	Lat 34°52', long 85°30', at Ga. Highway 143, at Trenton.	102	112	5.6	1.0
5	Lookout Creek	T	Lat 34°41', long 85°37', 0.5 mile northeast of Sulphur Springs station.	16.3	18	1.4	

T TVA site

EXPLANATION

FLOYD COUNTY MAPS

PRINCIPAL WATER-BEARING UNITS

A — Yields generally range from 5 to 50 gal/min. Yields as large as 1,000 gal/min may be obtained at favorable sites. Aquifer is dolomite and limestone. Water quality generally meets drinking-water standards and is suitable for many industrial uses.

B — Yields generally are less than 50 gal/min. Yields as large as 500 gal/min may be obtained at favorable sites. Aquifer is limestone and bedded chert. Water quality generally meets drinking-water standards and is suitable for many industrial uses. Water from lower part of unit may contain excessive iron.

C — Yields generally range from 0 to 20 gal/min. Yields as large as 50 gal/min may be obtained at favorable sites. Aquifers are sandstone, shale, limestone, mudstone, and bedded chert. Water quality generally meets drinking-water standards except for excessive iron.

D — Yields generally are less than 20 gal/min; a few exceed 50 gal/min. Yields as large as 300 gal/min may be obtained at favorable sites. Aquifer is limestone or dolomite units interlayered with shale units. Water quality generally meets drinking-water standards, although some contains excessive iron.

FAVORABLE WELL SITES—number indicates expected yield in gal/min.

●1 As much as 50

●3 As much as 1,000

SPRINGS—numbers 1 to 16 indicate flows of less than 0.1 Mgal/d.
Numbers 17 to 47 indicate flows of more than 0.1 Mgal/d.
Number refers to tables 22, 23, and 24.

8 Unused

7 At least half of flow unused

32 Entire flow in use

GAGING STATIONS—number refers to tables 25 and 26

1 Low-flow partial record

3 Continuous record

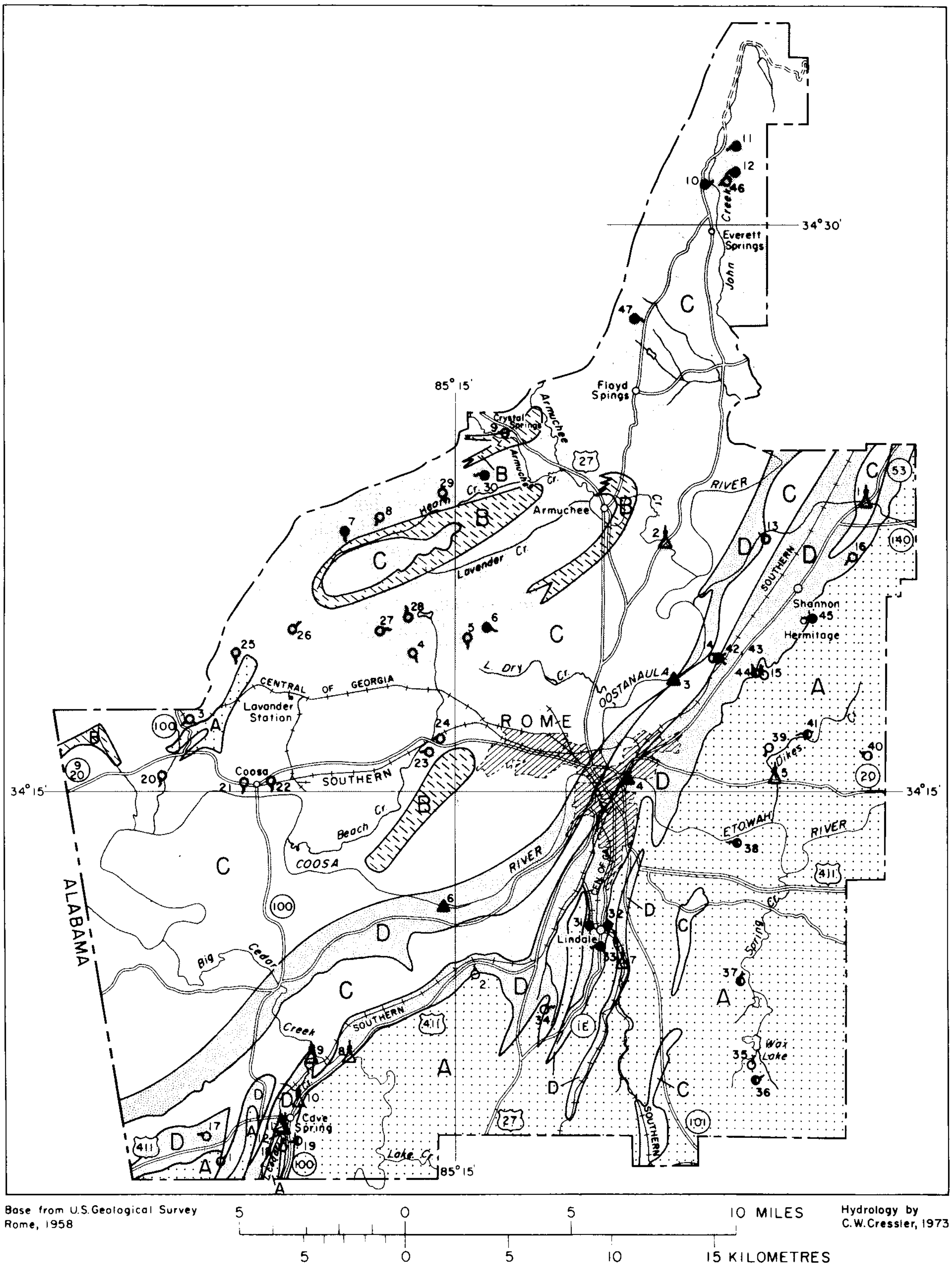


Figure 25.— Principal water-bearing units and location of springs and stream gaging stations, Floyd County. For Explanation see page 57.

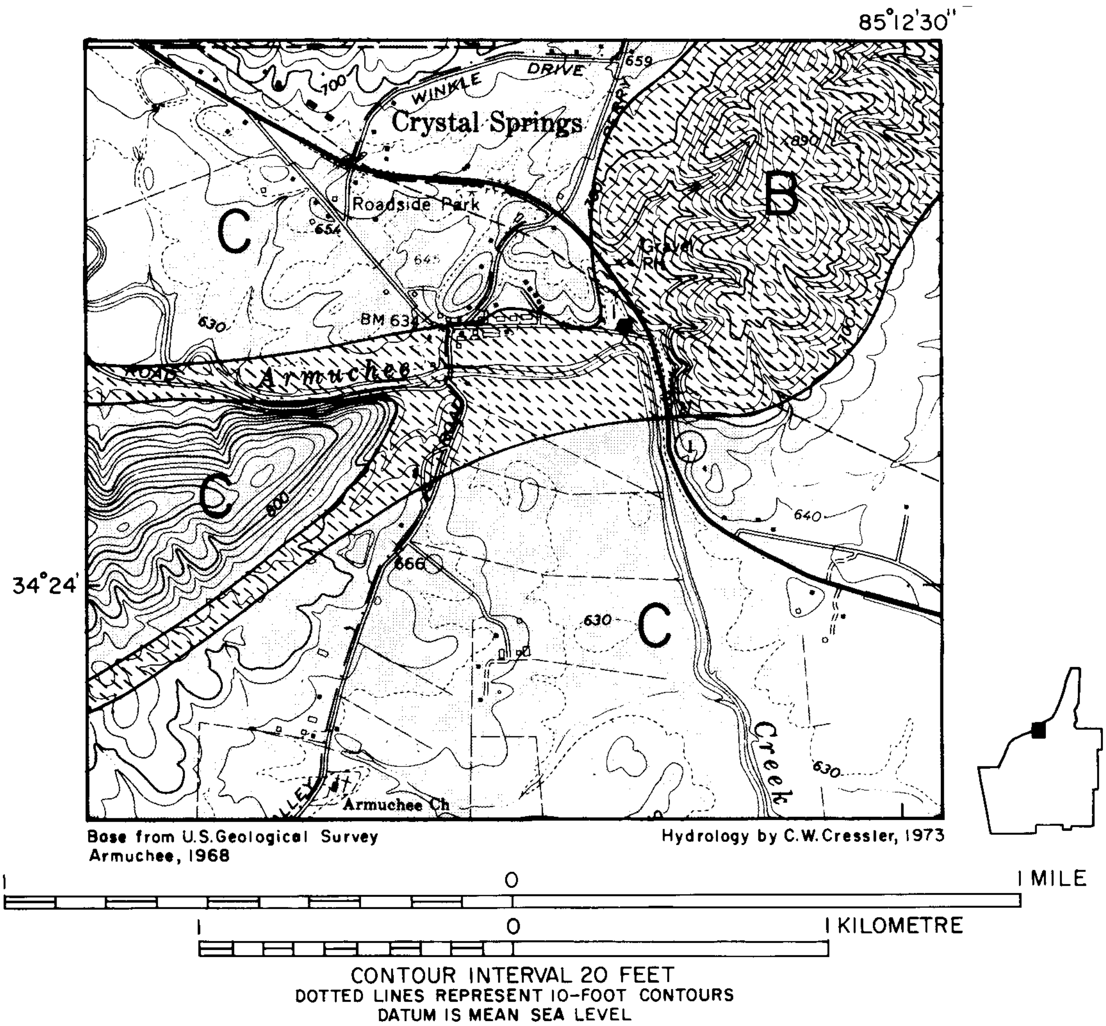


Figure 26.— Principal water-bearing units and location of favorable well site, Crystal Springs and vicinity, Floyd County. For Explanation see page 57.

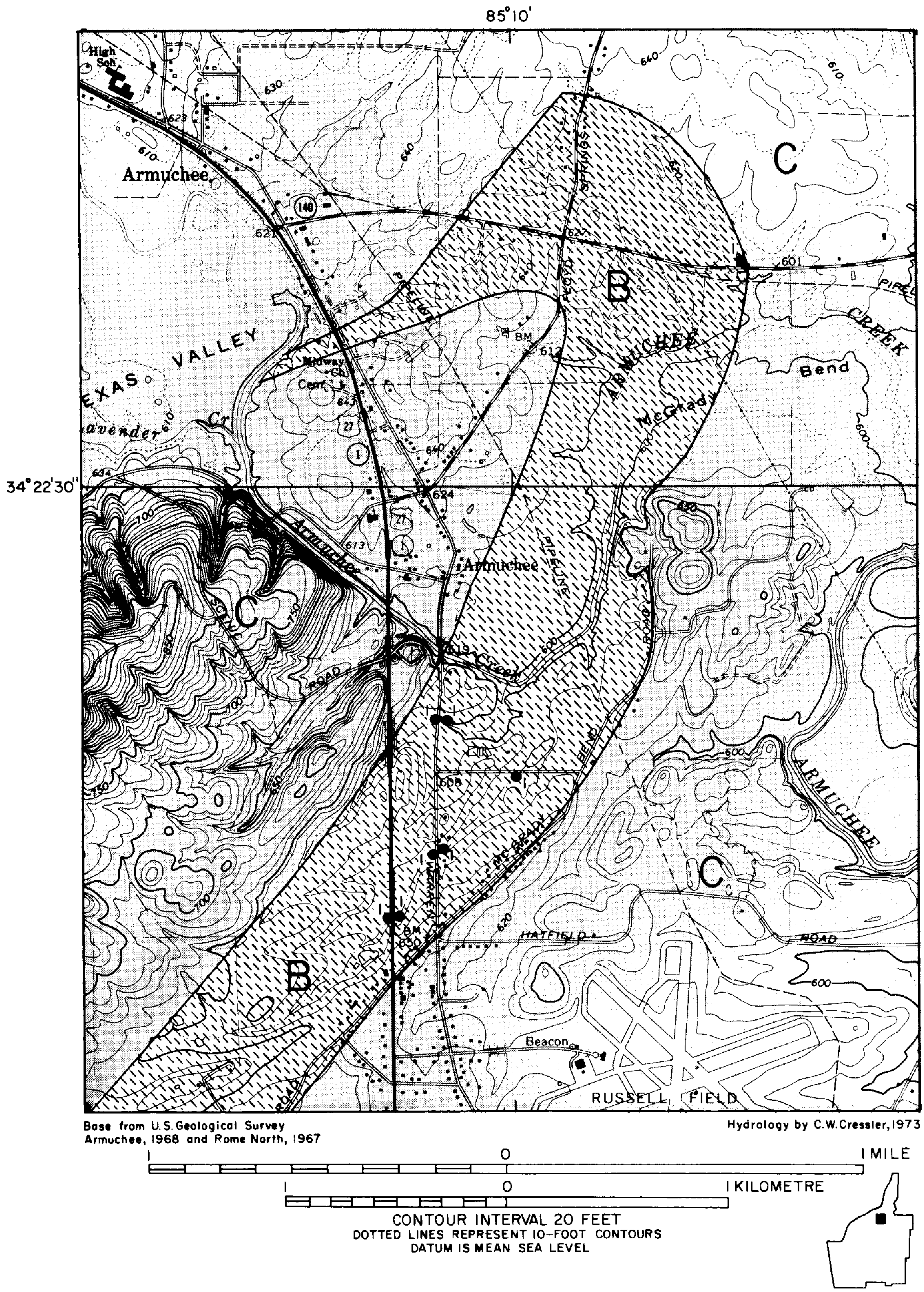


Figure 27.— Principal water-bearing units and location of favorable well sites, Armuchee and vicinity, Floyd County. For Explanation see page 57.

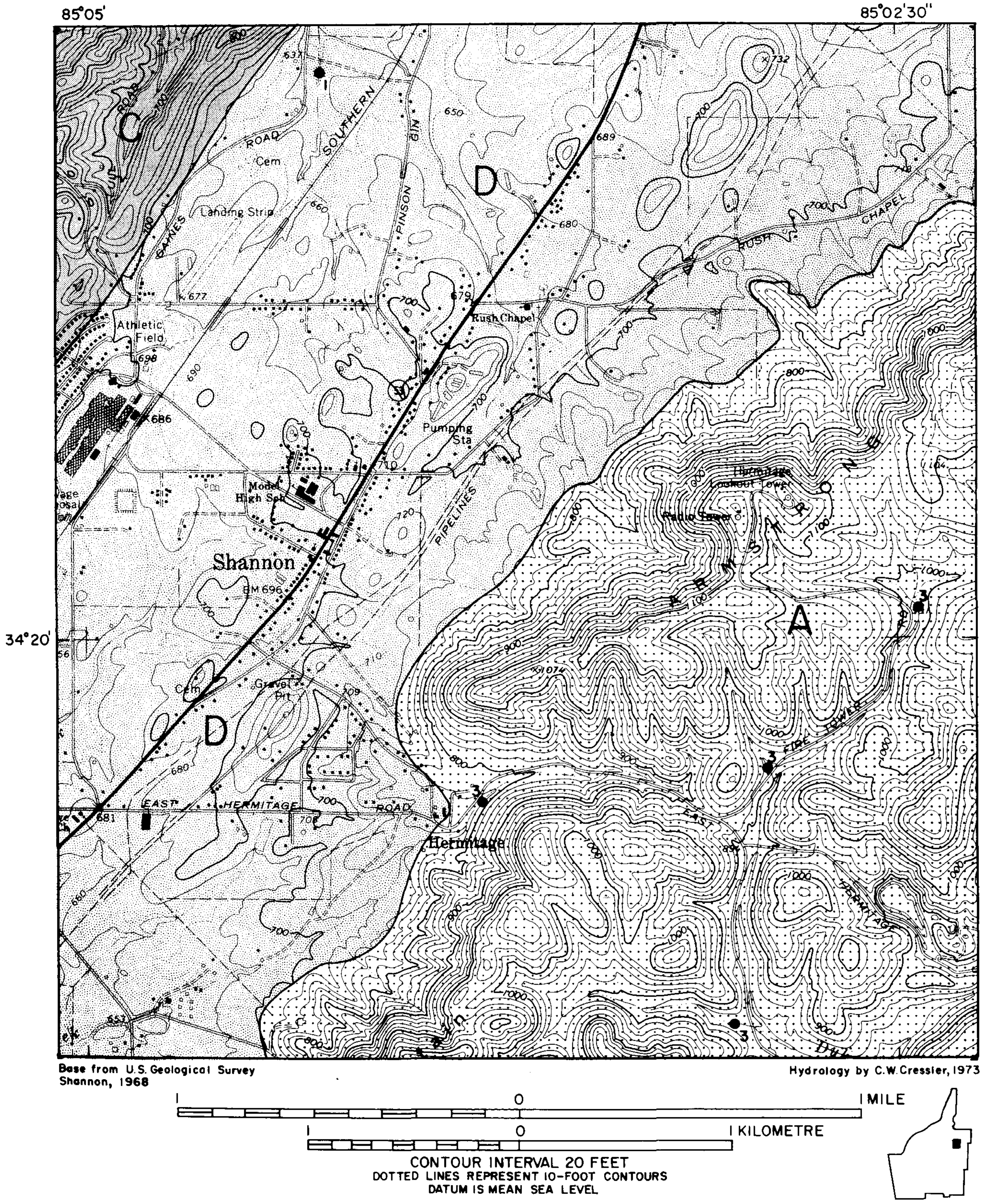


Figure 28.— Principal water-bearing units and location of favorable well sites, Shannon Hermitage area, Floyd County. For Explanation see page 57.

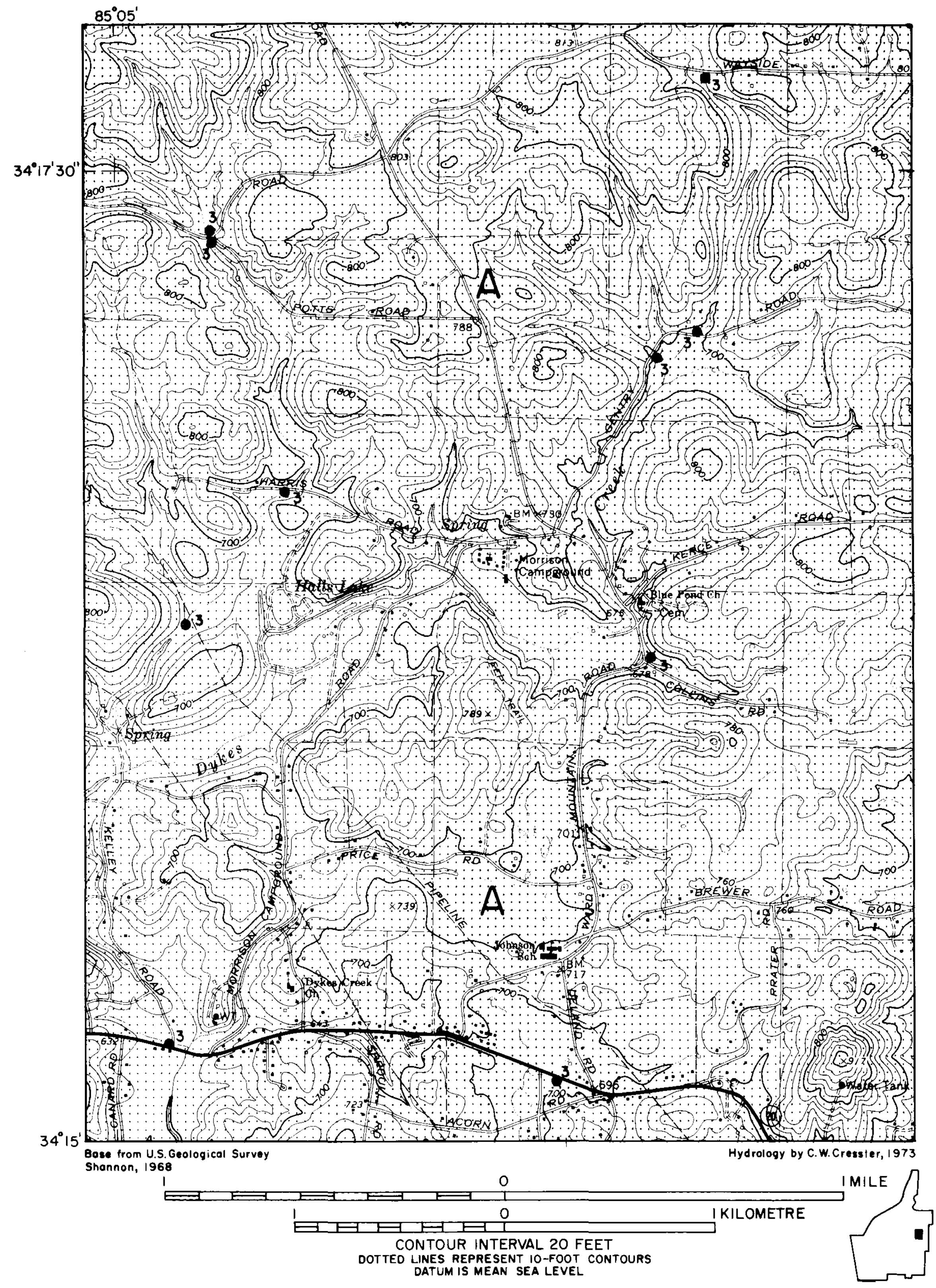


Figure 29.— Principal water-bearing unit and location of favorable well sites, Morrison's Campground and vicinity, Floyd County. For Explanation see page 57.

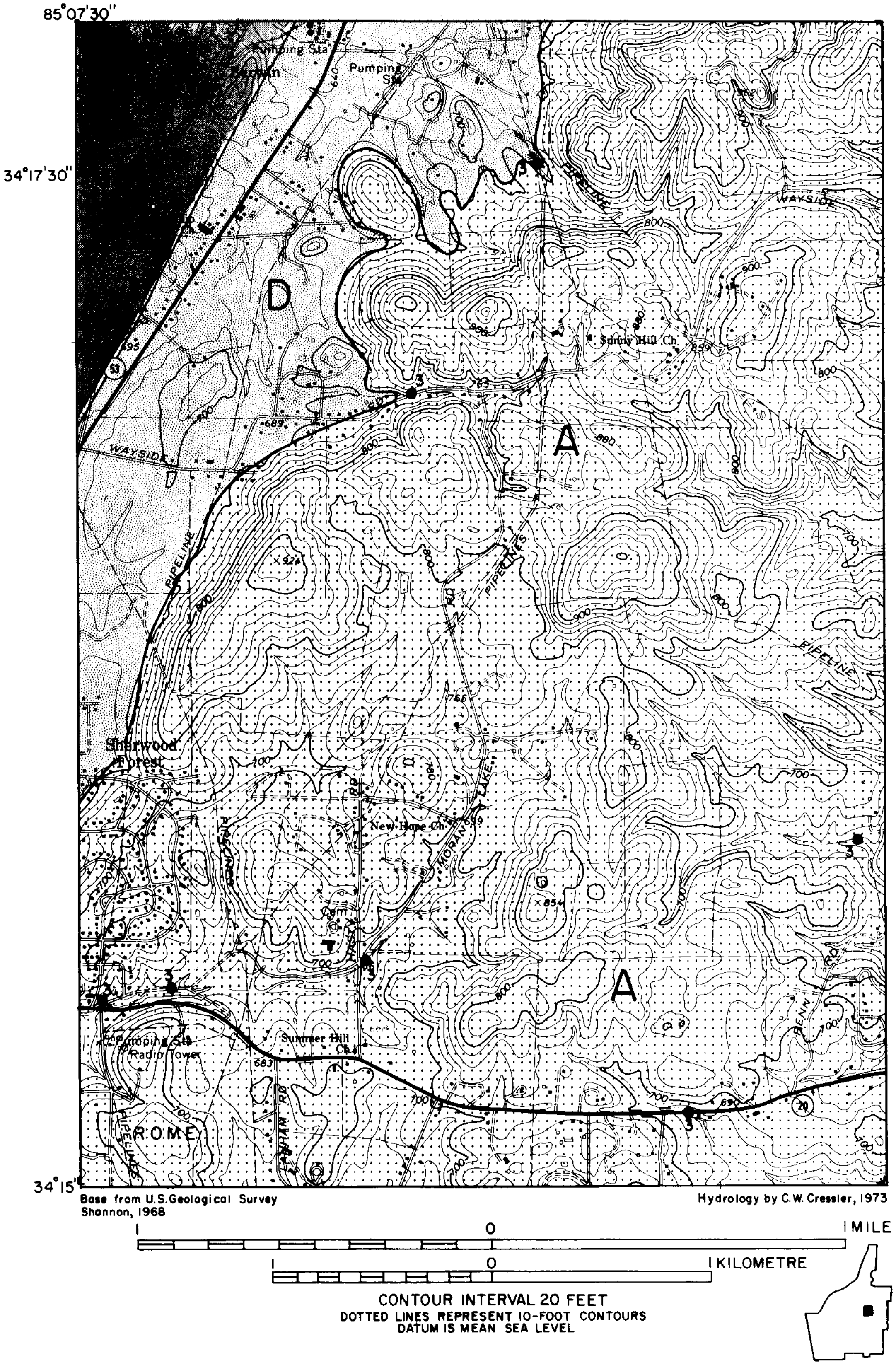


Figure 30.— Principal water-bearing units and location of favorable well sites, northeast Rome and vicinity, Floyd County. For Explanation see page 57.

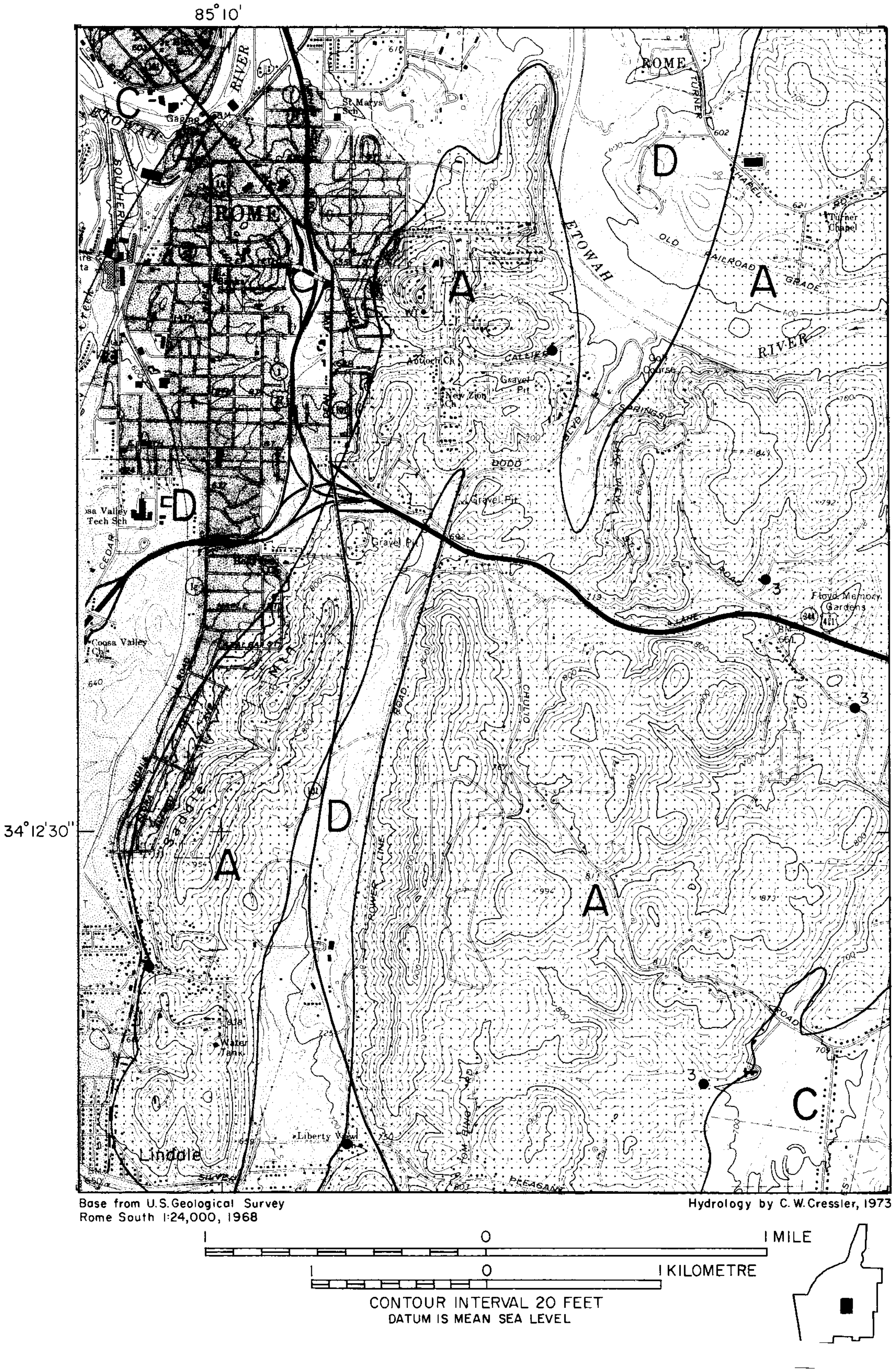


Figure 31.— Principal water-bearing units and location of favorable well sites, south Rome and north Lindale area, Floyd County. For Explanation see page 57.

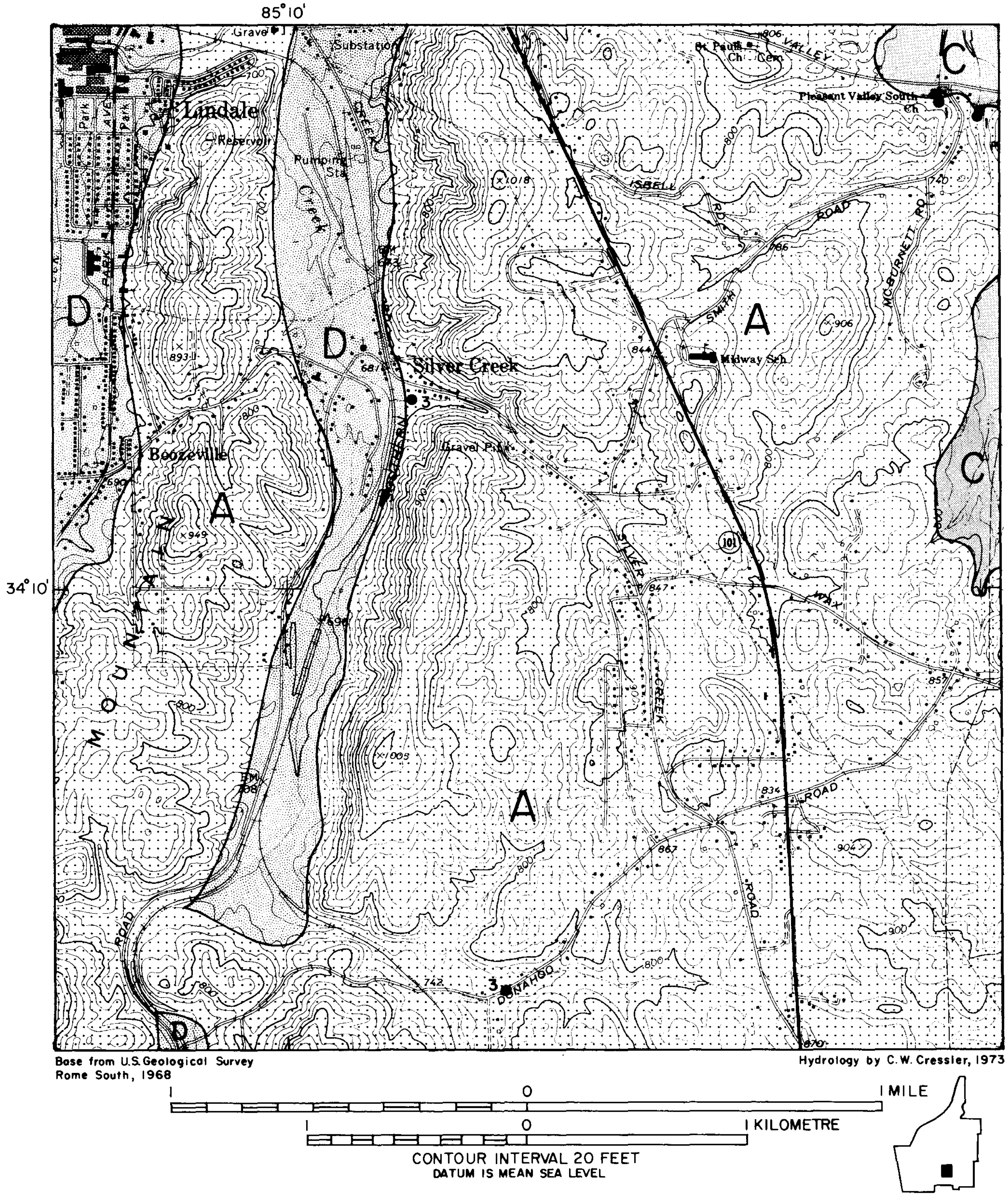


Figure 32.— Principal water-bearing units and location of favorable well sites, southeast Lindale and Silver Creek area, Floyd County. For Explanation see page 57.

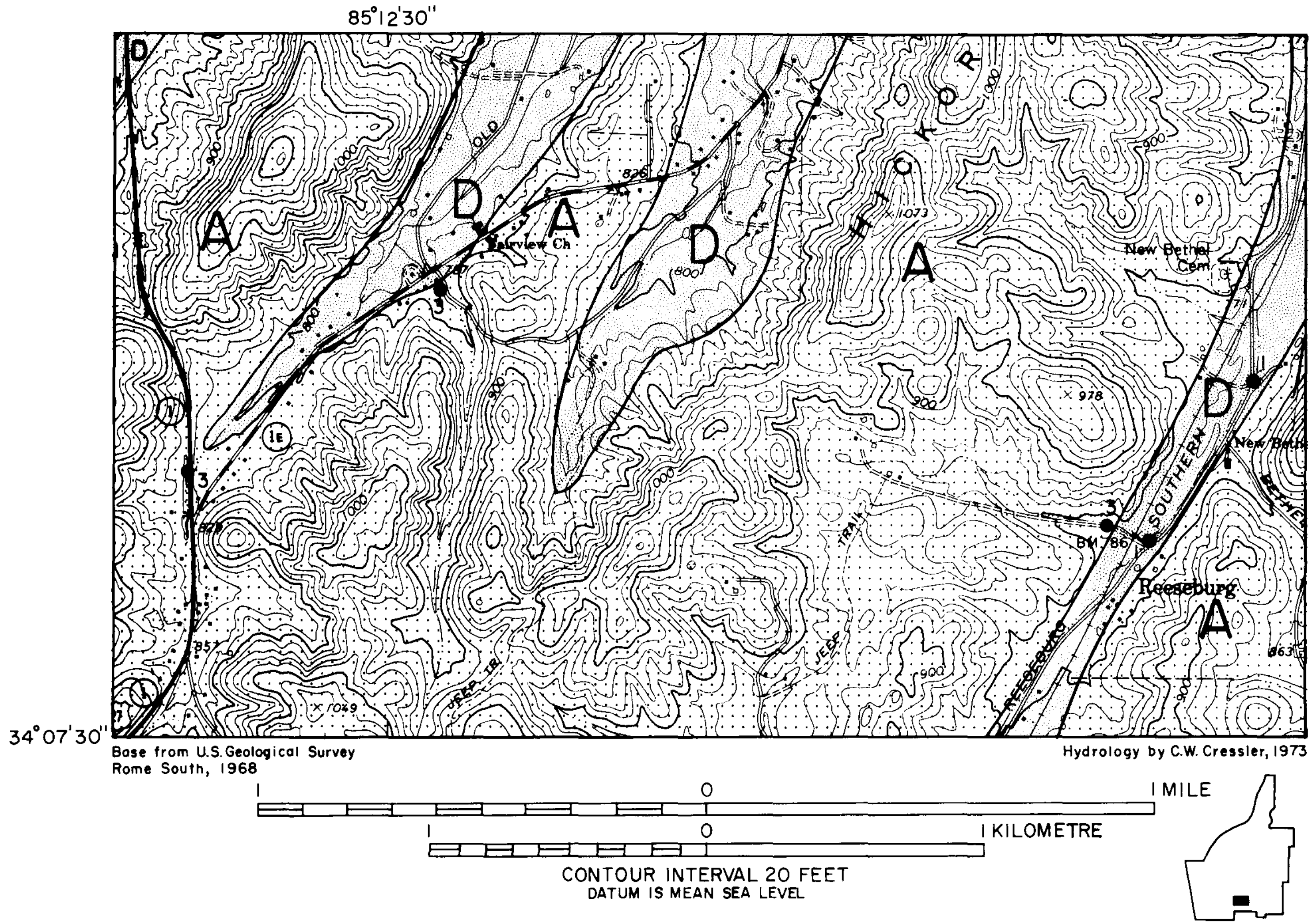


Figure 33.— Principal water-bearing units and location of favorable well sites, Reeseburg and vicinity, Floyd County. For Explanation see page 57.

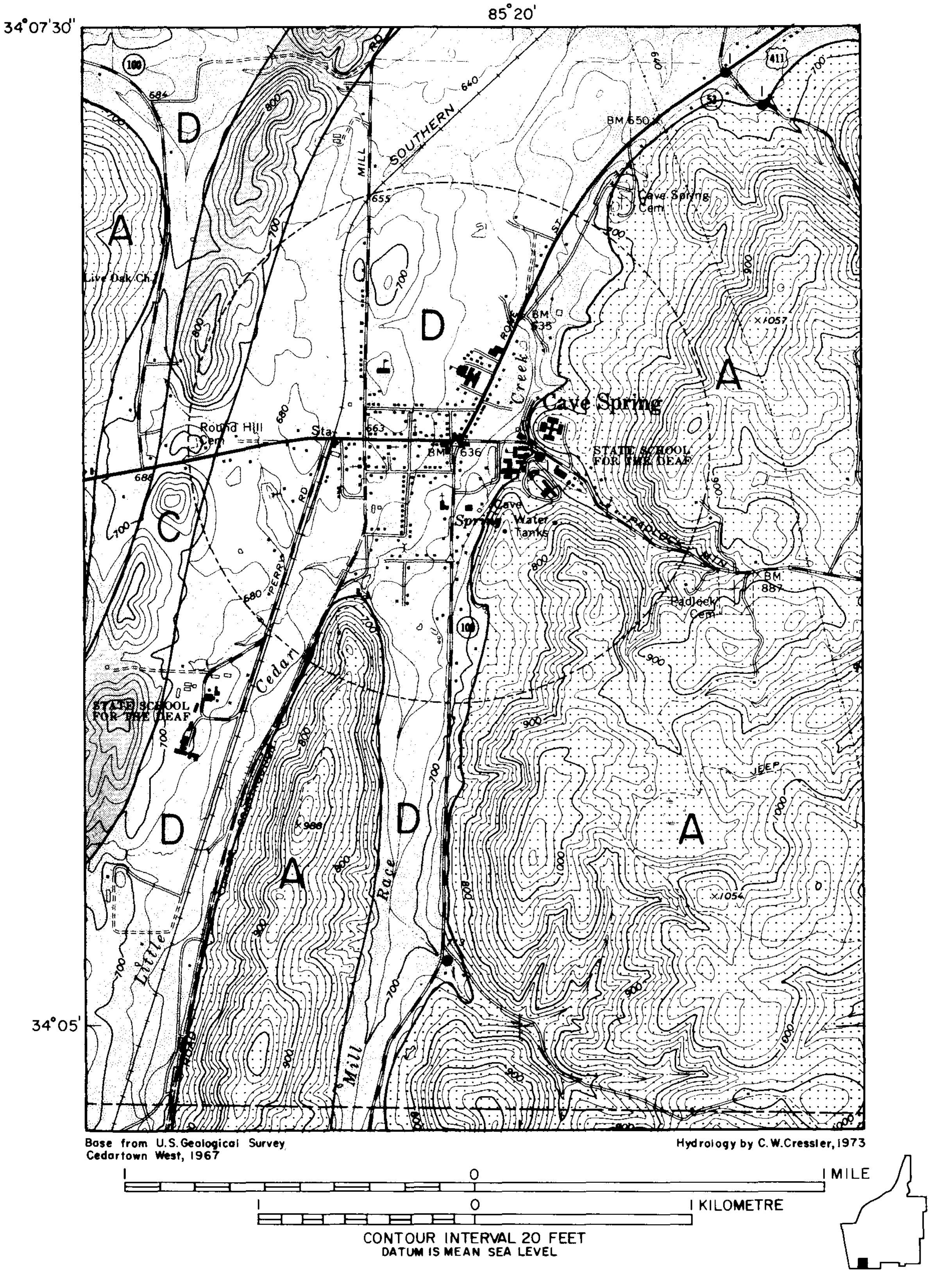


Figure 34.— Principal water-bearing units and location of favorable well sites, Cave Spring and vicinity, Floyd County. For Explanation see page 57.

Table 21.--Chemical analyses[1] of well water, Floyd County.

Owner	Date of collection	Water-bearing unit[3]	Milligrams per litre													Hardness[2] as $CaCO_3$		Specific conductance (micromhos per cm at 25°C)	pH	Color
			Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Calcium, magnesium	Non-carbonate			
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS				0.3		125				250	250	1.0	45	500						15
A. D. Simpson	2-20-62	A	8.7	0.11	28	11	1.3	0.4	137	2.8	1.5	0.0	1.5		131	115	2	220	7.9	
Sand Sp.	2-20-62	C	7.8	.07	29	2.6	1.6	.5	99	3.6	1.5	-	.1		97	83	2	170	7.6	
Georgia Power Co.	2-20-62	D	13	.36	30	2.4	4.6	.5	93	10	4.0	-	1.7		119	85	9	190	7.4	
Bill McKellan	2-20-62	D	8.0	.10	30	19	7.6	.5	172	5.2	11	-	5.6		169	153	12	320	7.7	
C. G. Wall	2-20-62	D	1.3	.07	16	3.2	1.8	5.3	76	.4	2.5	.1	1.0		75	53	-	120	7.0	
Willis Bros., Inc.	3-30-62	D	13	.07	20	1.9	2.8	.2	62	.4	6.0	.1	15		103	58	7	154	7.0	

[1] Analyses by U.S. Geological Survey.

[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

[3] Water was sampled from wells tapping water-bearing units shown in figure 25.

Data from Cressler (1970)

Table 22.--Minimum measured or estimated flow of springs, Floyd County, that discharge more than 0.1 million gallons per day.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow Mgal/d	Flow Gal/min	Water-bearing unit	Remarks
17	Roy Williamson	2.98 miles SW. of Cave Spring, N. side of U.S. Highway 411.	11-30-62	0.14e	100	D	
18	Old Mill Spring	0.97 mile SSW. of Cave Spring.	5-14-62 11-16-64	5.0 4.8	3,480 3,240	A	Boils and seeps from large area.
19	Cave Spring	SE. part of Cave Spring.	10-11-50 5-14-62 11-16-64	2.4 2.6 2.5	1,660 1,800 1,740	A	Public supply.
20	W. D. Vann	2.6 miles WNW. of Coosa, 0.42 mile S. of Ga. Highway 20.	11- 9-61	.14e	100	C	
21	Central of Georgia Railroad	0.32 mile W. of Coosa, N. side of Ga. Highway 20.	11-16-64	.1e	70	C	Flows from pipe out of concrete box.
22	Joe Early	0.25 mile NE. of Coosa, N. side of Ga. Highway 20.	11-16-64	.3	200	C	Domestic supply.
23	Rice Springs Farm	5.46 miles ENE. of Coosa, S. side of Ga. Highway 20.	---	.6	420	C	Unused. Measured by Roberts Engineering Corp.
24	Do.	5.50 miles ENE. of Coosa, N. side of Ga. Highway 20.	---	1.0	700	C	do.
25	Thomas Berry Estate	3.8 miles NNW. of Coosa, W. side of road.	11- 9-61	.14e	100	C	
26	Beard Spring	5.25 miles NNE. of Coosa, W. side of road.	10-17-50 10-18-64	1.0 .9	700 625	C	
27	Sand Spring	3.7 miles NE. of Lavender Station, S. side of road.	11-18-64	.3	210	C	
28	Berry School	6.25 miles SW. of Armuchee, at Sand Springs Church.	10-24-61	.14e	100	C	
29	Buffington Spring	2.25 miles SW. of Crystal Springs, S. side of road.	10-16-50 11-18-64	.2 .2e	140 140	C	
30	H. B. Hansard	1.0 mile SSW. of Crystal Springs, W. side of road.	10- 2-67	.1e	70	C	Used by 2 homes and dairy.
31	Pepperell Mfg. Co.	In Lindale, Ga.	3- 9-64	.15e	100	D	Developed.
32	Do.	do.	10-12-50	.2	140	D	Used by industry.
33	Do.	do.	3- 9-64	.10e	70	D	Developed.
34	Harry Marion Spring	3.2 miles SW. of railroad crossing in Lindale, 0.1 mile W. of road.	10-11-50 10-12-62	1.3 1.2	900 830	A	
35	Wax Spring	0.4 mile S. of the SE. corner of Wax Lake, in woods.	11-16-64	.9	625	A	Discharges from several seeps over wide area.
36	Luther Johnson	1.3 miles SE. of Wax, 2.2 miles N. of Polk County line.	10-24-62	.14e	100	A	Supplies several homes.
37	J. R. Abrams	1.58 miles NNE. of Wax, 3.0 miles W. of Bartow County line.	10-24-62	.14e	100	A	Furnishes 5 homes.
38	Dan H. Norton	4.7 miles W. of Bartow County line, S. bank of Etowah River.	10-12-62	.14e	100	A	Supplies dairy and 4 homes.
39	Edwards Spring	3.92 miles SSW. of Hermitage, 3.67 miles W. of Bartow County line.	10-12-50 11-12-62	.7 .7	485 485	A	
40	Youngs Mill Spring	4.76 miles SE. of Hermitage, 0.8 mile N. of Ga. Highway 20.	11- 7-50 11-12-62	2.0 2.3	1,390 1,600	A	Seeps from large area. Flows into lake.
41	Morrison Camp Ground Spring	3.3 miles S. of Hermitage, 2.33 miles W. of Bartow County line.	10-12-50 11-18-64	1.6 1.6	1,100 1,100	A	Supplies Morrison Camp Ground for short periods.
42	Dempsey Brothers Dairy	2.31 miles WSW. of Hermitage, 0.6 mile W. of Ga. Highway 53.	10-25-61	.1e	70	D	Used by dairy.
43	Dempsey Brothers Dairy	2.31 miles WSW. of Hermitage, 0.6 mile W. of Ga. Highway 53.	10-25-61	.1e	70	D	Used by milk processing plant.
44	(Unknown)	1.56 miles SW. of Hermitage, 0.7 mile E. of Ga. Highway 53.	10-26-61	.1e	70	D	
45	Hermitage Spring	At Hermitage.	10-26-61 1- 4-73	.14e .62	100 400	A	Supplies 5 homes.
46	Girl Scouts of America	1.4 miles NNE. of Everett Springs, 0.7 mile E. of road.	11-16-64	.2	140	C	Unused.
47	Arrowhead Spring	1.7 miles N. of Floyd Springs, W. side of road.	9-11-67	.46	320	C	Feeds Arrowhead Lake and fish hatchery.

e Estimated

Table 23.--Minimum measured or estimated flow of springs, Floyd County, that discharge less than 0.1 million gallons per day.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow		Water-bearing unit	Remarks
				Mgal/d	Gal/min		
1	(Unknown)	2.52 miles SW. of Cave Springs, E. side of road.	4-30-63	0.04e	28	C	
2	(Unknown)	3.93 miles WSW. of Lindale, S. side of road.	4-30-63	.05e	35	A	Reported to go dry.
3	M. S. Clay	2.7 miles NW. of Coosa, N. side of railroad track.	11- 9-61	.07e	50	C	
4	Berry Schools	6.55 miles NE. of Coosa, N. side of road.	10-23-61	.07e	50	C	
5	Do.	4.97 miles SW. of Armuchee, at Berry Academy.	10-23-61	.07e	50	C	
6	Do.	4.08 miles SW. of Armuchee, W. of road intersection.	10-23-61	.07e	50	C	Stock supply.
7	C. R. Smith	4.99 miles SW. of Crystal Springs, N. of road.	10- 9-61	.07e	50	C	Domestic supply.
8	F. Masingal	3.89 miles SW. of Crystal Springs, S. side of road.	10- 9-61	.07e	50	C	
9	Crystal Spring	In Crystal Springs, N. bank of Little Armuchee Creek.	10-11-61	.05e	35	B	
10	Clyde Dunagan	1.69 miles N. of Everett Springs, W. bank of Johns Creek.	10-11-61	.03e	21	C	
11	Barton Spring	2.77 miles NNE. of Everett Springs, E. of road.	10-11-61	.04e	28	C	Stock water.
12	Boy Scouts of America	Camp Sidney Dew, 2.89 miles NNE. of Everett Springs, 1.2 miles W. of Gordon County line.	10-11-61 12-10-70	.05e .02e	35 14	C	Enclosed, but rarely used.
13	J. W. Blankenship	2.75 miles NNW. of Hermitage, S. of road.	10-25-61	.07e	50	C	
14	W. Simms	2.70 miles SW. of Hermitage, E. side of road.	10-24-61	.07e	50	C	
15	Russell Spring	1.15 miles SW. of Hermitage, E. side of road.	10-12-50	.06	40	A	
16	H. Dawson	2.53 miles NNE. of Hermitage, E. side of road.	10-26-61	.05e	35	D	

e Estimated

Table 24.--Chemical analyses[1] of spring water, Floyd County.

Spring no.	Name or owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS					0.3		125				250	250	1.0	45	500						15
19	Cave Spring	3-13-59)	A	7.7	0.04	25	12	0.4	-	136	2.4	0.5	-	0.7	-	126	112	-	208	7.9	-
19	Do.	3-30-62	A	9.2	.03	27	10	1.1	0.5	130	-	1.0	0.2	.3	-	128	109	2	210	7.5	-
34	Harry Marion Spring	3-30-62	A	7.8	.09	30	9.2	1.2	.6	134	.4	1.5	.2	1.0	-	140	113	3	218	7.7	-
35	Wax Spring	3-20-63	A	6.7	.11	18	7.8	.8	.4	93	.4	1.0	.1	.9	-	96	77	1	141	7.3	-
41	Morrison Camp Ground Spring	3-21-62	A	6.6	.05	15	4.0	1.0	.6	65	.8	1.0	.2	.4	-	82	54	-	110	7.3	-
18	Old Mill Spring	3-20-63	A	7.7	.01	22	9.5	.7	.4	112	1.2	1.0	.1	.3	-	100	94	2	163	7.4	-
44	(Unknown)	3-30-62	A	8.0	.12	31	7.9	1.2	.4	130	2.0	1.0	.1	.2	-	128	110	4	210	7.5	-
28	Berry School	3-30-62	C	14	.11	15	3.5	2.5	1.0	60	7.2	2.0	.2	.1	-	73	52	3	119	6.9	-
22	Joe Early	3-30-62	C	8.2	.07	26	2.7	1.5	.3	88	3.2	1.0	.1	-	-	96	76	4	-	7.4	-
46	Girl Scouts of America	3-30-62	C	7.1	.03	11	.5	1.1	.7	36	.8	1.5	.2	.1	-	54	30	-	66	7.0	-

1 Analyses by U.S. Geological Survey.

2 Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

3 Water was sampled from springs that discharge from water-bearing units shown in figure 25.

Data from Cressler (1970)

Table 25.--Summary of streamflows, Floyd County.

Site no.	Stream name	Gage type	Location	Drainage area (sq mi)	Estimated average flow (Mgal/d)	Estimated 7-day,10-year minimum flow (Mgal/d)	Water use (1970) (Mgal/d)
1	Woodward Creek	M	Lat 24°28', long 85°02', at Ga. Highway 53, 4 miles northeast of Shannon.	12	11	1.9	
2	Armuchee Creek	M	Lat 34°22', long 85°09', at county road, 2 miles southeast of Armuchee.	225	218	17	
3	Oostanaula River	C	Lat 34°18', long 85°08', 4.5 miles north of Rome, and 6.5 miles downstream from Armuchee Creek.	2,120	2,250a	320a	10
4	Etowah River	C	Lat 34°11', long 85°10', at Southern Railway bridge, at Rome.	1,810	1,840b	370b	
5	Dykes Creek	PR	Lat 34°16', long 85°05', at county road, 0.2 mile north of Ga. Highway 20, and 5 miles east of Rome.	14.8	14	1.7	
6	Coosa River	C	Lat 34°12', long 85°15', at Mayos Bar Lock and Dam, 6 miles southwest of Rome.	4,040	4,200b	860b	
7	Silver Creek	PR	Lat 34°11', long 85°10', at county road, at Silver Creek.	24	21	5.6	
8	Cedar Creek	M	Lat 34°08', long 85°18', at U.S. Highway 411, 2.5 miles northeast of Cave Springs.	161	145	41	
9	Little Cedar Creek	M	Lat 34°08', long 85°20', at county road, 1.8 miles north of Cave Springs.	28	26	16	
10	Do.	M	Lat 34°07', long 85°20', at U.S. Highway 411, at Cave Springs.	25	23	16	
11	Do.	M	Lat 34°06', long 85°20', at county road, at Cave Springs.	18	17	8.4	
12	Tributary to Little Cedar Creek	M	Lat 34°06', long 85°20', at foot-bridge, 75 ft above mouth, at Cave Springs.	5.5	5.0	4.3	

C Continuous record
M Miscellaneous site
PR Low-flow partial-record

a Based on continuous daily flow, 1940-68.
b Based on continuous daily flow, 1951-66.

Table 26.--Chemical analyses[1] of streams, Floyd County.

Date	Time	Discharge (ft^3/s)	Total iron (Fe) (µg/l)	Total manganese (Mn) (µg/l)	Milligrams per litre: Dissolved calcium (Ca)	Dissolved magnesium (Mg)	Sodium (Na)	Potassium (K)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Nitrite plus nitrate (N)	Ammonia nitrogen (N)	Total phosphorus (P)	Total filtrable residue	Total nonfiltrable residue	Hardness (Ca,Mg)	Specific conductance (Micromhos)	pH (Units)	Temperature (Degree C)	Color (Platinum cobalt units)	Dissolved oxygen (Mg/l)	Biochemical oxygen demand (Mg/l)	Fecal coliform (MPN)
SITE 3 - Figure 25. Oostanaula River near Rome.																								
1-29-73	1250	5,910	1,400	70			1.9		36		2.7	0.27	0.05	0.10			40	100	7.0	20	100	10.6	1.0	2,300
7-16-73	1245	3,290	750	60			4.6		38		4.8	.34	.03	.31			36	110	7.3		5	5.1	1.1	3,900
SITE 4 - Figure 25. Etowah River at Rome.																								
1-29-73	1120	2,060							58			.39	.02	.04			60	135	6.4	9.5	50	10.5	.5	15,000
7-16-73	1515	1,270	180	<50					68			.31	<.02	.02			70	155	8.0	23.0	5	8.0	.5	1,500
SITE 6 - Figure 25. Coosa River near Rome.																								
1-29-73	1415	7,940							42			.30	.05	.09			42	110	7.2	7.0	125	10.5	1.2	93,000
7-16-73	1400	4,750							49			.25	.04	.22			50	130	7.9	26.0	10	5.0	1.1	43,000
SITE 7 - Figure 25. Silver Creek near Lindale.																								
6-16-73	0930		<100	<50	24	12	.5	0.4	108	<2.0	1.0	.24	<.02	<.02	138	5	106	210	7.8	17.0	5	9.1	.2	1,500

[1] Analyses by Georgia Dept. of Natural Resources.

EXPLANATION

GORDON COUNTY MAPS

PRINCIPAL WATER-BEARING UNITS

A — Yields generally range from 5 to 50 gal/min. Yields as large as 1,000 gal/min may be obtained at favorable sites. Aquifer is dolomite and limestone. Water quality generally meets drinking-water standards and is suitable for many industrial uses.

B — Yields generally are less than 50 gal/min. Yields as large as 500 gal/min may be obtained at favorable sites. Aquifer is limestone and bedded chert. Water quality generally meets drinking-water standards and is suitable for many industrial uses. Water from lower part of unit may contain excessive iron.

C — Yields generally range between 0 to 20 gal/min. Yields as large as 50 gal/min may be obtained at favorable sites. Aquifers include shale, limestone, siltstone, sandstone, bedded chert, and phyllite. Water quality generally meets drinking-water standards, although water from phyllite and shale commonly contains excessive iron.

D — Yields generally are less than 20 gal/min; a few exceed 50 gal/min. Yields as large as 300 gal/min may be obtained at favorable sites. Aquifer is limestone or dolomite units interlayered with shale units. Water quality generally meets drinking-water standards, although some contains excessive iron.

G — Yields generally range from 0 to 30 gal/min. Yields as large as 100 gal/min may be obtained at favorable sites. Aquifers include quartzite, graywacke, phyllite, slate, granite, and other metamorphic and igneous rocks. Water quality generally meets drinking-water standards except for water from phyllite and slate, which commonly contains excessive iron and manganese.

FAVORABLE WELL SITES—number indicates expected yield in gal/min.

●1 As much as 50

●2 As much as 500

●3 As much as 1,000

SPRINGS—numbers 1 to 23 indicate flows of less than 0.1 Mgal/d.
Numbers 24 to 35 indicate flows of more than 0.1 Mgal/d.
Number refers to tables 28, 29, and 30.

○7 Unused

◐29 At least half of flow unused

●12 Entire flow in use

GAGING STATIONS—number refers to tables 31 and 32

△8 Low-flow partial record

▲4 Continuous record

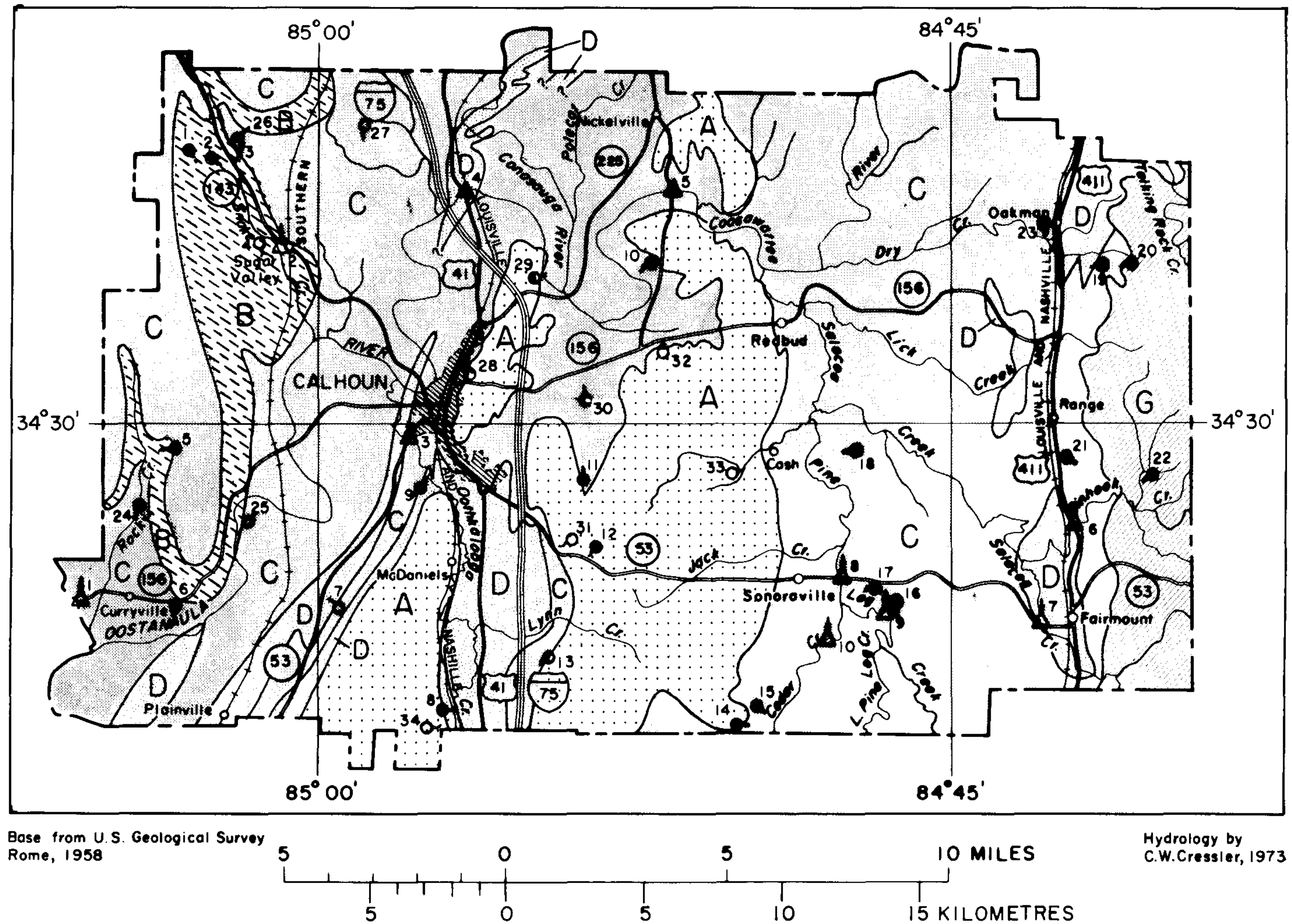


Figure 35.—Principal water-bearing units and location of springs and stream-gaging stations, Gordon County.

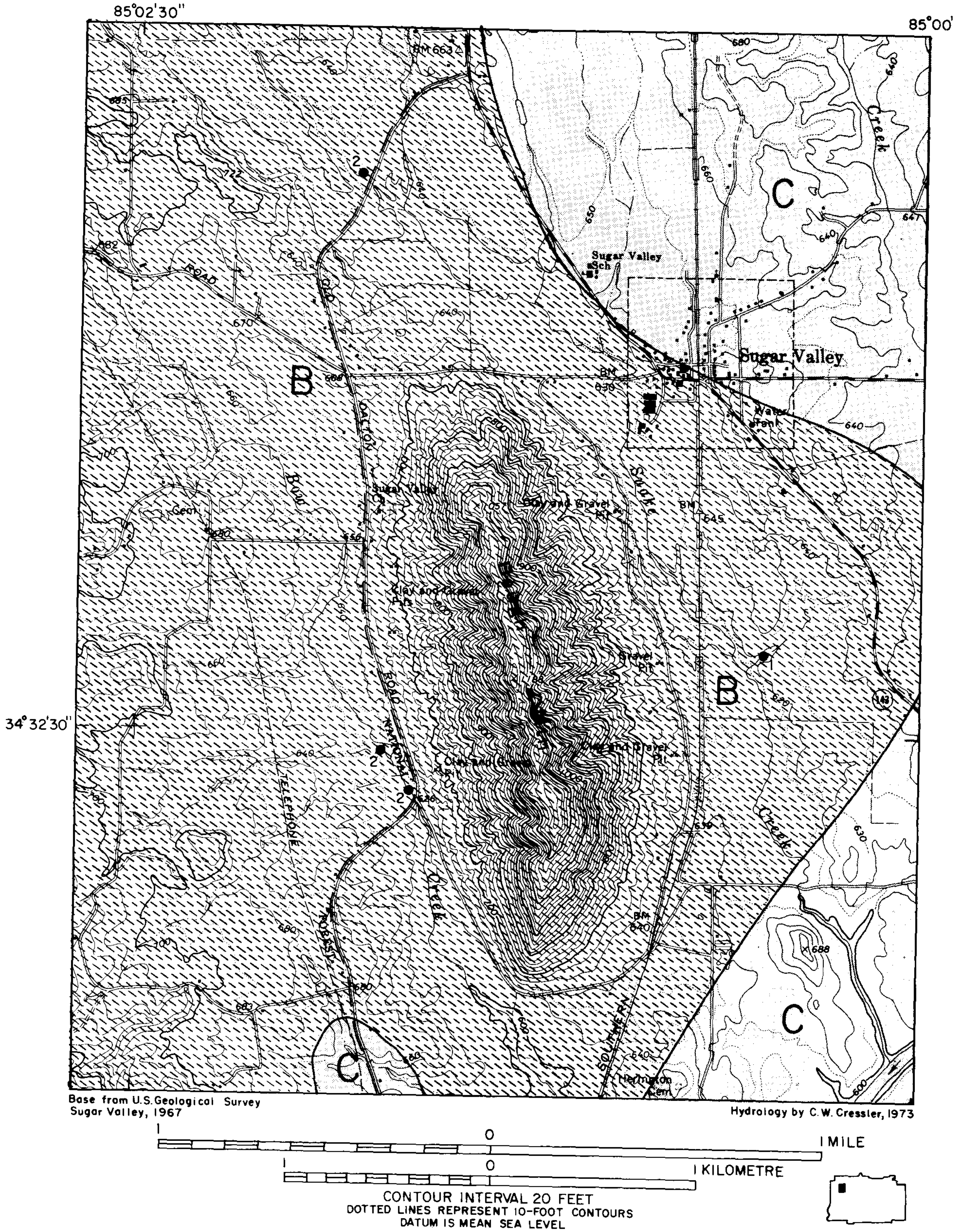


Figure 36.— Principal water-bearing units and location of favorable well sites, Sugar Valley and vicinity, Gordon County. For Explanation see page 74.

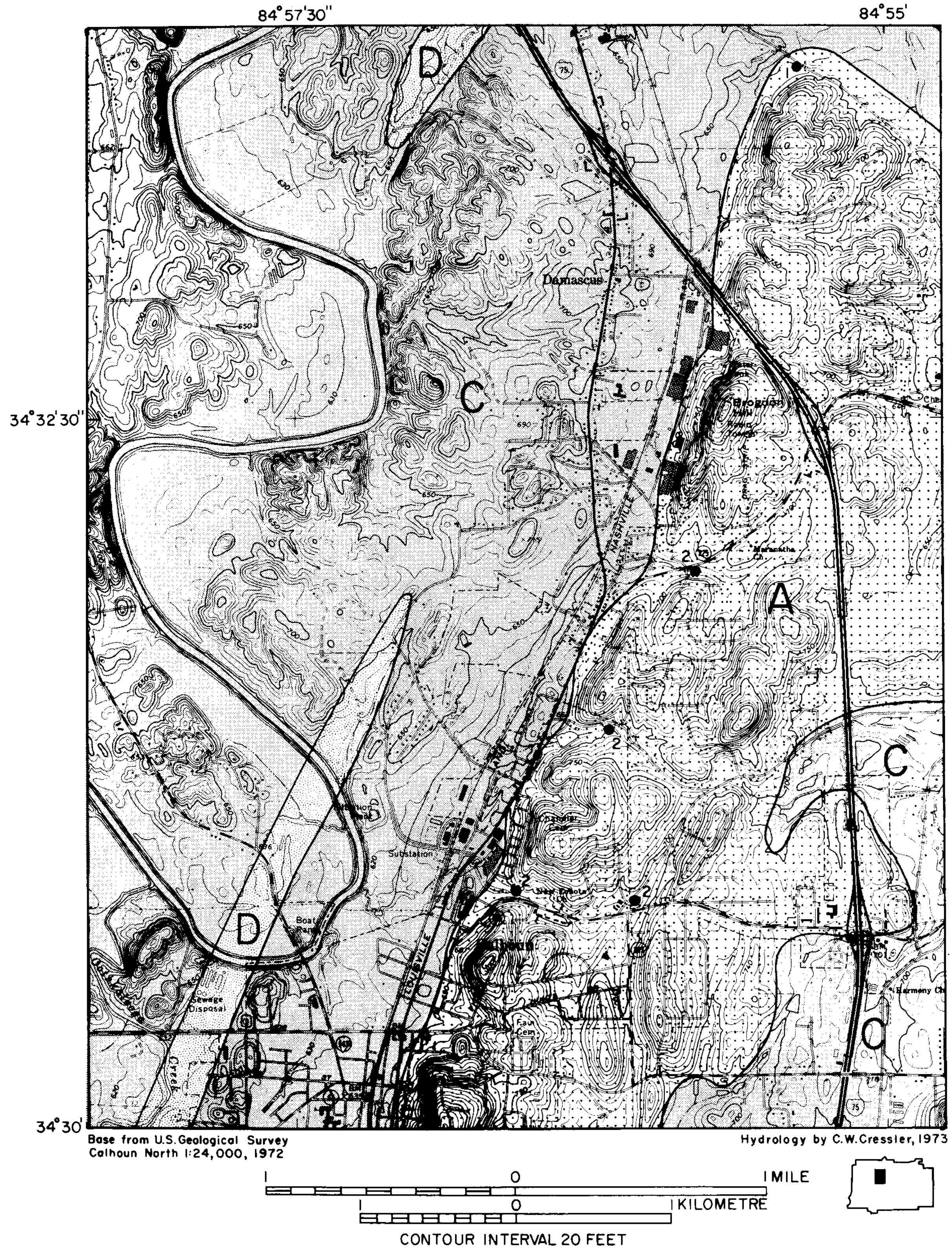


Figure 37.— Principal water-bearing units and location of favorable well sites, north Calhoun and vicinity, Gordon County. For Explanation see page 74.

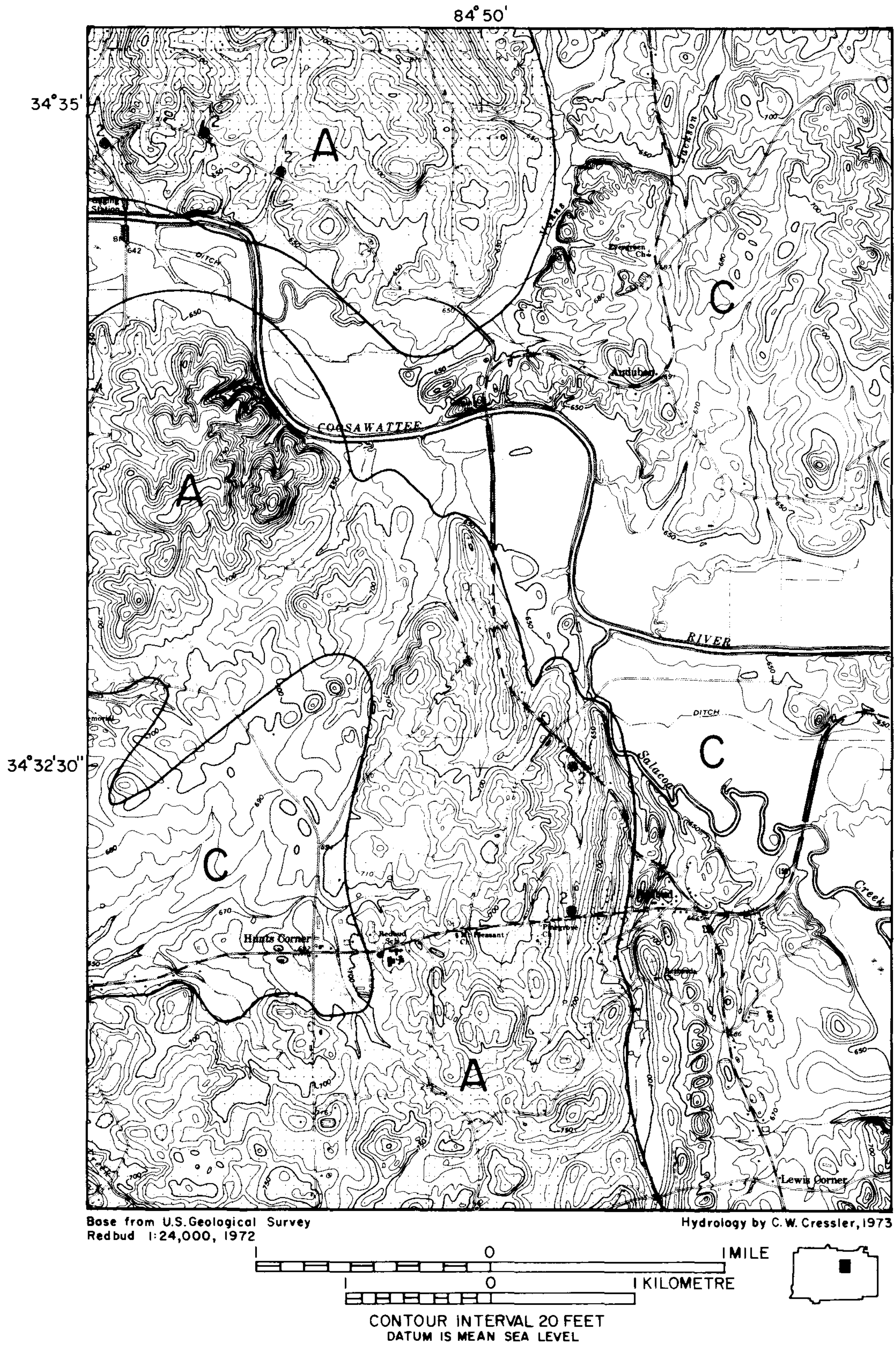


Figure 38.— Principal water-bearing units and location of favorable well sites, Redbud and vicinity, Gordon County. For Explanation see page 74.

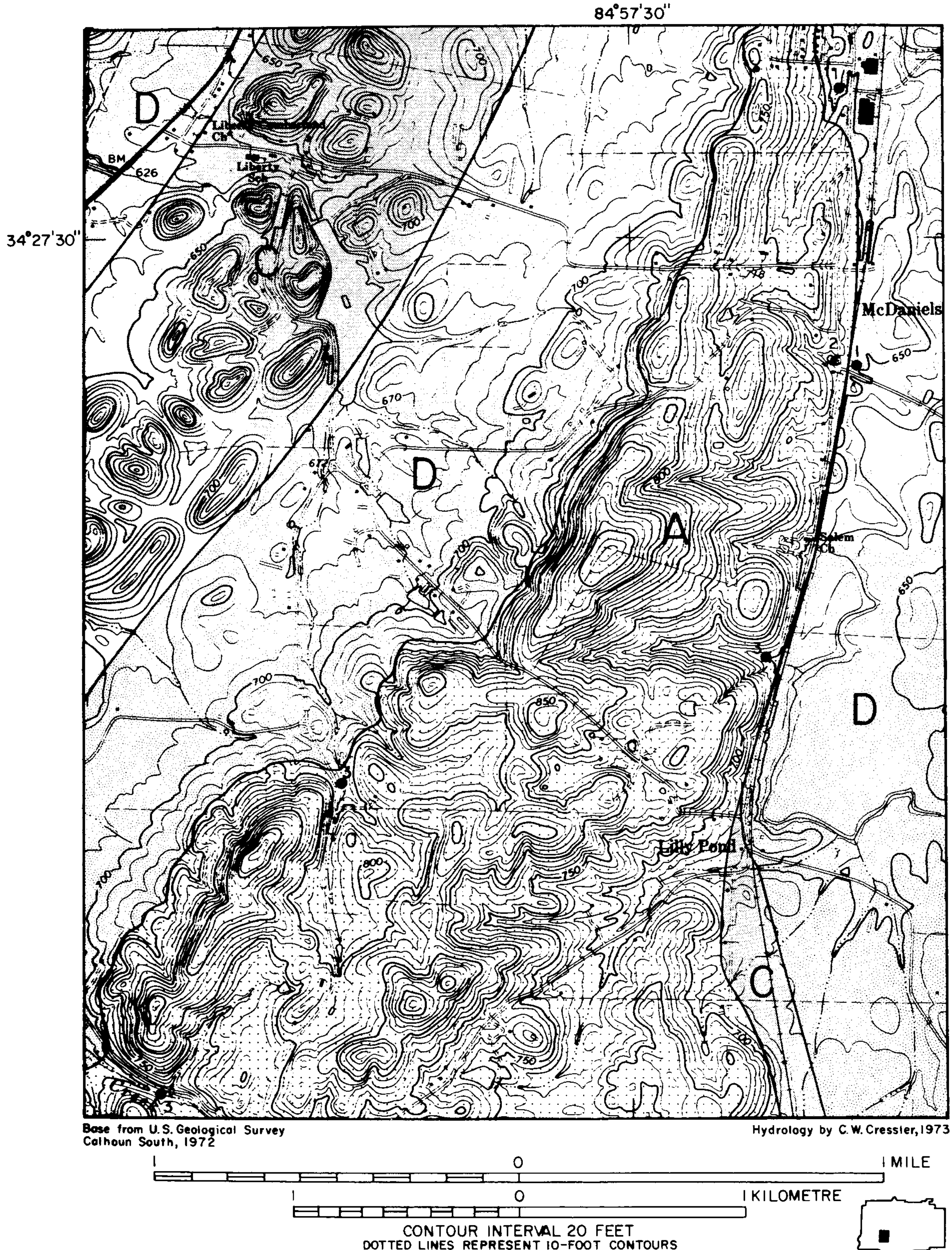


Figure 39.— Principal water-bearing units and location of favorable well sites, Lilly Pond and vicinity, Gordon County. For Explanation see page 74.

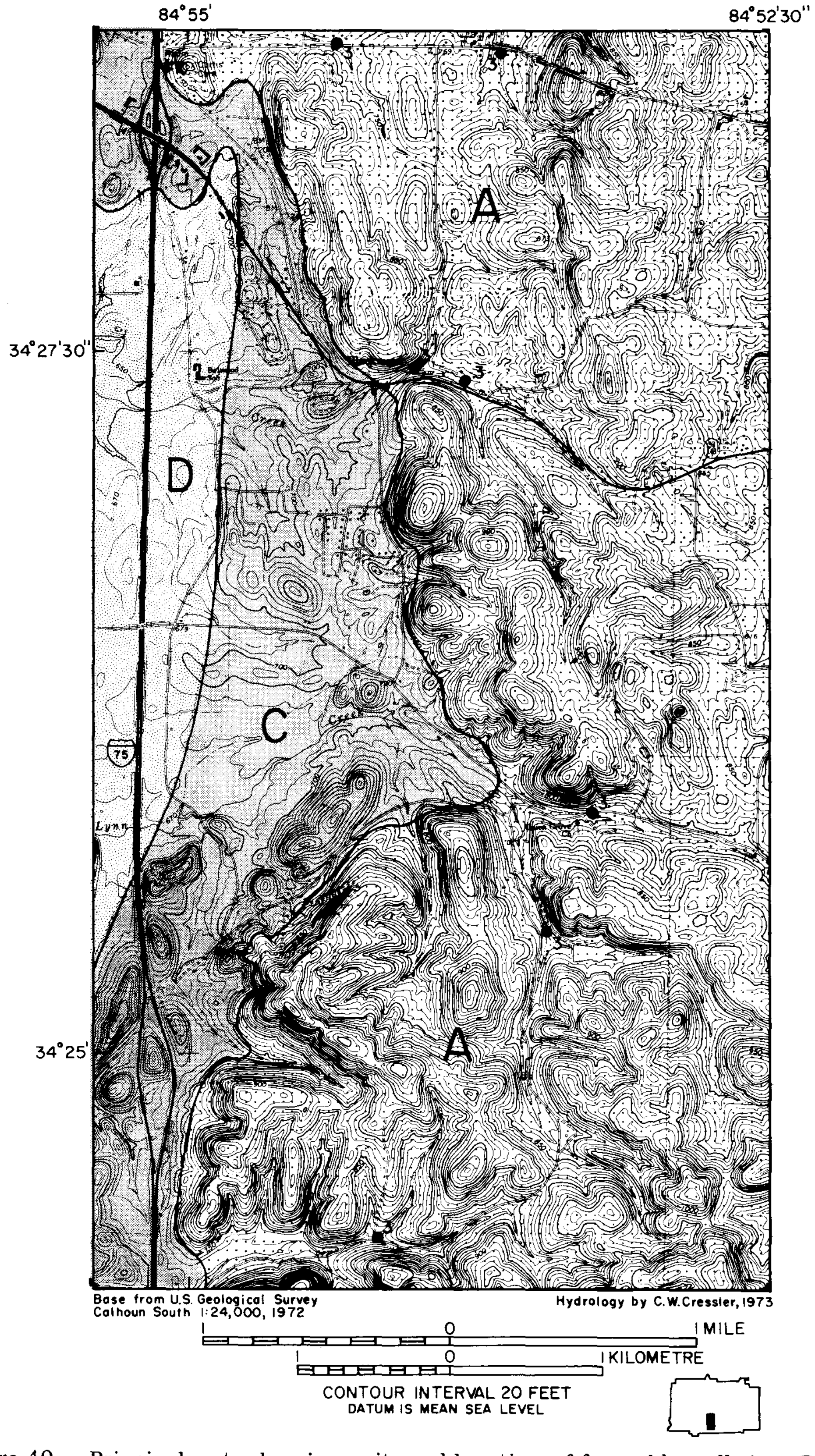


Figure 40.— Principal water-bearing units and location of favorable well sites, Blackwood and vicinity, Gordon County. For Explanation see page 74.

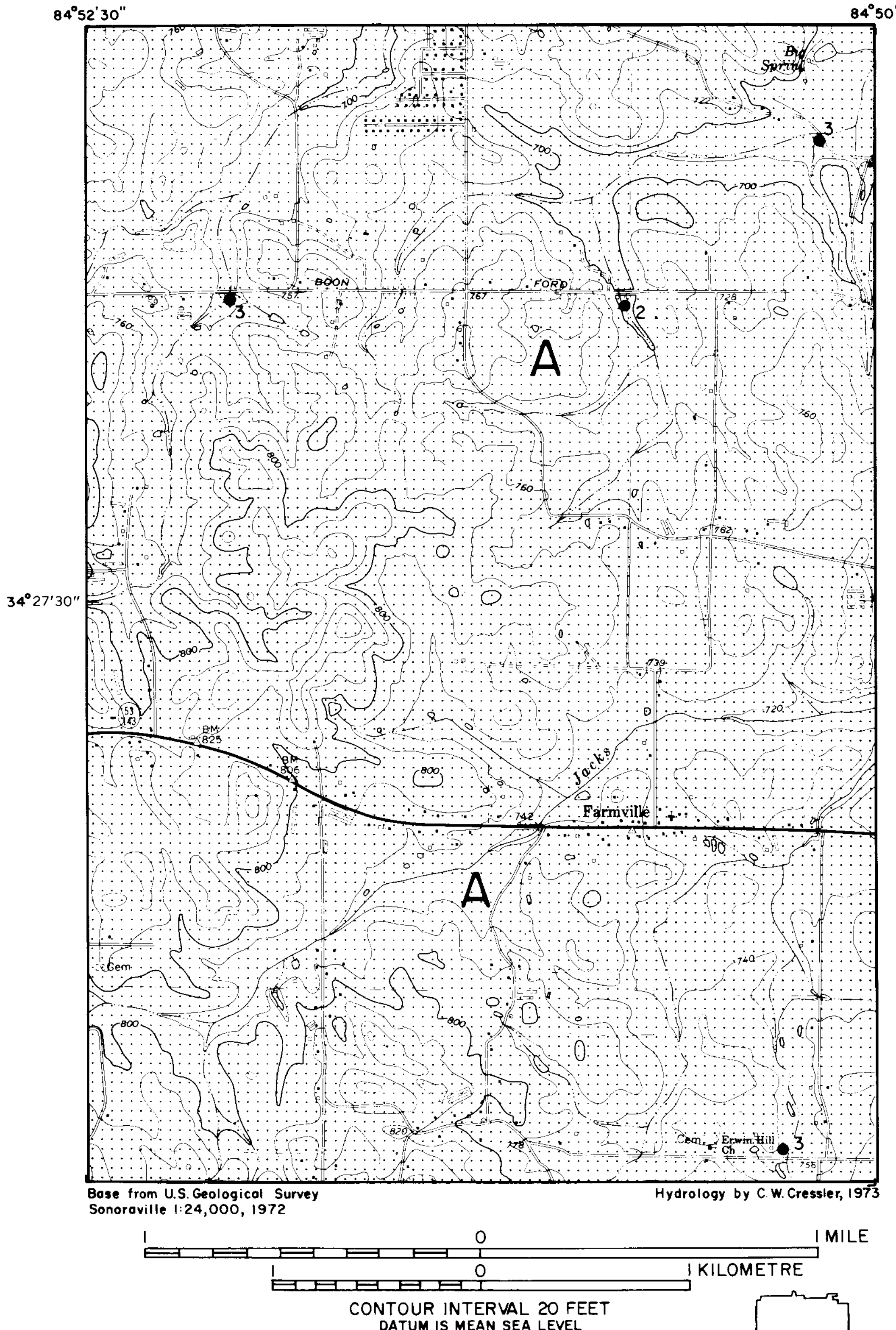


Figure 41.— Principal water-bearing unit and location of favorable well sites, Farmville and vicinity, Gordon County. For Explanation see page 74.

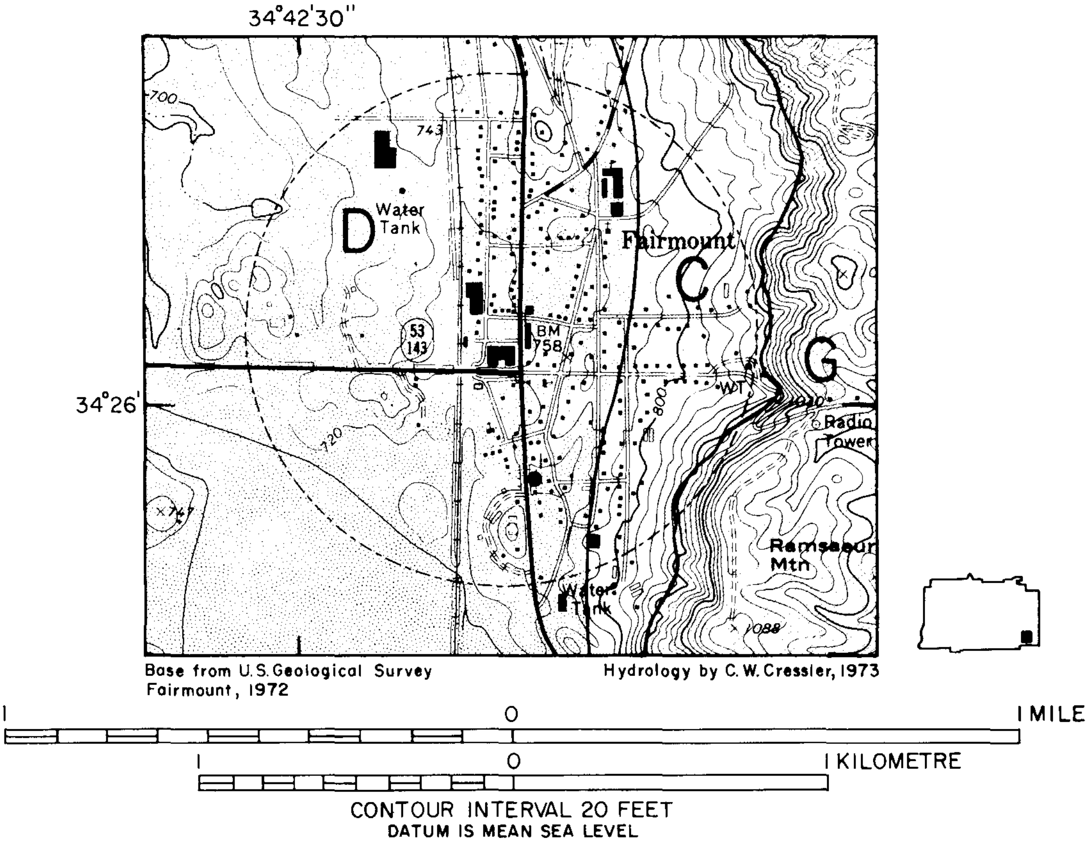


Figure 42.— Principal water-bearing units and location of favorable well site. Fairmount, Gordon County. For Explanation see page 74.

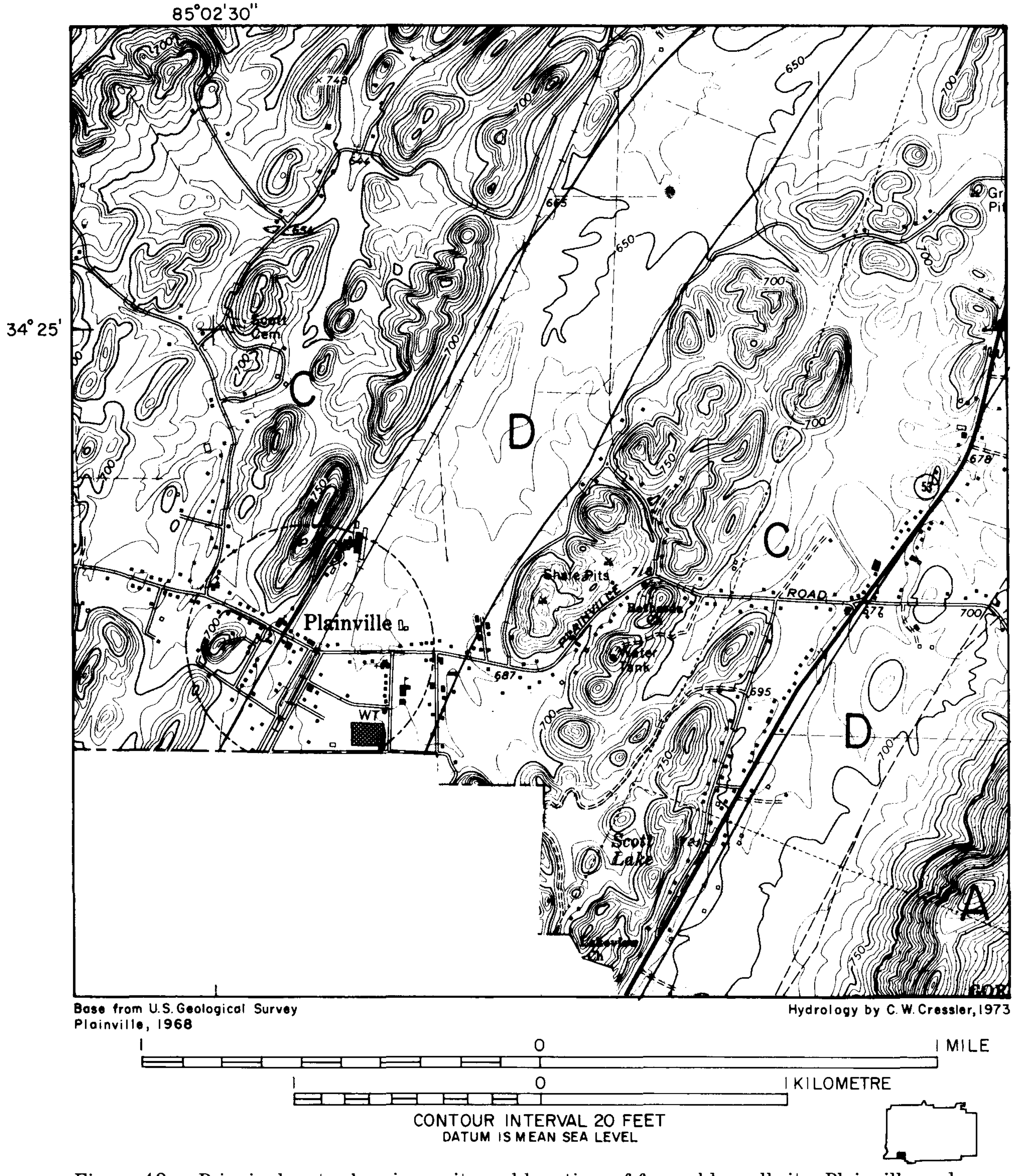


Figure 43.— Principal water-bearing units and location of favorable well site, Plainville and vicinity, Gordon County. For Explanation see page 74.

Table 27.--Chemical analyses[1] of well water, Gordon County.

Owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS				0.3		125				250	250	1.0	45	500						15
M. D. McDaniel	3-25-63	A	7.9	0.5	42	16	1.5	1.3	200	2.4	2.6	0.1	5.8	-	179	172	8	312	7.6	5
F. F. Waldrop	11- 5-63	B	13	.42	75	3.2	2.8	.2	230	8.0	10	.2	-	226	225	200	12	375	7.9	5
Max Banister	11-18-64	C	11	.18	11	3.5	.7	1.5	46	2.2	.9	.4	.7	-	55	42	4	86	6.9	-
J. W. Beal	11-16-64	C	19	.34	68	11	14	.3	208	55	7.0	.6	-	-	277	216	46	430	7.6	5
Carlton Poarch	11-15-64	C	16	.18	141	8.8	9.5	.3	436	16	22	.1	10	-	439	388	30	745	7.6	-
D. Rickett	11- 5-63	C	20	-	1.6	1.5	1.2	2.3	16	-	1.8	.3	3.0	46	40	10	-	42	6.5	5
Roy Chadwick	11- 4-63	D	8.6	-	32	2.2	1.6	.2	99	.4	3.0	.2	4.6	106	102	89	8	120	7.3	5
City of Fairmount	9-30-58	D	9.9	.05	64	3.0	7.0	.6	200	5.6	16	.1	11	213	216	172	8	376	7.9	4
Do.	11-16-64	D	7.7	.19	56	11	14	.4	216	11	6.0	.4	4.9	-	217	183	6	370	7.6	-
J. L. Owens	11- 6-63	D	8.1	.08	34	8.3	1.0	.2	126	13	1.5	.3	.2	130	129	119	16	223	7.4	5

1 Chemical analyses by U.S. Geological Survey.

2 Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

3 Water was sampled from wells tapping water-bearing units shown in figure 35.

Data from Cressler (1974)

Table 28.--Minimum measured or estimated flow of springs, Gordon County, that discharge more than 0.1 million gallons per day.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow		Water-bearing unit	Remarks
				Mgal/d	Gal/min		
24	Johnson Spring	1.75 miles N. of Curryville, N. side of county road.	10-29-50 11- 5-69	2.4 1.2	1,670 830	B	Pool spring.
25	Georgia Cumberland Academy	3.25 miles NE. of Curryville, E. side of Oostanaula River.	7-23-65	.14	97	B	
26	Billy Muse	E. of Ga. Highway 143, 1.2 miles NW. of Sugar Valley.	10- 8-67	.42	290	B	Domestic supply.
27	Blue Spring	3.3 miles NNE. of Sugar Valley, just N. of county road on Blue Springs Creek.	11- 5-69	.4e	280	C	
28	City of Calhoun	1.0 mile NNE. of center of Calhoun, N. side of Ga. Highway 156.	12-18-70	.1	70	A	Unused.
29	BPOE Elks Club	3.7 miles NE. of center of Calhoun, 0.12 mile N. of Ga. Highway 225.	11- 5-69	.3	200	A	Enclosed. Fills swimming pool.
30	Amacanada Spring	2.95 miles ESE. of center of Calhoun.	10-29-50 11- 5-69	.7 .8e	480 550	A	Fish hatchery.
31	Blackwood Spring	4.1 miles SE. of Calhoun, N. side of Ga. Highway 53.	12-18-70	.1	70	A	Feeds lake.
32	Roe's Spring (Crane Eater)	2.85 miles E. of I-75, S. side of Ga. Highway 156.	10-26-50 10-22-54 1-14-69 11- 5-69	3.7 1.5 1.5 1.7	2,600 1,000 1,000 1,180	A	
33	Dew's Spring (Big Spring)	0.95 mile SW. of Cash, upper end of Dew's Lake.	4-15-49 4-19-49 11- 5-69	4.5 4.5 6.0	3,100 3,100 4,200	A	Feeds lake.
34	A. W. Hufstetler	7.48 miles S. of center of Calhoun, 2.1 miles W. of I-75.	11- 5-69	.59	410	A	

e Estimated

Table 29.--Minimum measured or estimated flow of springs, Gordon County, that discharge less than 0.1 million gallons per day.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow		Water-bearing unit	Remarks
				Mgal/d	Gal/min		
L	Howard Duvall	2.9 miles NW. of Sugar Valley, W. side of road.	7-20-65	0.01e	10	B	Domestic supply.
2	Mrs. R. A. Brown	2.7 miles NW. of Sugar Valley, E. side of road.	7-20-65	.01e	10	B	do.
3	D. C. Holsomback	2.4 miles NNW. of Sugar Valley, on Snake Creek.	7-20-65	.01e	10	B	Unused.
4	Billy Muse	NW. part of Sugar Valley, E. bank of Snake Creek.	7-20-65	.01e	10	B	do.
5	J. M. Able	3.2 miles ENE. of Curryville, E. side of road.	7-21-65	.01e	10	B	Domestic supply.
6	Wesley Smith and John Milan	2.0 miles ENE. of Curryville, S. of Ga. Highway 156.	7-21-65	.02e	14	B	do.
7	Prater Baxter	2.4 miles NE. of Plainville, E. side of Ga. Highway 53.	9- 8-65	.01e	10	D	Unused.
8	Hugh Prather	1.95 miles W. of I-75, 0.5 mile N. of Bartow County line.	9- 2-65	.01e	10	A	Domestic supply.
9	James Beamer	1.75 miles SSW. of Calhoun, E. side of road.	9-16-65	.02e	14	C	do.
10	Lum Moss	5.8 miles NE. of Calhoun, 1.4 miles N. of Ga. Highway 156, W. side of road.	6-14-65	.01e	10	C	do.
11	Jessie Cox	3.6 miles ESE. of Calhoun, E. side of road.	7- 7-66	.01e	10	A	do.
12	J. R. Fain	4.57 miles SE. of Calhoun, 0.12 mile N. of Ga. Highway 53.	7- 7-66	.01e	10	A	do.
13	Gardner Spring	0.4 mile E. of I-75, 1.7 miles N. of Bartow County line.	9-15-65	.03	20	C	do.
14	Paul Hogan	4.4 miles E. of I-75, 0.2 mile N. of Bartow County line.	9-16-65	.01e	10	A	do.
15	Henry West	4.9 miles E. of I-75, 0.75 mile N. of Bartow County line.	9-16-65	.01e	10	C	do.
16	E. T. Sheppard	2.1 miles ESE. of Senoraville.	7-11-66	.01e	10	C	do.
17	Robert Ellis	1.7 miles E. of Senoraville, S. side of Ga. Highway 53.	7-13-66	.01e	10	C	do.
18	Arthur Henson	1.5 miles E. of Cash, N. side of road.	7-14-66	.01e	10	C	do.
19	S. H. Leatherwoods	1.45 miles SE. of Oakman.	7-20-66	.01e	10	C	Domestic supply. Went dry in 1925.
20	Charles Owens	1.6 miles SE. of Oakman.	2-20-66	.01e	10	G	Domestic supply.
21	Charlie Foster	0.8 mile S. of Ranger, N. side of road.	7-20-66	.01e	10	C	do.
22	Fred McDuffie	3.8 miles SE. of Ranger, 0.97 mile W. of Pickens County line.	7-15-66	.01e	10	G	do.
23	Whittemore Spring	W. part of Oakman.	7-15-66	.01e	10	C	Domestic supply.

e Estimated

Table 30.--Chemical analyses[1] of spring water, Gordon County.

Spring no.	Name or owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS					0.3		125				250	250	1.0	45	500						15
28	City of Calhoun	3-12-59	A	8.6	0.11	22	12	1.4	.0	127	2.4	1.5	.0	3.0	120	114	104	0	200	8.2	3
33	Dews (Big) Spring	6- 9-37	A	5.8	.02	26	15	1.0	0.6	150	2.7	1.5	.0	2.8	128	129	126	-	-	-	-
	Do.	3-25-65	A	7.8	.18	32	8.8	.9	1.0	140	.4	1.7	.1	1.9	-	124	116	2	219	7.2	0
29	Elks BPOE Club	2-19-62	A	9.4	.30	27	11	1.3	1.0	132	.8	1.5	.1	1.6	118	119	112	4	210	7.4	2
34	Hufstetler Spring	2- 6-67	A	8.8	.06	26	13	.7	.8	141	.4	1.5	.1	1.3	116	122	118	3	220	7.1	0
32	Roe (Crane Eater) Spring	3-25-65	A	7.3	.06	26	8.5	1.3	.8	118	1.2	2.5	.2	3.7	-	109	100	4	193	7.2	5
24	Johnson Spring	3-25-65	B	6.3	.05	11	.1	.8	.7	32	3.0	1.5	.2	.1	-	40	28	2	61	7.2	5

Data from Cressler (1974)

[1] Analyses by U.S. Geological Survey.

[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

[3] Water was sampled from springs that discharge from water-bearing units shown in figure 35.

Table 31.--Summary of streamflows, Gordon County.

Site no.	Stream name	Gage type	Location	Drainage area (sq mi)	Estimated average flow (Mgal/d)	Estimated 7-day,10-year minimum flow (Mgal/d)	Water use (1970) (Mgal/d)
1	Johns Creek	M	Lat 34°26', long 85°06', at Ga. Highway 156, 1 mile west of Curryville.	34	33	3.9	
2	Snake Creek	M	Lat 34°33', long 85°01', at county road, at Sugar Valley.	12	11	1.0	
3	Oothkalooga Creek	PR	Lat 34°30', long 84°58', at Ga. Highway 53, at Calhoun.	66	59	14	
4	Oostanaula River	C	Lat 34°35', long 85°56', at U.S. Highway 41, at Resaca.	1,610	1,780a	209a	9.0
5	Coosawattee River	C	Lat 34°35', long 84°52', at Pine Chapel, 5 miles east of Resaca.	856	932b	173b	
6	Pinhook Creek	M	Lat 34°28', long 84°43', at U.S. Highway 411, 2.2 miles north of Fairmount.	16.5	15	.6	
7	Sallacoa Creek	M	Lat 34°26', long 84°43', at Ga. Highway 53, 0.8 mile west of Fairmount.	50.8	46	1.0	
8	Pine Log Creek	M	Lat 34°27', long 84°48', at Ga. Highway 53, 0.9 mile east of Sonoraville.	99.2	87	16	
9	Do.	M	Lat 34°26', long 84°46', at county road, 2 miles southeast of Sonoraville.	65.7	57	9.7	
10	Cedar Creek	M	Lat 34°26', long 84°48', at county road, 1.5 miles south of Sonoraville.	28.1	24	4.1	

C Continuous record
M Miscellaneous
PR Low-flow partial-record

a Based on continuous daily flow, 1893-1968.
b Based on continuous daily flow, 1939-68.

Table 32.--Chemical analyses[1] of streams, Gordon County.

Date	Time	Discharge (ft^3/s)	Total iron (Fe) (µg/l)	Total manganese (Mn) (µg/l)	Milligrams per litre												Hardness (Ca,Mg)	Specific conductance (Micromhos)	pH (Units)	Temperature (Degree C)	Color (Platinum cobalt units)	Dissolved oxygen (Mg/l)	Biochemical oxygen demand (Mg/l)	Fecal coliform (MPN)
					Dissolved calcium (Ca)	Dissolved magnesium (Mg)	Sodium (Na)	Potassium (K)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Nitrite plus nitrate (N)	Ammonia nitrogen (N)	Total phosphorus (P)	Total filtrable residue	Total nonfiltrable residue								
SITE 4 - Figure 35. Oostanaula River at Resaca.																								
1-31-73	1000	3,220	600	70			3.1		35		3.4	0.20	<0.02	0.24			36	98	7.3	5.0	10	11.2	1.4	15,000
7-17-73	0745	2,410	2,900	130			1.8		27		5.0	.26	.03	.16			18	73	6.9	23.0	60	6.4	.8	2,300
SITE 5 - Figure 35. Coosawattee River at Pine Chapel.																								
6-16-71	1415	795	350	<50	5.6	2.0	1.5	1.0	18	5.0	2.0	.16	<.02	<.02	52	27	21	60	7.1	25.0	10	7.3	.4	430
SITE 7 - Figure 35. Salacoa Creek at Fairmount.																								
6-16-71	1300		400	<50	6.1	1.6	1.8	1.2	22	4.0	1.8	.20	<.02	<.02	54	9	20	59	7.2	22.0	10	7.8	.7	210
SITE 8 - Figure 35. Pine Log Creek at Sonoraville.																								
6-16-71	1330		450	<50	32	9.2	1.5	1.9	21	6.0	2.8	.68	<.02	.04	154	35	109	227	7.1	22.0	.5	7.0	.7	430

[1] Ananlyses by Georgia Dept. of Natural Resources.

EXPLANATION

MURRAY COUNTY MAP

PRINCIPAL WATER-BEARING UNITS

A — Yields generally range from 2 to 25 gal/min. Yields as large as 500 gal/min may be obtained at favorable sites. Aquifer is dolomite and limestone. Water quality generally meets drinking-water standards and is suitable for many industrial uses.

C — Yields generally range from 0 to 20 gal/min. Yields as large as 100 gal/min may be obtained at favorable sites. Aquifers include sandstone, mudstone, shale, siltstone, limestone, and bedded chert. Water quality generally meets drinking-water standards, except for excessive iron.

D — Yields generally are less than 20 gal/min; a few exceed 50 gal/min. Yields as large as 300 gal/min may be obtained at favorable sites. Aquifer is limestone or dolomite units interlayered with shale units. Water quality generally meets drinking-water standards, although some contains excessive iron.

G — Yields generally range from 0 to 30 gal/min. Yields as large as 100 gal/min may be obtained at favorable sites. Aquifers include quartzite, graywacke, phyllite, slate, granite, and other metamorphic and igneous rocks. Water quality generally meets drinking-water standards except for water from phyllite and slate, which commonly contains excessive iron and manganese.

FAVORABLE WELL SITES—number indicates expected yield in gal/min

●1 As much as 200

●2 As much as 500

SPRINGS—number refers to tables 34 and 35

~o2 Unused

~◐1 At least half of flow unused

~●3 Entire flow in use

GAGING STATIONS—number refers to tables 36 and 37

△5 Low-flow partial record

▲6 Continuous record

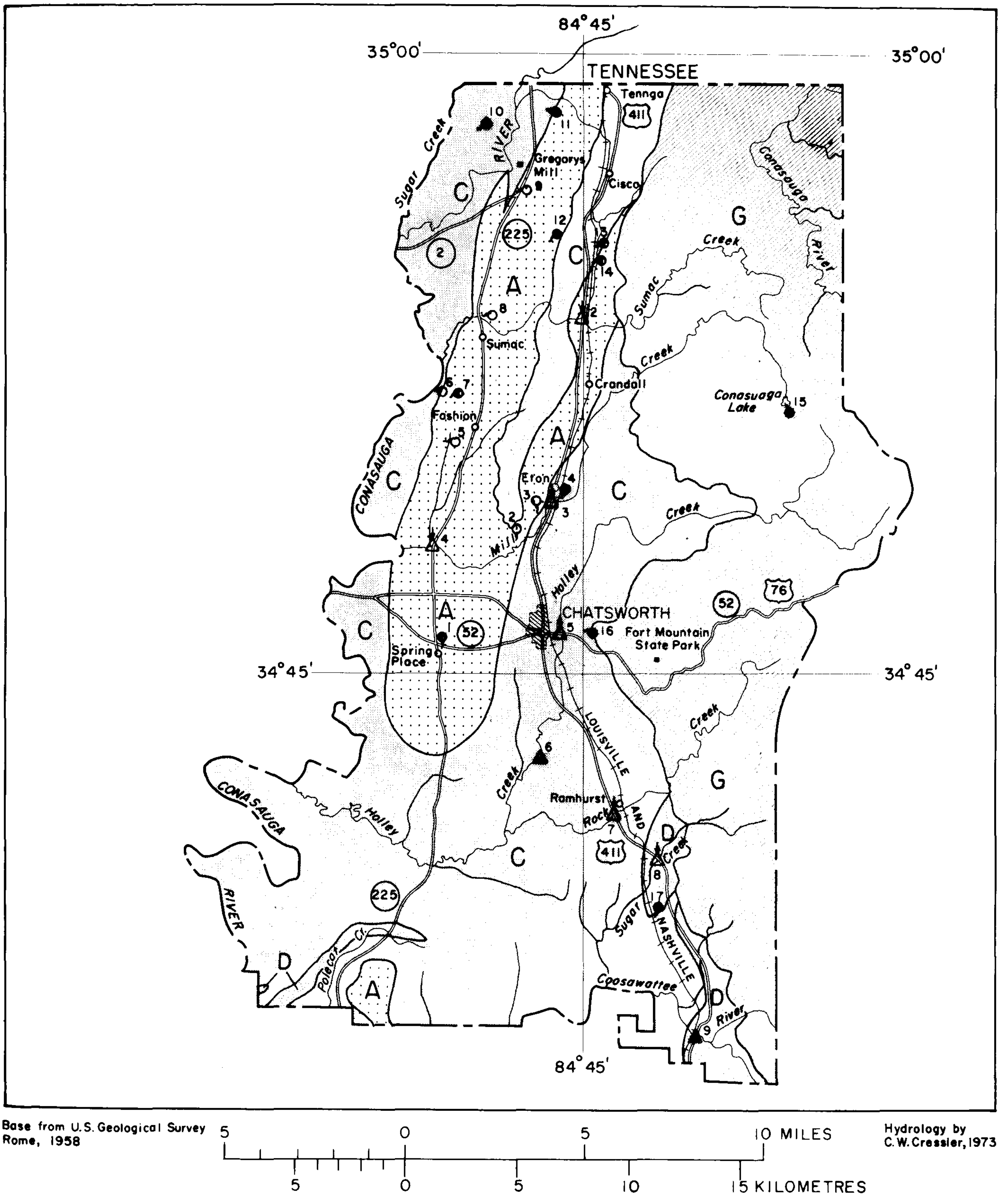


Figure 44.—Principal water-bearing units and location of springs and stream-gaging stations, Murray County.

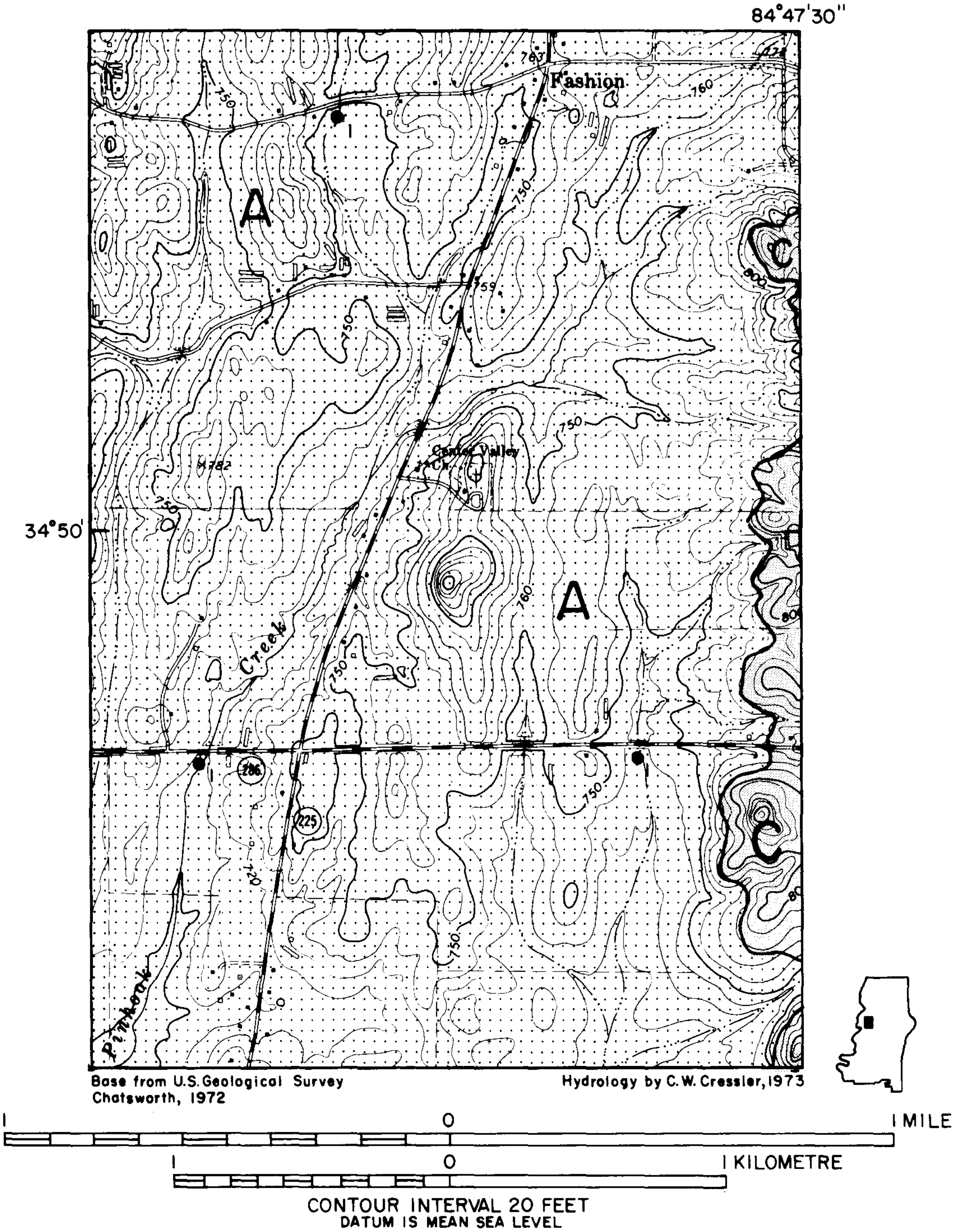


Figure 45.— Principal water-bearing units and location of favorable well sites, Fashion and vicinity, Murray County. For Explanation see page 90.

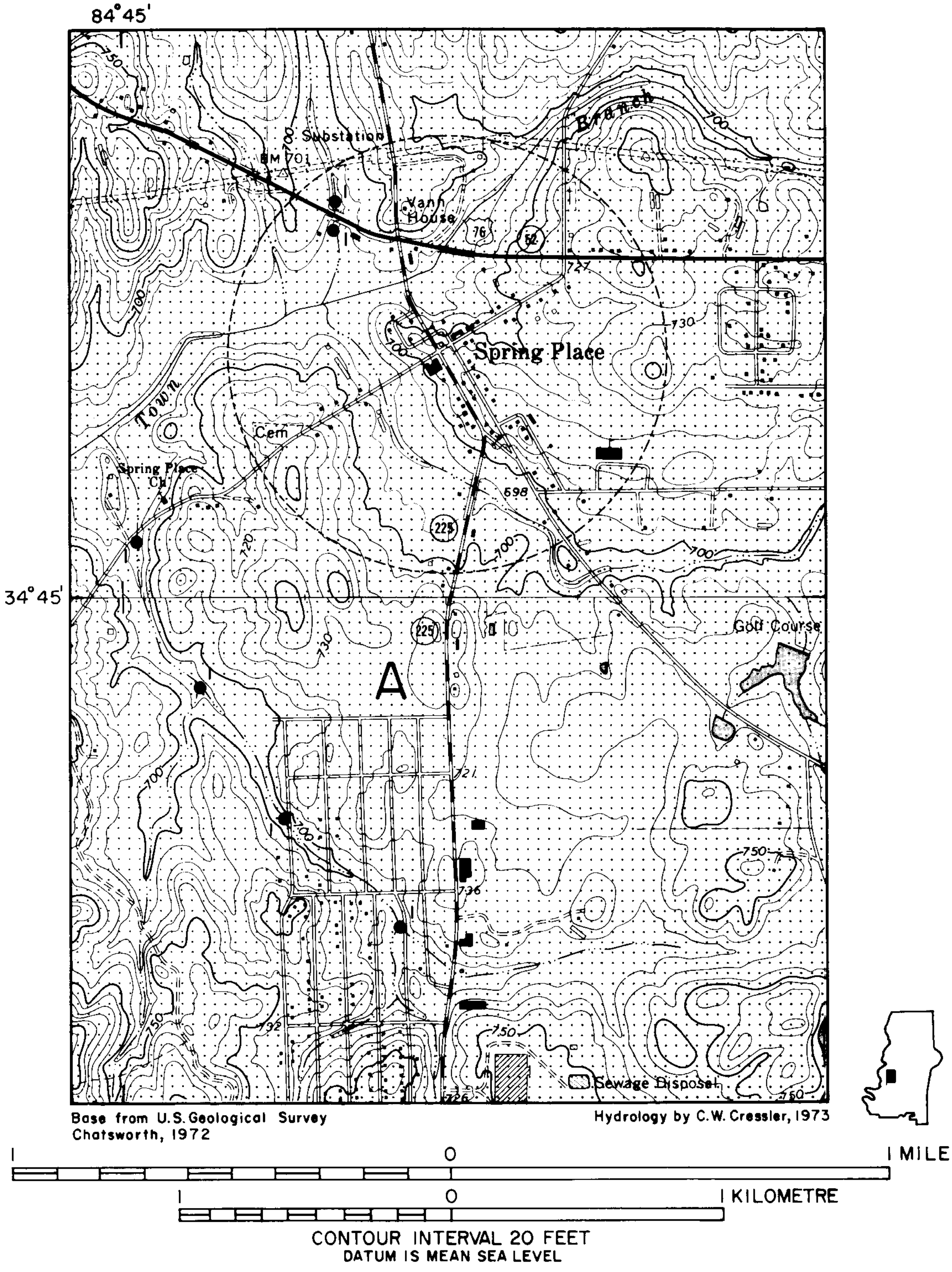


Figure 46.— Principal water-bearing unit and location of favorable well sites, Spring Place and vicinity, Murray County. For Explanation see page 90.

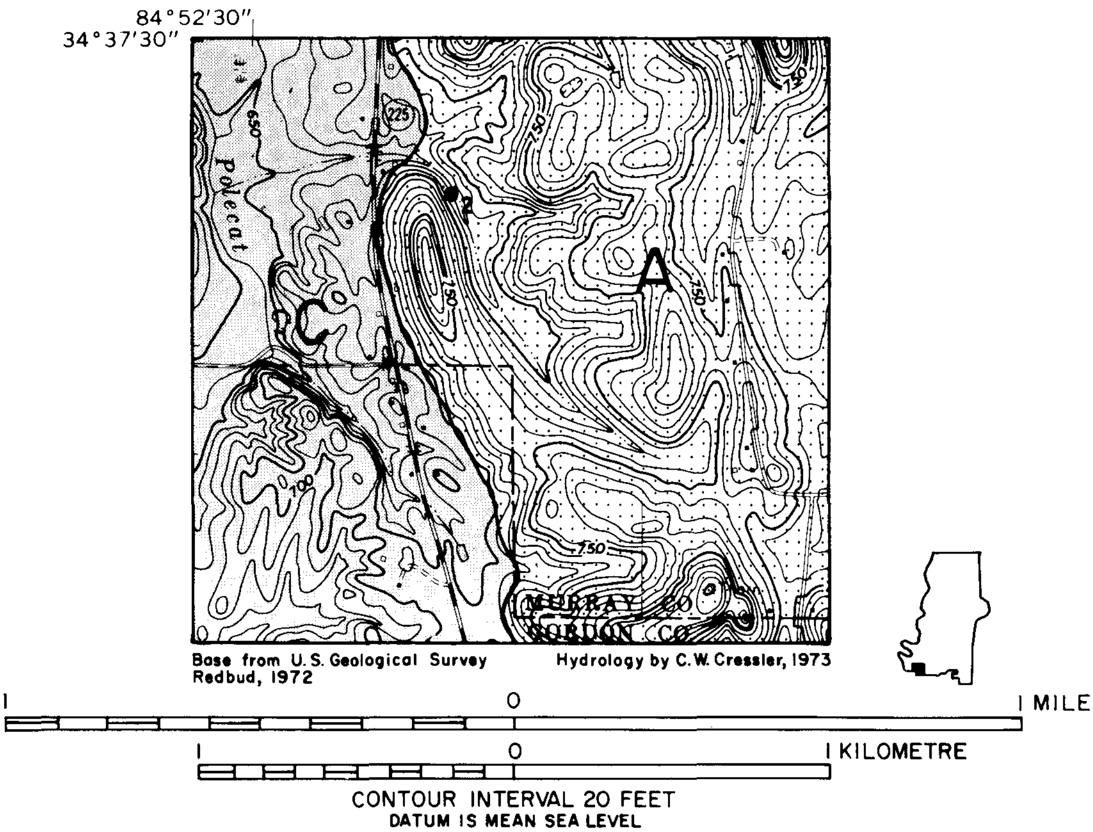


Figure 47.—Principal water-bearing units and location of favorable well site, vicinity of Georgia Highway 225, Murray-Gordon County line. For Explanation see page 90.

Table 33.--Chemical analyses[1] of well water, Murray County.

Owner	Date of collection	Water-bearing unit[3]	Milligrams per litre													Hardness[2] as $CaCO_3$		Specific conductance (micromhos per cm at 25°C)	pH	Color
			Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Calcium, magnesium	Non-carbonate			
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS				0.3		125				250	250	1.0	45	500						15
V. A. Bearden	11-16-64	A	9.3	0.14	34	18	0.8	1.2	184	0.4	1.4	0.1	1.7	-	158	157	6	280	7.5	-
Traver Robinson	3-23-65	A	12	.10	40	16	.7	.7	205	2.0	.0	.3	.0	-	173	165	0	296	7.9	5
W. W. Higdon	11-17-64	C	6.9	.10	2.8	.2	1.4	.4	5	.2	2.8	.0	6.7	-	24	8	4	30	5.8	-
J. B. Horne, Sr.	11- 6-63	C	17	.03	26	3.6	3.9	.6	91	7.6	2.8	.1	2.5	112	109	80	6	160	7.2	5
R. T. Springfield	11-16-64	C	18	.02	98	15	9.7	.3	284	27	39	.1	.7	-	348	308	76	565	7.8	-
N. Watson	11-16-64	C	23	.41	102	16	20	.3	265	88	30	.1	.0	-	410	320	-	635	7.6	-
	11- 6-63	C	16	.11	62	8.6	10	.7	230	6.8	7.0	.3	2.0	226	226	190	2	378	7.6	-

[1] Chemical analyses by U.S. Geological Survey.

[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

[3] Water was sampled from wells tapping water-bearing units shown in figure 44.

Data from Cressler (1974)

Table 34.--Minimum measured or estimated flow of springs, Murray County.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow		Water-bearing unit	Remarks
				Mgal/d	Gal/min		
1	Dr. James Bradford	In Spring Place, 0.19 mile N. of U.S. Highway 76.	11-15-50 11- 6-69	0.67 .06	465 42	A	Domestic supply.
2	A. L. Keith (Big Blue Spring)	2.1 miles SW. of Eton, 0.8 mile W. of U.S. Highway 411.	10-26-54	.07	48	A	
3	O'Neill Spring	0.5 mile SW. of Eton, W. side of Mill Creek.	-50 1-13-69	.47 .80	330 550	A	
4	James Spring	E. part of Eton.	11-15-50 10-26-54 1- 9-67	.95 .27 1.3	660 187 900	C	Supplies Chatsworth.
5	Lula Bailey	0.2 mile SW. of Fashion, 0.08 mile W. of Ga. Highway 225.	10-11-66	.01e	10	A	
6	Dr. Gregory	1.85 miles NNW. of Fashion, 0.8 mile W. of Ga. Highway 225.	1-15-50 7-15-70	.43 .32	300 220	A	
7	Troy McCamy	1.8 miles NNW. of Fashion, 0.5 mile W. of Ga. Highway 225.	10-11-66	.02e	14	A	Domestic supply.
8	Jessie Dunn	0.9 mile NNE. of Sumac, 0.4 mile E. of Ga. Highway 225.	10-11-66	.02e	14	A	Unused.
9	Colvard Spring	0.6 mile SE. of Gregory's Mill, E. side of Ga. Highway 225.	11-14-50 7-15-70	.58 .50	400 350	A	do.
10	S. A. Stafford	1.45 miles NW. of Gregory's Mill, 1.1 miles W. of Ga. Highway 225.	10-25-66	.01e	10	C	Stock supply.
11	Howard Phillips	1.5 miles WSW. of Tennga, 0.42 mile S. of Tennessee line.	8- 2-66	.02e	14	A	Domestic supply.
12	Mrs. Syble Bryant	2.0 miles SW. of Cisco, S. side of road.	10-11-66	.01e	10	A	do.
13	Carlton Petty	1.6 miles S. of Cisco, 0.55 mile E. of U.S. Highway 411.	7-28-66	.02e	14	A	Stock supply.
14	Coffee Spring	1.9 miles S. of Cisco, 0.45 mile E. of U.S. Highway 411.	7-28-66	.02e	14	A	do.
15	U.S. Dept. of Agriculture	SE. end of Conasauga Lake.	8- 2-66	.02e	14	G	Public supply.
16	City of Chatsworth	1.4 miles E. of Chatsworth, N. of U.S. Highway 76.				G	City supply.
17	Mrs. Mary Barnett (Gallman Spring)	3.1 miles SE. of Ramhurst, 0.41 mile W. of U.S. Highway 411.	10-25-66	.01e	10	D	Domestic supply. Went dry in 1925.

e Estimated

Table 35.--Chemical analyses[1] of spring water, Murray County.

Spring no.	Name or owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS					0.3		125				250	250	1.0	45	500						15
1	Bradford Spring	2-19-62	A	8.5	0.26	22	12	1.1	0.8	123	0.4	1	0.0	3.5	109	110	104	4	205	7.6	2
14	Coffee Spring	11- 6-63	A	4.0	.09	7.0	2.1	3.0	.5	23	12	1.5	.2	.1	54	51	26	7	72	6.6	5
3	O'Neill Spring	2- 8-67	A	9.1	.15	26	12	1.0	.9	136	.4	1.5	.1	3.4	120	122	114	3	219	7.4	0
4	James Spring	3-24-65	C	8.8	.56	26	7.5	1.4	1.1	110	2.8	2.6	.1	3.4	-	107	96	6	183	7.3	0
17	Gallman Spring	11- 6-63	D	15	.05	50	14	.8	1.2	213	2.4	1.4	.4	.0	88	190	182	8	320	7.7	5
16	City of Chatsworth	3-12-59	G	13	.09	2.6	.2	2.4	.2	14	3.2	1.2	.0	.6	38	30	8	0	33	6.3	5

[1] Analyses by U.S. Geological Survey.

[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

[3] Water was sampled from springs that discharge from water-bearing units shown in figure 44.

Data from Cressler (1974)

Table 36.--Summary of streamflows, Murray County.

Site no.	Stream name	Gage type	Location	Drainage area (sq mi)	Estimated average flow (Mgal/d)	Estimated 7-day,10-year minimum flow (Mgal/d)	Water use (1970) (Mgal/d)
1	Conasauga River	PR	Lat 35°01', long 84°44', at U.S. Highway 411, 1.5 miles north of Tennga.	108	154	16	
2	Sumac Creek	M	Lat 34°54', long 84°45', at U.S. Highway 411, 2 miles north of Crandall.	23.9	26	1.7	
3	Mill Creek	M	Lat 34°49', long 84°46', at U.S. Highway 411, at Eton.	21.9	24	1.7	
4	Do.	M	Lat 34°48', long 84°50', at Ga. Highway 225, 3 miles north of Spring Place.	33	37	8.4	
5	Holly Creek	M	Lat 34°46', long 84°46', at U.S. Highway 76, at Chatsworth.	50.0	54	1.6	
6	Do.	C	Lat 34°43', long 84°46', at county road, 3.3 miles south of Chatsworth.	64.9	70a	2.0a	
7	Rock Creek	M	Lat 34°42', long 84°44', at U.S. Highway 411, at Ramhurst.	16.5	18	.9	
8	Sugar Creek	PR	Lat 34°41', long 84°43', at U.S. Highway 411, 2 miles southeast of Ramhurst.	7.30	7.8	.9	
9	Coosawattee River	C	Lat 34°36', long 84°41', at U.S. Highway 411, at Carters.	531	800b	152b	

C Continuous record
M Miscellaneous
PR Low-flow partial-record

a Based on continuous daily flow, 1961-69.
b Based on continuous daily flow, 1897-1907; 1919-22; 1962-68.

Table 37.--Chemical analyses of streams, Murray County.

Date	Time	Discharge (ft^3/s)	Total iron (Fe) (µg/l)	Total manganese (Mn) (µg/l)	Milligrams per litre: Dissolved calcium (Ca)	Dissolved magnesium (Mg)	Sodium (Na)	Potassium (K)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Nitrite plus nitrate (N)	Ammonia nitrogen (N)	Total phosphorus (P)	Total filtrable residue	Total nonfiltrable residue	Hardness (Ca,Mg)	Specific conductance (Micromhos)	pH (Units)	Temperature (Degree C)	Color (Platinum cobalt units)	Dissolved oxygen (Mg/l)	Biochemical oxygen demand (Mg/l)	Fecal coliform (MPN)
SITE 6 - Figure 44. Holly Creek near Chatsworth.																								
1-31-73	1330	125					6.0		11		7.3	0.09	<0.02	0.06			8	58	6.5	6.0	10	12.6	0.3	4,300
6- 6-73	1415	450					3.7		20		3.4	.13	.04	.25			16	62	6.9	20.0	140	6.8	2.1	43,000
SITE 9 - Figure 44. Coosawattee River at Carters.																								
1-31-73	1430		350	60					10	4.0		.11	.03	.08			10	33	7.4	5.0	10	13.4	.6	430
7-17-73	1115		2,400	<50					13	9.0		.16	<.02	.12			16	44		20.5	35		.7	430,000

[1] Analyses by Georgia Dept. of Natural Resources.

EXPLANATION

POLK COUNTY MAPS

PRINCIPAL WATER-BEARING UNITS

A — Yields generally range from 5 to 50 gal/min. Yields as large as 1,000 gal/min may be obtained at favorable sites. Aquifer is dolomite and limestone. Water quality generally meets drinking-water standards and is suitable for many industrial uses.

C — Most wells yield between 1 and 30 gal/min. The aquifers include shale, slate, sandstone, chert, limestone, and phyllite. Water quality from most rock units meets drinking-water standards. Excessive iron occurs in water from some phyllite and slate.

E — Shallow wells generally yield between 2 and 30 gal/min. Deeper wells supply 600 to 1,500 gal/min and similar quantities may be obtained from favorable sites. Aquifer is interlayered limestone and dolomite. Water quality generally meets drinking-water standards and is suitable for many industrial uses.

G — Yields generally range from 2 to 30 gal/min. Yields of 50 to 200 gal/min may be obtained from favorable sites in brittle rocks. Aquifers include quartzite, phyllite, slate, granite and other metamorphic and igneous rocks. Water quality generally meets drinking-water standards except for water from phyllite and slate, which commonly contains excessive iron and manganese.

FAVORABLE WELL SITES—number indicates expected yield in gal/min

●3 As much as 1,000

●4 As much as 1,500

SPRINGS—number refers to tables 39 and 40

~○7 Unused

~◐9 At least half of flow unused

~●19 Entire flow in use

GAGING STATIONS—number refers to tables 41 and 42

△8 Low-flow partial record

▲1 Continuous record

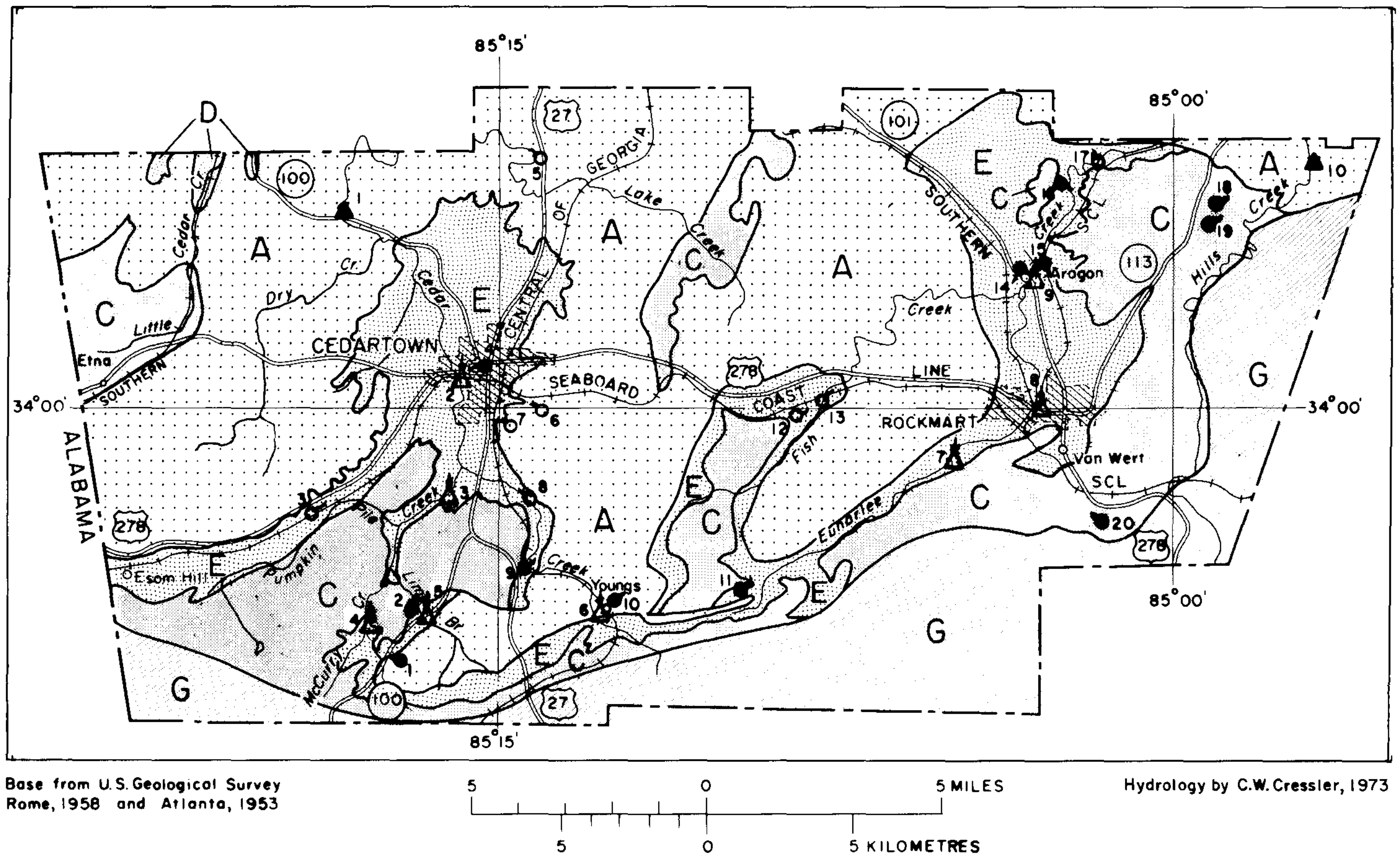


Figure 48.—Principal water-bearing units and location of springs and stream-gaging stations, Polk County.

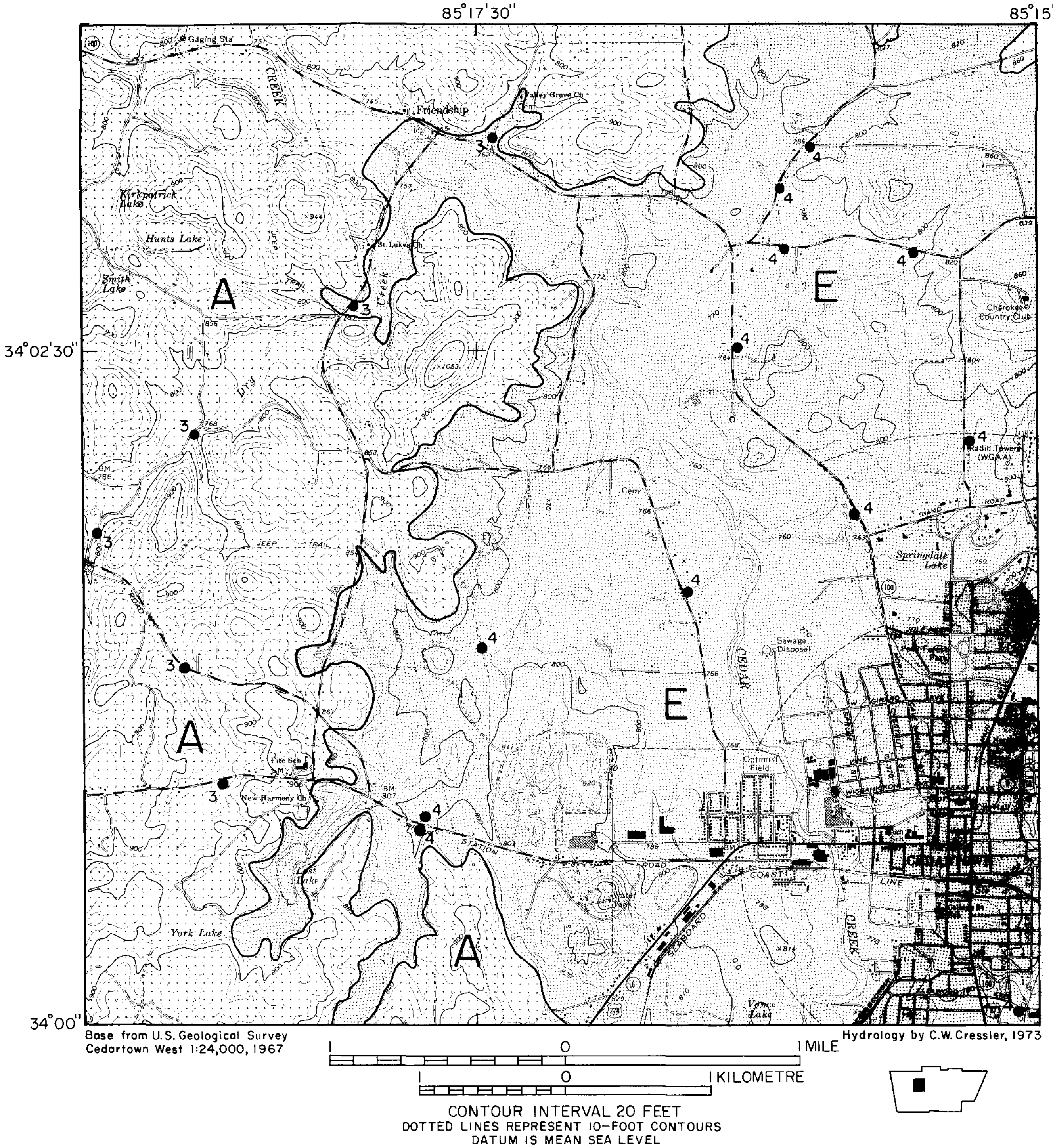


Figure 49.— Principal water-bearing units and location of favorable well sites, northwest Cedartown and vicinity, Polk County. For Explanation see page 100.

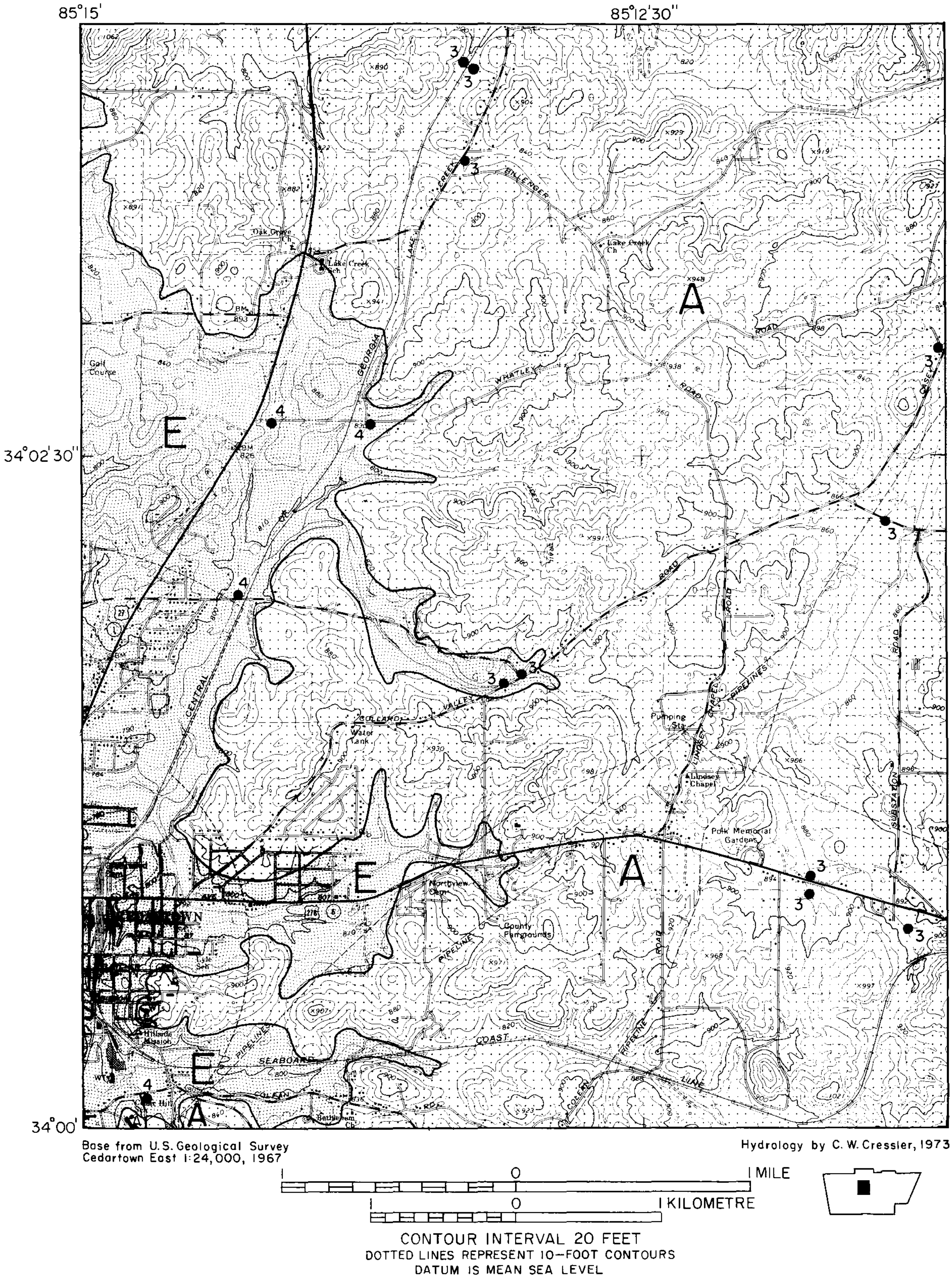


Figure 50.— Principal water-bearing units and location of favorable well sites, northeast Cedartown and vicinity, Polk County. For Explanation see page 100.

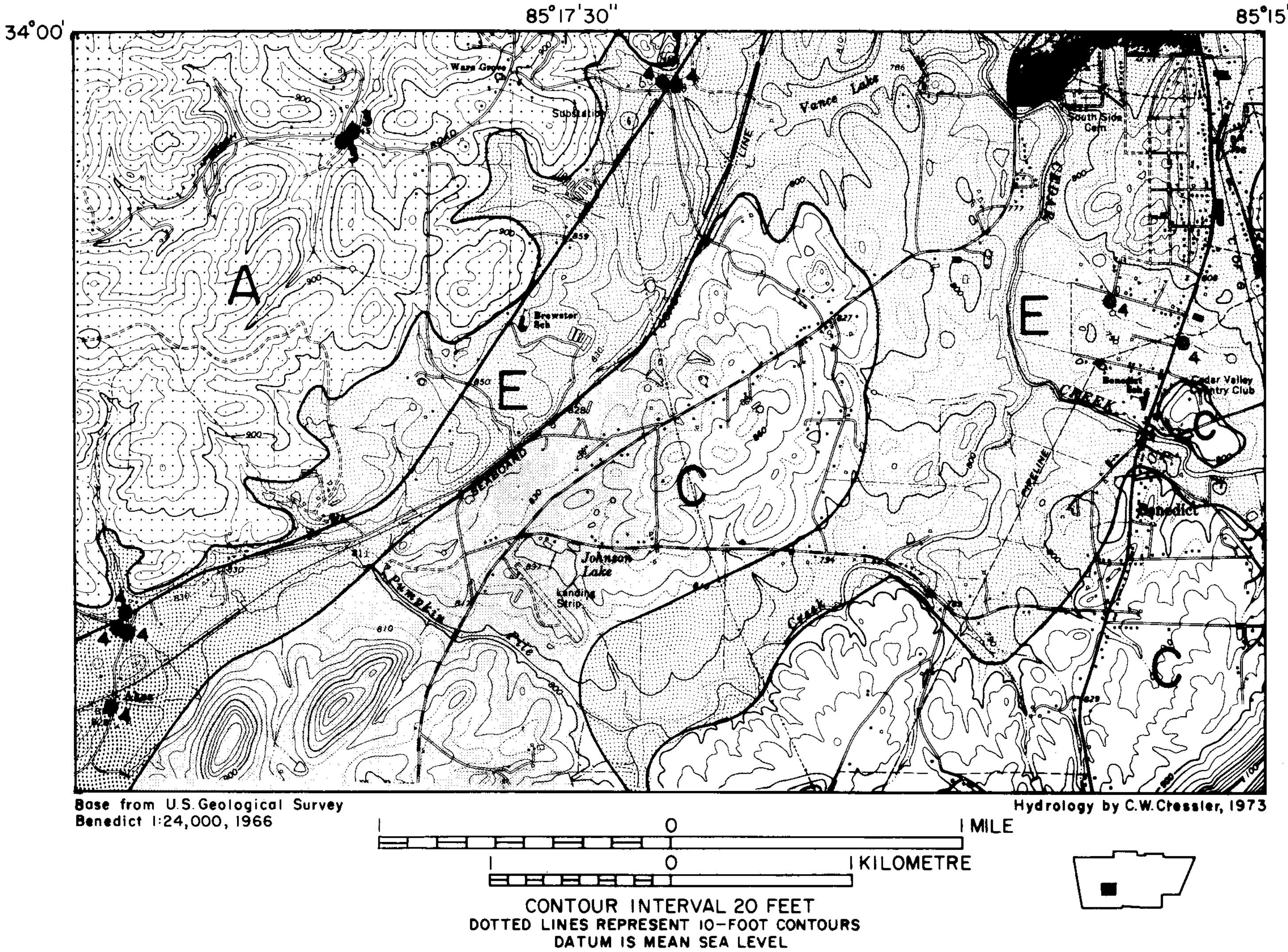


Figure 51.— Principal water-bearing units and location of favorable well sites, southwest Cedartown and vicinity, Polk County. For Explanation see page 100.

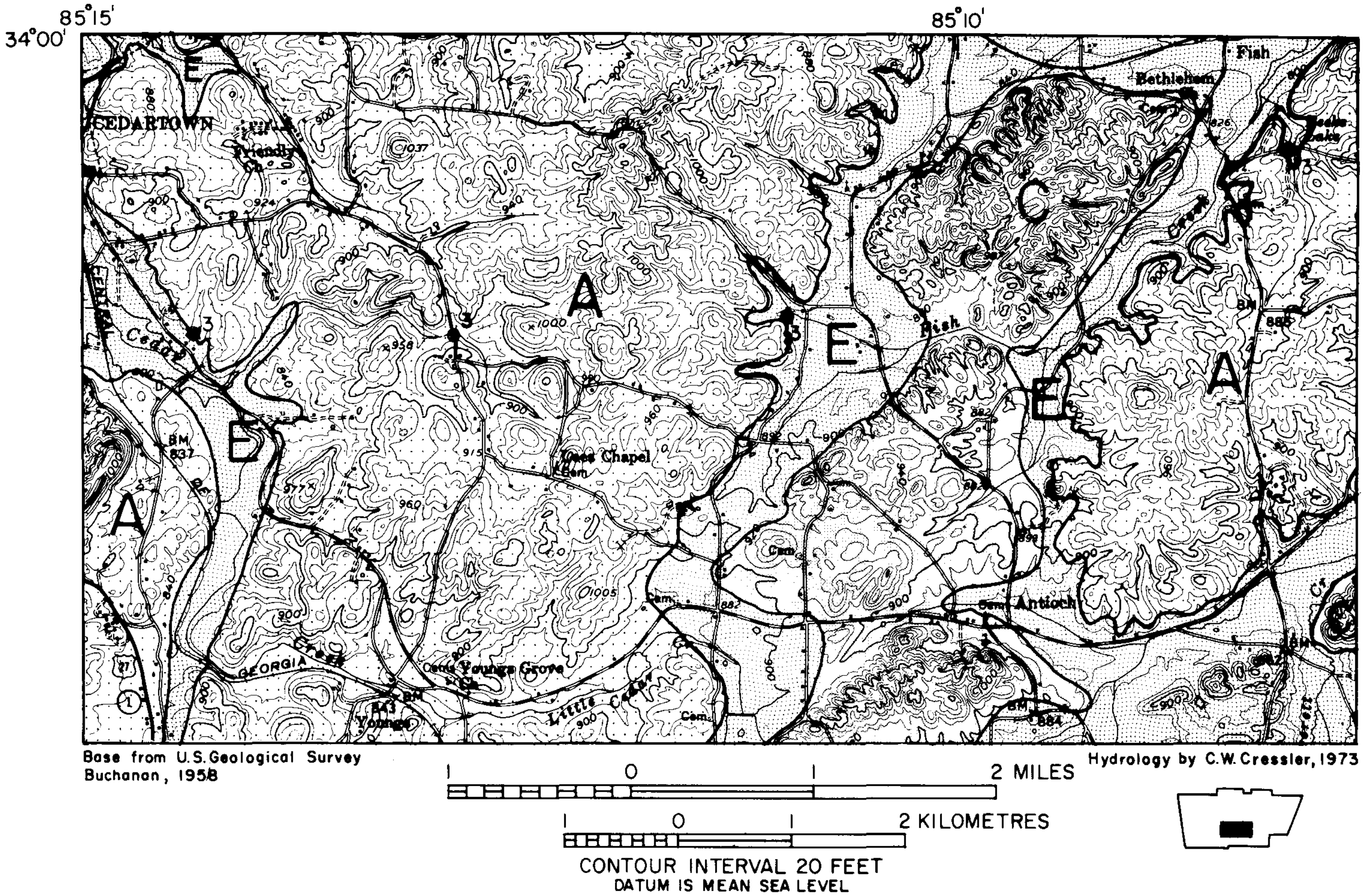


Figure 52.— Principal water-bearing units and location of favorable well sites, southeast Cedartown and vicinity, Polk County. For Explanation see page 100.

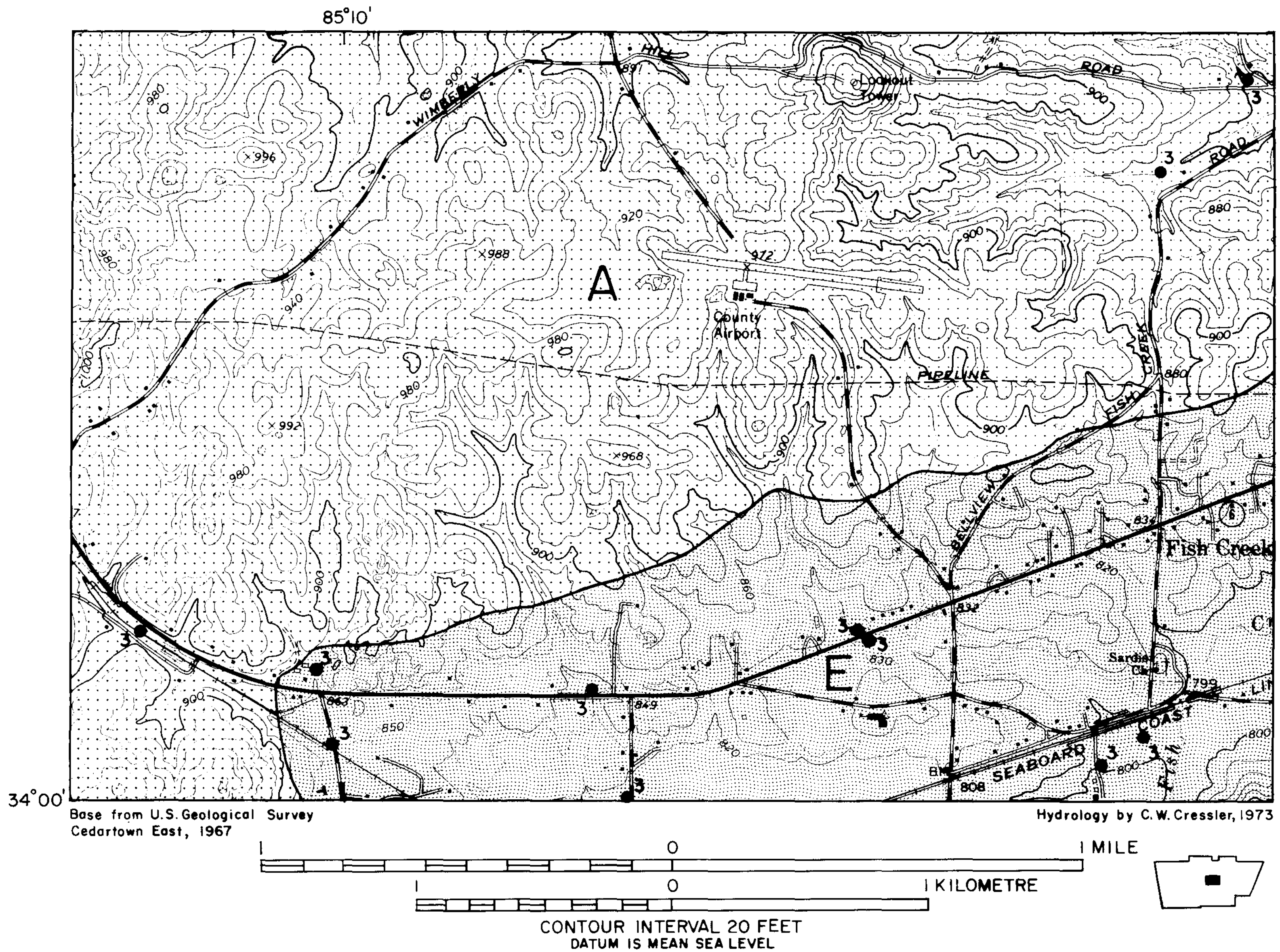


Figure 53.— Principal water-bearing units and location of favorable well sites, Fish Creek and vicinity, Polk County. For Explanation see page 100.

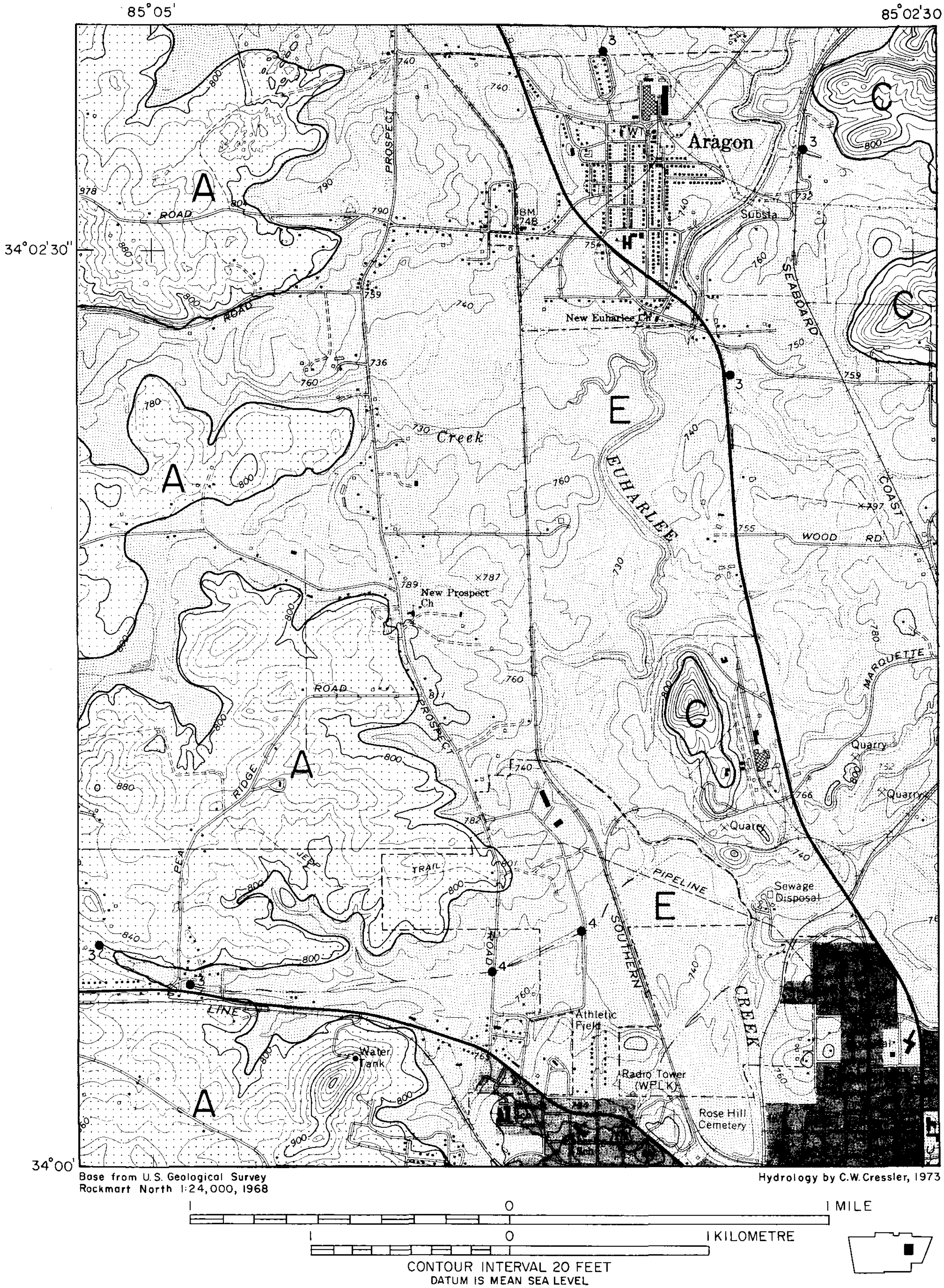


Figure 54.— Principal water-bearing units and location of favorable well sites, north Rockmart and Aragon area, Polk County. For Explanation see page 100.

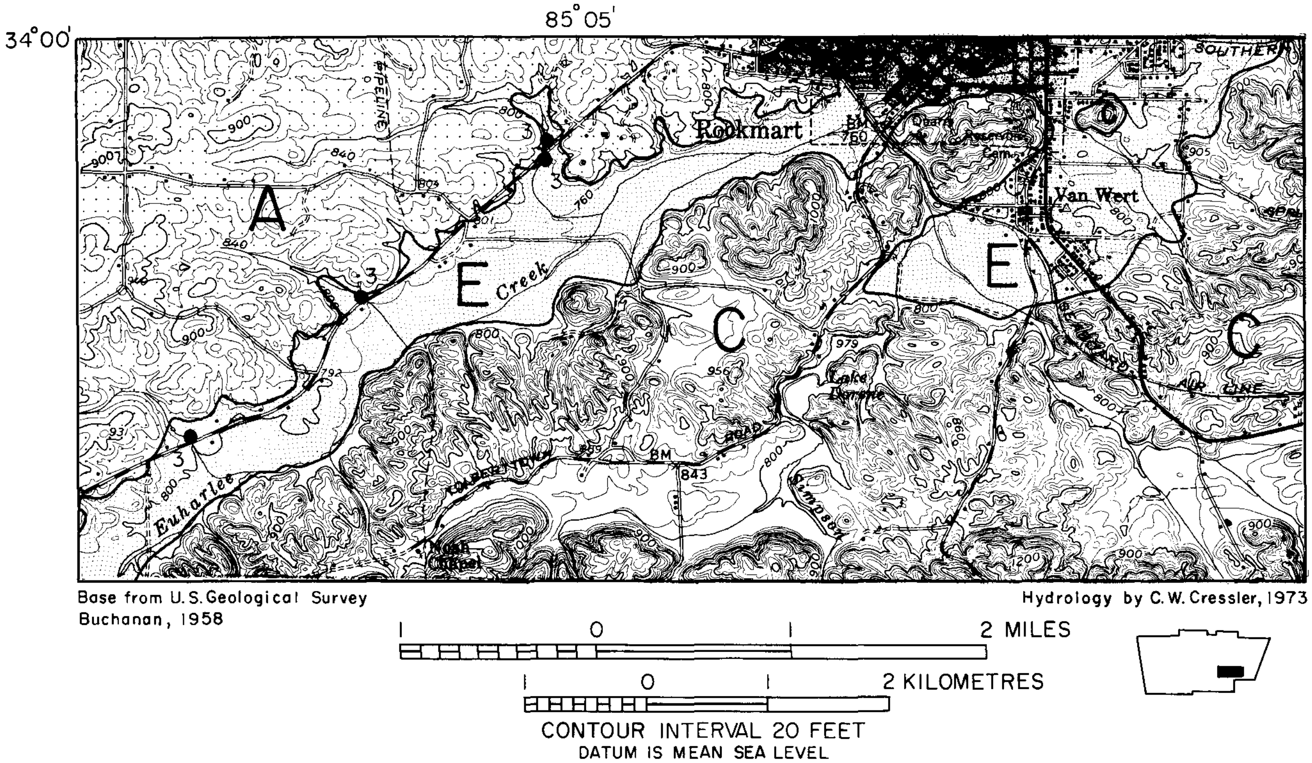


Figure 55.— Principal water-bearing units and location of favorable well sites, south Rockmart and Van Wert area, Polk County. For Explanation see page 100.

Table 38.--Chemical analyses[1] of well water, Polk County.

Owner	Date of collection	Water-bearing unit[3]	Milligrams per litre											Dissolved solids		Hardness[2] as $CaCO_3$		Specific conductance (micromhos per cm at 25°C)	pH	Color
			Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Residue	Sum	Calcium, magnesium	Non-carbonate			
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS				0.3		125				250	250	1.0	45	500						15
R. Campbell	2-22-62	A	6.5	0.33	1.6	0.5	2.7	0.8	4	0.0	5.0	0.0	4.2	-	29	6	2	36	5.6	
W. W. Corn	5-14-63	A	7.3	.09	24	-	2.0	.4	135	.0	1.5	0.1	1.6	-	117	114	4	212	7.5	
Bob Harrison	5-17-63	A	8.2	.04	30	-	2.0	.5	158	2.4	3.5	.1	3.3	-	143	136	6	252	7.6	
Cleo Brown	5-17-63	C	9.6	.15	56	-	3.5	.6	202	7.2	3.0	.1	.0	-	187	168	2	322	7.2	
Walt Chandler	5-16-63	C	17	1.1	2.0	-	3.8	.6	44	.4	1.8	.2	.0	-	54	32	-	75	6.5	
Porter Crimes	5-15-63	C	7.6	.16	22	-	2.2	.3	119	.0	2.0	.1	5.9	-	110	100	2	196	7.6	
W. M. Holbrook	5-17-63	C	19	.79	72	-	12	.6	188	12	4.0	.3	.0	-	343	276	122	521	8.4	
W. D. Jarnell	5-14-63	C	21	2.6	5.2	-	8.7	.6	11	52	4.5	.2	.0	-	109	57	48	160	5.8	
Jewell Hulsey	5-14-63	E	8.0	.10	34	-	1.7	.8	156	14	2.5	.2	.0	-	152	144	16	268	7.9	
E. M. Mead	5-14-63	E	6.9	.05	22	-	1.6	.8	89	.0	2.0	.0	3.1	-	86	76	3	151	7.6	

[1] Analyses by U.S. Geological Survey.
[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".
[3] Water was sampled from wells tapping water-bearing units shown in figure 48.

Data from Cressler (1970)

Table 39.--Minimum measured or estimated flow of springs, Polk County.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow Mgal/d	Flow Gal/min	Water-bearing unit	Remarks
1	R. T. McCoy	4.4 miles SW. of Youngs, E. side of Ga. Highway 100, on Lime Branch	4-30-63	0.28e	200	A	Supplies home and dairy.
2	Bentley Spring	3.6 miles WSW. of Youngs, 2.44 miles N. of Haralson County line.	4-30-60		5	C	Furnishes dairy.
3	West (Deep) Spring	4.2 miles SW. of center of Cedartown, S. side of U.S. Highway 278.	8-21-50	1.0	700	E	
4	Cedartown Spring	Cedartown waterworks.	10- 4-50 10-18-54 11-17-64	3.9 2.9 2.8	2,700 2,000 1,950	E	Public supply.
5	Locke Spring	4.83 miles NNE. of Cedartown, 0.13 mile W. of U.S. Highway 27.	8-22-50 11-17-64	.3 .3e	200 200	A	
6	Jones Spring	1.05 miles SE. of Cedartown, N. side of road.	10- 5-50	.4	280	A	
7	Philpott Spring	1.0 mile SSE. of center of Cedartown, 0.14 mile E. of railroad.	8-21-50	.08e	50	A	
8	E. E. Hudsputh	2,65 miles SSE. of center of Cedartown, on Cedar Creek.	10- 5-50 11-18-64	.3 .3e	200 200	A	
9	E. C. Morgan	1.3 miles W. of Youngs, 0.1 mile E. of U.S. Highway 27.	11-18-64	.5	350	E	Supplies dairy.
10	Youngs Spring	In Youngs.	10- 5-50 12-10-68	.6 .45	400 300	A	Public supply.
11	J. P. Everett	8.1 miles SE. of Cedartown, 3.15 miles N. of Haralson County line.	11-18-64	.3e	200	E	Furnishes home and dairy.
12	(Unknown)	1.55 miles ESE. of Grady, S. side of railroad.	11-18-64		5	E	
13	Fish Spring (Hoyt Beck)	2.1 miles E. of Grady, 0.5 mile S. of U.S. Highway 278.	10- 5-50 3-20-63	.9 .3	600 200	E	Largely filled in; not used.
14	Aragon Mills	In Aragon, E. side of Ga. Highway 101.	10- 5-50 11-18-64	.4 .35	280 240	E	Industrial supply.
15	Do.	In Aragon, 0.57 mile E. of Ga. Highway 101, N. bank of small creek.	10- 5-50	.76	530	E	do.
16	Davette Spring	E. side of paved road, 2.0 miles NE. of center of Aragon.	9-26-50 11-16-64	2.3 2.5	1,600 1,750	E	Unused.
17	Deaton Spring	2.5 miles NE. of center of Aragon, S. bank of Euharlee Creek.	9-25-50	15.6	10,800	E	Unused. Measurement made prior to spring being enclosed and may be the most accurate.
			5-12-66	6.5	4,500		Measurement: Intergrated computation from point velocity readings.
			6- 6-66	10.2	7,000		Difference in flow of Euharlee Creek upstream and downstream from spring.
			6- 6-66	9.0	6,200		Measure of water flowing through pipe from enclosure excludes large volume of leakage.
18	Paul McKelvey	E. side of Ga. Highway 113, 1.5 miles S. of Bartow County line.	10- 6-50	.2	140	C	
19	---	E. side of Ga. Highway 113, 2.0 miles S. of Bartow County line.	6- 6-66		10	C	Domestic supply.
20	R. E. Forsyth	1.6 miles SE. of Van Wert, 0.1 mile S. of U.S. Highway 278.	6-16-63	.28	190	C	Domestic supply.

e Estimated

Table 40.--Chemical analyses[1] of spring water, Polk County.

Spring no.	Name or owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS					0.3		125				250	250	1.0	45	500						15
10	Youngs Spring	3-20-63	A	8.3	0.02	25	11	1.3	0.4	127	2.0	1.0	0.1	0.7	-	122	106	2	182	8.0	-
14	Aragon Mills Spring	3-19-63	E	7.4	.05	37	12	1.6	.6	162	4.0	3.0	.1	3.0	-	164	140	7	232	7.5	-
4	Cedartown Spring	11-27-57	E	9.2	.05	34	14	2.2	.5	168	3.0	2.0	.4	4.0	-	157	142	5	264	7.4	-
	Do.	3-19-63	E	8.2	.05	31	14	2.0	.4	160	3.2	3.0	.1	3.7	-	160	136	5	224	7.7	-
16	Davette Spring	3-19-63	E	8.8	.08	30	13	.8	.3	154	.8	1.5	.1	.8	-	144	130	4	215	7.7	-
17	Deaton Spring	3-19-63	E	8.0	.09	34	10	1.2	.6	152	2.4	2.0	.1	2.4	-	150	128	4	217	7.6	-
13	Fish Spring	3-20-63	E	6.4	.06	22	6.6	2.0	.7	94	4.4	3.0	.1	3.5	-	100	82	5	154	7.4	-
3	West Spring	3-20-63	E	7.1	.05	18	7.1	.9	.4	88	.0	1.5	.1	1.2	-	74	4	2	139	7.2	-

[1] Analyses by U.S. Geological Survey.

Data from Cressler (1970)

[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

[3] Water was sampled from springs that discharge from water-bearing units shown in figure 48.

Table 41.--Summary of streamflows, Polk County.

Site no.	Stream name	Gage type	Location	Drainage area (sq mi)	Estimated average flow (Mgal/d)	Estimated 7-day,10-year minimum flow (Mgal/d)	Water use (1970) (Mgal/d)
1	Cedar Creek	C	Lat 34°04', long 85°19', near Ga. Highway 100, 4.5 miles northwest of Cedartown.	109	100a	21a	
2	Do.	M	Lat 34°01', long 85°16', at U.S. Highway 278, at Cedartown.	73	66	12	
3	Pumpkin Pile Creek	M	Lat 33°58', long 85°16', at county road, 2.8 miles south of Cedartown.	42	37	4.1	
4	McCurry Creek	M	Lat 33°56', long 85°18', at county road, 6 miles southwest of Cedartown.	7.8	7.1	.4	
5	Lime Branch	M	Lat 33°56', long 85°17', at Ga. Highway 100, 5.4 miles south of Cedartown.	5.8	5.3	.2	
6	Cedar Creek	M	Lat 33°57', long 85°13', at county road, 4.7 miles southeast of Cedartown.	9.8	8.4	1.5	
7	Euharlee Creek	PR	Lat 33°59', long 85°05', at county road, 2 miles southwest of Rockmart.	24	21	1.0	
8	Do.	M	Lat 34°00', long 85°03', at U.S. Highway 278, at Rockmart.	45	37	4.5	2
9	Do.	M	Lat 34°02', long 85°03', at Ga. Highway 101, at Aragon.	88	74	16	
10	Hills Creek	C	Lat 34°04', long 84°57', at county road, 2 miles southeast of Taylorsville.	26	19b	.7b	

C Continuous record
M Miscellaneous site
PR Low-flow partial-record

a Based on continuous daily flow, 1943-68.
b Based on continuous daily flow, 1960-69.

Table 42.--Chemical analyses[1] of streams, Polk County.

Date	Time	Discharge (ft^3/s)	Total iron (Fe) (μg/l)	Total manganese (Mn) (μg/l)	Milligrams per litre: Dissolved calcium (Ca)	Dissolved magnesium (Mg)	Sodium (Na)	Potassium (K)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Nitrite plus nitrate (N)	Ammonia nitrogen (N)	Total phosphorus (P)	Total filtrable residue	Total nonfiltrable residue	Hardness (Ca,Mg)	Specific conductance (Micromhos)	pH (Units)	Temperature (Degree C)	Color (Platinum cobalt units)	Dissolved oxygen (Mg/l)	Biochemical oxygen demand (Mg/l)	Fecal coliform (MPN)
SITE 1 - Figure 48. Cedar Creek near Cedartown.																								
1-29-73	1650	232					6.0		71	<2.0	2.8	0.39	0.03	0.06			80	185	7.3	10.0	40	9.8	1.2	4,300
7-18-73	1000	107					18		111	3.0	15	.27	.26	.23			110	305		22.0	10	4.1	1.5	93,000

[1] Analyses by Georgia Dept. of Natural Resources.

EXPLANATION

WALKER COUNTY MAPS

PRINCIPAL WATER-BEARING UNITS

A — Yields generally range from 5 to 50 gal/min. Yields as large as 1,000 gal/min may be obtained at favorable sites. Aquifer is dolomite and limestone. Water quality generally meets drinking-water standards and is suitable for many industrial uses.

B — Yields generally are less than 50 gal/min. Yields as large as 500 gal/min may be obtained at favorable sites. Aquifer is limestone and bedded chert. Water quality generally meets drinking-water standards and is suitable for many industrial uses. Water from lower part of unit may contain excessive iron.

C — Yields generally range from 0 to 20 gal/min. Yields as large as 100 gal/min may be obtained at favorable sites. Aquifers include sandstone, shale, bedded chert and limestone. Water quality from most rock units meets drinking-water standards. Water from shale and limestone may contain excessive iron, sulfate, or salt.

FAVORABLE WELL SITES—number indicates expected yield in gal/min

●1 As much as 200

●3 As much as 1,000

SPRINGS—number refers to tables 44 and 45

~o2 Unused

~◐4 At least half of flow unused

~●3 Entire flow in use

GAGING STATIONS—number refers to tables 46 and 47

△1 Low-flow partial record

▲2 Continuous record

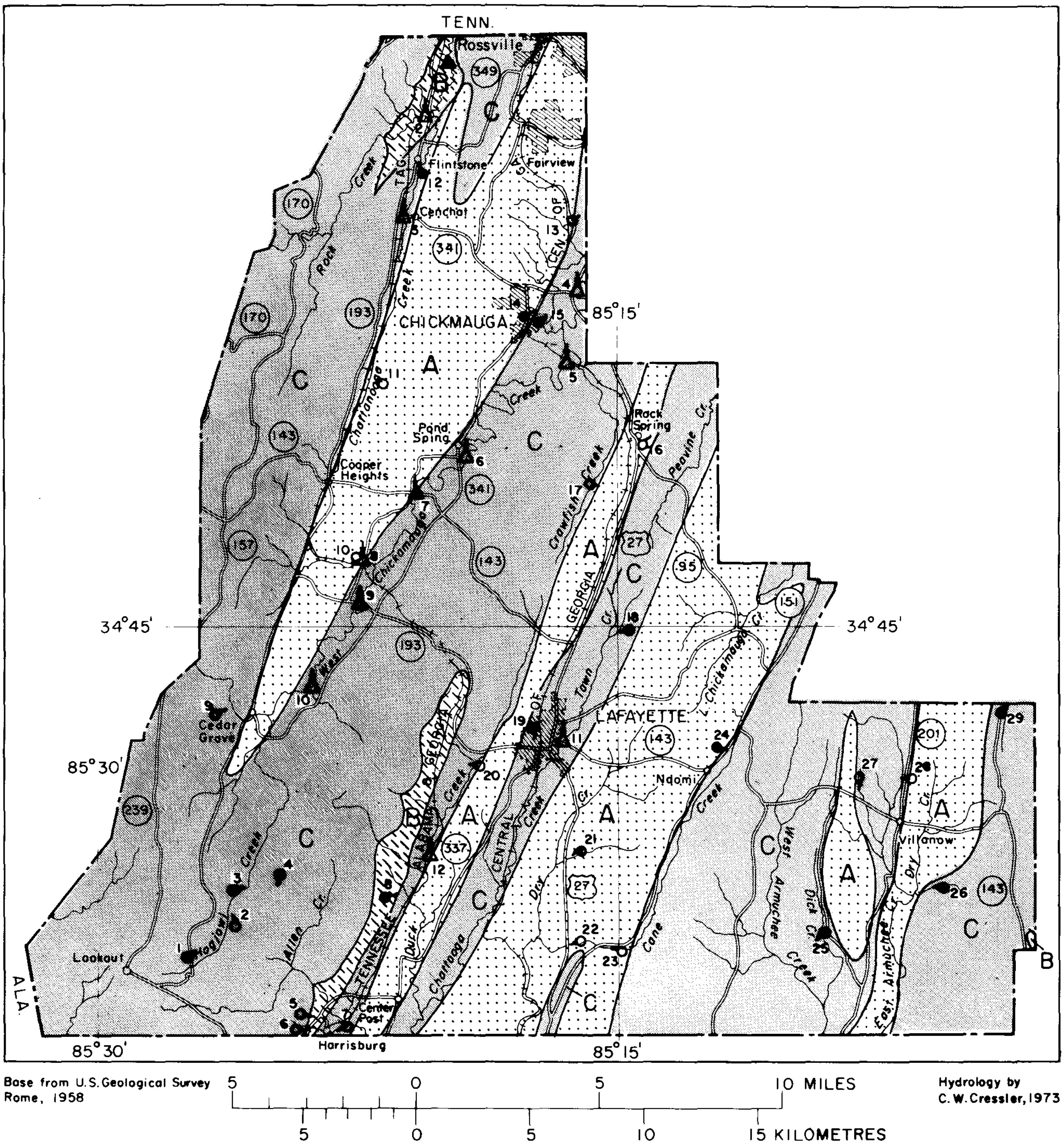


Figure 56.—Principal water-bearing units and location of springs and stream-gaging stations, Walker County.

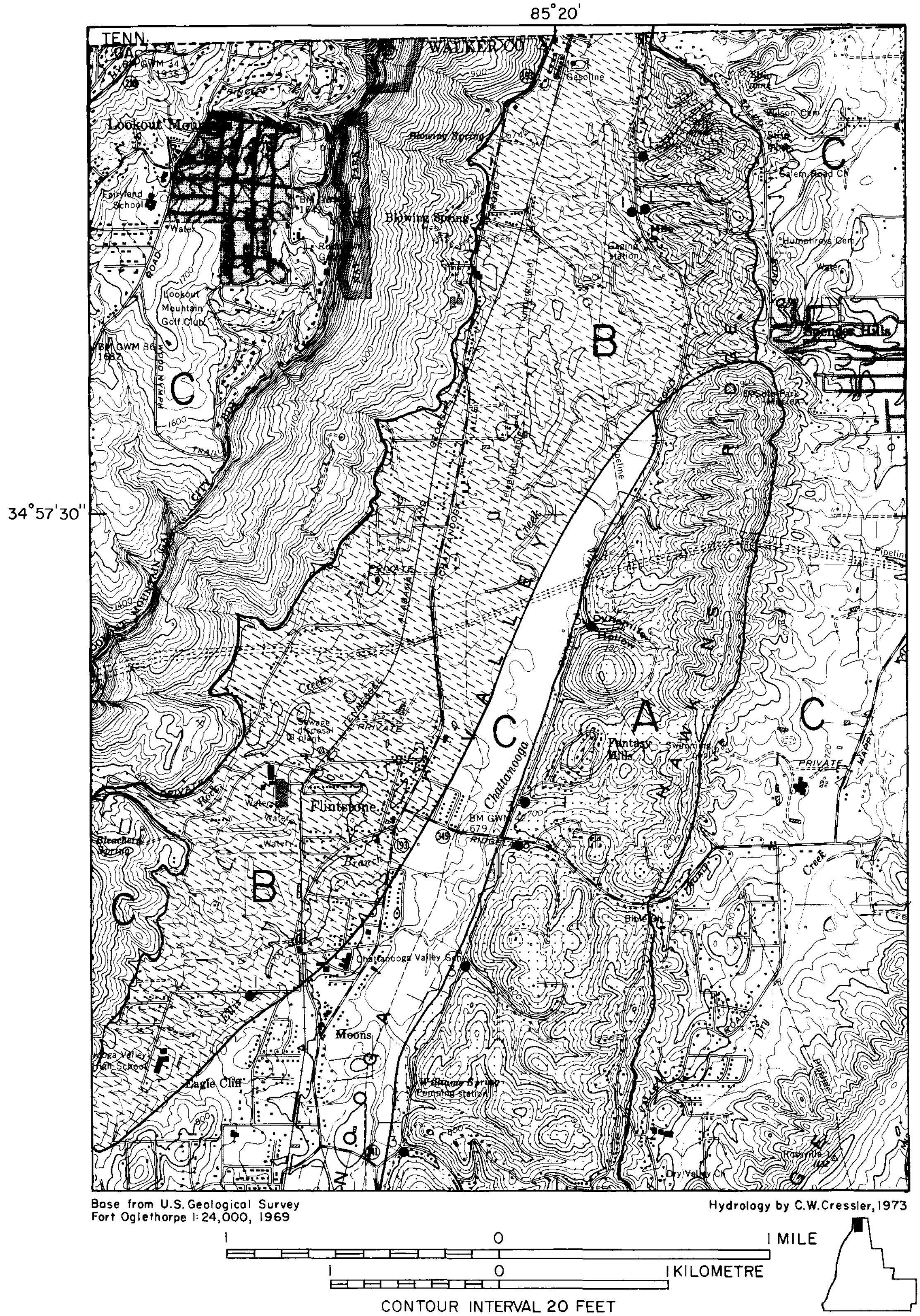


Figure 57.— Principal water-bearing units and location of favorable well sites, Flintstone and vicinity, Walker County. For Explanation see page 114.

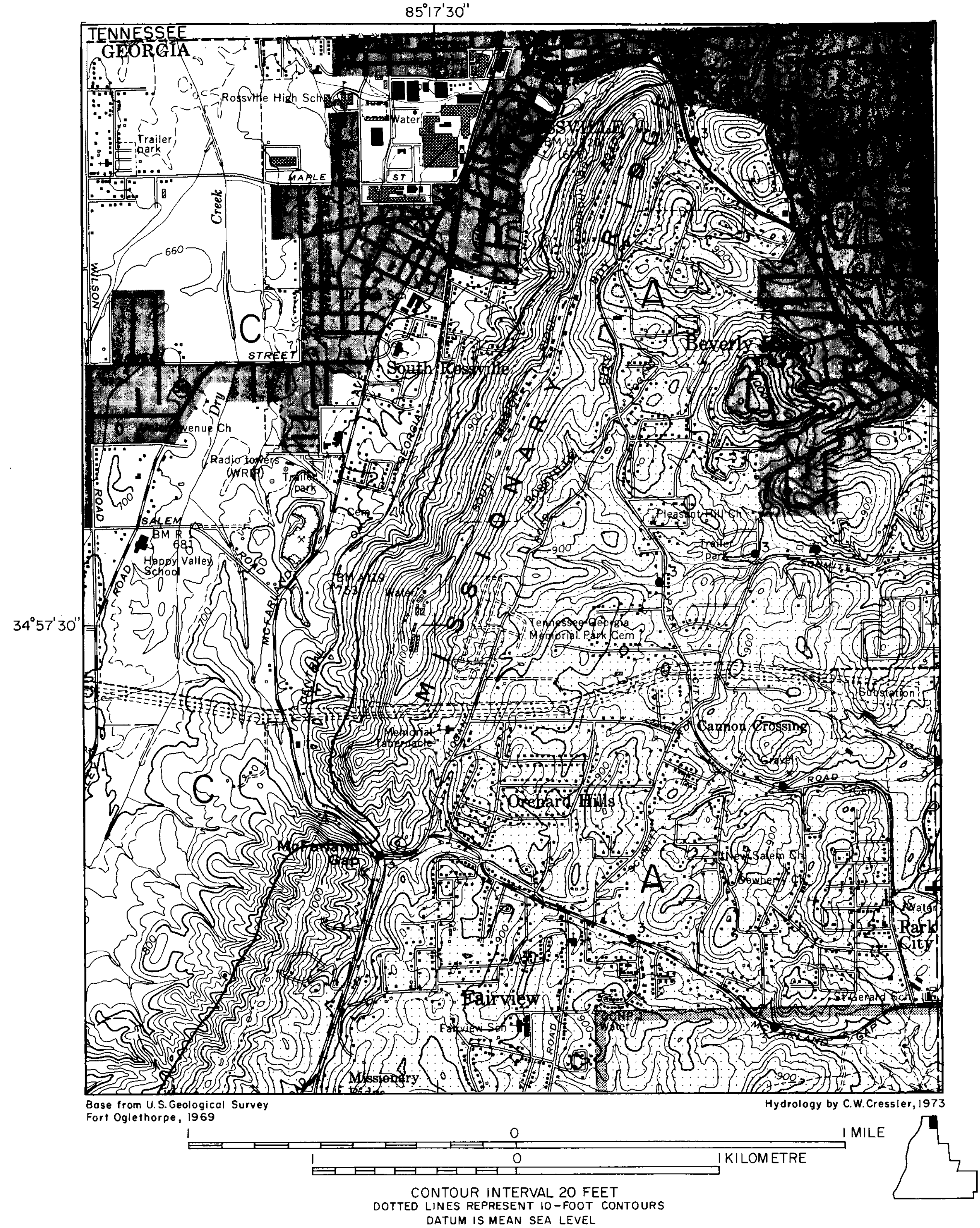


Figure 58.— Principal water-bearing units and location of favorable well sites, south Rossville and Fairview area, Walker County. For Explanation see page 114.

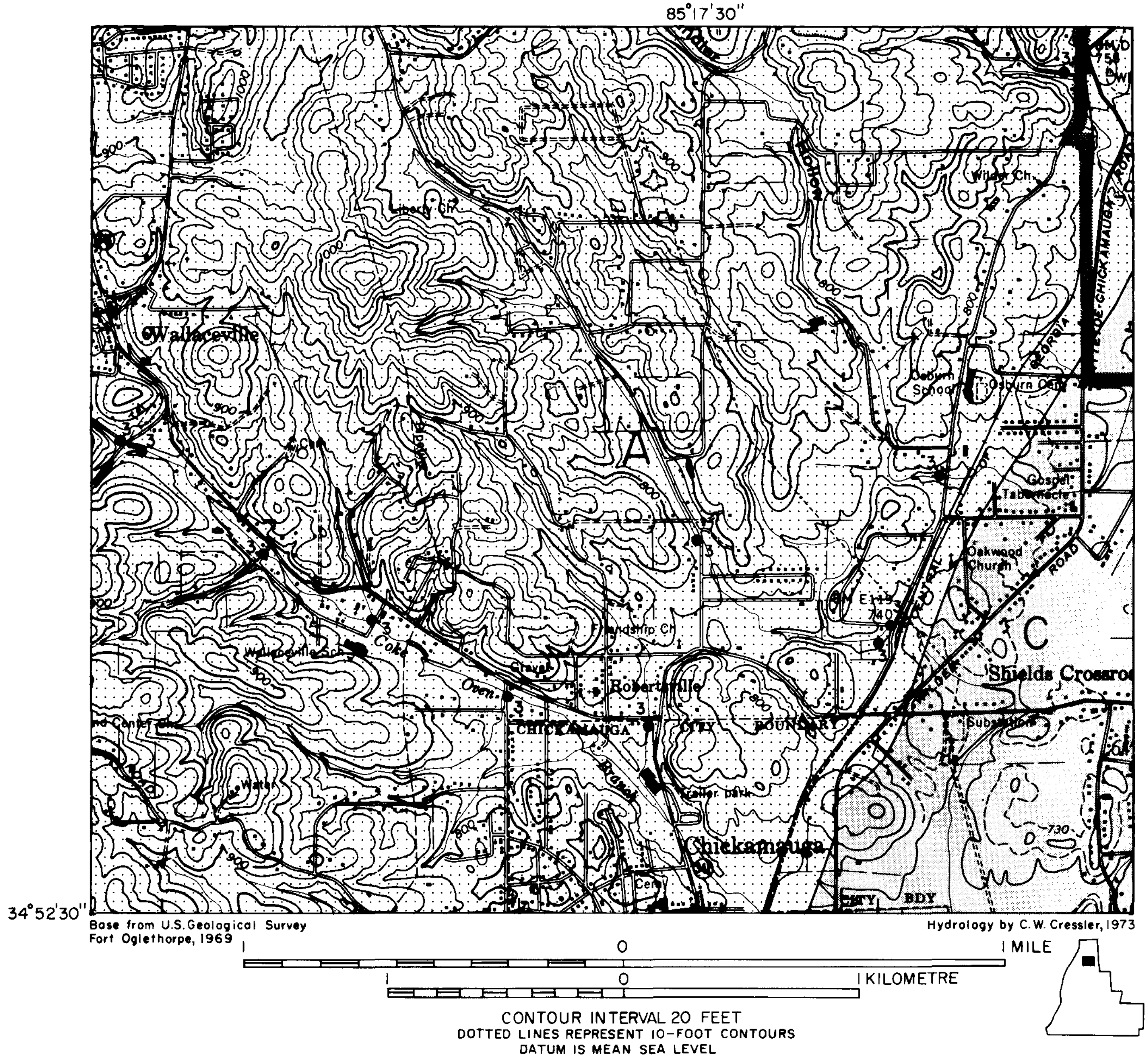


Figure 59.— Principal water-bearing units and location of favorable well sites, north Chickamauga and vicinity, Walker County. For Explanation see page 114.

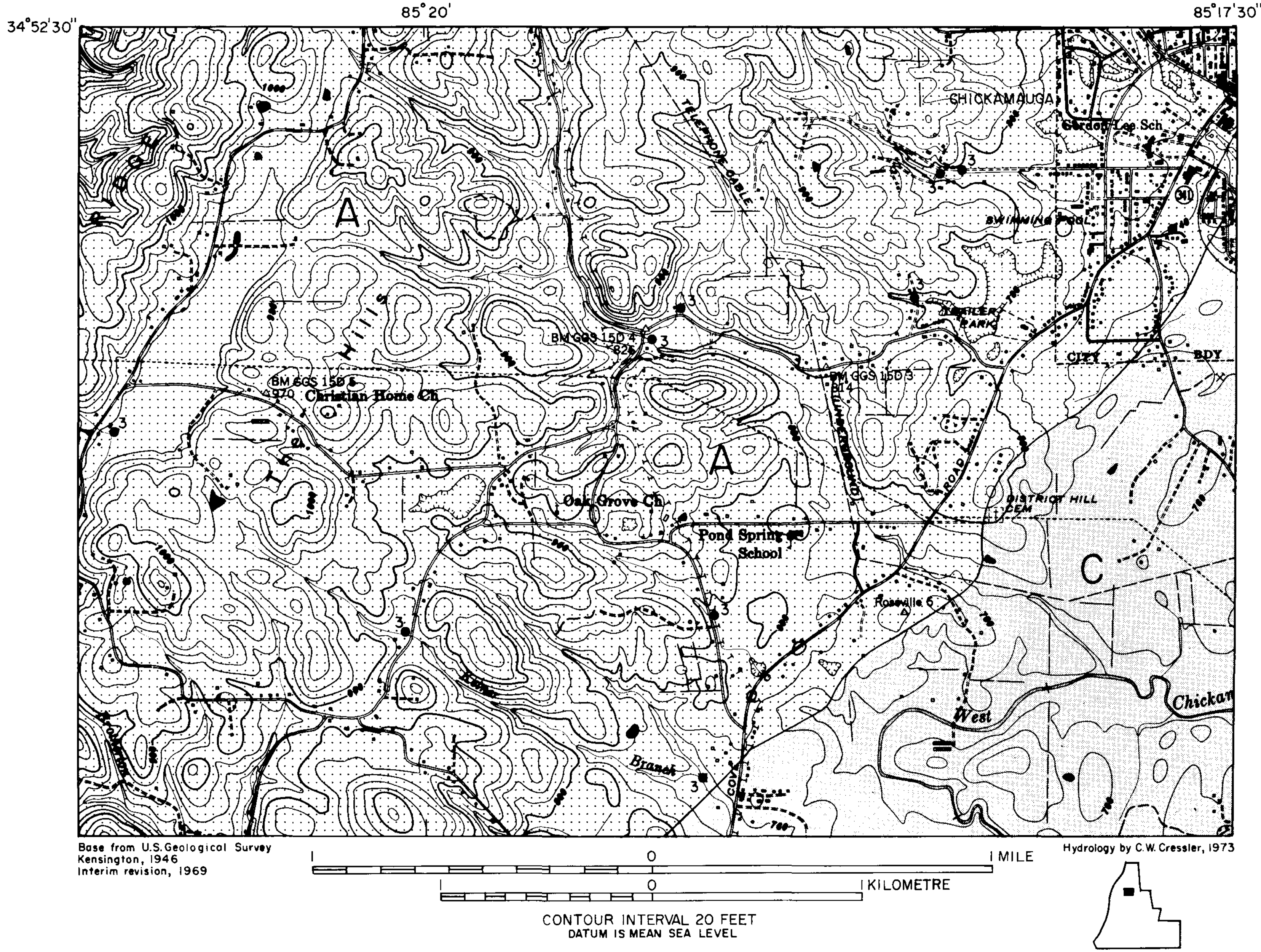


Figure 60.— Principal water-bearing units and location of favorable well sites, south Chickamauga and vicinity, Walker County. For Explanation see page 114.

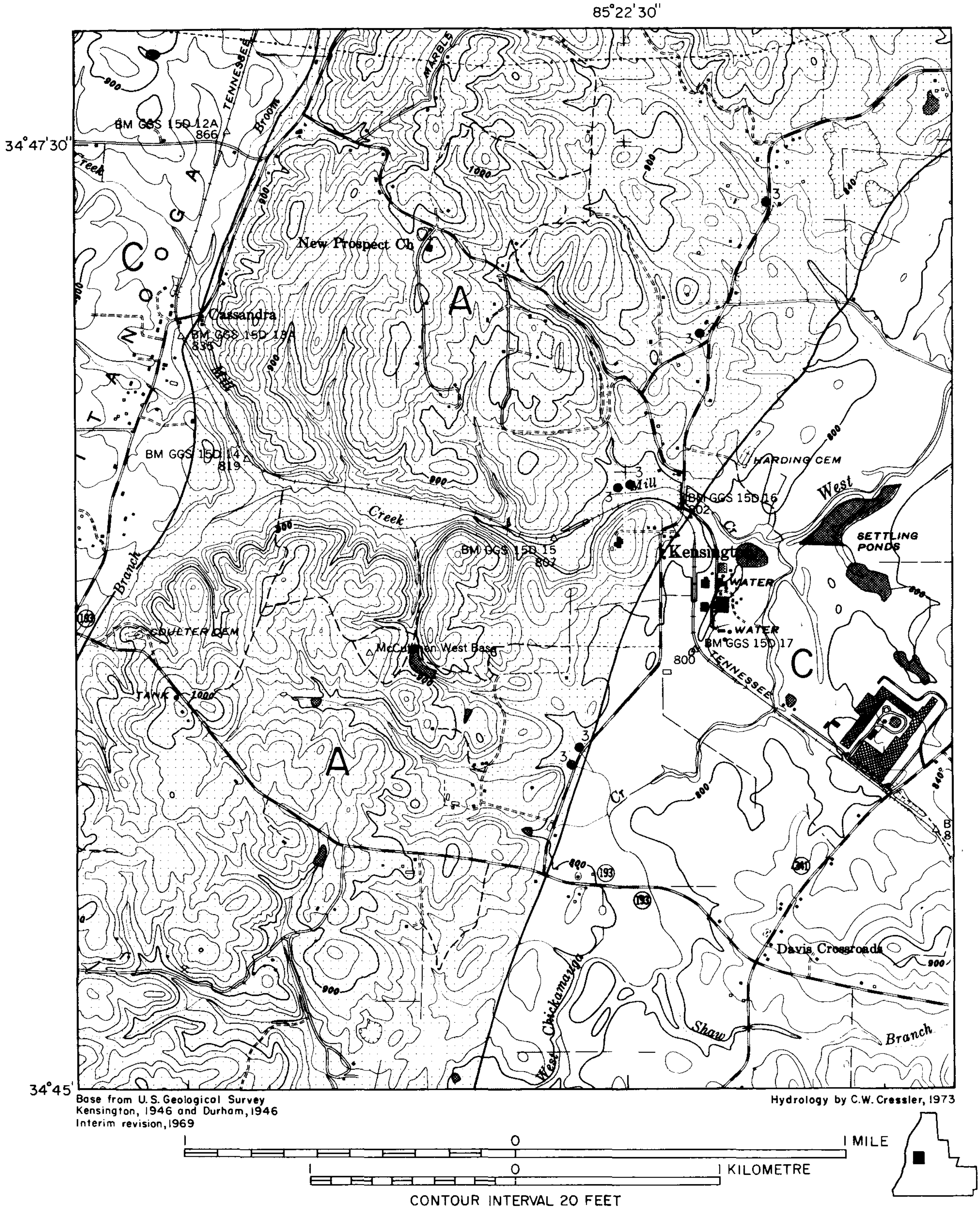


Figure 61.—Principal water-bearing units and location of favorable well sites, Kensington and vicinity. For Explanation see page 114.

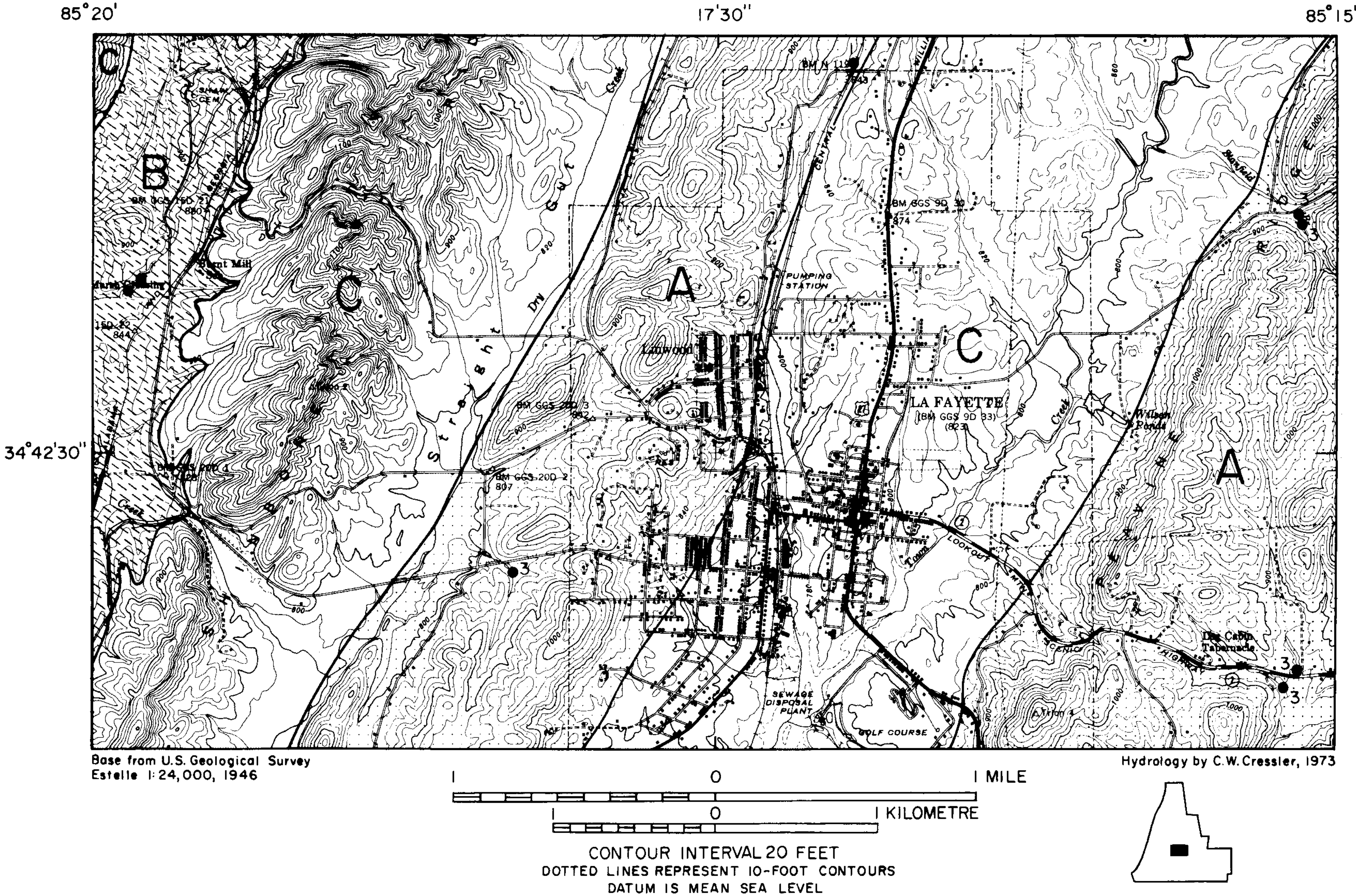


Figure 62.—Principal water-bearing units and location of favorable well sites, LaFayette and vicinity. For Explanation see page 114.

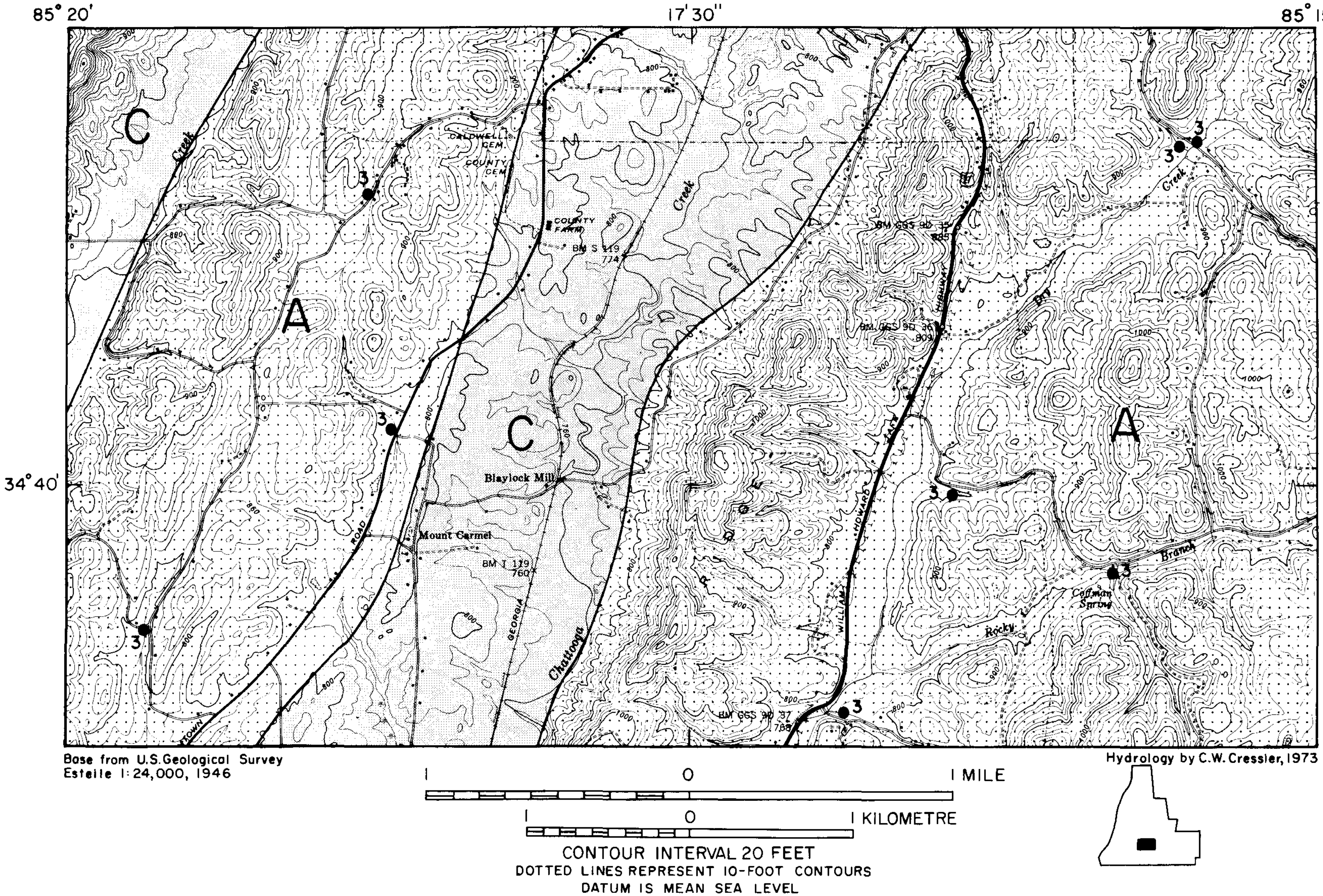


Figure 63.—Principal water-bearing units and location of favorable well sites, Mount Carmel and vicinity. For Explanation see page 114.

Table 43.--Chemical analyses[1] of well water, Walker County.

Owner	Date of collection	Water-bearing unit[3]	Milligrams per litre													Hardness[2] as $CaCO_3$		Specific conductance (micromhos per cm at 25°C)	pH	Color
			Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Calcium, magnesium	Non-carbonate			
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS				0.3		125				250	250	1.0	45	500						15
L. H. Bowers	8-14-60	C	12	0.01	33	0.4	2.2	0.7	99	0.4	2.0	0.1	2.3	-	117	84	3	166	7.2	7
G. K. Grigsby	7-27-60	C	8.9	.07	7.4	2.3	.7	.4	66	.4	.5	.1	.0	-	80	28	0	97	6.8	5
Mountain Cove Farms	7-25-60	C	24	.71	15	3.0	6.5	.5	76	4.0	.5	.2	.1	-	106	50	0	128	6.7	16
Do.	7-25-60	C	13	.03	102	28	9.1	.4	189	215	1.5	.4	.1	-	517	370	214	668	7.4	8
Eugene Patterson	7-25-60	C	6.3	.00	4.8	1.2	3.0	1.8	24	17	6.5	.1	.0	-	80	17	0	97	6.2	12
Levoy Stephenson	8-14-60	C	9.2	.16	53	2.2	1.1	.3	180	.8	1.5	.2	.6	-	173	141	0	272	7.4	3

Data from Cressler (1964)

1 Analyses by U.S. Geological Survey.
2 Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".
3 Water was sampled from wells tapping water-bearing units shown in figure 56.

Table 44.--Minimum measured or estimated flow of springs, Walker County.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow Mgal/d	Flow Gal/min	Water-bearing unit	Remarks
1	Mt. Cove Farms	1.95 miles ENE. of Lookout, 2.7 miles N. of Chattooga County line.	11-18-70	0.01	10	C	Stock supply.
2	Hunter Spring (Mt. View Farms)	4.08 miles ENE. of Lookout, 4.0 miles N. of Chattooga County line.	8-24-50 8- 4-60	1.5 .5	1,000 350	C	do.
3	Chapman Spring	4.3 miles NE. of Lookout, 4.5 miles N. of Chattooga County line.				C	Domestic supply.
4	Anderson Cave Spring	4.8 miles NE. of Lookout, 4.5 miles N. of Chattooga County line.	8- 4-60	.15	100	C	do.
5	Chandler Spring	2.6 miles WSW. of Center Post, 0.06 mile N. of Chattooga County line.	9-22-71	.5e	350	C	
6	---	2.6 miles WSW. of Center Post, 0.2 mile N. of Chattooga County line.	10- 7-71	.15e	100	C	Enclosed; unused.
7	Lumpkin Spring	1.5 miles WSW. of Center Post, 0.34 mile N. of Chattooga County line.				A	
8	Dickson Spring	3.25 miles NNW. of Center Post, 2.08 miles W. of Ga. Highway 337.	12-17-56 2-13-61 4-13-71 6- 7-71 6-18-71 9-22-71 1-11-72 3-10-72	7.2 7.5 7.1 3.0e 1.0 1.0 10.0e 7.0e	5,000 5,200 5,000 2,000 700 700 7,000 4,800	B	
9	Mathis Spring	0.7 mile W. of Cedar Grove.	10-26-60	.1	70	C	
10	Kensington Spring	0.1 mile NW. of Kensington.	11-18-70	.2e	140	A	Goes dry when nearby wells are heavily pumped.
11	Phillips Spring	4.8 miles N. of Kensington, 0.7 mile E. of Ga. Highway 193.				A	
12	Williams Spring	4.85 miles W. of Chickamauga, 0.3 mile E. of Ga. Highway 193.	9-14-60	1.2	830	A	Industrial supply.
13	Cave Spring	2.5 miles NE. of Chickamauga, 0.1 mile E. of road.	9-14-60			A	Goes dry nearly every year. Large flow in wet periods.
14	Crawfish Spring	In Chickamauga at waterworks.	10-27-54 10-26-60 3-10-61	23.0 8.9 29.8	16,000 6,200 20,600	A	Municipal supply. Very large flows in 1954 and 1961 were caused by unusually heavy rains. Flows are far larger than minimum.
15	Blue Hole (Bleachery)	In Chickamauga. Upper end of lake at bleachery.	10-26-60	5.7	4,000	A	Industrial supply.
16	Rock Spring	In Rock Spring, E. of U.S. Highway 27.				A	Stops flowing during dry years.
17	County Farm Spring	1.55 miles SW. of Rock Spring, W. edge of road.		.02e	20	C	Supplies County Farm.
18	Howard Lake	3.8 miles NE. of junction of Ga. Highway 143 and U.S. Highway 27, in LaFayette, 1.52 miles E. of U.S. Highway 27.	8-23-50	.2	140	A	Under lake.
19	Big Spring	N. part of LaFayette, at waterworks.	9-16-60 11- 2-60	1.0 1.6	700 1,100	A	Municipal supply.
20	Buzzard Roost Spring	1.85 miles WSW. of junction of U.S. Highway 27 and Ga. Highway 143, in LaFayette, 0.14 mile S. of Ga. Highway 193, and E. bank of Dry Creek.	9-16-49 10-28-54 12-17-56 7-18-60 8- 4-60	1.3 1.2 1.5 .7 .5	900 830 1,040 480 350	A	Flows into reservoir used by LaFayette for water supply.
21	Coffman Spring	5 miles N. of Chattooga County line, 0.74 mile E. of U.S. Highway 27.	9-16-49 10-26-60	.5 .2e	350 140	A	
22	Baker Spring	2.28 miles N. of Chattooga County line, 0.26 mile E. of U.S. Highway 27.	8-22-50 8-17-60	.14 .1e	100 70	A	
23	Waterville Spring	2.15 miles N. of Chattooga County line, 1.6 miles E. of U.S. Highway 27.	9- 9-49	.47	320	A	
24	Brown Spring	0.9 mile NNE. of Naomi, W. side of Ga. Highway 143.	10-26-60	.01	10	A	Stock supply.
25	Jones Spring	3.75 miles SW. of Villanow, 5.7 miles W. of Whitfield County line.	10-26-60	.03	20	C	Domestic supply.
26	Watkins Spring	2.25 miles SE. of Villanow, 2.4 miles W. of Whitfield County line.	9-11-51	.07	48	C	Stock supply.
27	Cleghorn Spring	1.75 miles NW. of Villanow, 4.8 miles W. of Whitfield County line, upper end of Clements Pond.	7-19-60	.03	20e	C	
28	Phillips Spring	0.9 mile N. of Villanow, E. side of road.	7-19-60	.03	20e	A	Stock supply.
29	Catron Spring	4.3 miles NE. of Villanow, W. bank of Mill Creek.	7-19-60	.03	20e	C	do.

e Estimated

Table 45.--Chemical analyses of spring water, Walker County.

Spring no.	Name or owner	Date of collection	Water-bearing unit[3]	Milligrams per litre													Hardness[2] as $CaCO_3$		Specific conductance (micromhos per cm at 25°C)	pH	Color
				Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Calcium, magnesium	Non-carbonate			
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS					0.3		125				250	250	1.0	45	500						15
19	Big Spring[1]	2-20-59	A	9.2	0.01	27	9.6	1.0	0.2	125	2.4	1.5	0.0	3.8	-	117	107	4	188	7.4	3
19	Big Spring[4]	4-20-38	A	6.9	.18	22	7.5	1.1	.5	99	2.4	1.6	.0	3.1	-	94	86	-	-	-	-
15	Blue Hole[4]	9-22-52	A	8.0	.00	30	19	Tr.	Tr.	140	Tr.	2	-	.05	-	150	150	-	-	7.5	none
15	Do.	11-24-53	A	8.0	.15	40	1	Tr.	Tr.	132	1	1	Tr.	-	-	200	105	-	-	7.5	none
20	Buzzard Roost Spring[4]	10-21-55	A	6.0	.40	40	14	Tr.	Tr.	158	5	7	-	-	-	236	157	-	-	8.0	none
	Buzzard Roost Spring[1]	7-18-60	A	8.6	.09	41	9.6	1.4	.7	168	2.4	1.5	.1	2.9	-	167	142	4	257	7.5	7
13	Cave Spring[1]	5- 5-58	A	7.1	.02	24	5.8	1.8	.4	101	5.0	2.5	.1	3.1	-	106	84	1	174	7.1	1
14	Crawfish Spring[1]	11-26-57	A	8.6	.04	26	10	1.4	.5	124	1.0	1.0	.1	3.5	-	114	106	4	199	7.2	4
12	Williams Spring[1]	7-18-60	A	8.2	.01	24	12	.9	.4	127	2.4	1.0	.1	.8	-	124	110	6	191	7.3	3
	Mrs. Sidney Wilson[4]			9.0	.03	117	27	Tr.	Tr.	376	Tr.	12	-	-	-	415	400	-	-	8.0	opaque
	(Not given)[4]	4-21-55	A	3.5	2.0	35	28	66	-	348	45	12	Tr.	-	-	557	201	-	-	9.9	pink
8	Dickson Spring[1]	2-13-61	B	5.5	.05	13	.6	.4	.2	41	1.2	.8	.0	.0	-	43	35	2	72	7.2	0
2	Mountain View Farms[1] (Hunter Spring)	8- 4-60	C	8.0	.11	53	3.9	1.8	.6	172	4.8	2.5	.2	2.9	-	175	148	7	272	7.3	4

Data from Cressler (1964)

[1] Analyses by U.S. Geological Survey.
[2] Water having a CaCO hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/1, "moderately hard"; 121 to 180 mg/1, "hard"; and more than 181 mg/1, "very hard".
[3] Water was sampled from springs that discharge from water-bearing units shown in figure 56.
[4] Analyses by Georgia Dept. of Natural Resources.

Table 46.--Summary of streamflows, Walker County.

Site no.	Stream name	Gage type	Location	Drainage area (sq mi)	Estimated average flow (Mgal/d)	Estimated 7-day,10-year minimum flow (Mgal/d)	Water use (1970) (Mgal/d)
1	Chattanooga Creek	C	Lat 34°58', long 85°20', near county road, 2.3 miles northeast of Flintstone.	50.6	53a	1.6a	
2	Rock Creek	T	Lat 34°57', long 85°21', at Ga. Highway 193, 1 mile north of Flintstone.	24.7	27	.8	
3	Chattanooga Creek	T	Lat 34°55', long 85°21', at county road, at Cenchat.	15.9	17	.6	
4	West Chickamauga Creek	T	Lat 34°55', long 85°15', 0.1 mile above bridge at Lee and Gordon Mill, and 1.6 miles northeast of Chickamauga.	121	133	16	
5	Do.	T	Lat 34°51', long 85°16', at county road, 1.6 miles southeast of Chickamauga.	99.4	109	6.5	
6	Do.	T	Lat 34°48', long 85°19', 0.8 mile south of Pond Spring, and 0.3 mile east of Cove Church.	79.3	87	4.4	
7	Do.	PR	Lat 34°48', long 85°21', at Ga. Highway 143, 2.3 miles northeast of Kensington.	73.0	80	3.7	
9	Do.	T	Lat 34°46', long 85°21', at Ga. Highway 193, 1.2 miles south of Kensington.	50.9	56	2.6	
10	Do.	T	Lat 34°44', long 85°24', at county road, 1.9 miles northeast of Cedar Grove.	37.3	41	1.9	
11	Town Creek	M	Lat 34°42', long 85°17', at Ga. Highway 143, at LaFayette.	14	16	.9	
12	Duck Creek	PR	Lat 34°40', long 85°20', at county road, 4.5 miles southwest of LaFayette.	20.3	22	.9	

C Continuous record
M Miscellaneous site
PR Low-flow partial-record
T TVA site

a Based on continuous daily flow, 1951-68.

Table 47.--Chemical analyses[1] of streams, Walker County.

					Milligrams per litre																			
Date	Time	Discharge (ft^3/s)	Total iron (Fe) (μg/l)	Total manganese (Mn) (μg/l)	Dissolved calcium (Ca)	Dissolved magnesium (Mg)	Sodium (Na)	Potassium (K)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Nitrite plus nitrate (N)	Ammonia nitrogen (N)	Total phosphorus (P)	Total filtrable residue	Total nonfiltrable residue	Hardness (Ca,Mg)	Specific conductance (Micromhos)	pH (Units)	Temperature (Degree C)	Color (Platinum cobalt units)	Dissolved oxygen (Mg/l)	Biochemical oxygen demand (Mg/l)	Fecal coliform (MPN)
SITE 1 - Figure 56. Chattanooga Creek near Flintstone.																								
6-17-71	1125	22	550	80	29	6.6	20	3.1	119	20	6.8	0.26	0.10	0.56	392	33	103	310	7.6	21.0	15	4.6	1.3	23,000
SITE 7 - Figure 56. West Chickamauga Creek near Kensington.																								
6-17-71	1210	13	150	110	45	6.8	38	1.8	115	46	40	1.3	1.8	.36	352	8	132	460	7.5	23.0	20	4.6	1.3	230

[1] Analyses by Georgia Dept. of Natural Resources

EXPLANATION

WHITFIELD COUNTY MAPS

PRINCIPAL WATER-BEARING UNITS

A — Yields generally range from 5 to 50 gal/min. Yields as large as 1,000 gal/min may be obtained at favorable sites. Aquifer is dolomite and limestone. Water quality generally meets drinking-water standards and is suitable for many industrial uses.

B — Yields generally are less than 50 gal/min. Yields as large as 500 gal/min may be obtained at favorable sites. Aquifer is limestone and bedded chert. Water quality generally meets drinking-water standards, and is suitable for many industrial uses. Water from lower part of unit may contain excessive iron.

C — Yields generally range from 0 to 20 gal/min. Yields as large as 100 gal/min may be obtained at favorable sites. Aquifers include sandstone, mudstone, shale, siltstone, limestone, and bedded chert. Water quality generally meets drinking-water standards, except for excessive iron.

D — Yields generally are less than 20 gal/min; a few exceed 50 gal/min. Yields as large as 300 gal/min may be obtained at favorable sites. Aquifer is limestone or dolomite units interlayered with shale units. Water quality generally meets drinking-water standards, although some contains excessive iron.

FAVORABLE WELL SITES—number indicates expected yield in gal/min.

●1 As much as 100

●2 As much as 500

●3 As much as 1,000

SPRINGS—number refers to tables 49 and 50

4 Unused

3 At least half of flow unused

8 Entire flow in use

GAGING STATIONS—number refers to tables 51 and 52

△1 Low-flow partial record

▲7 Continuous record

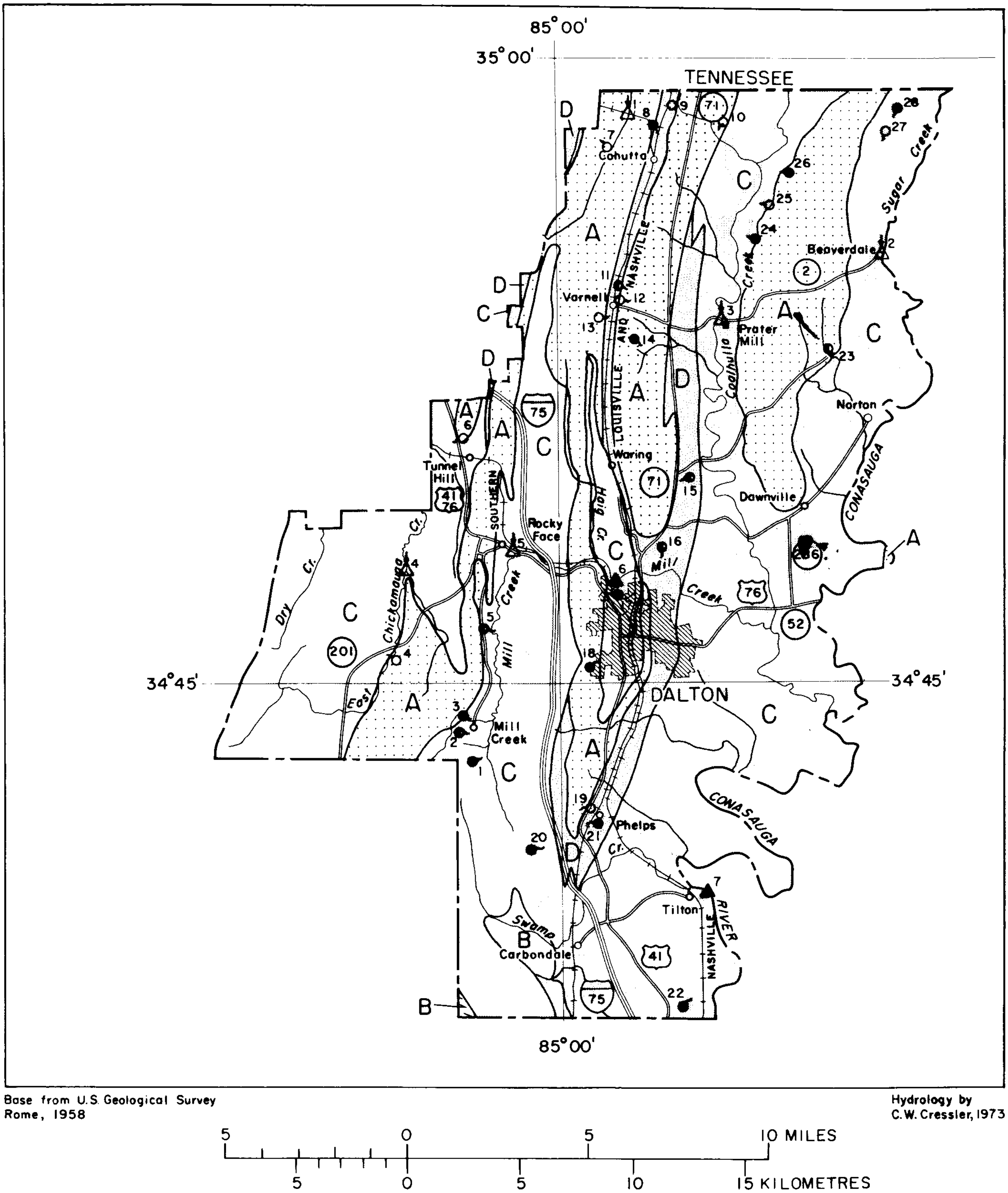


Figure 64.—Principal water-bearing units and location of springs and stream-gaging stations. Whitfield County.

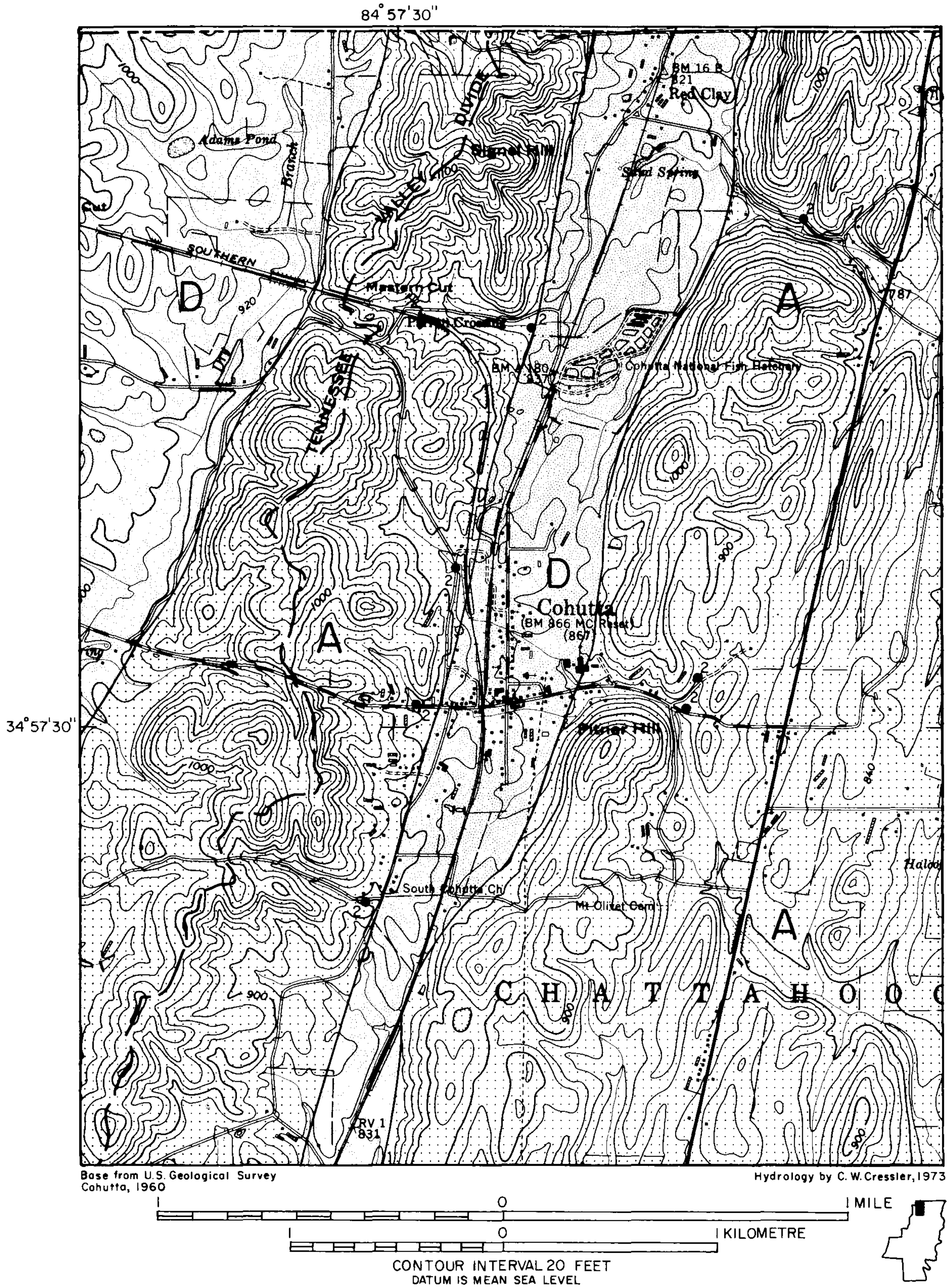


Figure 65.—Principal water-bearing units and location of favorable well sites, Cohutta and vicinity.

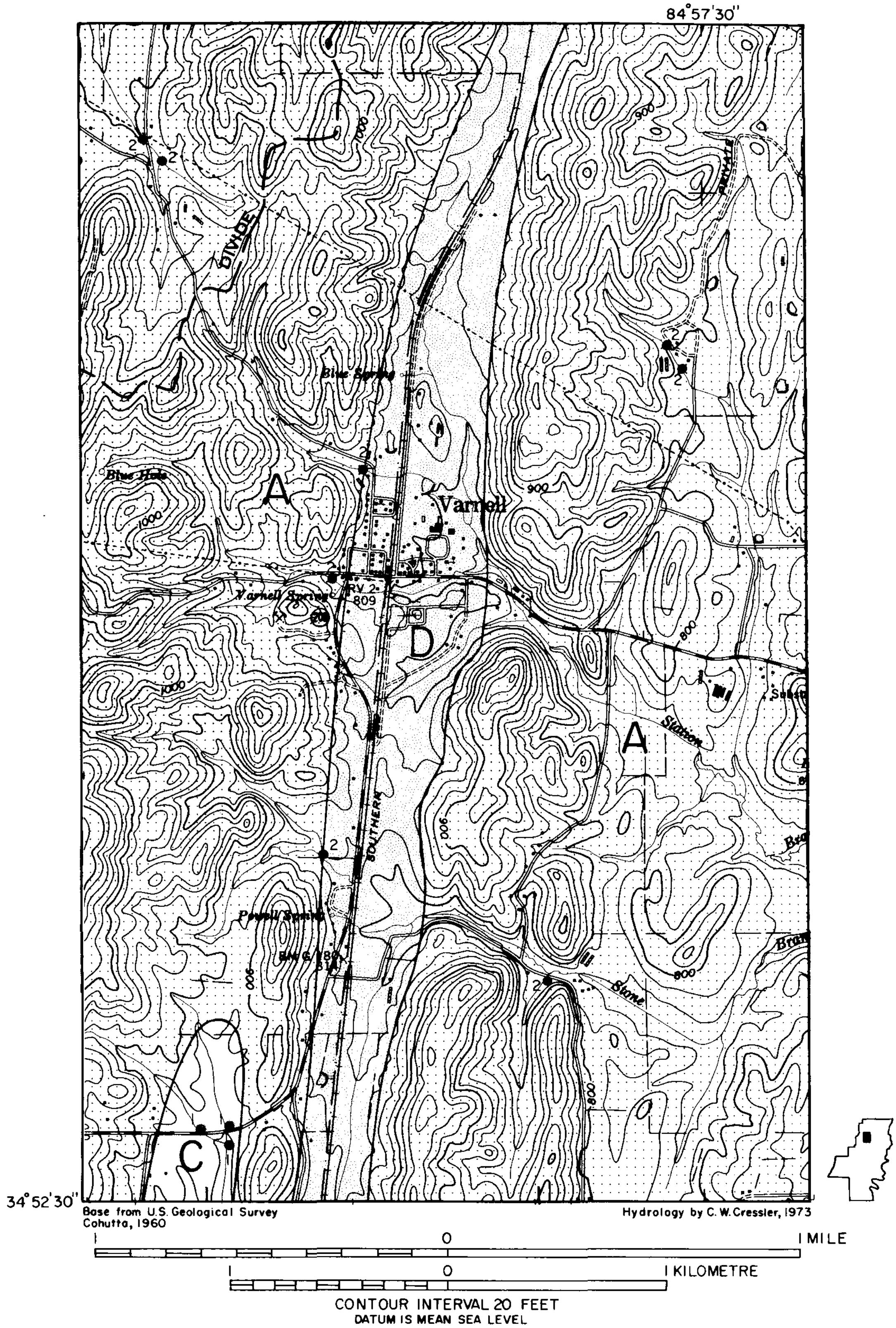


Figure 66.—Principal water-bearing units and location of favorable well sites, Varnell and vicinity. For Explanation see page 128.

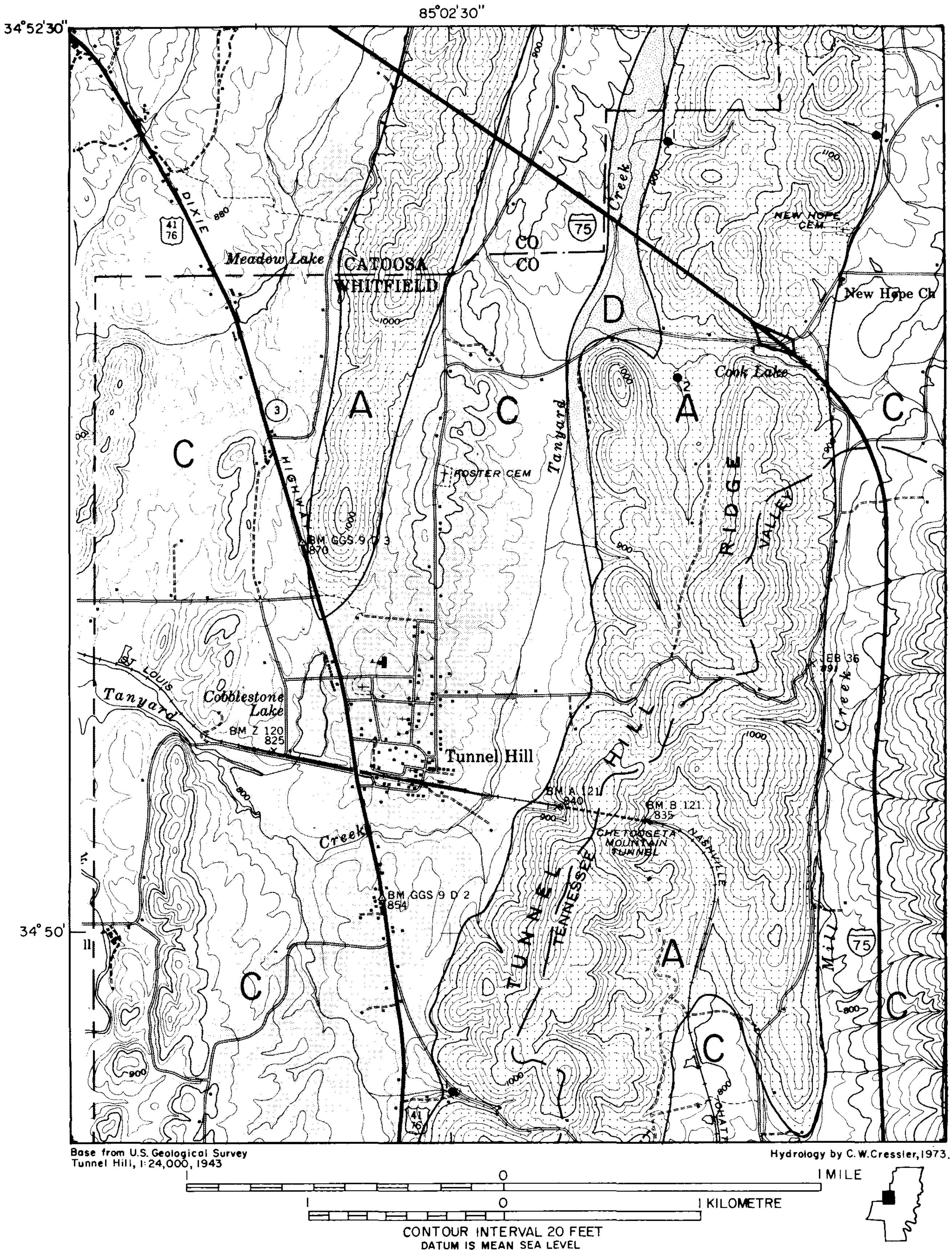


Figure 67.—Principal water-bearing units and location of favorable well sites, Tunnel Hill and vicinity. For Explanation see page 128.

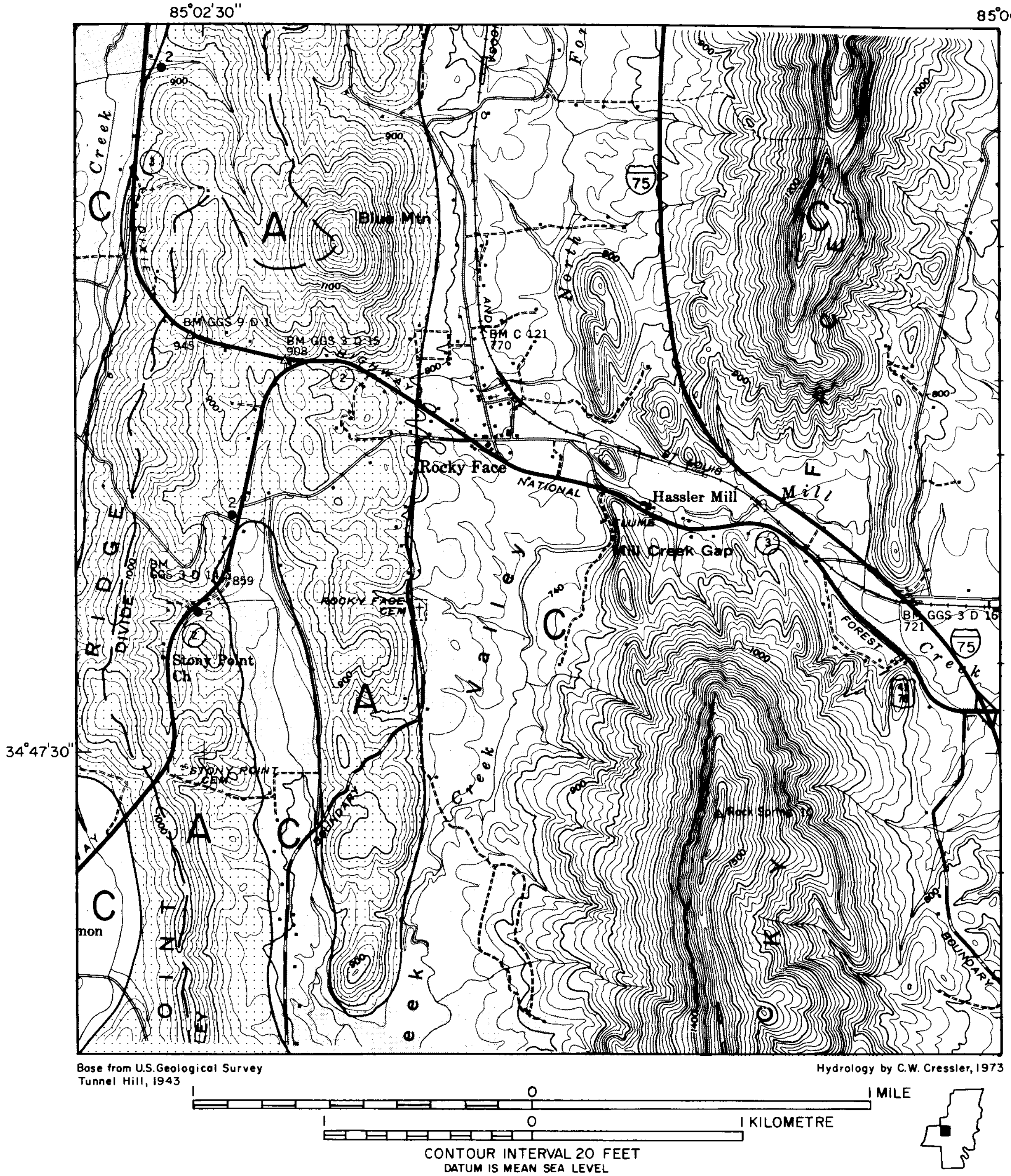


Figure 68.—Principal water-bearing units and location of favorable well sites, Rocky Face and vicinity. For Explanation see page 128.

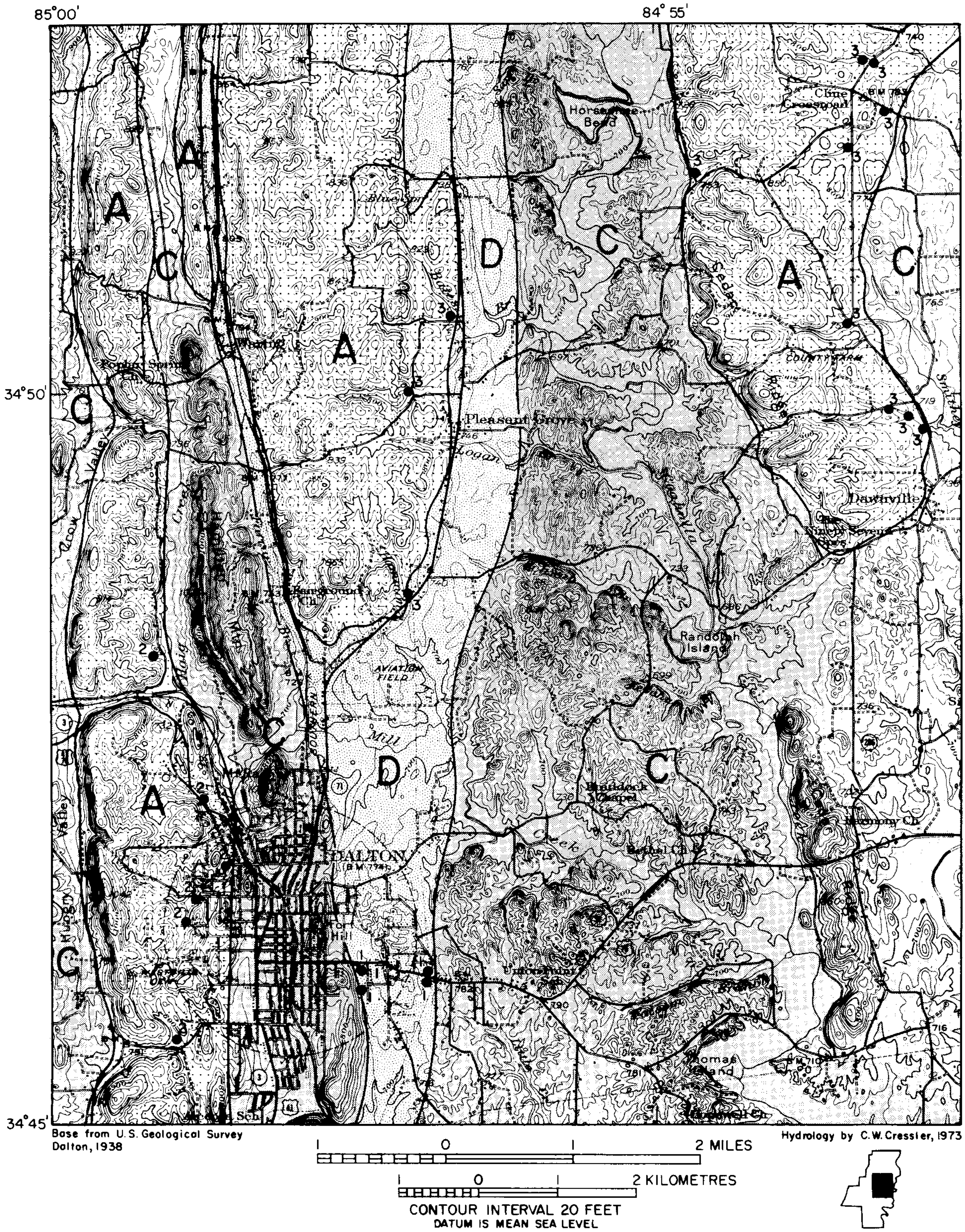


Figure 69.—Principal water-bearing units and location of favorable well sites, Dalton and vicinity. For Explanation see page 128.

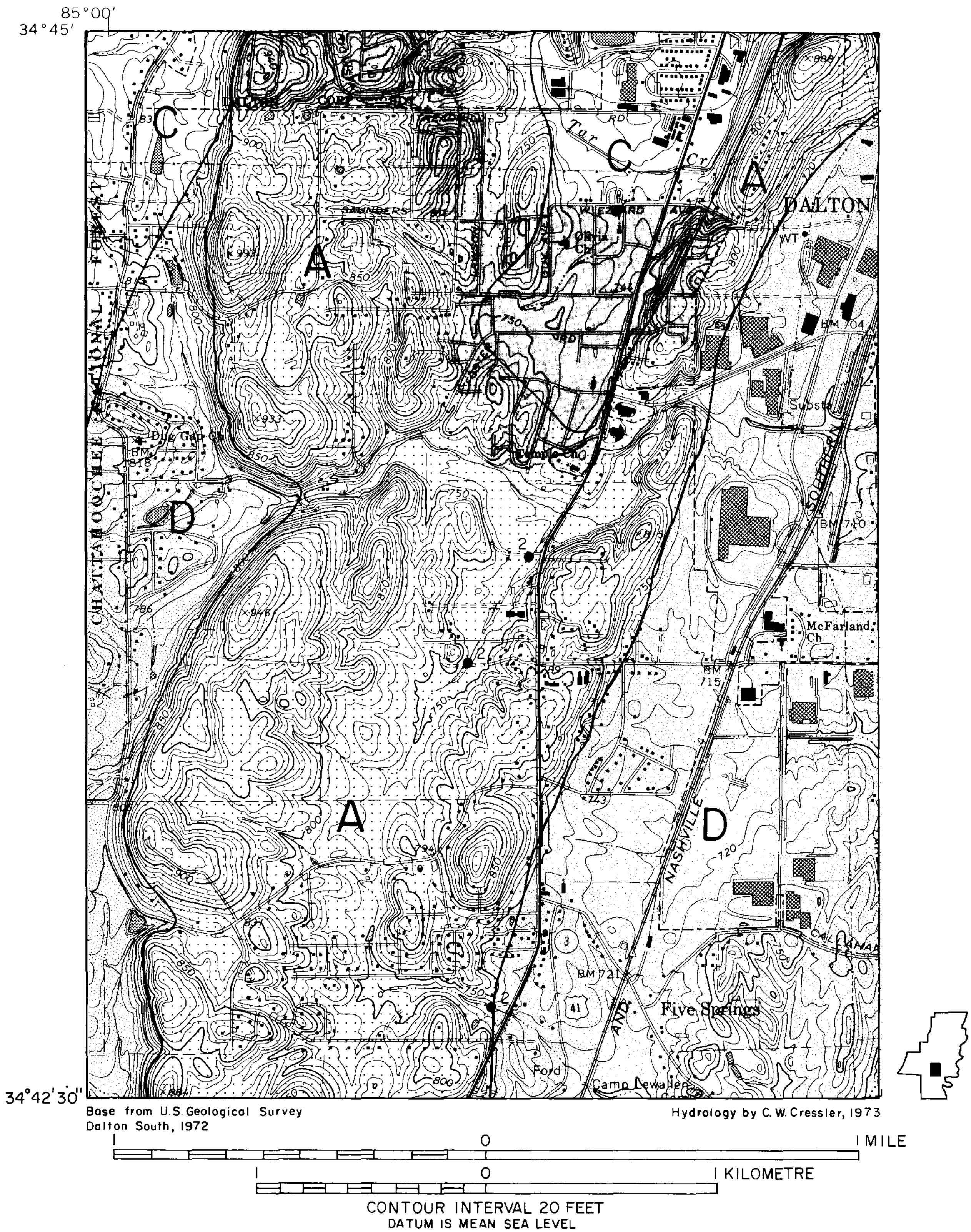


Figure 70.—Principal water-bearing units and location of favorable well sites, South Dalton and vicinity. For Explanation see page 128.

Table 48.--Chemical analyses[1] of well water, Whitfield County.

Owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS				0.3		125				250	250	1.0	45	500						15
C. L. Prichett	11-17-64	A	10	0.17	29	2.6	1.1	0.3	98	0	1.1	0.0	1.5	-	94	83	2	160	7.2	-
Ethel Combee	3-23-65	C	4.2	.50	5	1.8	5.7	4.8	0	22	7.0	0.1	10	-	61	20	20	112	4.6	20
Beachel Elrod	3-24-65	C	11	.77	44	14	5.8	1.5	196	10	6.0	.0	9.8	-	199	168	4	339	7.6	5
T. J. Gazaway	3-25-65	C	6.3	.42	16	1.0	4.3	1.1	47	6.4	3.0	.0	9.0	-	70	44	6	120	7.0	10
Clyde Hayes	11- 5-63	C	28	.04	1.8	.9	1.7	4.7	22	.0	1.0	.2	.1	40	49	8	0	41	6.5	0
Dovie Jackson	11- 5-63	C	19	.19	91	8	5.0	.2	296	11	6.8	.1	-	280	287	260	18	450	7.9	0
A. L. Middleton	11- 6-63	C	18	.08	53	4.4	3.8	.5	148	4.4	14	.2	11	212	182	150	28	300	7.6	0
Dan Tullock	3-25-65	C	10	.50	36	12	2.2	.4	173	.4	1.4	.1	2.2	-	150	140	0	262	7.9	5
Haren Voyles	11-18-64	C	6.6	.03	2.8	.2	1.0	.6	6	.0	2.2	.0	1.6	-	18	8	3	29	5.9	-

Data from Cressler (1974)

[1] Chemical analyses by U.S. Geological Survey.
[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".
[3] Water was sampled from wells tapping water-bearing units shown in figure 64.

Table 49.--Minimum measured or estimated flow of springs, Whitfield County.

Spring no.	Spring name or owner	Location	Date measured or estimated	Flow		Water-bearing unit	Remarks
				Mgal/d	Gal/min		
1	Troy Cleghorn	0.8 mile S. of Mill Creek, 0.6 mile E. of Walker County line.	11- 2-67	0.01e	10	C	Domestic supply.
2	C. W. Masters	0.18 mile NW. of Mill Creek, 0.1 mile W. of road.	11- 2-67	.02e	14	C	Do.
3	Do.	0.25 mile NW. of Mill Creek, 0.13 mile W. of road.	11- 2-67	.02e	14	C	Do.
4	Freeman Spring	4.32 miles SW. of Rocky Face, 2.8 miles N. of Walker County line.	11-29-50 10-28-54 12-30-68 11- 5-69	2.2 1.1 1.65 1.37	1,530 775 1,150 950	A	
5	H. P. McArthur	2.33 miles SSW. of Rocky Face, 1.9 miles W. of I-75.	11- 2-62	.01e	10	C	Stock supply.
6	J. B. Griffin	0.55 mile N. of Tunnel Hill, 0.9 mile E. of Catoosa County line.	11-29-50 11- 3-67	.11 .10	77 70	A	Unused.
7	P. C. Henderson	1.0 mile WNW. of Cohutta, S. side of road.	11- 2-67	.01e	10	A	
8	Cohutta Fish Hatchery (U.S. Government)	1.06 miles NNE. of Cohutta, W. of road.	11-16-50 2-19-62 10-21-69	.66 .65 .33	460 450 230	A	Supplies fish hatchery.
9	Sand Spring (Clifton Farmer)	1.68 miles NNE. of Cohutta, E. side of road.	7-18-67	.01e	10	D	Not used.
10	W. E. Maples	1.95 miles NE. of Cohutta, 0.25 mile E. of Ga. Highway 71.	7-18-67	.05e	35	A	Do.
11	Southern Railway (Blue Spring)	0.4 mile NNE. of Varnell, 0.12 mile E. of Southern Railway.	11- 5-69	.39	260	D	
12	Wheeler Estate	0.28 mile NNE. of Varnell, 0.15 mile E. of Southern Railway.	11- 5-69	.05	35	D	
13	Seymour Spring (Varnell Spring)	0.2 mile W. of Varnell, W. side of road.	1-15-69 11- 5-69	.25 .29	174 200	A	
14	Dr. Wood	1.12 miles SSE. of Varnell, 0.5 mile E. of Southern Railway.	10-31-67	.01e	10	A	Domestic supply.
15	---	0.28 mile E. of Ga. Highway 71, 4.8 miles N. of U.S. Highway 76.	11- 5-69	.02e	14	D	
16	Dalton Country Club	0.05 mile E. of Ga. Highway 71, 2.62 miles N. of U.S. Highway 76.	11-29-50	.5	350	A	Partly used.
17	Crown Cotton Mill	NW. part of Dalton, at Crown Cotton Mill.	11-17-50	.34	230	C	Developed.
18	American Thread Company	SW. part of Dalton at American Thread Co., 1.8 miles W. of U.S. Highway 41.	11-17-50 3-13-59	.57 .57	400 400	A	Industrial supply.
19	Anderson Spring	In Phelps, 0.07 mile E. of U.S. Highway 41.	11-18-64	.01e	10	D	
20	Crown Cotton Mill (Jeager Spring)	0.2 mile W. of I-75, 4.75 miles N. of Gordon County line.	11-17-50 10-28-54 11- 5-71	.87 .62 .6e	600 430 420	C	Supplies swimming pool and trout pond. Industrial cooling.
21	Frank Mayo	In Phelps, 0.19 mile E. of U.S. Highway 41, S. of road.	5-25-67	.3	210	D	Industrial cooling.
22	Nance Spring	0.39 mile E. of U.S. Highway 41, 0.3 mile N. of Gordon County line.	11- 5-69	.2e	140	C	Industrial supply.
23	Deep Spring	3.08 miles SW. of Beaverdale, 2.4 miles W. of Murray County line.	11-16-50 10-27-54 12-30-68 11- 5-69	2.2 1.5 2.2 1.5	1,530 1,040 1,530 1,040	A	Small quantity of water used by nursery.
24	Jess Cline	3.45 miles WNW. of Beaverdale, 4.1 miles S. of Tennessee line.	11-19-67	.01e	10	A	Domestic supply.
25	U.S. Dept. of the Interior	3.2 miles WNW. of Beaverdale, 3.25 miles S. of Tennessee line.	11-28-50 10-27-54 11- 3-67	.62 .03 .5e	430 21 350	A	Unused.
26	Lee Sugart (Estelle Spring)	3.6 miles NW. of Beaverdale, 2.12 miles S. of Tennessee line.	7-18-67	.01e	10	A	Domestic supply.
27	Millard Deverall	0.72 mile S. of Tennessee line, 1.78 miles W. of Murray County line.	5-25-67	.02e	14	C	Unused.
28	L. W. Deverall	0.3 mile S. of Tennessee line, 1.45 miles W. of Murray County line.	5-29-67	.02	14	C	Domestic supply.

e Estimated

Table 50.--Chemical analyses[1] of spring water, Whitfield County.

Spring no.	Name or owner	Date of collection	Water-bearing unit[3]	Milligrams per litre: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Residue	Dissolved solids: Sum	Hardness[2] as $CaCO_3$: Calcium, magnesium	Hardness[2] as $CaCO_3$: Non-carbonate	Specific conductance (micromhos per cm at 25°C)	pH	Color
U.S. PUBLIC HEALTH SERVICE (1962) DRINKING-WATER STANDARDS					0.3		125				250	250	1.0	45	500						15
18	American Thread Co.	3-13-59	A	5.8	0.08	30	13	0.5	0.2	161	1.6	2	0.0	1.3	140	138	145	18	242	7.9	3
8	Cohutta Fish Hatchery	2-19-62	A	8.4	.14	24	11	1.2	.5	128	4.0	1.5	.0	1.4	120	115	105	0	200	7.7	2
23	Deep Spring	3-23-65	A	6.9	.06	17	9.4	.7	.6	98	.5	.8	.0	.7	-	85	81	0	150	7.5	5
4	Freeman Spring	3-24-65	A	7.8	.08	34	6.8	.4	.6	138	.8	1.0	0.2	.4	-	120	113	0	211	7.4	0
13	Seymour Spring	3-23-65	A	7.7	.01	26	9.7	.4	.5	128	.0	.5	.1	.0	-	108	105	0	191	7.3	0
17	Crown Cotton Mill	11-17-64	C	8.5	.01	37	13	2.5	.7	171	.4	5.3	.0	5.4	-	160	148	8	282	7.5	-
22	Nance's Spring	11- 6-63	C	17	.06	16	7.1	1.7	2.8	82	6.2	1.7	.1	.1	104	93	69	2	145	7.1	0
19	Anderson Spring	11-18-64	D	7.6	.02	35	20	20	.8	182	2.0	38	.0	3.8	-	217	168	19	383	7.5	-

Data from Cressler (1974)

[1] Analyses by U.S. Geological Survey.

[2] Water having a $CaCO_3$ hardness of 0 to 60 mg/l is classified, "soft"; 61 to 120 mg/l, "moderately hard"; 121 to 180 mg/l, "hard"; and more than 181 mg/l, "very hard".

[3] Water was sampled from springs that discharge from water-bearing units shown in figure 64.

Table 51.--Summary of streamflows, Whitfield County.

Site no.	Stream name	Gage type	Location	Drainage area (sq mi)	Estimated average flow (Mgal/d)	Estimated 7-day,10-year minimum flow (Mgal/d)	Water use (1970) (Mgal/d)
1	Tiger Creek	M	Lat 34°59', long 84°58', at county road, 1.5 miles north of Cohutta.	1.78	1.8	0	
2	Conasauga River	M	Lat 34°55', long 84°50', at Ga. Highway 2, at Beaverdale.	180	187	21	
3	Coahulla Creek	M	Lat 34°54', long 84°55', at Ga. Highway 2, 9 miles north of Dalton, at Prater Mill.	87	90	7.8	
4	East Chickamauga Creek	T	Lat 34°48', long 85°05', at county road, 2.8 miles west of Rocky Face.	24.3	25	4.3	
5	Mill Creek	M	Lat 34°48', long 85°01', at U.S. Highway 41, 3.8 miles northwest of Dalton.	18	18	2.3	
6	Do.	C	Lat 34°48', long 84°59', 1,000 ft upstream from city pumping plant, at Dalton.	38.4	46a	9.0a	
7	Conasauga River	C	Lat 34°40', long 84°56', at county road, at Tilton.	682	744b	57b	

C Continuous record
M Miscellaneous site
T TVA site

a Based on continuous daily flow, 1944-58.
b Based on continuous daily flow, 1938-68.

Table 52.--Chemical analyses[1] of streams, Whitfield County.

Date	Time	Discharge (ft^3/s)	Total iron (Fe) (µg/l)	Total manganese (Mn) (µg/l)	Milligrams per litre: Dissolved calcium (Ca)	Dissolved magnesium (Mg)	Sodium (Na)	Potassium (K)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Nitrite plus nitrate (N)	Ammonia nitrogen (N)	Total phosphorus (P)	Total filtrable residue	Total nonfiltrable residue	Hardness (Ca,Mg)	Specific conductance (Micromhos)	pH (Units)	Temperature (Degree C)	Color (Platinum cobalt units)	Dissolved oxygen (Mg/l)	Biochemical oxygen demand (Mg/l)	Fecal coliform (MPN)
SITE 7 - Figure 64. Conasauga River at Tilton.																								
1-31-73	1130	1,530					7.1		47		8.0	0.20	0.02	0.50			44	136	6.7	5.0	40	10.8	3.5	23,000
7-17-73	0900	530					4.4		58		8.5	.20	.28	.96			60	162	7.2	25.0	40	1.3	3.6	230,000

[1] Analyses by Georgia Dept. of Natural Resources.

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