OCCURRENCE AND AVAILABILITY OF GROUND WATER IN THE ATHENS REGION, NORTHEASTERN GEORGIA

By Dean B. Radtke, Charles W. Cressler, Howard A. Perlman,
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CONVERSION FACTORS

Factors for converting inch-pound units to the International System (SI) of units are given below:

Multiply	By	To obtain
	Length	
inch (in.)	2.540	centimeter (cm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
	Area	
square mile (mi^2)	2.590	square kilometer (km^2)
	Volume	
gallon per minute (gal/min)	0.06309	liter per second (L/s)
millon gallons per day (Mgal/d)	0.04381	cubic meters per second (m^3/s)
	43.81	liters per second (L/s)

Temperature

Temperature in degrees Fahrenheit (°F) can be converted to degrees Celsius (°C) as follows:

$$°C = 5/9\ (°F - 32)$$

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ABSTRACT

This study was conducted to assess the occurrence and availability of ground water in the crystalline rocks of the Piedmont area in northeastern Georgia and to determine whether ground water is a viable alternative or supplemental source for industrial, public, and private supplies. The area is underlain by a variety of metamorphic and igneous rocks. Many of these rocks are of similar character and yield water of comparable chemical quality; for convenience they have been combined into 11 principal water-bearing units. Ground water occurs in and is transmitted through joints, fractures, and other secondary openings in the bedrock and pore spaces in the overlying regolith. The quantity of water that a rock unit can supply to wells is determined by the number, capacity, and interconnection of the secondary openings.

Of an estimated 10,000 successful wells drilled in the Athens Region, 972 wells are reported by drilling contractors to supply from 20 to 300 gallons per minute. For the purposes of this study, wells that supply 20 gallons per minute or more are considered to be high yielding because they are adequate for most private and small public water supplies. Studies of well sites revealed that high-yielding wells can be developed only where the water-bearing units have undergone significant increases in secondary permeability. This occurs mainly in association with (1) contact zones between rock units of contrasting character, (2) contact zones within multilayered rock units, (3) fault zones, (4) stress-relief fractures, and (5) shear zones.

Many high-yielding wells are dependable and have records of sustaining large yields for many years. One hundred nineteen industrial, public-supply, and private wells have been in use for periods of 5 years to more than 64 years without having the problem of declining yields.

Ground water may be a viable alternative or supplemental source for industrial, public, and private supplies in much of the Athens Region. In 1980, ground water made up 38 percent (18 million gallons per day) of the total water used in the area. Yields of 20 to more than 200 gallons per minute are obtained from wells throughout most of the region. The study area has more than 400 miles of major fault zones and more than 450 miles of contact zones, most of which are potentially permeable. About one-third of the area is underlain by water-bearing units that nearly everywhere contain potentially

permeable zones. The area has hundreds of topographic settings of the types commonly underlain by high-yielding stress-relief fractures. Major shear zones also can be expected to have numerous sites for high-yielding wells. Because only a fraction of these sites contain wells, it probably is possible to develop a large number of high yielding wells in much of the 11-county area.

The water from wells in the study area generally is of good chemical quality and is suitable for drinking and many other uses. Concentrations of dissolved constituents are fairly consistent throughout the area. Except for iron, manganese, and fluoride, dissolved constituents rarely exceed drinking-water standards.

INTRODUCTION

Municipal and industrial water supplies in the 11-county Athens Region (fig. 1) of northeastern Georgia are derived mainly from rivers and small tributary streams. Although most of the study area is drained by the Apalachee, Broad, Ocmulgee, and Oconee Rivers, most towns and the rural areas are served by small tributary streams that are affected by prolonged droughts. During dry periods, the flows of many tributary streams are inadequate to meet local needs without the construction of expensive storage facilities. The area also is undergoing rapid urban growth and there is a concern that the surface-water sources will be unable to meet increasing demands. For many towns and most rural areas, water from wells is the best source available.

However, developing large ground-water supplies has been a problem in the parts of the Athens Region. For example, the city of Statham, Barrow County, in attempting to increase its ground-water supply following the 1980-81 drought, drilled six deep wells, all of which were low yielding. The city of Bowman, in Elbert County, drilled three deep wells that were almost dry. Because of their low permeability, crystalline rocks have the reputation of furnishing only small quantities of ground water--usually 2 to 20 gal/min. As a result, ground water in the area has not been considered as a practical source of supply. The lack of development of ground-water supplies has limited the economic growth of some areas not served by municipal or county water systems. There are, however, a large number of wells in the Piedmont area in Georgia that supply 50 to more than 400 gal/min (Cressler and others, 1983). A study was needed to assess the occurrence, availability, and chemical quality of ground water in the Athens Region. This study addresses that need and was part of the Northeast Georgia Region Water Resources Management Study done by the U.S. Geological Survey in cooperation with the U.S. Army Corps of Engineers, Savannah District.

Objectives and Scope

The objectives of this study were to (1) assess the occurrence and availability of ground water and, from existing data, the chemical quality of ground water, and (2) determine whether ground water may be a viable alternative or supplemental source for industrial, public, and private supplies in

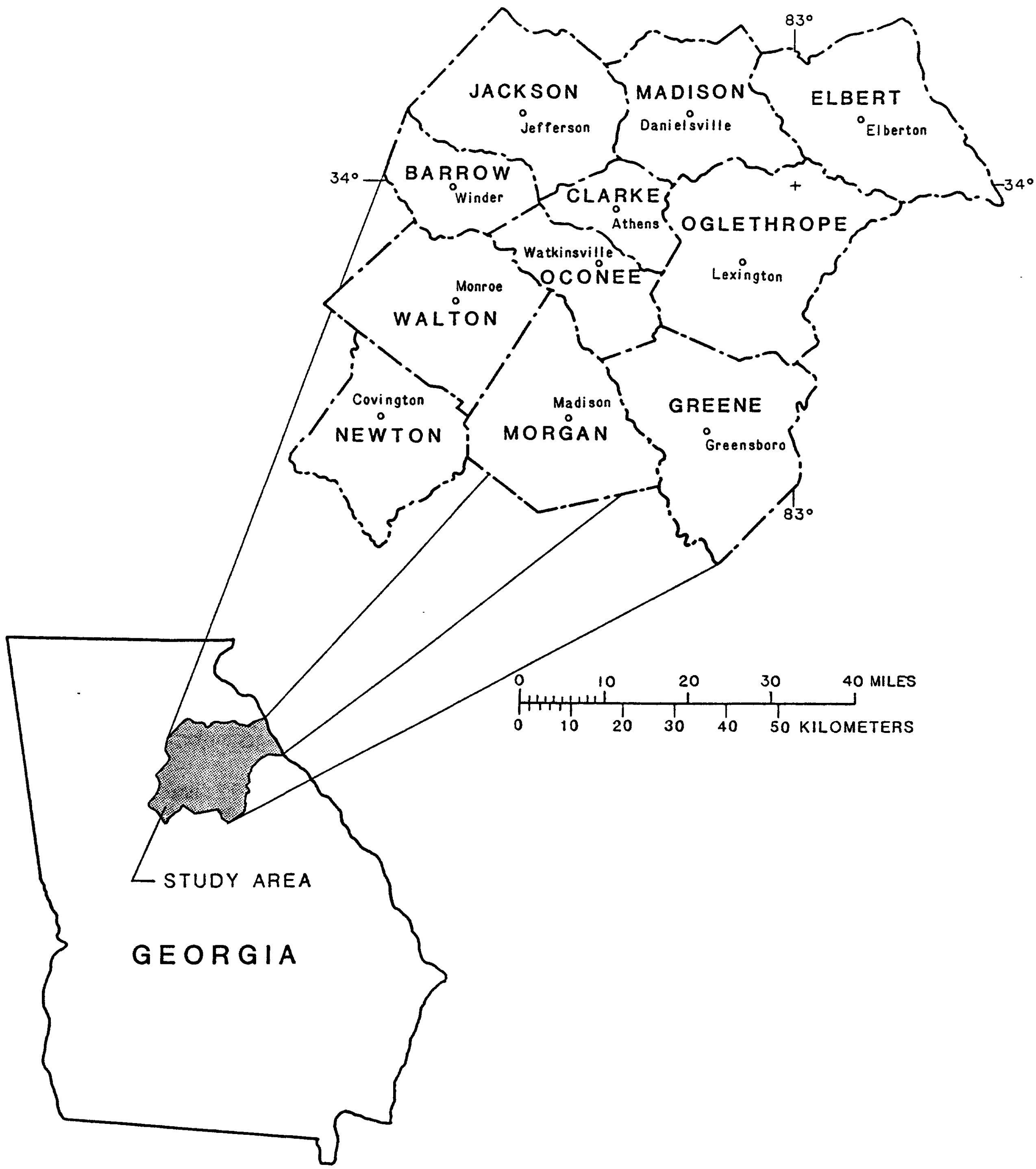

Figure 1.—Location of the study area.

much of the Athens Region. The purpose of this report is to present the significant findings of this study.

The study area covers 3,254 mi^2 in northeastern Georgia. It includes the counties of Barrow, Clarke, Elbert, Greene, Jackson, Madison, Morgan, Newton, Oconee, Oglethorpe, and Walton.

Well-inventory data, physiographic information, and a recently completed geologic map of the region were used to determine the relation between high-yielding wells and rock type, topography and drainage, and geologic structure. Where possible, pumping tests and geophysical logs were used to support the accuracy of the well-inventory data, including depths and yields. Water-quality information from historical data files was used to determine the potability of ground water in the study area. Long-term well records and water-use data were compiled to assess the dependability of high-yielding wells and to determine the proportion that ground water contributes to total water use in the area.

Methods of Investigation

Data for wells in the study area were obtained from files of the U.S. Geological Survey, published reports, and records of drilling contractors. Construction, depth, yield, location, and ownership data were collected for all wells reported by drilling contractors to furnish 20 gal/min or more. For this study, wells rated at 20 gal/min or more are considered to be "high yielding" because they are adequate for most private and small public water supplies. The wells were located by field checking and plotted on 7 1/2-minute topographic quadrangle maps. As far as possible, driller-supplied information for each well was verified by owner contact. The well inventory produced complete data for 972 wells that yield from 20 to 300 gal/min.

A water-bearing-unit map of the Athens Region (pl. 1) was constructed from a regional geologic map by Michael W. Higgins and Rebekah Brooks, U.S. Geological Survey, that extends the stratigraphy and structure introduced by Higgins and others (1984). The locations of diabase dikes (Unit E) were taken primarily from Lester and Allen (1950) and the Geologic Map of Georgia (1976).

Borehole geophysical logs, including caliper, fluid resistivity, temperature, electric, gamma, and sonic televiewer, were run on nine selected high-yielding wells to provide information about the nature of the water-bearing openings in these wells and to confirm the accuracy of well-inventory data.

Pumping tests were conducted on three wells to verify the accuracy of yield data obtained by the well inventory and to estimate the safe yields of the wells. Where available, data for pumping tests conducted by drilling contractors were used to verify the accuracy of reported well yields.

Well data were tested to identify relations between high-yielding wells and such factors as well depth, water-bearing units, topographic setting, geologic structure, specific capacity, and altitude of water-bearing openings.

Three wells in the study area were equipped with float-actuated continuous water-level recorders to measure seasonal fluctuations in the water level in response to seasonal changes in precipitation and evapotranspiration.

Water-use data were obtained from the U.S. Geological Survey's water-use project and from the Georgia Department of Natural Resources, Environmental Protection Division. Public and private water suppliers provided historic monthly water-meter readings for individual housing units on well-water systems in rural residential subdivisions. Additional water-use data were obtained by the well inventory.

The quality of ground water in the region was determined from water-quality data (239 ground-water-sample analyses) obtained from the Georgia Environmental Protection Division and the Georgia Geologic Survey.

Previous Investigations

Little has been written about ground water in the Athens Region. Most reports deal primarily with geology. One of the earliest reports covering the geology of the area was Watson's "Granites and Gneisses of Georgia" (1902). A report by McCallie (1908) discusses ground water in the Athens Region. Crickmay (1952) reported on "Geology of the Crystalline Rocks of Georgia." Thomson and others (1956) reported on the "Availability and Use of Water in Georgia," in which the occurrence of ground water in the Piedmont was briefly discussed. LaForge and others (1925) discussed the drainage systems of the Georgia Piedmont. Staheli (1976) reported on the drainage patterns of the area's streams that may have a bearing on the distribution of ground water in the Athens area. Howard (1973) reported on the "Studies of Saprolite and its Relation to Migration and Occurrence of Ground Water in Crystalline Rocks." Watson (1984) discussed the hydrogeology of Greene and Morgan Counties in the southern part of the study area.

Numerous master's theses have been prepared by students from the University of Georgia and Emory University on the geology of the study area. (See "Selected References.") However, little or no mention was made of ground water in these theses.

A report by Cressler and others (1983), "Ground Water in the Greater Atlanta Region, Georgia," includes the western parts of Barrow, Newton, and Walton Counties.

Data-Site Numbering System

The Athens Region is covered by 81 U.S. Geological Survey 7 1/2-minute topographic quadrangle maps. Wells in this report are numbered according to a system based on the 7 1/2-minute topographic quadrangles. Each 7 1/2-minute quadrangle in Georgia has been given a number and a letter designation according to its location. The numbers begin in the southwest corner of the State and increase numerically eastward. The letters begin in the same place, but progress alphabetically to the north, following the rule of "read right up." Because the alphabet contains fewer letters than there are quadrangles, those in the northern part of the State have double letter designations, as in 16CC (refer to fig. 2).

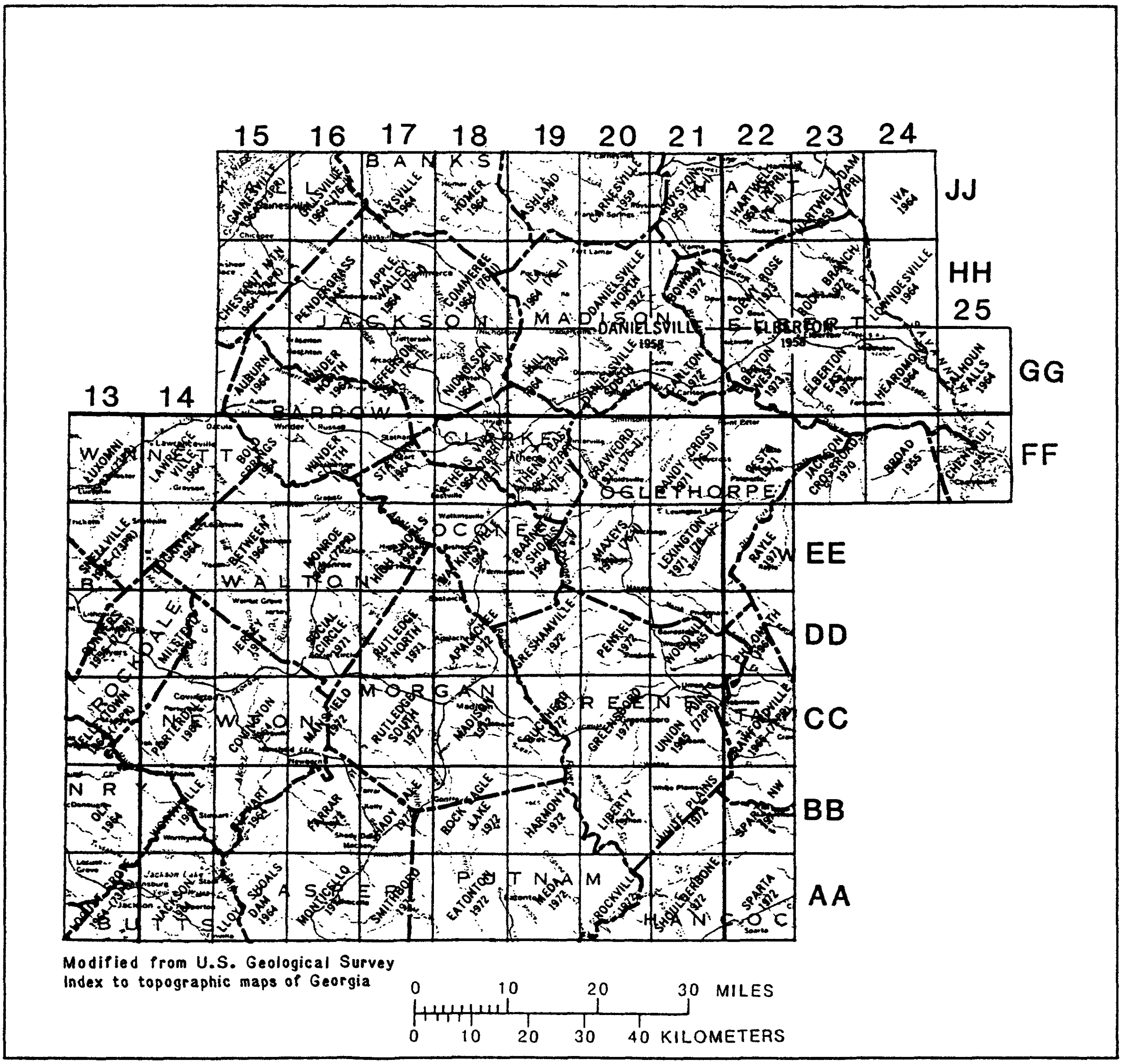

Figure 2.—Number and letter designations for 7 1/2-minute quadrangles for the Athens Region.

Wells in each quadrangle are numbered consecutively, beginning with number 01, as in 16CC01. Complete well numbers, as in 16CC01, are used in well tables and most illustrations. On plate 1 the well numbers lack quadrangle designations because of space limitations. The quadrangle designations for these wells can be obtained from figure 2 and from the inset on plate 1.

Acknowledgments

The authors wish to acknowledge the many people who gave assistance during the study. Hundreds of property owners throughout the study area willingly supplied information about their wells and permitted access to their property. The following companies and personnel furnished construction and yield data on high-yielding wells:

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Messrs. Don and Richard Bennett, Athens Plumbing and Well Supply, Athens
Mr. Jerome and Mrs. Mabel Martin, Martin Well Co., Athens
Mr. Walter McCannon, McCannon Well Drilling, Lexington
Messrs. Dan and John Elder, Oconee Well Drillers, Watkinsville
Mr. John and Mrs. Judy Robinson, Robinson Well Drilling, Monroe
Mr. Gene Spray, Spray and Sons LTD, Crawford
Mr. Russell and Mrs. Carolyn Banks, Banks Well Drilling Co., Dallas
Mr. Henry Baxter, Jr., Baxter Well Boring and Drilling, Commerce
Mr. Perry L. Gunter, Gunter Well Drilling and Boring, Washington
Mr. Sam Montgomery, Montgomery Well Drilling, Commerce
Mr. Robert and Mrs. Nell Holder, Holder Well Company, Covington
Messrs. Hoyt and Randy Waller, Waller Well Drilling Company, Griffin

City clerks, water department personnel, and industrial plant managers provided information on locations, histories, and use of wells in numerous towns, cities, and industries.

The authors wish to acknowledge the U.S. Geological Survey personnel who assisted on this project. Special thanks are due the following individuals: Michael W. Higgins for mapping the geology of the study area; Julia L. Fanning and Jacqueline A. Nolting for compiling water-use and water-quality data; and Harold E. Gill for providing helpful suggestions regarding the investigation and the report.

DESCRIPTION OF THE STUDY AREA

The Athens Region encompasses 3,254 mi^2 in the Piedmont physiographic province (Clark and Zisa, 1976; Fenneman, 1938). Most of the report area is a broad rolling upland or plateau. A few small monadnocks stand above its surface, which, on the whole is smooth, but is deeply dissected by southeastward flowing streams. On the southern margin of the study area, below deeply dissected divides, great areas of nearly level land extend for miles (LaForge and others, 1925). The plateau is inclined to the southeast and averages 800 to 1,000 ft above sea level in the northwest and about 500 to 600 ft in the southeast.

All streams in the Athens Region flow to the Atlantic Ocean. The Region is drained by five main rivers having southeasterly or southerly courses down the general slope of the land surface, and across the trend of the geologic structure. The eastern part of the area is drained by the Savannah River and its tributaries. The middle section of the Athens Region is drained by the Oconee River and its tributaries. The South, Alcovy, and Yellow Rivers, along with their tributaries, drain the western part of the region into the Ocmulgee River system. The land surface is rather closely dissected by highly developed dendritic drainage and nearly all tributaries join the trunk streams at acute angles (LaForge and others, 1925). Only a few of the larger streams flow for any considerable distance parallel to the structural trend and the courses of the minor ones are independent of the structure.

The area is underlain by a variety of metamorphosed plutonic, volcanic, and sedimentary rocks including gneiss, schist, amphibolite, and diabase and by unmetamorphosed granite plutons and diabase dikes (pl. 1). Metamorphic rocks predominate. Regional stresses have warped the rocks into numerous folds and the sequence has been extensively faulted. Erosion of these deformed rocks produced the complex outcrop patterns that exist today. The different rock types in the area have been divided by various workers into more than 30 named formations and unnamed mappable units. Individual rock units range in thickness from less than 10 ft to possibly more than 10,000 ft (M. W. Higgins, U.S. Geological Survey, oral commun., 1984).

The large number of rock types in the area and their varied outcrop patterns greatly complicate the occurrence and availability of ground water. Nevertheless, many of the named formations and unnamed mappable units in the Athens Region are made up of rocks of similar character that yield water of comparable chemical quality. Thus for convenience, the rocks in the study area have been grouped into 11 principal water-bearing units and assigned letter designations. The areal distribution and the descriptions of the water-bearing units in the Athens Region are shown on plate 1.

Bedrock in nearly all of the study area is covered by unconsolidated material. Collectively this unconsolidated material, which is composed of saprolite, alluvium, and soil, is referred to as regolith.

Most of the area is covered by saprolite, a clayey residual deposit produced by weathering of the rocks, and by soils derived from this material. Depending on the properties of the parent rock and the topographic setting, the saprolite ranges in thickness from 0 to about 200 ft. Saprolite thickness was estimated from the casing depths of the 972 inventoried wells. On uplands where the slope is less than 15 percent, saprolite generally is thicker than in areas having steeper slopes. In many valleys the saprolite has been removed by erosion, and the bedrock is exposed or thinly covered by alluvial deposits. Soil is nearly everywhere present as a thin mantle on top of the saprolite and alluvium.

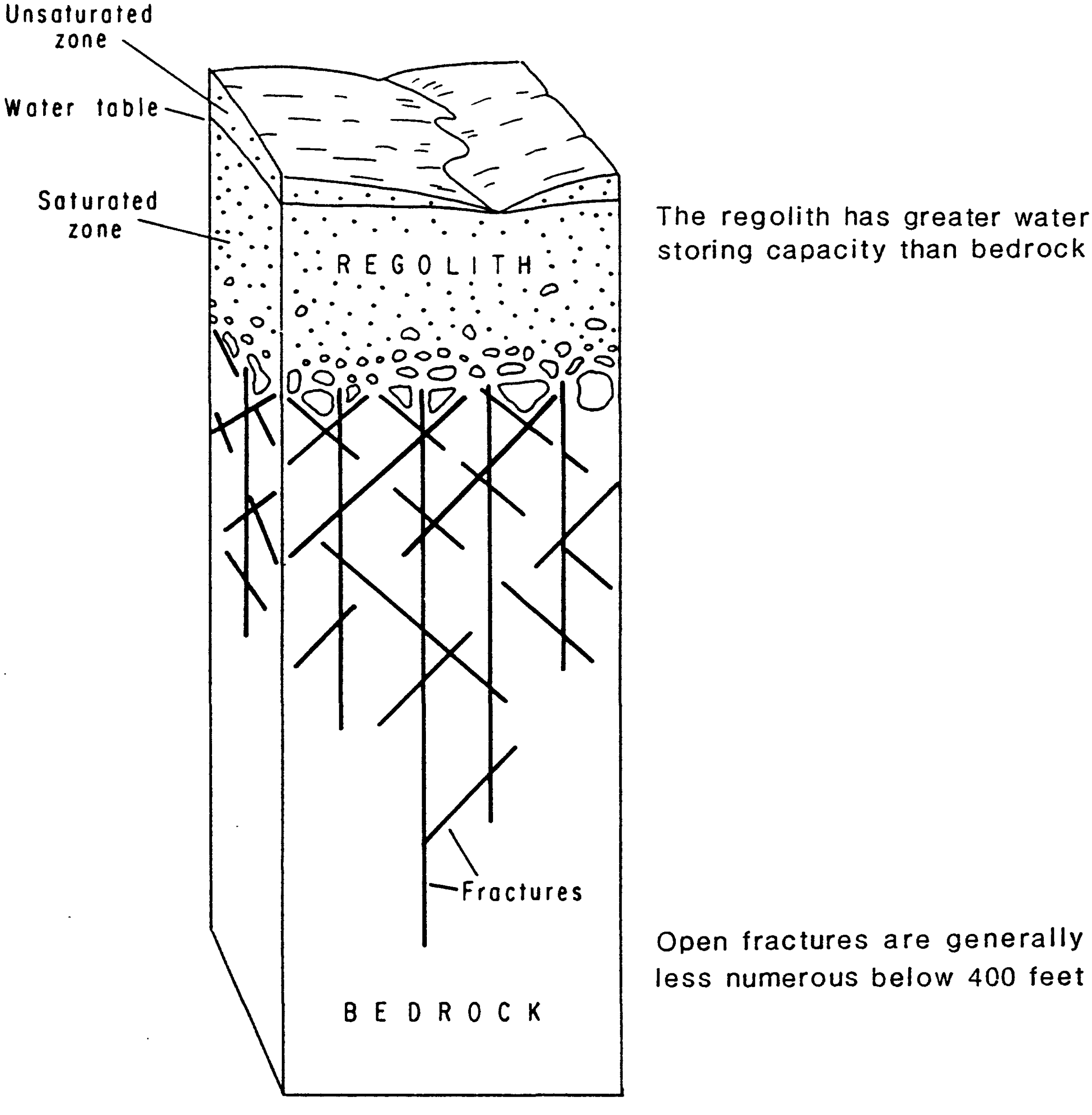

Figure 3.—Principal components of the ground-water system in the Athens Region. Modified from Daniel and Sharpless (1983).

Soils and saprolite in the study area are relatively porous and, depending on the thickness and topographic setting, have the potential to absorb and store large quantities of precipitation. Generally, the greater the saturated thickness of saprolite, the greater the quantity of water that is held in storage.

OCCURRENCE AND AVAILABILITY OF GROUND WATER

Ground water in the Piedmont province occupies joints, fractures, and other secondary openings in the bedrock and pore spaces in the overlying regolith. By far the largest volume of water is stored in the regolith. Water recharges the underground openings by seeping through the regolith or by flowing directly into openings in exposed rock. This recharge is from precipitation that falls in the area.

Unweathered and unfractured bedrock in the study area has very low porosity. Thus, the quantity of water that a rock unit can store and transmit to wells is determined by the number, capacity, and interconnection of the secondary openings. The yields to wells that these openings can sustain for long periods depends on the quantity of available recharge. Over the long term, wells tapping secondary openings in bedrock, no matter how large the initial yields, can withdraw water only at the rate it is replaced by recharge. The quantity of recharge needed to sustain large well yields, especially during prolonged droughts, is available mainly in stream valleys, drainages, and draws that receive constant recharge from large catchment areas covered by regolith, and on broad, relatively flat areas blanketed by several feet of saturated regolith. The principal source of recharge is water that is stored in the regolith and slowly released to bedrock openings.

The main components of the ground-water system in the study area are illustrated schematically in figure 3. A conceptual view of the saturated zone, the water table, and directions of ground-water flow for a typical area in the Athens Region is shown in figure 4.

The depth of the water table varies from place to place depending on the topographic settings (fig. 4). In stream valleys and other areas of discharge, the water table may be at or near land surface. On upland flats and broad interstream divide ridges, the water table generally ranges from a few feet to a few tens of feet beneath the surface, but on steep hills and narrow ridges the water table may be considerably deeper.

Water-Level Fluctuations

Seasonal changes in precipitation and evapotranspiration produce corresponding changes in recharge and therefore in ground-water storage as reflected by water levels. Rainfall in the area is heavy in winter, spring, and midsummer and relatively light in early summer and autumn. Autumn is the driest season of the year. Ground-water levels rise rapidly in response to recharge with the onset of late winter rains and reduced evapotranspiration, and generally reach their highest levels for the year in April, as indicated by the hydrographs for wells 19HH12 and 18FF54 (figs. 5, 6). Increases in

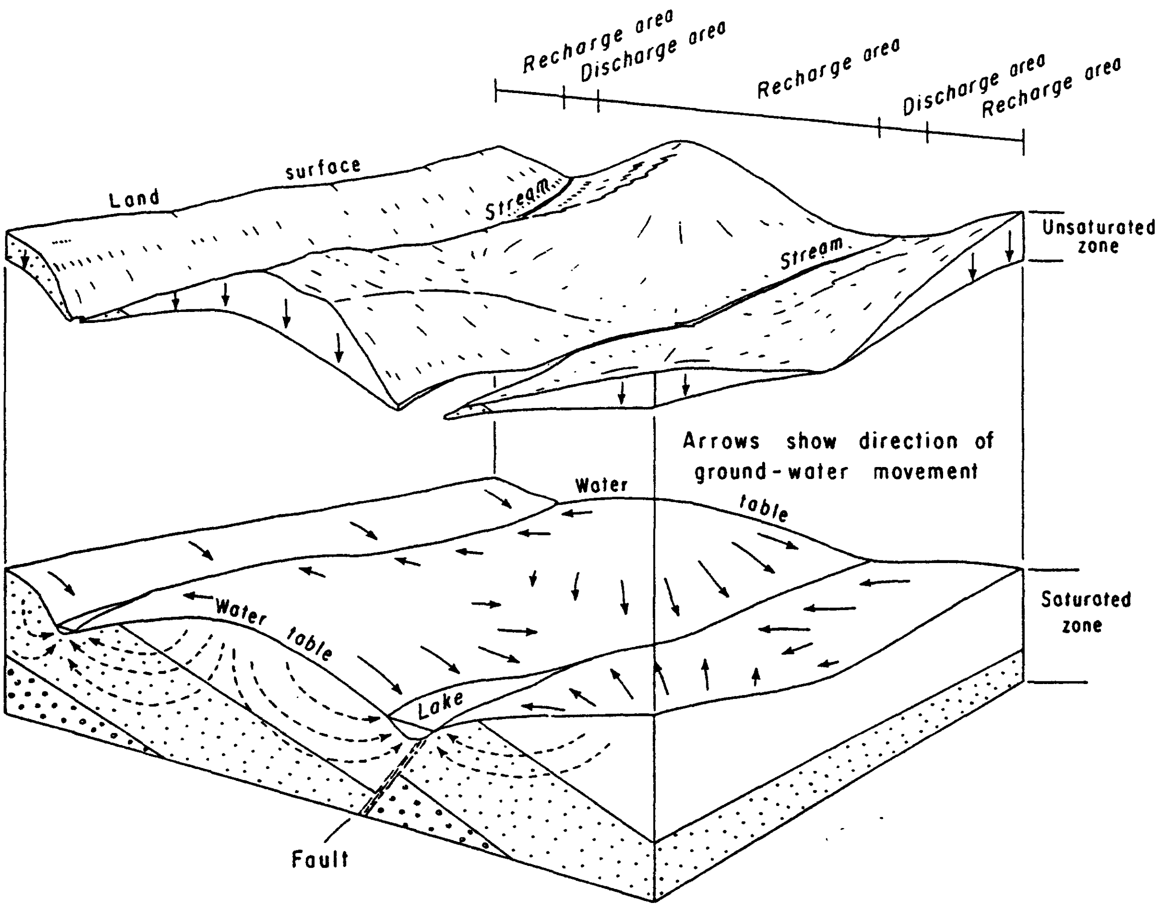

Figure 4.—Conceptual view of the unsaturated zone (lifted up), the water-table surface, and the direction of ground-water flow for a typical area in the Athens Region. Modified from Daniel and Sharpless (1983).

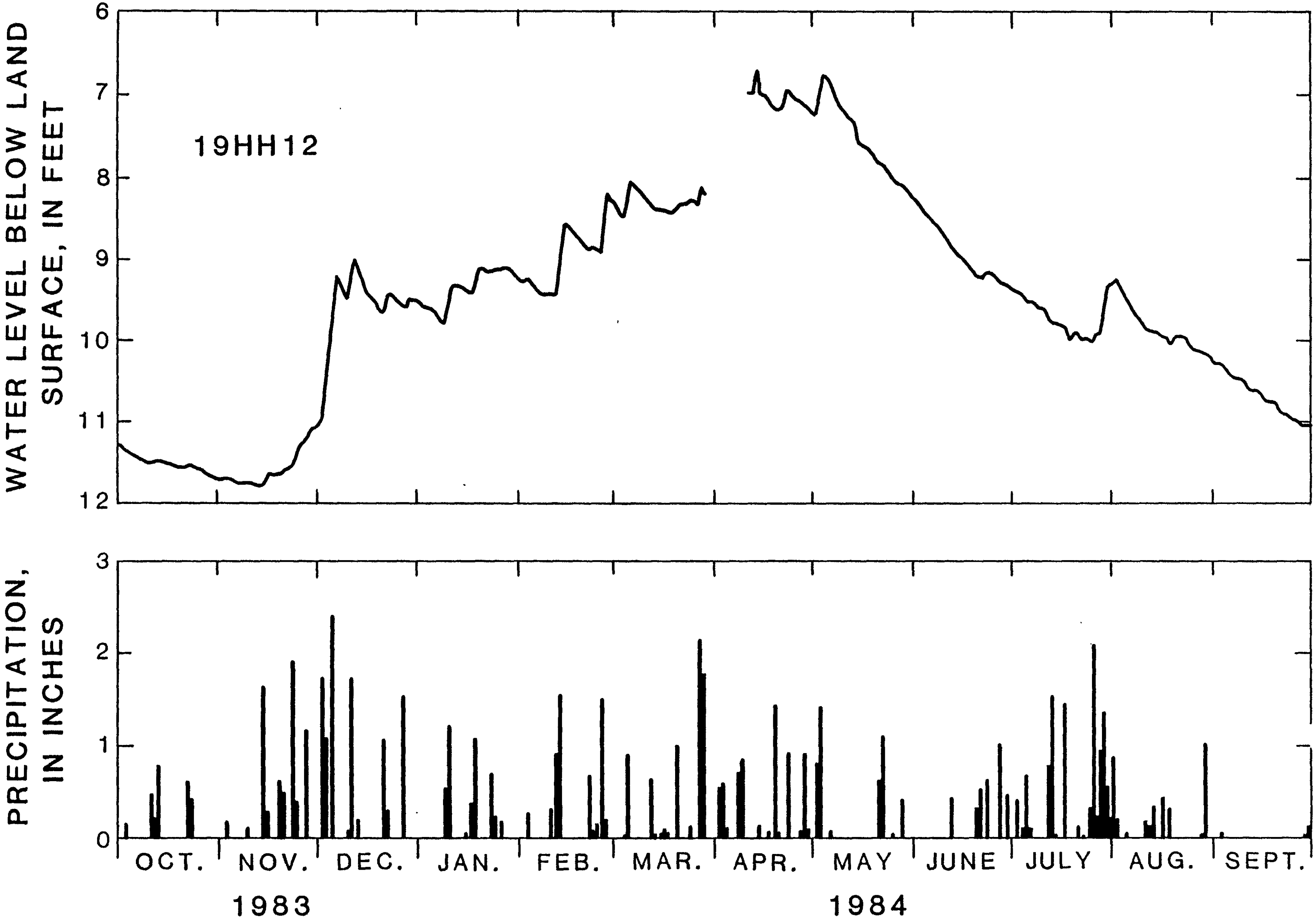

Figure 5.—Water-level fluctuations in the Meadow Lake Estate observation well 19HH12, Madison County, and precipitation at Commerce.

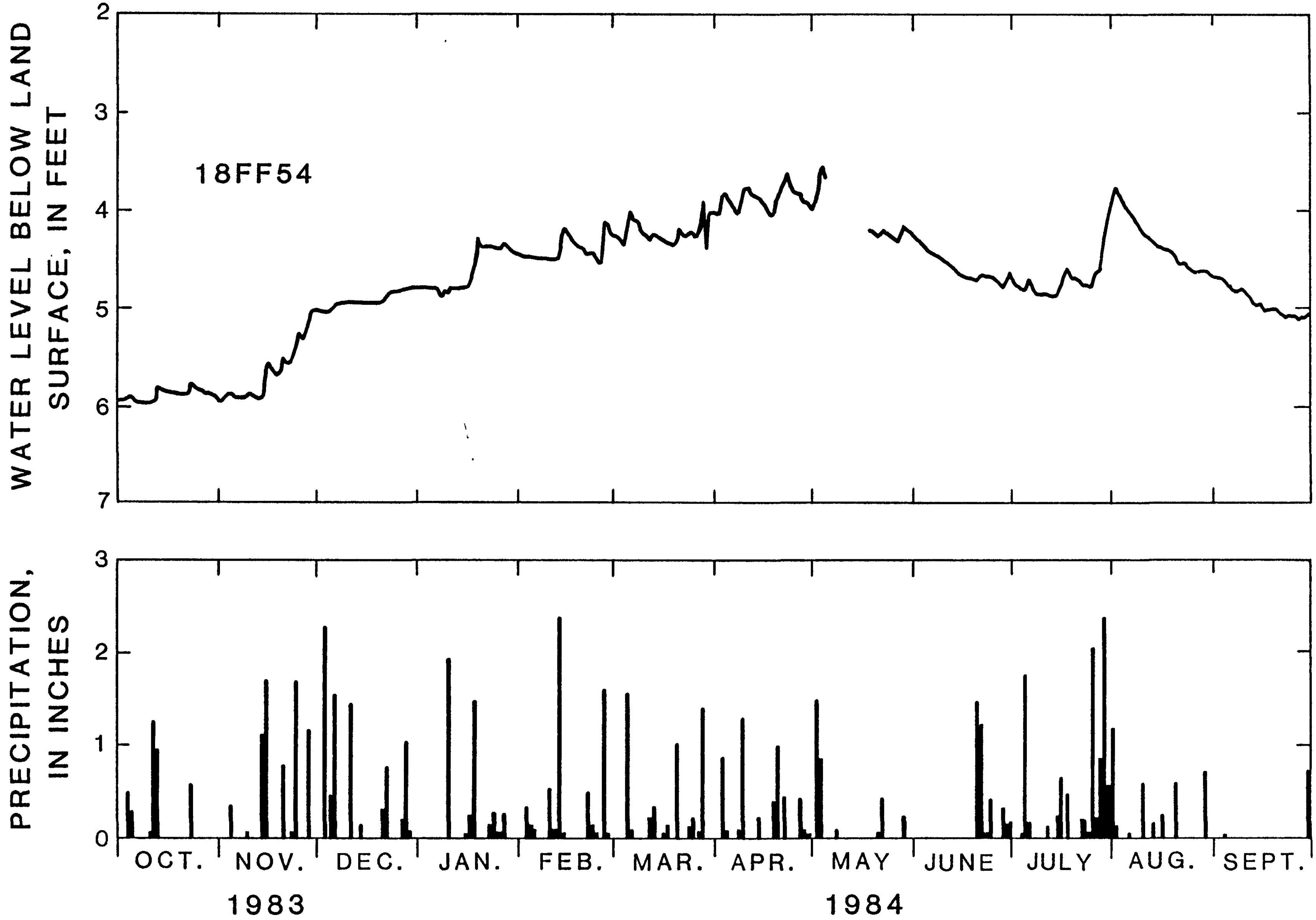

Figure 6.—Water-level fluctuations in the Birchmoor Hills observation well 18FF54, Oconee County, and precipitation at Athens.

evapotranspiration and decreases in rainfall during early summer reduce recharge and cause ground-water levels to decline. Heavy precipitation in midsummer may cause small rises in ground-water levels, but the lack of recharge from light rainfall in the autumn results in water levels declining to the annual lows, generally in October or November (Clarke and others, 1984). Total water-level fluctuation ranges in wells 19HH12 and 18FF54 for the 1983 water year were 5.1 ft and 2.3 ft, respectively (figs. 5, 6).

Effects of Drainage Pattern on the Availability of Ground Water

The Georgia Piedmont has three major drainage patterns: rectangular, trellis, and dendritic. Streams having rectangular and trellis drainage patterns, common in the northern part of the Piedmont, flow in strongly angular courses that follow the rectangular pattern of the joints that break up the rocks. All of the streams in that part of the Piedmont show the influence of geologic control. Streams in the Athens Region, however, have a dendritic drainage pattern, which is indicative of streams that developed independently of the underlying geology (LaForge and others, 1925; Staheli, 1976). According to Staheli (1976, p. 451), dendritic drainage, in which streams are characterized by regular branching in all directions, probably was established on some preexisting surface and later superimposed on the underlying crystalline rocks. Streams flowing on the veneer of material that covered the bedrock were superimposed above the concealed rocks. When rejuvenated by uplift, the streams became incised and developed courses without regard to the structure or lithology of the underlying rocks. After the cover material was removed, only the physiographic pattern of the streams suggests their having been let down from a superimposed position (Lobeck, 1939, p. 173).

Thus, except where streams flow along or across zones of bedrock weakness such as faults or contact zones, rocks underlying stream valleys in the Athens Region may have about the same permeability as the country rock and are not necessarily good sites for high-yielding wells. Conversely, significant increases in permeabililty may develop mainly where zones of bedrock weakness underlie stream valleys and drainage courses. (However, see the section "Stress-Relief Fractures.")

In the Greater Atlanta Region, which adjoins the report area on the southwest, many draws and intermittent streams in the uppermost headwater areas of large streams show evidence of having developed under control of the bedrock geology (Cressler and others, 1983). Presumably these small drainages developed after removal of a preexisting cover. The effects of bedrock control are indicated by locations of intermittent streams and draws on zones of bedrock weakness. Undoubtedly, late-forming drainages in the Athens Region formed under similar conditions. Because many late-forming drainages in the Atlanta area are sites for high-yielding wells, similar sites in the Athens Region also may furnish large yields.

Data for High-Yielding Wells

There are an estimated 10,000 successful drilled wells in the Athens Region. Most of these wells were intended for domestic or farm supplies. The wells were located primarily for the convenience of the users, and most of the drilling sites were selected without regard to the suitability of geohydrologic conditions. Thus, for the purposes of this report, the wells are considered to be randomally located. The random selection of the 10,000 well sites in the region resulted in 972 wells, or nearly 10 percent, that are high yielding.

The well inventory provided construction, depth, yield, and ownership data for the 972 high-yielding wells. Data for the wells are presented in table 10 (at end of report) and the well locations are shown on plate 1. Of the 972 high-yielding wells, 55.7 percent yield from 20 to 49 gal/min. Nearly 65 percent of the wells are used for private domestic supply, and about 14 percent are used for public supply (table 1).

Table 1.--Major water-use categories and statistics for wells in the Athens Region

Water-use category	Number of wells	Percent of total
Domestic	630	64.8
Industrial	40	4.1
Institutional	36	3.7
Irrigation	17	1.8
Public supply (includes private suppliers)	139	14.3
Agricultural	73	7.5
None	25	2.6
Unknown	12	1.2

To gain a better understanding of the ground-water system in the report area, the well data were tested to identify relations between high-yielding wells and such factors as well depth, water-bearing units, topographic setting, geologic structure, specific capacity, and altitude of water-bearing openings. The following relations were observed.

About 28 percent of the 972 high-yielding wells are deeper than 299 ft, 12 percent are between 400 and 599 ft deep, but only 2.3 percent are deeper than 600 ft (table 2). These figures indicate that there rarely is justification for drilling deeper than about 600 ft when attempting to develop a large well supply.

Table 2.--Relation of high-yielding wells in the Athens Region to depth

Well depth range (feet)	Number of wells	Percent of total[1]
0 - 99	39	4.0
100 - 199	305	31.4
200 - 299	345	35.5
300 - 399	136	14.0
400 - 499	76	7.8
500 - 599	40	4.1
600 - 699	16	1.6
700 - 799	7	.7

[1] Rounded.

The range of well yields is greater in some water-bearing units than in others, but average well yields of most units are similar (table 3). For example, wells in granite gneiss and muscovite gneiss (Units B, I) yield from 20 to 300 gal/min, and average 56 and 57 gal/min, respectively. Wells in amphibolite-gneiss-schist (Unit A) and schist (Unit C) yield from 20 to 225 and from 20 to 200 gal/min and have average yields of 52 and 51 gal/min. Although wells drilled in Units B and I may have a better chance of supplying 300 gal/min than wells in Units A and C, well yields in all four units can be expected to average about the same.

An important difference between water-bearing units is the ratio of high-yielding wells to the total number of wells drilled in each unit. This ratio is a function of the density and distribution of interconnected secondary openings and it gives a general indication of the relative difficulty of obtaining a large well supply in each water-bearing unit. For example, schist (Unit C), granite (Unit F), and metavolcanic rocks (Unit J) tend to have a comparatively low density of interconnected secondary openings that can supply large yields. Consequently, a relatively small percentage of wells drilled in these units are high yielding. On the other hand, granite gneiss (Unit B), biotite gneiss (Unit D), quartzite (Units H, G), and muscovite gneiss (Unit I) tend to have a greater density of interconnected secondary openings. A larger percentage of wells drilled in these units are high yielding. In mixed rock types such as Units A and K, permeable zones have widespread, although commonly uneven, distribution so that the proportion of high-yielding wells tends to vary from fairly large to small.

In summary, areas underlain by Units C, F, and J can be relatively difficult places to develop large ground-water supplies. Terranes formed by Units B, D, H, G, and I generally are more favorable for developing high-yielding wells. The ease of obtaining large well yields in areas of Units A and K varies from favorable to difficult.

Table 3.--Summary data for high-yielding wells in water-bearing units of the Athens Region

Water-bearing unit[1]	Number of wells	Yield (gal/min)		Well depth (feet)		Casing depth (feet)	
		Range	Average	Range	Average	Range	Average
A Amphibolite-gneiss-schist	311	20-225	52	45-800	246	8-230	69
B Granite gneiss	184	20-300	56	26-680	256	8-302	64
C Schist	60	20-200	51	58-530	207	3-150	60
D Biotite gneiss	139	20-250	65	53-700	285	10-180	57
E Mafic-ultramafic	0	--	--	--	--	--	--
F Granite	78	20-100	38	52-790	242	8-294	63
G Sheared rock	9	20-150	61	98-553	323	9- 89	47
H Quartzite	1	--	100	--	240	--	62
I Muscovite gneiss	104	20-300	57	85-705	257	16-200	68
J Metavolcanic	18	20-100	39	68-600	265	15-221	77
K Melange	56	20-200	44	65-700	228	7-151	78

[1]Refer to plate 1.

Verification of Well-Yield Data

A concern during the initial phase of this study was the accuracy of data obtained by the well inventory, especially well-yield data. In the Athens Region, well yields normally are estimated by the drilling contractors at the time of drilling. Nearly all the wells are drilled by the air-rotary method and the yields are estimated by blowing compressed air down the drill column into the well and measuring the volume of water being expelled. As a rule, the tests are continued until the water clears, which can take from a few minutes to several hours. The method gives a general indication of a well's yield potential and it provides information needed to select a pump of the correct capacity.

Well-drilling contractors in the study area generally are conservative when reporting yields estimated by this method. Taking into account the intended use of each well and the anticipated pumping schedule (intermittent, peak demand, or continuous), they commonly report the yield to be as much as 50 percent lower than estimated at the time of drilling. They do this to avoid "promising" more water than the well can supply. The low incidence of declining-yield problems in the area indicates that the reported yields are reasonably accurate. (See the section, "Dependability of High-Yielding Wells.") However, this method does not provide drawdown or recovery data needed to estimate the safe yield of the wells.

Safe Yield

The safe yield of a well has been defined by Lohman (1972) as, "the amount of ground water one can withdraw without getting into trouble." In this definition, withdrawal may mean pumping a well nearly continuously, as is common with industrial and municipal supplies; seasonally, as for irrigation; or intermittently for prescribed periods each day, as to meet peak demands. Trouble may mean a number of things, including (1) running out of water, (2) declining yields, (3) muddying of the water supply during droughts, and (4) well interference.

Safe yields commonly are estimated as either (1) the maximum pumping rate that a well can sustain indefinitely, or (2) the maximum rate at which a well can be pumped intermittently or for prescribed periods. The appropriate type of estimate depends largely on the intended use of the well. Whichever estimate is made, the safe yield may not remain constant but may vary with changing conditions. Safe yield may vary throughout the year between wet and dry seasons, and the seasonal safe yield may temporarily diminish during a long drought. Other conditions, such as interference from nearby pumping wells or the diversion of surface drainage and subsequent loss of available recharge, may lower the safe yield of a well. Continuous monitoring of the water level in a pumping well is a good way to determine whether the safe yield is being exceeded, and it affords an opportunity to adjust the pumping rate or the pumping schedule to maintain the optimum water level.

Safe yields of most wells can be estimated with reasonable accuracy from long-term pumping tests. These are tests in which the pumping rate is increased in steps or kept constant for several hours or days and the water level in the well is measured during both the pumping and the recovery phases of the tests. In general, the longer the pumping period, the more accurately the safe yield can be estimated. The most accurate estimates normally are obtained from tests that run 48 hours or more. The important thing is that the test be long enough to allow the water-level drawdown to stabilize and remain stable for at least several hours.

The rate of water-level recovery after pump shutdown reflects the efficiency of recharge to the fracture system that supplies the well. Thus, the rate of recovery is indicative of the number of hours per day that a well can maintain a certain yield. For example, a well pumped at the rate of 100 gal/min for 48 hours, during which the water level declined 30 percent of the distance to the highest water-bearing opening, but completely recovered in about 1 hour, probably can be pumped at that rate almost continuously. On the other hand, another well pumped at the same rate for the same length of time, during which the water level declined more than 50 percent of the distance to the highest water-bearing opening, and required 4 to 6 hours to recover, may be able to sustain that yield only 12 to 18 hours per day. The well probably could be pumped at the rate of 100 gal/min for several hours each day to meet peak demands or fill storage tanks, or it could be throttled back to pump 50 gal/min intermittently throughout a 24-hour period. A conservative drilling contractor might report the yield of this well to be 50 gal/min. By constantly monitoring the water level in the well, the pumping rate could be varied or the pumping schedule adjusted to avoid excessive drawdown during droughts or to take advantage of a higher safe yield during periods of increased recharge.

Pumping Tests

Long-term pumping tests have been conducted by drilling contractors on a number of high-yielding wells in the area (table 4). The tests provide information on the ability of wells to sustain high yields for extended periods. The tests spanned 24 to 36 hours and included water-level measurements showing that maximum drawdowns in most wells were not excessive. The test results were used to determine the correct pump capacities for the wells, allowing for the type of demand and the pumping schedule projected for each well. However, none of the tests provided recovery data needed to estimate safe yields.

To obtain firsthand information on the accuracy of reported well yields, and to determine how closely the reported yields correspond to safe yields, pumping tests were conducted on three wells during this study. The wells selected for testing have large reported yields and tap different water-bearing units. Water-level drawdown and recovery were measured throughout the tests in order to estimate the safe yield of each well. The pumping tests showed that the safe yield of one well (18FF61) is larger than the yield reported by the drilling contractor and the safe yield of another well (19HH12) is about the same as the reported yield. Data for two of the pumping tests are presented below to show how they were conducted and to explain the interpretation of results.

Table 4.-Pumping tests conducted by drilling contractors in the Athens Region

County	Drilling Contractor	Well owner	Well depth (feet)	Static water level (feet)	Pumping water level (feet)	Well yield (gal/min)	Length of test (hours)	Period of water-level stability (hours)
Barrow	Virginia Supply and Well Company	John Tate, Statham	110	38	47	25	24	--
Clarke	do.	T. J. Harrold, Wintersville	185	42	85	20	24	--
Jackson	do.	Wayne Poultry Co.	400	7	210	52	24	--
	do.	do.	355	41	205	27	24	--
	do.	do.	280	9	220	83	24	--
	do.	do.	262	8	210	137	24	--
	do.	do.	265	5	200	87	24	--
	do.	do.	250	5	205	137	24	--
	do.	do.	223	7	205	107	24	11
	do.	do.	121	23	107	45	24	12
	B. T. Minish Well Drilling Company	Pendergrass School	300	53	128	75	24	12
Newton	Virginia Supply and Well Company	FFA Camp at Covington	604	125	200	34	24	--
	do.	Town of Mansfield	437	26	148	45	36	18
Walton	--	B. F. Miller	270	50	150	25	24	--

The third pumping test conducted during the study was only partly successful. It indicated that the well could furnish the reported yield without excessive drawdown, but the recovery phase of the test was so greatly affected by interference from nearby pumping wells that the safe yield could not be estimated. For this reason, the test data are omitted.

Hickory Hills well

The Hickory Hills well (18FF61) is in the Hickory Hills Subdivision in Oconee County. The area is underlain by water-bearing Unit I. Well statistics are as follows:

Date drilled	1983
Date tested	April 2-3, 1984
Depth	275 ft
Casing depth	55 ft
Diameter	6 in.
Pump level	168 ft
Static water level	18.77 ft
Yield (reported by driller)	100 gal/min or more
Yield (estimated by 24-hour pumping test)	150 gal/min

Most of the water was derived from fractures at depths of 242 and 270 ft.

A step-drawdown test was conducted to estimate the safe yield of the well. Pumping was done in steps of 100, 120, and 150 gal/min for a period of 24 hours (fig. 7). Pumping at 150 gal/min produced a 90-ft drawdown to a depth of 115 ft below land surface. Recovery of the water level after pump shutdown was relatively rapid, being about 60-percent complete after 30 minutes.

According to LeGrand (1967, p. 4), the increase in yield of a well in crystalline rocks is not proportionate to an increase in drawdown of the water level. Rather, a yield of about 80 percent of the total capacity of the well results from lowering the water level only about 40 percent of the available drawdown[1]. In the Hickory Hills test well (18FF61), a pumping rate of 150 gal/min produced a decline in water level of only about 48 percent of the available drawdown (to the top of the highest water-bearing opening), indicating that the well was being pumped at about 85 percent of capacity (fig 8.). In light of this fact and the fairly rapid recovery rate, 150 gal/min probably is close to the safe yield for this well at its intended use as a subdivision supply which will require intermittent pumping. Continuous monitoring of the water level in the well during production would reveal whether that yield over-stresses the well during dryer seasons and the pumping rate could be adjusted accordingly.

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[1]LeGrand (1967, p. 4) referred to the available drawdown as the total depth of the well. However, in the Hickory Hills test well, the total yield is derived from two water-bearing fractures. Thus, it would be undesirable to draw the water level down to the uppermost water-bearing fracture, because doing so could lead to iron encrustation of the walls of that fracture and eventually to reduced yields. Therefore, the available drawdown in the test well is considered to be the depth (242 ft) of the highest water-bearing fracture, thus making the estimated safe yield somewhat conservative.

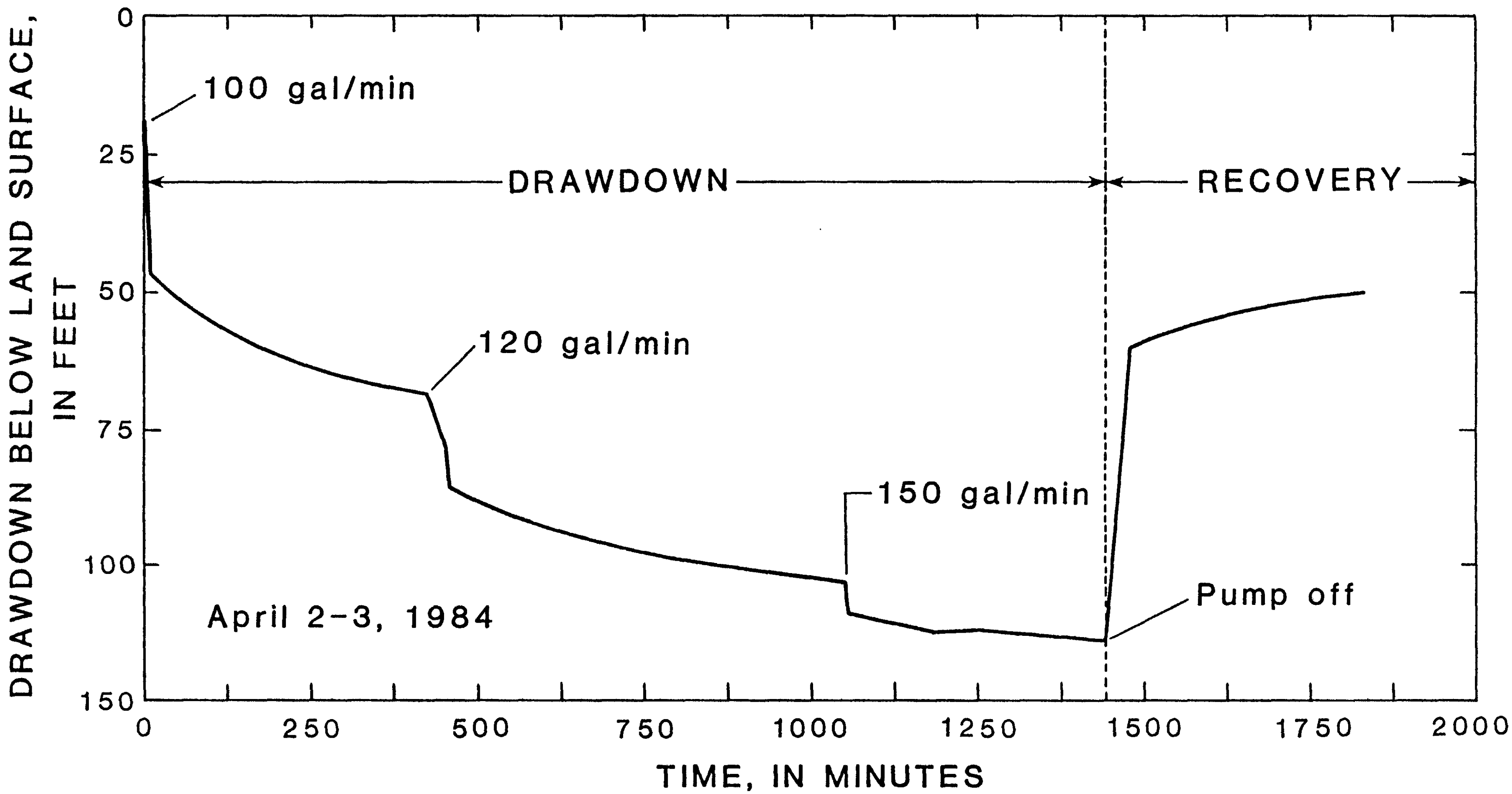

Figure 7.—Drawdown and recovery curve for the well-efficiency test on the Hickory Hills well 18FF61, Oconee County.

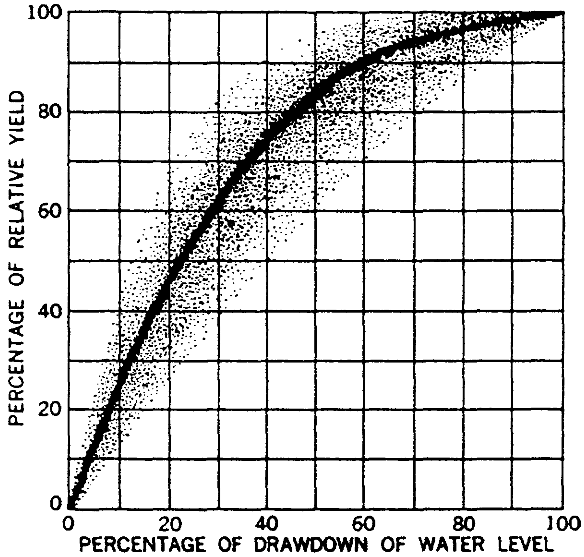

Figure 8.—The curve shows that an increase in yield of a well is not directly proportionate to an increase in drawdown of the water level. A yield of nearly 80 percent of the total capacity of a well results from lowering the water level only 40 percent of the available drawdown. (LeGrand, 1967).

Meadow Lake Estate well

The Meadow Lake Estate well (19HH12) is in the Meadow Lake Estate subdivision in Madison County. The area is underlain by water-bearing Unit C. Most of the water was derived from fractures at depths of about 145 ft and 179 ft. Well statistics are:

Date drilled	1973
Date tested	April 4-5, 1984
Depth	180 ft
Casing depth	50 ft
Diameter	6 in.
Pump level	140 ft
Static water level	7.71 ft
Yield (reported by driller)	100 gal/min
Yield (estimated by 18-hour pumping test)	105 gal/min

A step-drawdown test was conducted to estimate the safe yield of the well. Pumping began at the rate of 135 gal/min but declined to 120 gal/min and finally to 105 gal/min as the drawdown in the well increased the pumping head (fig. 9). Pumping at the rate of 105 gal/min produced a drawdown of 117 ft to a depth of 124 ft below land surface. Recovery of the water level after pump shutdown was relatively slow, being about 60 percent complete after 3 hours.

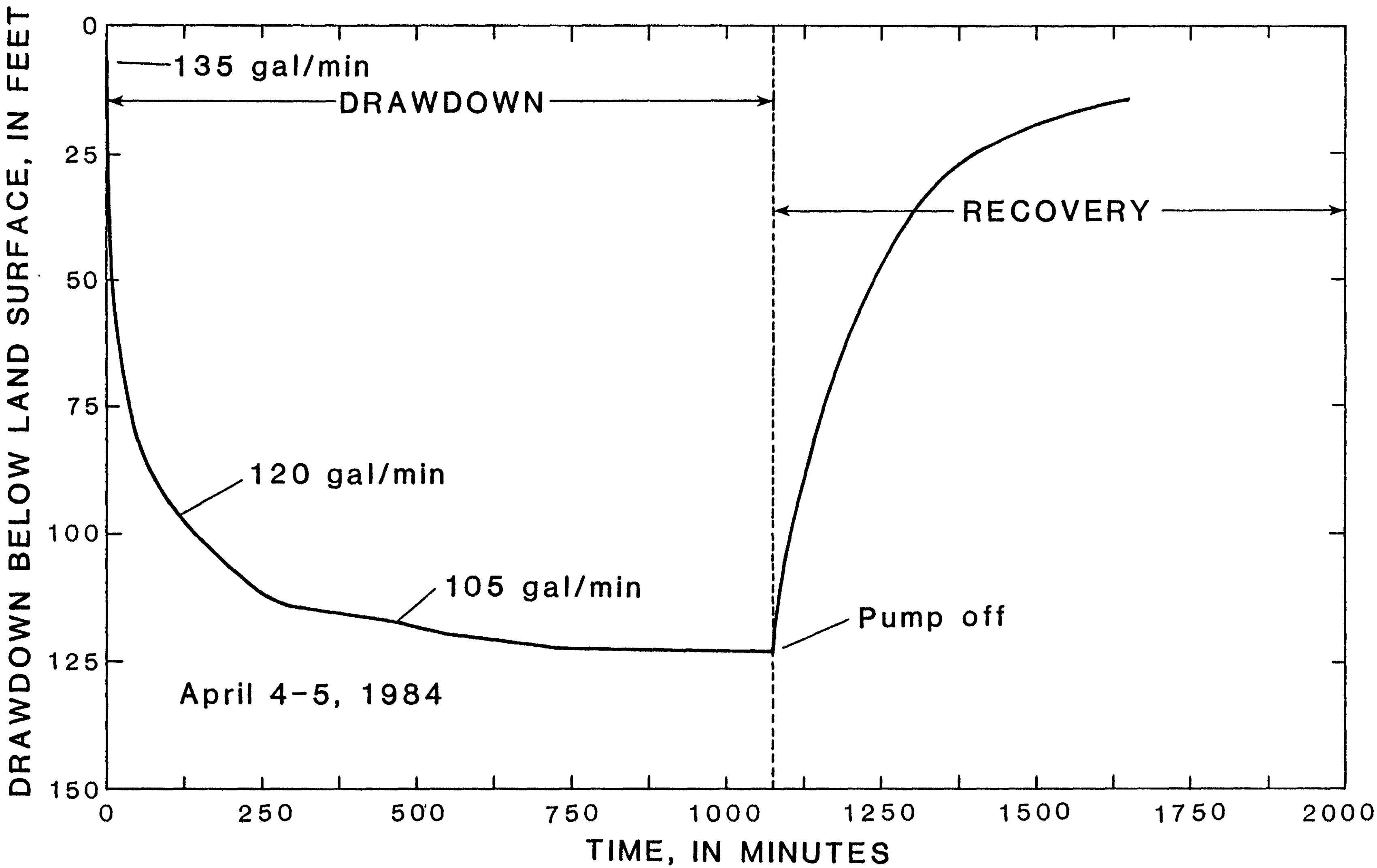

Figure 9.—Drawdown and recovery curve for the well-efficiency test on Meadow Lake Estate well 19HH12, Madison County.

In the Meadow Lake Estate well, a pumping rate of 105 gal/min lowered the water level to a depth of 124 ft below land surface, which is about 85 percent of the available drawdown. Figure 8 indicates that the well was being pumped at about 98 percent of capacity. In light of this information and the slow recovery rate, 105 gal/min probably is close to the safe yield for this well at its intended use which will require intermittent pumping. Continuous monitoring of the water level during production would be important to guard against excessive drawdown should the safe yield of the well decrease during the summer and fall.

Geologic Conditions that Produce High-Yielding Wells

High-yielding wells--ones that are rated at 20 gal/min or more--generally can be developed only where the water-bearing units have developed significant increases in secondary permeability. This occurs mainly in association with certain structural, stratigraphic, and topographic features, including (1) contact zones between rock units of contrasting character, (2) contact zones within multilayered rock units, (3) fault zones, (4) stress-relief fractures, and (5) shear zones. Other factors, such as rock type, depth of weathering, thickness of regolith, and topographic setting, can interact to increase or decrease the availability of large water supplies from wells.

Contact Zones Between Rock Units of Contrasting Character

Sixty-five wells yield 20 to 200 gal/min from permeable contact zones between rock units of contrasting character (table 5). The largest yields are obtained from wells that penetrate contact zones between Unit F (granite) and different lithologies in Unit K (biotite gneiss, metachert, greenschist, and greenstone), Unit C (schist), and Unit B (biotite gneiss). The most productive contacts generally are ones in which a resistant rock is overlain by a rapidly weathering rock that is (1) foliated, (2) has a high feldspar content, (3) differs mineralogically, and (4) occupies a topographic position favorable to recharge.

The Athens Region has more than 450 miles of contact zones, most of which are potentially permeable (pl. 1). It may be possible to develop large well supplies wherever the contact zones underlie or trend parallel to stream valleys and draws that have catchment areas large enough to furnish adequate recharge. Although high-yielding wells were not found in association with diabase dikes (Unit E) in the report area, contact zones between diabase dikes and the country rock supply large well yields in the Greater Atlanta Region (Cressler and others, 1983). It may be possible to develop high-yielding wells in favorable topographic settings along most diabase dikes shown on plate 1.

Table 5.--Summary of high-yielding wells in or near contact zones and fault zones

Water-bearing units (plate 1)	Type of zone	Number of wells	Yield (gal/min)		Well depth (feet)		Casing depth (feet)	
			Range	Average	Range	Average	Range	Average
A/A	fault	3	30	--	152-305	192	12- 55	34
A/B	contact	22	20-100	56	68-455	228	20-140	70
A/C	fault	8	20- 60	39	100-398	209	40-143	71
A/E	contact	6	20- 65	41	175-500	279	34-150	78
A/H	do.	1	20	--	98	--	30	--
B/A	fault	12	30-100	56	98-660	293	18-152	71
B/C	do.	9	20- 50	27	58-460	213	21-102	67
B/E	contact	7	20-100	44	158-563	237	39- 60	53
B/F	do.	3	20-100	80	200-270	222	30- 82	56
B/G	do.	1	50	--	150	--	50	--
B/J	fault	4	20-100	45	80-205	162	50-120	88
B/K	do.	2	25- 50	38	45-175	110	60-101	80
C/F	contact	4	20-150	65	80-290	178	23- 82	48
D/A	fault	11	25-150	96	83-585	278	21-100	57
D/B	do.	1	80	--	158	--	45	--
D/F	contact	2	20- 30	25	605	--	52	--
F/E	do.	1	60	--	285	--	105	--
G/B	do.	1	20	--	302	--	9	--
G/E	do.	3	35- 75	53	413-553	489	36- 53	43
H/A	do.	1	100	--	240	--	62	--
I/A	fault	12	20-300	70	125-568	280	23-119	70
I/B	do.	6	20-100	40	85-705	286	30-160	76
I/C	do.	4	20- 50	34	165-295	230	17- 65	43
I/D	do.	7	20-100	54	120-428	224	60- 76	66
I/E	contact	1	50	--	308	--	105	--
J/E	fault	1	75	--	125	--	90	--
K/D	do.	1	20	--	100	--	60	--
K/E	contact	5	20-100	56	65-515	291	8-125	111
K/F	do.	7	25-200	55	65-265	205	8-140	59

Contact Zones Within Multilayered Rock Units

Contact zones within multilayered rock units supply water to a large number of wells in the study area. More than 300 wells derive water from Unit A, mainly from permeable contact zones that have developed between layers of schist and gneiss or schist and amphibolite (table 3). Wells also derive large yields from contact zones between layers of gneiss and schist or schist and amphibolite in Unit B, and between contrasting lithologies in Unit K. However, because individual layers of rock in these units are not shown on plate 1, and generally are not delineated on geologic maps of the area, they can only be identified by field surveys. The largest sustained yields are obtained from contact zones that lie in and trend parallel to draws and stream valleys that are downgradient from sizable catchment areas which provide a source of recharge.

Fault Zones

Fault zones in the study area consist mainly of the type that displaced rock units without producing extensive deformation. Although fractures produced by the movement on the faults typically have been healed by mineralization and no longer are open, the shearing and mixing of rock types contribute to the development of secondary permeability. Increases in permeability result from differential weathering of the contrasting rock types, much the same as occurs in permeable contact zones.

Eighty-one wells drilled in and near these fault zones yield 20 to 300 gal/min (table 5). The largest yields generally are obtained from fault zones that involve both resistant rocks such as gneiss (Units B, D, I) and less resistant rocks such as schist (Units A, C).

More than 400 miles of potentially permeable fault zones are present in the study area (pl. 1). Large well yields are possible wherever the fault zones lie in and trend parallel to stream valleys and draws that have adequate recharge.

Stress-Relief Fractures

Borehole geophysical techniques were used to study the nature of water-bearing openings in nine selected high-yielding wells in the Athens Region. Sonic televiewer logs revealed that in five wells the water-bearing openings consist of horizontal or nearly horizontal fractures. The fractures were observed in gneiss interlayered with schist (Unit A), granite gneiss (Unit B), schist (Unit C), biotite gneiss (Unit D), and muscovite gneiss (Unit I). The horizontal fractures are believed to be stress-relief fractures formed by the upward expansion of the rock column in response to erosional unloading, as reported by Cressler and others (1983).

Wells that derive water from stress-relief fractures characteristically remain essentially dry, or yield low quantities of water, until they penetrate one or two fractures (Cressler and others, 1983). The highest yielding fracture typically is at or near the bottom of the wells because (1) the large yields were in excess of the desired quantity and, therefore, drilling ceased, or (2) in deep wells yielding 50 to 100 gal/min or more, the large volume of water from the fracture(s) "drowned out" the pneumatic hammers in the drill bits, effectively preventing deeper drilling.

In the Athens Region many wells that yield 50 to 300 gal/min reportedly derive water from openings at the bottom of wells 200 ft to more than 600 ft deep. These openings are believed to be stress-relief fractures. The wells occupy a variety of topographic settings, including broad, deep valleys, the crests and slopes of divide ridges, and the valleys of intermittent streams and draws that head on the upper slopes of the ridges.

Because of their horizontal nature and depth of occurrence, the presence of stress-relief fractures is not indicated by structural and stratigraphic features normally associated with increased bedrock permeability. The only clue to their presence recognized thus far is topographic setting. (For illustrations of topographic settings, see Cressler and others, 1983.) Areas considered favorable for stress-relief fractures include:

1. Points of land formed by (1) two streams converging at acute angles, (2) two subparallel tributaries entering a large stream, and (3) land protruding into the wide flood plains of large streams.

2. Broad, relatively flat areas, commonly on divide ridges, that are surrounded by stream heads, and in and near the upper reaches of intermittent streams and draws on the slopes of ridges.

3. Broad, deep valleys formed by the removal of large volumes of material relative to the land on either side.

The study area contains hundreds of topographic settings that could be underlain by stress-relief fractures. It may be possible to develop large supplies of ground water by drilling into these sites.

Shear Zones

Shear zones in the report area consist of two types. One type, which is made up of button schist and sheared quartzite and amphibolite (Unit G), underlies a broad area in western Jackson and Barrow Counties. The second type consists of a long, narrow zone of sheared country rock (Units A, B), such as the one that extends from near Covington in Newton County northeastward 24 miles across Walton County (pl. 1). This shear zone is marked along its length by isolated ridges upheld by chert-like flinty crush rock (Unit G). A similar, but narrower, zone of sheared country rock occurs in Newton and Walton Counties north of Covington.

Nine wells that penetrate sheared rock of Unit G yield 20 to 150 gal/min. East of Monroe, Walton County, well 16EE10 derives 25 gal/min from the shear zone in Unit A. Well 14DD76 supplies 77 gal/min from Unit B in the shear zone in northern Newton County.

Dependability of High-Yielding Wells

Wells in crystalline rocks have a reputation of being unable to sustain large yields. However, many wells in the Athens Region are highly dependable and have records of supplying large yields for many years. One hundred nineteen industrial, municipal, and private water-supply wells have been in use for periods of 5 years to more than 64 years without having the problem of declining yields (table 6). It is worth noting that the size of a well's yield is not in itself indicative of the well's ability to sustain long-term pumping.

Only a small percentage of wells in the area have had the problem of declining yields. Fifteen wells that initially were high yielding have undergone major declines. (These wells no longer are high yielding and therefore are not included in this report.) Some of the wells developed problems because they are located on hill crests or narrow ridges that have limited recharge potential or they are interfered with by nearby pumping wells, so that the rate of withdrawal exceeds the rate of recharge. Over a period of time, the aquifers were dewatered and the yields became inadequate. Other wells had problems because they are equipped with pumps whose capacities are so large that the water levels were repeatedly drawn down below water-bearing openings. Repeated exposure to air resulted in iron encrustations on the surfaces of the water-bearing openings, resulting in reduced yields. One well tested by Virginia Supply and Well Company furnished only 10 percent of the reported yield of 100 gal/min, apparently because debris that had accumulated over a period of years largely sealed off the water-bearing fracture at the bottom of the well.

Declining well yields generally can be attributed to overpumping of the aquifer so that the rate of withdrawal exceeds the rate of recharge, to the plugging of water-bearing openings or pump intakes by iron encrustation, or to the obstruction of bottom-hole fractures by the accumulation of debris in the well. Problems of declining well yields generally can be avoided by observing the following precautions:

1. Locate wells in areas that have adequate recharge potential, such as in draws and drainages down gradient from large catchment areas, or on the tops or slopes of broad divide ridges overlain by thick regolith. Proper spacing of wells is necessary to avoid interference. Sites on steep hills and narrow ridges covered by thin saprolite may have limited recharge potential.

2. Conduct pumping tests of sufficient length to estimate the safe yield of each well, taking into account the intended use of the well and the anticipated pumping schedule. Limit pump capacity to the rate of safe yield or below to avoid excessive drawdown and exposure of the shallowest water-bearing opening to air, which can foster iron encrustation.

3. Monitor water levels in pumping wells so that withdrawal rates or schedules can be adjusted to seasonal or long-term changes in water level, and hence safe yield, thereby avoiding excessive drawdown.

Table 6.--Selected high-yielding wells in the Athens Region in use for 5 years or more

Quadrangle number	Sequence number	Owner	Yield (gal/min)	Well depth (ft)	Year drilled	Production (years)	Use
Barrow County							
15GG	01	City of Auburn	100	418	1954	30	Public supply.
16FF	05	Harrison Poultry Company	77	438	1958	26	Industrial.
16FF	07	do.	180	253	1958	26	Do.
16FF	08	do.	140	198	1958	26	Do.
16FF	06	do.	57	600	1959	25	Do.
16FF	09	do.	225	300	1959	25	Do.
16FF	01	do.	76	800	1961	25	Do.
15FF	04	Westvaco	20	563	1977	7	Do.
Clarke County							
19FF	04	Clarke County Prison	52	105	1948	36	Public supply.
19FF	12	Thomas Textiles	45	500	1948	36	Industrial.
19FF	21	Spring Valley Mobile Home Park	65	300	1959	25	Public supply.
18FF	22	Univ. of Georgia Veterinary School	23	353	1970	14	Institutional.
19FF	26	The Loef Co., Inc.	20	320	1970	14	Industrial.
19GG	46	Sandy Trailer Park	60	200	1970	14	Public supply.
18FF	49	Barber Creek Estates	40	170	1971	14	Do.
18GG	26	Crooked Creek Village	100	530	1972	13	Do.
22HH	09	Athens Boiler and Machine Work	50	210	1972	12	Industrial.
19FF	40	Classic Nursery	20	703	1973	11	Irrigation.
19FF	43	University of Georgia	38	338	1973	11	Agricultural.
19GG	01	Piedmont Park Mobile Home Park	30	200	1974	10	Public supply.
19GG	44	Mineral Springs Subdivision	30	128	1975	9	Do.
19FF	29	Glenn Forest Subdivision	30	263	1975	9	Do.
19FF	24	Hallmark Trailer Park	120	218	1976	8	Do.
19FF	34	Largo Trailer Park	60	265	1978	6	Do.
19FF	30	Glenn Forest Subdivision	50	220	1978	6	Do.
19FF	06	Pinecrest Lodge	60	145	1978	6	Do.
19FF	44	University of Georgia	20	400	1978	6	Institutional.
19FF	23	Hallmark Trailer Park	100	203	1979	5	Public supply.
19FF	42	University of Georgia	57	500	1979	5	Irrigation.
Elbert County							
21HH	02	City of Bowman	57	272	1951	33	Public supply.
24GG	04	Heardmont Healthcare Center	28	200	1957	27	Institutional.
21HH	04	City of Bowman	75	450	1959	25	Public supply.
23GG	17	Turner Concrete	27	350	1971	13	Industrial.
23GG	16	do.	60	280	1972	12	Do.
21HH	03	City of Bowman	47	680	1974	10	Public supply.
Greene County							
20CC	07	Wellington Puritan Mills	53	450	1948	36	Industrial.
21BB	01	City of White Plains	51	465	1969	15	Public supply.
20BB	04	Beaverdam Subdivision	25	515	1977	7	Do.
20CC	19	Georgia Kraft	30	173	1977	7	Industrial.
20BB	06	Deerfield Estate Subdivision	60	425	1978	6	Public supply.
20BB	07	do.	25	265	1978	6	Do.
Jackson County							
15GG	02	City of Braselton	39	235	1946	38	Do.
17JJ	01	City of Maysville	60	500	1948	36	Do.
18HH	02	Harmond Grove Mills	165	500	1949	35	Industrial.
15GG	07	City of Hoschton	124	509	1964	20	Public supply.
15GG	03	City of Braselton	35	455	1965	19	Do.
16HH	01	Wayne Poultry Company	46	121	1966	18	Industrial.
16HH	02	do.	107	223	1966	18	Do.
16HH	03	do.	114	210	1966	18	Do.
16HH	04	do.	137	250	1966	18	Do.
16HH	05	do.	87	265	1966	18	Do.
18GG	02	Colony Mobile Home Park	100	240	1970	14	Public supply.
16HH	18	Mott Prepared Foods, Inc.	35	553	1974	10	Industrial.
15GG	04	City of Braselton	75	480	1976	8	Public supply.
15HH	05	do.	162	350	1976	8	Do.
18HH	06	Gold Kist	100	250	1976	8	Industrial.
16HH	16	Mott Prepared Foods, Inc.	50	413	1979	5	Do.

Table 6.--Selected high-yielding wells in the Athens Region in use for 5 years or more--Continued

Quadrangle number	Sequence number	Owner	Yield (gal/min)	Well depth (ft)	Year drilled	Production (years)	Use
Madison County							
21GG	02	City of Comer	75	507	1920	64	Public supply.
20HH	05	City of Danielsville	27	230	1946	38	Do.
20HH	02	Transco	50	255	1951	33	Industrial.
19HH	09	Ila School	40	265	1955	29	Institutional.
21GG	01	City of Comer	55	500	1955	29	Public supply.
21GG	03	City of Carlton	33	502	1955	29	Do.
20GG	20	City of Colbert	42	400	1957	27	Do.
20HH	03	Transco	200	450	1958	26	Industrial.
20HH	04	City of Danielsville	200	302	1958	26	Public supply.
20GG	21	City of Colbert	85	660	1964	20	Do.
20GG	19	do.	100	600	1965	19	Do.
20GG	23	Colonial Pipeline	150	290	1966	18	Industrial.
19GG	11	Westbrook Mobile Home Park	30	275	1971	13	Public supply.
21GG	04	City of Carlton	35	500	1977	7	Do.
Morgan County							
17DD	05	City of Rutledge	25	280	1933	51	Do.
17DD	07	City of Bostwick	200	495	1964	20	Do.
18CC	01	City of Madison	203	346	1978	6	Do.
Newton County							
15CC	40	Alcovy Mobile Home Park	150	98	1969	15	Do.
15DD	23	81-Loop Trailer Park	40	353	1969	15	Do.
15DD	11	Covington Recreation Department	200	220	1975	9	Do.
14DD	52	Spring Valley Subdivision	100	375	1976	8	Do.
14CC	22	City of Almon	60	220	1977	7	Do.
14CC	33	Yellow River Trailer Park	35	255	1978	6	Do.
14DD	76	Bo-Peep Nursery	75	277	1978	6	Irrigation.
14CC	37	Spillers Lumber Company	20	202	1979	5	Industrial.
14CC	39	Abide Awhile Mobile Home Court	40	100	1979	5	Public supply.
Oconee County							
19EE	14	Thomas, C. H. (Orchard)	25	240	1969	15	Irrrigation.
18FF	47	Hickory Hills Subdivision	55	350	1972	12	Public supply.
18FF	48	do.	75	293	1972	12	Do.
18FF	60	Northwest Woods Subdivision	100	465	1972	12	Do.
19EE	22	Pine Hill Subdivision	40	340	1972	12	Do.
19EE	23	do.	50	340	1972	12	Do.
19EE	49	Green Hills Country Club	100	215	1972	12	--
18FF	42	Northwest Woods Subdivision	150	390	1973	11	Public supply.
18FF	58	Oak Ridge Subdivision	55	585	1974	10	Do.
18FF	59	do.	100	165	1974	10	Do.
19EE	50	Green Hills Country Club	20	280	1974	10	Irrigation.
18EE	48	Elder Heights Subdivision	100	400	1975	9	Public supply.
18EE	59	Northwest Woods Subdivision	120	240	1975	9	Do.
18FF	35	Rivermont Village	30	605	1975	9	Do.
18FF	36	do.	20	605	1975	9	Do.
18EE	60	Northwest Woods Subdivision	250	275	1976	8	Do.
18EE	61	Sherwood Forest Subdivision	20	398	1976	8	Do.
18EE	62	do.	30	428	1976	8	Do.
18EE	54	City of Watkinsville	200	700	1977	7	Do.
18FF	53	Palomino Pass Subdivision	55	203	1977	7	Do.
17FF	12	Osceola Village Subdivision	80	185	1978	6	Do.
Oglethorpe County							
21FF	09	City of Lexington	40	440	1970	14	Do.
20FF	08	City of Arnoldsville	30	705	1973	11	Do.
20FF	09	do.	30	265	1973	11	Do.
20FF	19	Wilkins Industries	30	248	1974	10	Industrial.
21FF	08	City of Lexington	75	383	1974	10	Public supply.
19EE	46	Wright Nurseries	20	308	1976	8	Irrigation.
20EE	15	Hoescht, David	25	70	1979	5	Public supply.
20EE	16	do.	20	175	1979	5	Do.
20EE	17	do.	20	115	1979	5	Do.
20EE	18	do.	30	175	1979	5	Do.
Walton County							
15DD	14	City of Jersey	39	327	1943	41	Institutional.
16EE	04	Transcontinental Gas	120	436	1957	27	Industrial.
15DD	13	City of Jersey	28	500	1967	17	Public supply.
16EE	03	Rolling Hills Mobile Home Park	30	500	1973	11	Do.
15DD	12	City of Jersey	50	565	1979	5	Do.

4. In wells that derive water from bottom-hole fractures, deepen the wells several feet below the fractures to accomodate sediment and debris that otherwise might accumulate and obstruct the openings.

GROUND WATER AS AN ALTERNATIVE OR SUPPLEMENTAL SOURCE OF SUPPLY

Although persons living in the Piedmont province of Georgia generally are considered to depend on surface water, a large number of municipal, rural residential, and industrial water users rely on wells as their principal or sole source of water (table 7). Indeed, during 1980, ground water (18 Mgal/d) made up 38 percent of the total water used in the Athens Region (Pierce and others, 1982). Thus, ground water accounts for a substantial part of the total water supply of the study area. Most of the ground water was used for public-supply (13.6 percent) and rural domestic (64.3 percent) purposes (table 7). As increasing growth in the area further stresses surface-water sources, ground water will be in greater demand for supplemental and alternative supplies.

Findings of this study indicate that ground water may be a viable alternative or supplmental source for industrial, public, and private water supplies in much of the Athens Region. Yields of 20 to 200 gal/min presently (1984) are being supplied by wells throughout most of the area (pl. 1; table 10). The high well yields are being obtained mainly from sites in specific types of topographic and geologic settings. Such settings, listed below, are widespread in the area and only a fraction of the potential sites have been tapped.

1. The 11-county area has more than 400 miles of major fault zones and more than 450 miles of contact zones, most of which are potentially permeable (pl. 1). There are hundreds of sites where these faults and contacts occur in valleys and draws that concentrate the flow of water. Many of these sites probably have the potential of supplying large well yields.

2. About one-third of the study area is underlain by Units A and K that nearly everywhere contain potentially permeable contact zones not shown on plate 1. Favorable topographic settings are common in the outcrop areas of these units and probably will provide numerous sites for high-yielding wells.

3. A large number of wells in the study area seem to derive high yields from stress-relief fractures in specific types of topographic settings. The Athens Region contains hundreds of topographic settings that could be underlain by stress-relief fractures. It may be possible to develop high-yielding wells at many of these sites.

4. The major shear zone that extends about 24 miles across Newton and Walton Counties (pl. 1) is crossed by and paralleled by several stream segments and draws that can be expected to overlie zones of increased permeability. Similar conditions exist in the 4-mile-long shear zone northwest of Covington, Newton County. Wells drilled in these sites can be expected to have high yields.

Table 7.--Ground-water use in the Athens Region for 1980

[Water use, in million gallons per day. Data from Pierce and others, 1982]

County	Total water use	Total ground-water supply	Public ground-water supply	Rural domestic	Livestock	Irrigation	Industrial
Barrow	4.48	2.52	0.27	1.13	0.72	--	0.40
Clarke	13.51	.92	.30	.54	.03	0.03	.02
Elbert	2.93	1.29	.12	.77	.05	--	.35
Greene	2.05	.73	.10	.56	.04	.03	--
Jackson	5.69	3.01	.26	1.54	.46	.02	.73
Madison	2.37	2.20	.38	1.46	.34	.02	--
Morgan	2.15	.93	.33	.52	.08	--	--
Newton	5.79	2.10	.28	1.79	.03	--	--
Oconee	1.78	1.52	.28	.90	.18	.14	.02
Oglethorpe	1.29	.90	.06	.70	.14	--	--
Walton	4.87	1.97	.08	1.73	.12	--	.04
Totals	46.91[1]	15.09	2.46	11.64	2.19	0.24	1.56
Percent of total ground-water use[1]			13.6	64.3	12.1	1.3	8.6

[1] Rounded.

The reader should be aware, however, that in much of the study area, sites capable of sustaining large well yields may be widely separated. This means that developing a large ground-water supply (0.25 to 1 Mgal/d) could require the drilling of three or more wells that are spaced thousands of feet apart. Conditions rarely, if ever, would permit drilling several closely spaced wells to form a well field. This can mean that developing a large ground-water supply in a limited area or on a particular piece of property may not be possible. A common practice of water suppliers in the Georgia Piedmont is to link several widely spaced high-yielding wells by distribution lines. This is a practical approach to obtaining large ground-water supplies in crystalline rocks because it allows wells to be separated as widely as needed to tap the most favorable sites.

GROUND-WATER QUALITY

Well water in the Athens Region generally is of good chemical quality and is suitable for drinking and many other uses. Concentrations of dissolved constituents are fairly consistent throughout the area and, except for iron, manganese, and fluoride, rarely exceed State drinking-water standards. The few wells that contain excessively high concentrations of manganese and fluoride probably penetrate local mineralized zones. Water from these wells generally can be made potable by using special filters. A summary of chemical analyses of well water is presented in table 8. Water-quality data for wells in the area are given in table 9.

No detailed study has been made of well contamination in the Athens Region. However, data provided by the Georgia Environmental Protection Division on public water suppliers in the study area were scanned for possible contamination problems. The results of testing for selected harmful metals, organics, and bacteria showed only isolated instances of well contamination.

High concentrations of iron reported in some wells could be due to the action of iron-fixing bacteria. The presence of iron bacteria is indicated by hard iron deposits that fill pipes and coat pumps, and by slimes, scums, and filamentous bacteria that attach to well and pipe walls and fill voids in water-bearing material. The bacteria cause turbidity, discoloration, and unpleasant tastes and odors in water. The water generally can be brought to acceptable standards by filtration.

Iron bacteria may be introduced to a well bore during drilling or pump installation. For this reason, some States require sterilization of drilling tools to prevent cross-contamination (Leenheer and others, 1975). Once introduced, iron bacteria can be difficult to eliminate. A satisfactory control of the bacteria may be chlorination, though tastes and odors may persist. Also, preventing aeration of the well bore and pump by limiting drawdown of the water level can help, as iron precipitation is most active in an oxidizing environment. Continued exposure of the well bore and water-bearing openings to oxidation can result in iron encrustation and decreased well yield.

Table 8.--Summary of chemical analyses of well water from the Athens Region

[<, less than]

		WATER-BEARING UNIT								
		A	B	C	D	F	G	I	J	K
Silica (mg/L)	Number	11	15	1	8	2	--	1	4	2
	Minimum	6.0	2.0	--	12	33	--	--	18	30
	Maximum	335	38	--	48	40	--	--	50	40
	Mean	53	24	32	28	38	--	34	33	35
Iron (µg/L)	Number	10	8	3	13	1	--	4	2	2
	Minimum	55	30	300	<50	<100	--	160	<100	<50
	Maximum	2,000	4,290	2,250	1,960	110	--	1,160	7,700	630
	Mean	580	1,180	960	775	110	--	550	4,000	500
Manganese (µg/L)	Number	1	1	--	5	--	1	1	1	2
	Minimum	--	<25	--	<25	--	--	<25	--	<50
	Maximum	--	25	--	275	--	--	50	--	200
	Mean	70	25	--	119	--	<50	50	20	155
Calcium (mg/L)	Number	10	15	1	7	2	--	1	4	2
	Minimum	4.0	1.0	--	5.0	4.0	--	--	19	5.6
	Maximum	45	34	--	16	43	--	--	80	72
	Mean	17	13	6.0	10	23	--	8.8	46	39
Magnesium (mg/L)	Number	9	15	--	7	3	--	1	4	2
	Minimum	1.3	.5	--	1.3	.2	--	--	5.8	1.6
	Maximum	6.2	8.9	--	4.1	22	--	--	25	27
	Mean	3.1	2.8	--	2.5	13	--	.6	15	14
Sodium (mg/L)	Number	25	17	2	22	4	1	13	5	2
	Minimum	3.6	2.8	4.4	6.8	6.5	--	4.4	2.0	6.3
	Maximum	18	17	5.3	37	22	--	21	18	8.4
	Mean	8.3	8.3	4.8	13	14	4.7	9.4	11	7.3
Bicarbonate (mg/L)	Number	8	11	1	8	2	--	1	4	1
	Minimum	25	4.0	--	11	28	--	--	71	--
	Maximum	83	149	--	72	190	--	--	146	--
	Mean	57	52	44	38	109	--	52	115	39
Sulfate (mg/L)	Number	12	15	1	12	3	--	3	4	1
	Minimum	.4	.3	--	1.6	.4	--	<2.0	1	<2.0
	Maximum	38	14	--	22	48	--	5.0	70	12
	Mean	10	3.9	7.0	6.8	21	--	3.9	28	12
Chloride (mg/L)	Number	15	16	1	14	6	1	5	5	2
	Minimum	1.0	1.0	--	1.0	.1	--	1.8	7.0	1.8
	Maximum	12	15	--	24	42	--	6.0	43	79
	Mean	4.9	5.2	1.0	7.1	9	.5	3.4	18	40
Fluoride (mg/L)	Number	18	13	--	18	6	1	9	5	2
	Minimum	<.1	<.1	--	<.1	.1	--	.1	.1	.1
	Maximum	.9	1.0	--	.8	3	--	1.2	1	.1
	Mean	.3	.3	--	.2	.7	.2	.3	.4	.1
Nitrite plus nitrate (mg/L)	Number	15	13	--	11	5	1	2	3	1
	Minimum	.1	.09	--	.1	.24	--	<.10	<.5	<.1
	Maximum	10	14	--	22	10	--	1.1	17	.5
	Mean	2.1	3.3	--	4.3	3.2	.50	.63	7.6	.5
Dissolved solids (mg/L)	Number	26	16	3	22	7	1	13	5	3
	Minimum	52	36	52	20	34	--	20	148	69
	Maximum	227	162	135	152	308	--	136	364	307
	Mean	97	94	81	96	157	56	88	226	164
Hardness (mg/L)	Number	30	25	5	28	8	1	15	6	5
	Minimum	14	6	12	8	5	--	5	44	20
	Maximum	112	217	26	95	196	--	150	303	196
	Mean	48	46	17	41	76	38	37	137	132
Alkalinity (mg/L)	Number	24	18	5	25	6	1	14	4	4
	Minimum	8	6	20	9	35	--	4	49	76
	Maximum	102	101	36	158	100	--	118	120	178
	Mean	51	42	27	53	62	24	47	86	117
Specific conductance (µmhos @ 25°C)	Number	21	14	--	16	6	1	9	3	1
	Minimum	55	31	--	65	56	--	41	191	--
	Maximum	231	260	--	195	470	--	172	276	--
	Mean	113	102	--	131	189	62	107	235	73
pH (units)	Number	33	27	5	32	8	1	16	6	5
	Minimum	6.0	5.3	6.4	5.0	6.3	--	6.1	5.5	6.6
	Maximum	8.0	8.6	7.4	9.8	8.3	--	8.2	8.1	7.5
	Mean	7.3	7.5	6.9	8.6	7.5	6.0	7.6	7.5	7.2

Table 9.--Chemical analyses of well water from the Athens Region

[Analyses by Georgia Environmental Protection Division and Georgia Geologic Survey. System, sample taken from water distribution line; MHP, mobile home park; <, less than]

						Micrograms per liter		Milligrams per liter												
Well number[1]	County	Water-bearing unit[2]	Name or owner	Date of collection	Silica (SiO_2), milligrams per liter	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (N)	Dissolved solids	Hardness[3]	Alkalinity	Specific conductance, micromhos at 25°C	pH
			Environmental Protection Agency (1976) Drinking-Water Standards			300	50					250	250	[4]1.2	10	500				
400700663	Barrow	A	Auburn MHP, system	02-25-82	--	195	<50	--	--	--	--	3.0	2.8	0.7	<0.50	104	26	42	100	7.3
			Bellgrade Manufacturing Company	05-07-46	18	600	--	26	--	--	--	22	12	--	--	112	38	--	--	7.0
300700231		A	City of Auburn	10-15-58	25	--	--	20	5.1	5.2	63	21	9.5	.1	.80	134	71	--	184	6.9
15GG01		A	City of Auburn, well 1	02-05-82	--	--	--	--	--	9.9	--	--	--	--	--	124	52	52	--	7.3
15GG10		A	City of Auburn, well 2	02-05-82	--	--	--	--	--	10	--	--	--	--	--	100	26	20	--	6.4
300700240		A	City of Statham, system	08-19-81	--	--	--	--	--	7.6	--	<2.0	7.0	.3	2.5	64	14	8	62	6.2
300724453			Green Tree Acres Subdivision, system	04-07-83	--	690	--	--	--	6.8	--	3.0	2.0	.2	<.50	92	38	46	101	6.6
16FF05-09		A	Harrison Poultry	08-15-62	30	--	--	8.8	1.9	6.0	49	--	--	.2	.20	82	30	--	89	6.9
15FF01		B	J. Adams	01-15-65	27	--	--	4.4	0.5	6.5	18	0.8	3.0	.1	9.9	--	13	--	64	6.6
			Rex Lipham	11-20-46	14	--	--	9.0	13	--	15	--	8.0	--	--	35	77	12	--	7.1
			W. Perkins & Sons	02-15-67	28	--	--	5.8	1.5	4.1	35	--	0.8	.1	.40	59	20	--	62	6.6
402932259	Clarke		Beaver Dam Estates MHP, system	08-26-83	--	<50	<25	--	--	4.4	--	--	--	.1	3.1	72	6	8	52	6.2
302925641		I	Cedar Village Subdivision, system	08-12-82	--	--	--	--	--	--	--	<2.0	3.4	--	--	64	8	4	--	--
302914065			Cherokee MHP, well 1	02-18-82	--	--	--	--	--	5.8	--	--	--	--	--	32	40	32	--	6.7
302914065			Cherokee MHP, well 2	02-18-82	--	--	--	--	--	5.8	--	--	--	--	--	44	38	32	--	6.6
302914065			Cherokee MHP, system	02-18-82	--	<100	<50	--	--	5.8	--	<2.0	2.5	.1	1.4	40	38	32	83	6.7
302902954		I	Country Corners MHP, system	11-18-82	--	420	<50	--	--	19	--	5.0	6.0	1.2	<.5	128	44	72	172	7.7
302902954		I	Country Corners MHP, well 1	11-18-82	--	--	--	--	--	9.2	--	--	--	--	--	124	54	56	--	7.2
302902954		I	Country Corners MHP, well 2	11-18-82	--	--	--	--	--	21	--	--	--	--	--	136	50	74	--	8.2
302902954		I	Country Corners MHP, well 3	11-18-82	--	--	--	--	--	13	--	--	--	--	--	112	52	66	--	7.7
			E. C. Fowler	12-17-45	8.0	400	--	19	11	--	--	8.0	6.0	--	--	99	36	--	--	6.8
			E. P. Bowland	12-17-53	3.0	200	--	--	--	--	6.0	--	17	.2	--	35	1	5	--	6.0
			Empire State Chemical Company, well 2	07-11-46	50	4000	--	152	51	--	--	--	4.0	--	--	--	400	53	--	6.7
			Empire State Chemical Company, well 3	07-11-46	52	3400	--	173	59	--	--	--	3.6	--	--	--	458	58	--	6.6
			Empire State Candy Company	10-13-58	25	500	--	4.0	1.3	3.6	25	1.4	3.5	.1	1.5	56	16	--	55	6.4
			F. C. McDaris	09-11-56	20	3200	--	56	--	0.5	50	12	4.0	--	.15	135	140	41	--	7.0
19FF29/30		I	Glenn Forest MHP, well 1	10-12-83	--	<100	--	--	--	--	--	--	--	--	--	--	39	81	--	7.9
19FF29/30		I	Glenn Forest MHP, well 2	10-12-83	--	<100	--	--	--	--	--	--	--	--	--	--	150	118	--	8.2
19FF29/30		I	Glenn Forest MHP, well 3	10-12-83	--	--	--	--	--	--	--	--	--	.1	<.10	--	--	--	142	7.3
19FF29/30		I	Glenn Forest MHP, system	10-12-83	--	1160	50	--	--	11	--	--	--	.1	<.50	124	38	42	137	7.2
18FF01		A	John Thurmond Furniture Company	10-15-58	25	--	--	4.0	1.3	3.6	25	1.4	3.5	.1	1.5	56	16	--	55	6.4
19GG44		I	Mineral Springs Subdivision, system	03-25-82	--	160	<50	--	--	4.8	--	<2.0	3.0	.1	<.50	58	14	20	49	6.4
19GG44		I	Mineral Springs Subdivision, well	03-25-82	--	--	--	--	--	4.4	--	--	--	--	--	20	14	20	--	6.5
302902972			Providence Village MHP, system	09-08-83	--	1090	<25	--	--	6.5	--	--	--	.1	<.50	--	--	--	114	7.2
302902990			Sandy Springs Subdivision, system	03-25-82	--	<100	50	--	--	11	--	7.0	6.0	.2	<.50	108	22	34	96	6.8
302902990			Sandy Springs Subdivision, well	01-25-84	--	6540	75	--	--	--	--	--	--	--	--	84	14	30	--	6.7
19FF01		A	T. J. Harrold	02-15-67	39	500	--	5.8	1.4	5.6	35	.4	1.2	.1	1.1	75	20	--	68	6.6
302903018		I	Trail Creek MHP, system	08-26-83	--	<50	<25	--	--	5.2	--	--	--	.1	--	52	5	8	41	6.1
302917037			Whispering Pines Subdivision, system	09-29-83	--	220	60	--	--	11	--	--	--	.1	<.50	136	50	74	163	7.3
25FF01	Elbert	K	Bobby Brown Steta Park	09-10-56	30	630	200	72	27	--	--	12	79	.1	--	--	196	178	--	7.5
305204923		K	Bobby Brown State Psrk, system	09-19-79	--	<100	<50	--	--	--	--	--	--	--	--	307	170	135	--	7.2
21HH04		B	City of Bowman	10-15-58	14	--	--	1.4	.6	2.8	8.0	1.2	5.8	.1	3.3	37	6	--	42	5.9
21HH04		B	do.	08-15-61	15	--	--	2.0	.6	5.0	11	.8	2.8	.1	7.5	49	8	--	47	6.3
21HH04		B	do.	03-28-64	12	--	--	1.0	1.1	6.9	4.0	1.3	4.7	.1	14	44	--	--	60	5.3
21HH02		B	City of Bowman, well 1	11-21-77	--	<100	--	--	--	--	--	--	--	--	--	--	10	6	--	6.8
21HH04		B	City of Bowman, well 2	11-21-77	--	100	--	--	--	--	--	--	--	--	--	--	37	29	--	6.3
21HH03		B	City of Bowman, well 3	01-27-82	--	--	--	--	--	12	--	--	--	--	--	108	52	52	--	7.1
305204899		B	City of Bowman, well 4	06-12-84	--	<50	<25	--	--	--	--	--	--	.1	--	48	9	6	60	6.3
405207974			Elberton Poultry Company, system	04-10-78	--	<50	--	--	--	--	--	--	--	--	--	--	84	124	--	7.6
			G. Bondi	04-09-52	8.0	50	--	7.0	1.0	--	--	--	5.0	--	--	35	62	--	--	7.8
22GG01		F	Georgia Granite	09-16-37	--	--	--	--	--	--	--	--	--	--	--	34	--	--	--	--
24GG04		K	Heardmont Health Care Center, system	10-12-83	--	330	110	--	--	8.4	--	<2.0	--	--	<.50	116	28	76	--	7.3

See footnotes at end of table.

Table 9.--Chemical analyses of well water from the Athens Region--Continued

[Analyses by Georgia Environmental Protection Division and Georgia Geologic Survey. System, sample taken from water distribution line; MHP, mobile home park; <, less than]

Well number[1]	County	Water-bearing unit[2]	Name or owner	Date of collection	Silica (SiO_2), milligrams per liter	Micrograms per liter: Iron (Fe)	Micrograms per liter: Manganese (Mn)	Milligrams per liter: Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (N)	Dissolved solids	Hardness[3]	Alkalinity	Specific conductance, micromhos at 25°C	pH
	Environmental Protection Agency (1976) Drinking-Water Standards					300	50					250	250	[4]1.2	10	500				
23GG01	Elbert	F	J. C. Hudson	11-15-63	40	--	--	43	22	22	190	14	42	0.2	10	308	196	--	470	8.3
405207947			N. Hart Memorial Medical Center, system	07-17-80	--	<100	<50	--	--	--	--	<5.0	13	.1	1.2	156	84	62	178	6.5
405236534			Northwood Hills Subdivision, system	04-19-84	--	505	<25	--	--	9.5	--	--	--	.4	1.5	--	--	--	105	7.3
405232037		K	Richard B. Russell Dam, system	04-28-80	--	<50	--	--	--	--	--	--	--	--	<0.10	--	67	80	--	7.2
			W. H. Hoover	01-15-65	50	--	--	8.8	1.2	12	22	0.4	18	.2	12	--	27	--	130	6.6
23GG09		F	Whispering Pine MHP, system	02-19-81	--	<100	<50	--	--	--	--	<2.0	4.0	.2	1.6	64	5	35	58	6.5
	Greene		A. J. Ellison	01-15-65	43	--	--	4.8	.7	9.0	33	.4	6.0	.1	6.4	--	15	--	90	6.6
306606568		F	City of Siloam, system	09-18-81	--	<100	<50	--	16	--	--	<2.0	3.5	3	<.50	--	63	66	158	7.0
21CC03		J	City of Union Point, well 1	10-15-58	48	--	--	26	5.8	15	71	4.8	20	.1	17	239	89	--	276	6.6
21CC01		J	City of Union Point, well 2	02-20-53	18	--	--	80	25	2.0	112	70	43	.2	3.0	364	303	92	--	6.5
21CC04		J	City of Union Point, well 3	02-20-53	18	--	--	59	22	2.0	146	37	14	.2	3.0	210	238	120	--	5.5
21BB01		J	City of White Plains	06-15-72	50	7700	20	19	7.8	18	130	1.0	8.0	.5	--	170	80	--	239	7.7
306606586		J	City of White Plains, system	09-18-81	--	<100	<50	--	--	16	--	<2.0	7.0	1	<.50	148	70	84	191	7.4
306606586		J	City of White Plains, well	07-11-84	--	200	--	--	--	--	--	--	--	--	--	--	44	49	--	8.1
12D001		F	City of Woodville, well 2	10-04-83	--	<100	--	--	--	--	--	--	--	--	--	--	23	45	--	7.3
306606595		F	City of Woodville, system	10-04-83	--	110	<25	--	--	13	--	<2.0	0.1	.1	3.4	136	50	26	124	6.6
			Francis Stapleton	02-10-56	26	--	--	46	--	--	95	30	26	--	--	135	115	78	--	7.0
19DD01		B	L. C. Curtis & Son	03-03-66	30	--	--	34	4.2	12	149	11	2.0	.7	.40	--	102	--	260	7.0
			Mary Leila Mills, well 1	02-20-53	18	--	--	43	11	--	71	23	22	.2	4.0	222	152	58	--	5.5
			Mary Leila Mills, well 2	02-20-53	21	--	--	58	6.0	2.0	109	9.0	11	.2	2.0	180	170	89	--	6.0
			Mrs. James Arear	12-04-59	20	--	--	32	3.0	30	107	3.0	31	.3	30	194	92	88	--	7.1
			R. Stewart	08-15-62	26	--	--	1.8	--	3.9	16	--	1.5	.2	.50	38	4	--	37	6.1
	Jackson	A	A. D. Bolton	02-17-54	6.0	250	--	45	--	--	83	38	12	.9	--	227	112	68	--	8.0
			Allied Poultry, well 2	03-17-66	1.2	--	--	--	--	--	--	--	--	--	--	--	50	50	--	--
307824488			Arcade MHP, well 1	07-09-81	--	580	<50	--	--	4.2	--	7.0	1.0	.1	.24	48	--	18	60	6.8
307824488		A	Arcade MHP, well 2	07-09-81	--	260	<50	--	--	4.2	--	6.0	1.0	.1	.24	52	--	20	62	6.9
407813012			Atlanta Union Mission, well 1	09-16-82	--	--	--	--	--	3.5	--	--	--	<.1	--	72	30	38	--	7.1
407813012			Atlanta Union Mission, system	03-21-79	--	400	--	--	--	--	--	--	--	.1	--	--	50	66	139	7.0
			Benton Nicholson, Jr.	08-15-62	25	--	--	5.0	1.7	3.3	41	--	1.8	.4	--	50	--	--	70	6.8
15GG03		A	City of Braselton, well 2	02-23-82	--	--	--	--	--	6.9	--	--	--	--	--	124	78	72	157	7.6
15GG04		A	City of Braselton, well 3	02-23-82	--	--	--	--	--	7.7	--	--	--	--	--	96	60	50	137	7.2
307807771			City of Braselton, system	09-13-79	--	100	<50	--	--	--	--	--	--	.2	.30	--	--	--	160	7.5
15GG07		A	City of Hoschton, system	09-16-82	--	--	--	--	--	12	--	--	--	<.1	--	92	28	34	--	6.5
307807799		A	City of Hoschton, well	09-16-82	--	--	--	--	--	--	--	--	--	.1	1.7	--	--	--	--	--
17JJ01		A	City of Maysville, well 1	10-15-58	23	--	--	16	3.4	6.3	68	8.8	4.0	.1	4.1	112	54	--	148	7.3
18GC02		A	Colony Mobile Home Park, well 1	02-24-81	--	<100	<50	--	--	6.3	--	--	--	--	.80	84	34	34	77	7.0
407827484			Colony Mobile Home Park, well 2	02-24-81	--	--	<50	--	--	6.2	--	--	--	--	<.50	56	26	14	44	6.5
407831218			Goldkist Hatchery, system	07-05-78	--	<100	--	--	--	--	--	--	--	--	--	--	36	7	--	4.4
407813030			Jackson County Correction Inst., well	01-16-79	--	--	--	--	--	--	--	--	--	<.1	3.7	--	--	--	105	6.7
407813030			Jackson County Correction Inst., system	10-07-82	--	<100	<50	--	--	8.1	--	--	9.5	<.1	4.3	80	30	26	115	6.2
407827545			Kingswood Subdivision, system	02-23-82	--	<500	<50	--	--	10	--	--	--	--	3.1	104	46	32	116	6.6
407827545			do.	01-16-79	--	--	--	--	--	--	--	--	--	<.1	2.2	--	--	--	101	6.5
307807814		A	Nicholson Water Association, well 1	09-16-82	--	--	--	--	--	12	--	--	--	.6	--	92	42	56	--	7.4
307807814		A	Nicholson Water Association, well 2	09-16-82	--	--	--	--	--	5.7	--	--	--	<.1	--	80	26	20	--	6.3
307807814		A	Nicholson Water Association, main well	03-26-79	--	--	--	--	--	--	--	--	--	<.1	4.7	--	--	--	100	6.0
307807869			Pleasant Acres Subdivision, system	09-29-82	--	<100	<50	--	--	6.4	--	6.0	2.0	.1	1.4	96	32	38	107	7.1
307807869			Pleasant Acres Subdivision, well	01-25-79	--	--	--	--	--	--	--	--	--	<.1	2.9	--	--	--	93	6.1
407812754			Rancho North Subdivision, system	09-29-82	--	590	70	--	--	5.8	--	32	2.0	.1	<.50	132	76	54	183	7.0
307807832			North Jackson Elementary, system	09-18-78	--	<50	--	--	--	--	--	--	--	--	--	--	32	40	--	7.5
307807841			South Jackson Elementary, system	09-18-78	--	50	--	--	--	--	--	--	--	--	--	--	18	25	--	7.2
16HH13		A	Waffle House, system	10-30-78	--	<100	--	--	--	--	--	--	--	--	--	--	85	13	--	6.4
16HH01		B	Wayne Poultry, well 1	02-15-67	32	--	--	3.1	1.4	4.7	26	.4	1.8	.1	1.5	60	14	--	--	--
16HH05		B	Wayne Poultry, well 8	04-15-71	31	--	--	12	3.6	7.7	51	14	2.5	.3	.40	112	45	--	--	--

See footnotes at end of table.

Table 9.--Chemical analyses of well water from the Athens Region--Continued

[Analyses by Georgia Environmental Protection Division and Georgia Geologic Survey. System, sample taken from water distribution line; MHP, mobile home park; <, less than]

Well number[1]	County	Water-bearing unit[2]	Name or owner	Date of collection	Silica (SiO_2), milligrams per liter	Micrograms per liter: Iron (Fe)	Micrograms per liter: Manganese (Mn)	Milligrams per liter: Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (N)	Dissolved solids	Hardness[3]	Alkalinity	Specific conductance, micromhos at 25°C	pH
	Environmental Protection Agency (1976) Drinking-Water Standards					300	50					250	250	[4]1.2	10	500				
309509444	Madison		Brown Brothers Farm Subdivision, well 4	10-25-83	--	--	--	--	--	8.2	--	--	--	--	--	80	23	28	--	6.8
309509444			Brown Brothers Farm Subdivision, well 2	02-27-79	--	--	--	--	--	--	--	--	--	0.1	2.4	--	--	--	79	6.2
309509444			Brown Brothers Farm Subdivision, well 3	10-25-83	--	--	--	--	--	9.3	--	--	--	--	--	96	34	42	--	7.1
309509444			Brown Brothers Farm Subdivision, well 5	10-25-83	--	--	--	--	--	7.7	--	--	--	--	--	108	37	44	--	7.1
309509444			Brown Brothers Farm Subdivision, well 1	10-25-83	--	--	--	--	--	11	--	--	--	--	--	132	56	76	--	7.5
309509444			Brown Brothers Farm Subdivision, well 2	10-25-83	--	--	--	--	--	11	--	--	--	--	--	124	56	60	--	7.5
21GG03		B	City of Carlton	09-15-55	23	800	--	18	1.3	--	--	0.3	9.5	--	--	--	36	48	--	8.6
309509374		B	City of Carlton, well 1	10-17-83	--	--	--	--	--	9.9	--	--	--	--	--	120	42	42	--	6.7
21GG04		B	City of Carlton, well 3	10-17-83	--	--	--	--	--	10	--	--	--	<.1	2.8	68	12	10	63	6.1
20GG18		B	City of Colbert	03-15-51	24	400	--	18	4.7	--	--	2.3	3.4	--	--	--	45	66	--	7.3
20GG19		B	City of Colbert, well 1	03-10-82	--	<100	<50	--	--	7.2	--	--	--	<.1	<0.50	96	34	34	182	6.7
20GG02		B	City of Colbert, well 2	02-27-79	--	--	--	--	--	--	--	--	--	<.1	.27	--	--	--	73	7.3
20GG22		B	City of Colbert, well 4	06-12-84	--	4295	25	--	--	7.7	--	--	--	--	--	100	25	24	--	7.0
21GG01		B	City of Comer	10-13-58	33	--	--	31	3.5	10	108	14	15	.8	.09	162	92	89	243	7.6
21GG02		B	City of Comer, well 2	11-02-77	--	<100	--	--	--	--	--	--	--	--	--	--	102	38	--	7.7
20HH04		C	City of Danielsville	10-20-54	32	2250	--	6.0	--	--	44	7.0	1.0	--	--	135	15	36	--	7.4
20HH04		C	City of Danielsville, well 1	10-13-83	--	--	--	--	--	5.3	--	--	--	--	--	52	12	26	--	6.6
20HH04		C	City of Danielsville, well 1	11-14-77	--	330	--	--	--	--	--	--	--	--	--	--	20	28	--	6.4
20HH05		C	City of Danielsville, well 2	10-13-83	--	--	--	--	--	4.4	--	--	--	--	--	56	12	20	--	6.5
309509408		C	City of Danielsville, well 4	08-12-81	--	300	--	--	--	--	--	--	--	--	--	--	26	27	--	6.4
309509417		A	City of Ile, well 1	09-13-78	--	2000	<50	--	--	--	--	--	--	.4	<.10	--	45	40	231	7.2
19HH08		A	City of Ila, well 2	04-05-84	335	350	70	--	--	11	--	--	--	--	--	124	58	70	--	7.5
		B	Comer Elementary School	03-15-55	2.0	500	--	18	4.0	--	--	5.2	11	--	--	--	43	101	--	8.0
		B	Comer Oil Mill	06-15-47	27	300	--	15	4.2	--	--	2.4	12	--	--	--	39	33	--	6.6
			F. McGinnis	08-15-62	15	--	--	3.6	1.6	4.9	9.0	--	4.0	.1	19	65	16	7	69	6.0
19HH09		A	Ila Elementary	03-15-55	8.0	500	--	18	4.0	--	--	5.2	11	--	--	--	42	72	--	7.3
19HH09		A	Ile School, well	08-15-52	36	1600	--	18	6.2	--	--	.4	5.4	--	--	--	49	57	--	7.2
4J9516122			Morningside Village Trailer Park, system	10-13-83	--	--	--	--	--	8.1	--	--	--	--	--	68	15	34	--	6.8
409516122			do.	01-04-79	--	<50	--	--	--	--	--	--	--	.3	.10	--	15	40	76	6.9
			Mr. Reuben Martin	11-15-55	29	400	--	12	5.5	--	--	.8	12	--	--	--	35	39	--	6.9
			R. D. Kennemer	07-12-55	30	1300	16	16	2.0	--	73	7.0	5.0	--	--	130	40	60	--	7.0
409516131			Strickland's Trailer Park, system	01-10-79	--	<50	--	--	--	--	--	--	--	<.1	1.2	--	15	40	58	7.1
19GG11		I	Westbrook Trailer Park, well 2	10-13-83	--	--	--	--	--	6.9	--	--	--	--	--	64	25	34	--	7.0
19GG11		I	do.	01-04-79	--	--	--	--	--	--	--	--	--	.4	.15	--	--	--	101	7.5
17DD07	Morgan	D	City of Boetwick	04-01-66	48	--	--	14	2.2	14	72	11	3.0	.8	1.5	--	44	--	155	7.2
310409883		D	City of Bostwick, system	02-18-82	--	1955	160	--	--	17	--	22	12	.1	<.50	--	74	54	195	--
310409892		D	City of Buckhead	06-09-72	30	1000	--	5.7	1.3	6.8	19	1.6	4.0	.2	--	60	20	--	85	6.3
310409892		D	City of Buckhead, system	10-05-83	--	<50	<25	--	--	11	--	--	--	.5	5.7	--	--	--	132	6.9
17DD05		A	City of Rutledge, well 1	10-15-58	29	--	--	16	3.4	8.1	62	9.2	8.0	.2	10	121	54	--	163	6.7
310409917		D/A	City of Rutledge, system	05-04-53	26	1400	--	29	4.0	--	94	8.0	9.0	.1	5.0	187	67	77	--	5.5
310409917		D/A	do.	10-05-83	--	<50	<25	--	--	9.8	--	--	--	<.1	2.1	--	--	--	113	6.6
		D	Hard Labor Creek, well 1	05-04-53	26	1300	--	10	2.0	--	40	5.0	3.0	--	--	--	--	33	--	5.0
		D	Hard Labor Creek, well 2	05-04-53	26	1400	--	16	2.0	--	47	--	--	.1	--	83	18	38	--	5.0
		D	Hard Labor Creek, well 3	02-19-53	26	1600	--	5.0	4.0	--	34	3.0	10	.2	5.0	140	20	28	--	5.0
19CC01		K	Leroy Birds	08-27-62	40	--	--	5.6	1.6	6.3	39	--	1.8	.1	.50	69	20	--	73	6.6
			Mrs. J. L. Veal	06-17-55	20	2500	--	54	20	1.0	31	4.0	10	--	--	480	217	--	--	7.0
			Rutledge Recreation Park Seneca	03-09-39	16	--	--	30	2.0	13	84	--	38	--	--	--	--	--	--	--
15CC40	Newton	G	Alcovy MHP, system	07-23-82	--	<100	<50	--	--	4.7	--	<2.0	0.5	.2	<.50	56	38	24	62	6.0
14CC22		A	Almon Community, well 2	02-01-79	--	<100	--	--	--	--	--	--	--	<.1	3.1	--	43	63	84	6.4
		D	City of Mansfield	11-20-59	19	110	--	8.4	4.1	13	24	4.4	20	.1	22	--	18	--	--	6.1
310710008		D	City of Mansfield, well 1	10-30-78	--	<100	--	--	--	--	--	--	--	--	--	--	53	158	--	7.1
310710008		D	City of Mansfield, well 3	09-05-78	--	<50	--	--	--	--	--	--	--	--	--	--	84	75	--	8.1
		D	City of Mansfield	05-04-53	12	1500	--	--	--	--	11	--	24	.2	5.0	103	26	9	--	5.0

See footnotes at end of table.

Table 9.--Chemical analyses of well water from the Athens Region--Continued

[Analyses by Georgia Environmental Protection Division and Georgia Geologic Survey. System, sample taken from water distribution line; MHP, mobile home park; <, less than]

Well number[1]	County	Water-bearing unit[2]	Name or owner	Date of collection	Silica (SiO_2), milligrams per liter	Micrograms per liter: Iron (Fe)	Micrograms per liter: Manganese (Mn)	Milligrams per liter: Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (N)	Dissolved solids	Hardness[3]	Alkalinity	Specific conductance, micromhos at 25°C	pH
	Environmental Protection Agency (1976) Drinking-Water Standards					300	50					250	250	[4]1.2	10	500				
	Newton	B	Covington Mills	02-13-39	26	3000	--	14	8.9	--	61	2.4	5.3	--	--	--	--	--	--	--
15DD34		B	Dial Water System, system	01-27-83	--	<100	<50	--	--	3.8	--	<2.0	2.5	0.1	0.70	36	8	6	31	5.4
			Dr. Cook	02-11-52	12	100	--	9.0	2.0	--	--	5.0	3.0	--	--	70	30	--	--	7.2
			East Newton School	09-26-55	18	--	--	19	3.6	--	--	0.1	8.5	--	--	12	--	--	--	6.9
			Farm near Porterdale	02-10-56	20	350	--	--	--	--	21	--	5.0	--	1.3	19	15	17	--	7.5
15BB10		D	FFA + FHA Camp State, well	08-30-79	--	<100	--	--	--	--	--	--	--	--	--	--	95	99	--	7.4
			Game & Fish Commission	08-27-45	40	700	--	8.0	--	--	--	--	5.5	--	--	32	68	--	--	7.2
410728460			Greenwood Subdivision, system	07-30-79	--	<100	<50	--	--	--	--	--	--	.1	1.5	--	--	--	41	6.0
			H. F. Blair	07-31-42	4.0	--	--	6.4	--	--	--	1.0	27	--	--	--	80	134	--	--
			Hudson Ice & Coal	06-24-52	19	--	--	4.4	1.2	--	--	6.3	14	--	--	14	--	--	--	8.5
			Jamestown Subdivision, system	06-17-82	--	<100	<50	--	--	5.9	--	<2.0	4.5	.1	1.2	84	28	44	100	6.6
			John Latham, system	03-11-52	10	750	--	5.0	--	--	--	--	6.0	--	--	--	29	--	--	7.6
			John Latham, well	03-11-52	10	--	--	5.0	--	--	37	--	6.0	--	--	25	--	--	--	7.2
		B	Oxford City	08-28-62	38	30	--	7.6	3.4	6.3	55	.4	1.0	.2	1.0	--	--	--	97	7.0
14CC32		A	Pipers Riverside Estates, system	03-23-83	--	<100	<50	--	--	18	--	--	--	--	--	160	102	102	--	7.8
14CC32		A	do.	01-13-83	--	<100	<50	--	--	12	--	25	4.5	.4	<.50	164	106	100	226	7.5
410728488			Price Water Works, system	01-21-82	--	<100	<50	--	--	13	--	9.0	2.0	.4	--	124	72	82	172	7.8
			R. T. Jons	04-27-66	22	--	--	2.0	3.0	5.0	30	--	2.0	--	2.0	54	17	25	--	6.3
14DD52		B	Spring Valley Subdivision, well	02-14-79	--	--	--	--	--	--	--	--	--	.2	<.10	--	--	--	54	6.6
310710017		D	Town of Newborn, system	11-19-82	--	335	<50	--	--	11	--	4.5	9.0	.2	<.50	108	56	40	141	6.2
20FF08	Oglethorpe	I	City of Arnoldsville, well 1	10-12-83	--	--	--	--	--	5.6	--	--	--	--	--	60	10	22	--	--
20FF09		B	City of Arnoldsville, well 2	10-12-83	--	--	--	--	--	--	--	--	--	--	--	132	58	66	--	8.2
410917815			do.	02-04-82	--	<100	55	--	--	8.0	--	11	2.5	.2	<.50	128	68	66	156	7.7
21FF09		F	City of Lexington, well 1	08-12-82	--	--	--	--	--	14	--	--	--	--	--	292	152	100	--	7.5
21FF09		F	City of Lexington, system	03-25-81	--	<100	<50	--	--	--	--	48	2.2	.6	.24	206	110	100	270	7.1
20EE20		B	City of Maxeys, well 1	04-10-78	--	<50	--	--	--	--	--	--	--	--	--	--	217	70	--	7.7
20EE21		B	City of Maxeys, well 2	10-21-81	--	--	--	--	--	12	--	--	--	--	--	132	40	32	--	6.4
			E. Dudley	01-20-65	27	--	--	17	0.9	3.6	54	10	2.0	.1	.60	--	46	--	114	6.9
		F	R. Thaxton	11-16-59	33	--	--	4.0	.2	6.5	28	.4	2.2	.2	.80	65	11	--	56	6.3
			Univ. of Georgia Wilkins Experimental Farm	09-27-62	36	--	--	17	6.7	10	119	--	1.5	.3	.10	125	70	--	187	7.0
18FF54	Oconee	D	Birchmore Hills Subdivision, system	09-21-83	--	<50	<25	--	--	7.6	--	--	--	.2	<.50	92	28	38	88	7.3
18FF52		D	Brookwood Estates, well 1	09-21-83	--	--	--	--	--	9.6	--	8.0	1.5	--	--	120	45	58	--	7.9
18FF52		D	do.	05-16-80	--	160	70	--	--	--	--	8.0	1.5	.4	.10	114	49	63	147	7.6
18FF51		D	Brookwood Estates, well 2	09-21-83	--	--	--	--	--	9.3	--	--	--	--	--	116	44	56	--	7.9
310825902		D	City of Bishop, well 1	10-13-83	--	--	--	--	--	11	--	--	--	--	--	72	10	10	--	5.8
310825902		D	City of Bishop, well 2	10-13-83	--	--	--	--	--	9.5	--	--	--	--	--	148	50	52	--	6.9
310825902		D	City of Bishop, system	10-13-83	--	140	275	--	--	10	--	--	--	<.1	4.7	--	--	--	92	5.9
17FF09		A	Deerwood Estates, system	03-11-82	--	<100	<50	--	--	6.2	--	<2.0	1.5	.1	<.50	108	52	66	135	7.5
18EE48		D	Elder Heights Subdivision, system	10-25-83	--	65	65	--	--	11	--	--	--	.1	<.50	144	53	80	142	7.8
			F. G. Parish	11-16-59	15	--	--	7.6	2.2	7.7	19	3.2	9.0	--	17	99	28	--	115	6.4
18EE57		D	Family Life Enrichment Center	02-18-82	--	<100	<50	--	--	9.2	--	<2.0	4.0	<.1	1.9	20	8	20	65	6.4
18EE13		D	G. Graves	08-27-62	37	--	--	11	1.6	8.0	59	2.0	1.2	.2	--	84	34	--	106	6.8
			G. L. Thomas	01-20-56	10	250	--	55	--	--	131	8.0	38	--	2.5	195	137	107	--	--
		I	Green Hills Country Club	08-27-62	34	--	--	8.8	.6	8.5	52	2.8	1.8	.2	1.1	81	24	--	98	6.9
410817757		D	Hickory Hills Subdivision, system	08-25-83	--	415	25	--	--	8.7	--	--	--	.2	--	132	53	58	120	7.4
18FF47		D	Hickory Hills Subdivision, well	03-12-79	--	--	--	--	--	--	--	--	--	.1	.10	--	--	--	156	7.1
310814706			Indian Hills Subdivision, system	08-25-83	--	<50	<25	--	--	8.0	--	--	--	.2	.60	100	30	40	106	6.8
310814706			Indian Hills Subdivision, well	08-25-83	--	--	--	--	--	--	--	--	--	.2	.35	--	--	--	113	7.2
410817678		D	Killarney West Subdivision, well	09-21-83	--	--	--	--	--	--	--	--	--	.2	.33	--	--	--	150	7.8
410817678		D	Killarney West Subdivision, system	09-21-83	--	--	--	--	--	10	--	--	--	--	--	116	54	66	--	8.2
310810148			Moreland Heights MHP, system	03-02-83	--	<100	<50	--	--	--	--	--	--	.2	1.1	--	--	--	116	6.5
310810148		D	do.	03-02-83	--	--	--	--	--	10	--	--	--	--	--	108	36	44	--	6.6
310810157		D	Northwest Woods Subdivision, system	09-09-81	--	105	<50	--	--	--	--	10	1.0	.3	<.50	108	63	50	130	7.2

See footnotes at end of table.

Table 9.--Chemical analyses of well water from the Athens Region--Continued

[Analyses by Georgia Environmental Protection Division and Georgia Geologic Survey. System, sample taken from water distribution line; MHP, mobile home park; <, less than]

Well number[1]	County	Water-bearing unit[2]	Name or owner	Date of collection	Silica (SiO_2), milligrams per liter	Iron (Fe), micrograms per liter	Manganese (Mn), micrograms per liter	Calcium (Ca), milligrams per liter	Magnesium (Mg), milligrams per liter	Sodium (Na), milligrams per liter	Bicarbonate (HCO_3), milligrams per liter	Sulfate (SO_4), milligrams per liter	Chloride (Cl), milligrams per liter	Fluoride (F), milligrams per liter	Nitrate (N), milligrams per liter	Dissolved solids, milligrams per liter	Hardness[3], milligrams per liter	Alkalinity, milligrams per liter	Specific conductance, micromhos at 25°C	pH
	Environmental Protection Agency (1976) Drinking-Water Standards					300	50					250	250	[4]1.2	10	500				
17FF11	Oconee	A	Oak Grove Subdivision, system	10-25-83	--	<50	<25	--	--	7.8	--	--	--	<0.1	<0.50	88	33	62	104	7.4
18FF58		A	Oak Ridge Subdivision, well 1	03-02-83	--	--	--	--	--	18	--	--	--	--	--	56	20	58	--	7.3
18FF59		D	Oak Ridge Subdivision, well 2	03-02-83	--	--	--	--	--	10	--	--	--	--	--	24	22	28	--	6.6
310814991		A/D	Oak Ridge Subdivision, system	03-02-83	--	<100	<50	--	--	--	--	<2.0	5.0	.1	1.1	84	12	46	99	6.9
17FF12		I	Osceola Village Subdivision, system	03-11-82	--	--	--	--	--	11	--	4.0	3.0	.2	<.50	120	28	42	115	7.1
17FF12		I	Osceola Village Subdivision, well	04-17-79	--	470	--	--	--	--	--	--	--	.1	<.10	--	--	--	106	7.2
310815161		D	Tramalina Acres, well 2	03-02-83	--	--	--	--	--	14	--	--	--	--	--	108	44	70	--	7.3
310815161		D	Tramalina Acres Subdivision, well 1	03-02-83	--	--	--	--	--	37	--	--	--	--	--	148	26	82	--	9.7
310815161		D	Tramelina Acres Subdivision, system	03-02-83	--	<100	<50	--	--	36	--	2.5	5.0	.1	1.1	152	22	100	188	9.8
310817565			Woodlands Subdivision, system	03-25-82	--	<100	<50	--	--	8.6	--	13	3.0	.3	<.50	104	48	50	129	7.2
16EE01	Walton	A	B. F. Miller/Barnie Moody	02-15-67	30	70	--	17	1.4	6.2	74	1.2	1.0	.1	.10	95	48	--	129	6.9
414723670			Briscoes MHP, well	12-04-78	--	<50	--	--	--	--	--	--	--	.1	.35	--	35	35	137	7.8
			J. J. Jeffried	01-18-65	33	--	--	--	1.9	4.9	24	.4	1.2	.1	5.5	--	17	--	66	6.5
314712927			Jackson MHP, well 1	12-05-77	--	<100	--	--	--	--	--	--	--	--	--	--	15	35	--	7.0
314712927			Jackson MHP, well 2	12-05-77	--	<100	--	--	--	--	--	--	--	--	--	--	13	34	--	6.6
314712927			Jackson MHP, system	02-05-82	--	<100	<50	--	--	7.4	--	<2.0	2.5	.2	3.5	88	20	22	78	6.4
			Mrs. Veal	11-07-55	20	2500	--	50	15	--	30	4.0	6.0	--	--	81	215	23	--	7.2
15DD01		B	R. Byrd	08-28-62	30	--	--	17	.6	17	85	2.0	1.0	1	1.1	122	45	--	154	7.7
16EE03		A	Rolling Hills MHP, system	10-19-83	--	55	<25	--	--	6.3	--	--	--	.1	.70	--	--	--	61	6.8
414723731			Royal Courts MHP, well 1	08-06-82	--	--	--	--	--	8.9	--	--	--	--	--	84	30	36	--	6.5
414723731			Royal Courts MHP, well 4	08-06-82	--	--	--	--	--	5.3	--	--	--	--	--	48	12	22	--	6.0
414723731			Royal Courts MHP, system	08-06-82	--	<100	<50	--	--	3.6	--	<2.0	2.0	<.1	<.50	48	34	20	53	6.2
314712936			Sun Hill Estates, system	12-22-81	--	<100	<50	--	--	7.9	--	<2.0	1.5	1.0	.80	76	26	36	75	7.1
15DD12		A	Town of Jersey, system	12-22-81	--	<100	<50	--	--	5.3	--	<2.0	1.5	.2	.60	72	36	44	86	7.4
			Walker Park School	10-15-58	9.6	600	--	1.6	2.9	1.4	6.0	--	1.5	--	7.9	29	16	--	34	5.7
			Walton County Hospital	10-06-55	13	800	--	23	2.9	--	--	.3	6.0	--	--	124	49	73	--	7.5
414740402			Walton County Mental Health Center, well 1	03-10-80	--	<50	--	--	--	--	--	--	--	--	--	--	12	37	--	6.3
414723740			Whitley MHP, system	08-06-82	--	<100	<50	--	--	3.4	--	<2.0	1.5	.1	1.5	40	12	10	36	6.2

[1] Nine digit number is the Georgia Environmental Protection Division accounting designation. The 7 1/2-minute topographic quadrangle number and letter designation are for wells that yield greater than 20 gal/min listed in table 12 and shown on plates 1-3.
[2] Water sampled from water-bearing units shown on plates 1-3. Wells without water-bearing unit designation were not field located.
[3] 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".
[4] Based on average annual air temperature.

Another source of well contamination is radioactive minerals that are common constituents of rocks in the area. Although naturally occurring radioactivity may be present in wells nearly anywhere in the State, significant problems have been limited to scattered locations (Georgia Environmental Protection Division, written commun., 1984). Routine sampling of public-supply wells in the Athens Region by the Environmental Protection Division (written commun., 1985) has identified one well in Oglethorpe County in which the level of radioactivity exceeded drinking-water standards. A study of public-supply and private wells could reveal the extent of contamination by radioactive substances in the Athens Region.

A potential exists for contamination of wells in the Athens Region by insecticides and herbicides. For example, during 1984, insecticides and herbicides were applied to between 50,000 and 100,000 acres in Morgan County and they were used to lesser extents in the other counties of the region (Georgia Environmental Protection Division, written commun., 1984). The potential for well contamination will increase as the use of these chemicals becomes more widespread.

Faulty well construction and improper site selection may result in contaminated wells. Well contamination can result from the practice of locating wells for convenience rather than for protection of the water supply. Many domestic wells are located as close as possible to the point of use without due regard to potential sources of contamination such as septic tanks. Located in this manner, poorly constructed wells can be subject to contamination.

Well sites that are least likely to become contaminated are those located, as far as practical, upgradient from potential sources of contamination. Sealing wells against the entry of surface water and fitting well caps tightly to keep out animals and other impurities are necessary safety measures to protect wells from contamination.

CONCLUSIONS

1. The 11-county Athens Region is underlain by a variety of metamorphic and igneous rocks that have been divided into more than 30 named formations and unnamed mappable units. Many of these units are composed of rocks of similar character that yield water of comparable chemical quality. For convenience, the rocks have been grouped into 11 principal water-bearing units.

2. Unweathered and unfractured crystalline rocks have low porosity and permeability. Ground water is stored in and transmitted through joints, fractures, and other secondary openings in the bedrock and pore spaces in the overlying regolith. The quantity of water that a rock unit can transmit to wells is determined by the number, capacity, and interconnection of the secondary openings.

3. Of approximately 10,000 drilled wells in the Athens Region, 972 wells yield from 20 to 300 gal/min and are considered as high-yielding wells. Wells that furnish 20 gal/min for 12 to 18 hours per day are adequate for most private and small public supplies.

4. Twenty-eight percent of the high-yielding wells are deeper than 299 ft, 12 percent are between 40 and 599 ft deep, but only 2.3 percent are deeper than 600 ft. Thus, drilling wells deeper than about 600 feet to obtain a large yield rarely is justified.

5. High-yielding wells generally can be developed only where the water-bearing units have significant secondary permeability. This occurs mainly in association with certain structural, stratigraphic, and topographic features, such as (1) contact zones between rock units of contrasting character, (2) contact zones within multilayered rock units, (3) fault zones, (4) stress-relief fractures, and (5) shear zones.

6. The availability of ground water is markedly affected by the dendritic surface-drainage pattern that dominates the area. The dendritic drainage probably was established on some preexisting surface and later superimposed on the underlying crystalline rocks. Thus, except where they parallel or cross zones of bedrock weakness such as faults or contact zones, the valleys of large streams can be expected to have permeability similar to that of the adjacent country rock and are not necessarily good sites for high-yielding wells. On the other hand, many small drainages such as draws, hollows, and intermittent streams in the uppermost headwater areas probably developed under geologic control and may be sites of increased permeability.

7. To sustain large well yields, permeable zones must occupy valleys and draws that receive continuous recharge from large catchment areas, or underlie broad, flat areas covered by thick saturated regolith.

8. The range of well yields is greater in some water-bearing units than in others, but the average yields for most units are similar.

9. A significant difference between water-bearing units is the ratio of high-yielding wells to the total number of wells drilled in each unit. This ratio is a function of the density and distribution of interconnected secondary openings and gives a general indication of the difficulty of obtaining a large well supply in each unit. Areas underlain by Units C, F, and J can be relatively difficult places to develop large ground-water supplies. Terranes formed by Units B, D, H, G, and I generally are more favorable for developing high-yielding wells. Areas of Units A and K vary from favorable to difficult for obtaining large supplies of well water.

10. Many wells in the area are dependable and have records of sustaining large yields for many years. One hundred nineteen industrial, public-supply, and private wells have been in use for periods of 5 years to more than 64 years without having the problem of declining yields.

11. Ground water may be a viable alternative or supplemental source for industrial, public, and private supplies in much of the study area. In 1980, ground water made up 38 percent (18 Mgal/d) of the total water used in the area. Yields of 20 to more than 200 gal/min presently (1984) are being obtained from wells throughout most of the area. The study area has more than 400 miles of major fault zones and more than 450 miles of contact zones, most of which are potentially permeable. About one-third of the area is underlain

by water-bearing Units A and K, which nearly everywhere contain potentially permeable contact zones. The area has hundreds of topographic settings of the types commonly underlain by high-yielding stress-relief fractures. Major shear zones in Newton and Walton Counties probably have numerous potential sites for high-yielding wells. Because only a fraction of the sites that seem to have high yield potential have been tapped, a large number of high-yielding wells may be obtainable in all 11 counties of the area.

12. The reader should be aware, however, that in much of the study area, sites that may be capable of having high-yielding wells may be widely separated. This suggests that developing a large ground-water supply (0.25 to 1.0 Mgal/d) could require drilling three or more wells that are spaced thousands of feet apart. Increased bedrock permeability and available recharge would rarely, if ever, occur in the right combinations to permit the close spacing of several wells to form a well field.

13. The well water generally is of good chemical quality and is suitable for drinking and many other uses in most of the study area. Concentrations of dissolved constituents are fairly consistent throughout the area. Except for iron, manganese, and fluoride, dissolved constituents rarely exceed State drinking-water standards. The few wells that contain excessively elevated constituent concentrations probably penetrate local mineralized zones or are contaminated by iron-fixing bacteria. The mineralized water generally can be made potable by the use of special filters.

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GLOSSARY

Selected terms used in this report are defined below.

Alluvial - Pertaining to alluvium.

Alluvium - A general term for clay, silt, sand, gravel and stones, and other unconsolidated material which has been deposited by rivers, floods, and other causes: applies to stream deposits of comparatively recent time.

Amphibolite - A rock consisting mainly of amphibole and plagioclase feldspar. Quartz is absent or present in small quantities.

Banded - The texture of rocks having thin and nearly parallel bands of different textures, colors, or minerals.

Basaltic - Pertaining to basalt, a fine-grained, dark-colored igneous rock, including basalt, diabase, and andesite if dark colored.

Batholith - A large body (generally greater than 40 square miles in area) of intrusive rock(s).

Bedrock - Any solid rock exposed at the surface of the earth or overlain by regolith.

Biotite - A common rock-forming mineral. A member of the mica group, black in hand specimen.

Borehole - A hole drilled into the earth.

Cataclastic - Pertaining to a texture found in metamorphic rocks in which brittle minerals have been broken and flattened in a direction at a right angle to the pressure stress.

Clay - A natural, inorganic soil material with plastic properties composed of very fine detrital fragments of minerals, commonly clay minerals, having a diameter less than 1/256 millimeter.

Crystalline rock - A general term for igneous and metamorphic rocks as opposed to sedimentary.

Dendritic drainage pattern - A drainage pattern characterized by regular branching in all directions with tributaries joining the main stream at all angles.

Diabase - A rock of basaltic composition that commonly forms dikes.

Dike - A tabular body of intruded igneous rock that cuts across the structure of adjacent rocks or cuts massive rocks.

Divide ridge - A prominent ridge, the crest of which forms the boundary between adjacent drainage basins.

Drainage divide - The boundry between adjacent drainage basins.

Draw - A small, natural watercourse or gully, usually dry except during and immediately following heavy rains. A natural depression or swale; a shallow drainageway.

Drawdown - The lowering of the water level in a well caused by pumping ground water.

Ductile - Pertaining to a substance that readily deforms plastically.

Evapotranspiration - A term for that part of precipitation returned to the air through evaporation from the soil and open water bodies and transpiration of plants, no attempt being made to distinguish between the two.

Fault - A fracture or fracture zone in rock along which displacement of the two sides relative to one another has taken place.

Feldspar - A group of abundant rock-forming aluminosilicate minerals. Feldspars are the most widespread of any mineral group and may constitute 60 percent of the earth's crust.

Felsic - A mnemonic term derived from (fe) for feldspar, (l) for lenads or feldspathoids, and (si) for silica plus (c), and applied to light-colored rocks containing an abundance of one or all of these constituents. The chief felsic minerals are quartz, feldspars, feldspathoids, and muscovite. Contrasted with mafic.

Flinty crush rock - Rock that has been crushed to the extent that textures are obliterated. It is homogeneous and dense, and has a chert-like appearence.

Foliation - A general term for a planar arrangement of textural or structural features in any kind of rock. Often used to describe the segregation of different minerals into parallel layers. When used in describing parallel fabrics in metamorphic rocks, considered synonymous with schistosity, gneissic banding, and slaty cleavage.

Foliation plane - The textural or structural element in foliated rocks having two dimensions conspicuously in excess of the third.

Fracture - A general term for any break in a rock, whether or not it causes displacement, due to mechanical failure by stress. Fractures include cracks, joints, and faults.

Fractured - Broken by interconnected cracks.

Geologic unit - An assemblage of rocks which have some character in common, whether of origin, age, or composition.

Geophysical well log - A graphic record of the measured or computed physical characteristics of the rock section penetrated by a well, plotted as a continuous function of depth. Well logs commonly are referred to by generic type, such as resistivity log, or by specific curve type, such as sonic log or televiewer log.

Gneiss - A coarse-grained metamorphic rock in which bands rich in granular minerals alternate with bands in which schistose minerals predominate.

Granite - A plutonic rock consisting essentially of alkali feldspar and quartz. Sodic plagioclase is commonly present in small amounts and muscovite, biotite, hornblende, or rarely pyroxene may be constituents.

Headwater - The source and upper part of a stream, including the upper drainage basin.

Igneous - In petrology, rocks or minerals formed by solidification from hot, molten or partially molten material termed magma. Defines one of the three major groups into which all rocks are divided, contrasted with sedimentary and metamorphic.

Infiltration - The flow of a fluid into a substance through pores or small openings. Here, the flow or movement of water through the soil surface into the ground.

Joint - In geology, a relatively smooth fracture or parting which abruptly interrupts the physical continuity of a rock mass. A joint has no visible displacement parallel to the joint surface; otherwise it is termed a fault.

Lithology - A term used to mean the description of rocks, usually from observation of hand specimens or outcrops; loosely used to mean the composition and texture of rock.

Mafic - In petrology, a term applied to igneous rocks composed predominantly of dark-colored, ferromagnesian silicate minerals. Contrasted with felsic.

Mafic volcanics - Dark-colored rocks of volcanic origin containing an abundance of mafic minerals.

Melange - A body of deformed rock consisting of blocks and fragments of different rock types, from less than a foot to more than a mile across, embedded in fine-grained, generally sheared material.

Metagabbro - Loosely used for any metamorphosed coarse-grained dark igneous rock.

Metamorphic rock - Rock which has formed in the solid state in response to pronounced changes of temperature, pressure, and chemical environment differing from those under which the rock originated. One of the three major groups into which rocks are divided.

Metamorphism - The process of mineralogical and structural adjustment of solid rocks to physical or chemical conditions, differing from those under which the rocks originated.

Mica - A mineral group of aluminosilicates with sheetlike structure, characterized by very perfect clevage in one direction. Commonly occurring varieties are biotite (dark) and muscovite (light).

Monadnock - A residual hill or mountain standing above a peneplain.

Muscovite - A mineral, a member of the mica group, the common white mica of granite and gneiss.

Outcrop - An exposure of rock at the surface of the ground.

Peneplain - A land surface of considerable area worn down by erosion to a nearly flat or broadly undulating plain.

Permeability - The permeability of rock is its capacity for transmitting water.

Phyllite - An argillaceous rock intermediate in metamorphic grade between slate and schist.

Physiographic province - A region of which all parts are similar in geologic structure and climate and which has consequently had a unified geomorphic history; a region whose pattern of relief features or landforms differs significantly from that of adjacent regions.

Plutonic - Of igneous origin. A general term applied to that class of igneous rocks which have crystallized at great depth beneath the surface of the earth.

Porous - Containing voids, pores, interstices, or other openings which may or may not be interconnected.

Porphyritic - A textural term for those igneous rocks in which larger crystals (phenocrysts) are set in a finer groundmass which may be crystalline or glassy or both.

Quartz - A mineral, formula SiO_2.

Quartzite - A granulose metamorphic rock consisting essentially of quartz. Muscovite is a common accessary mineral.

Rectangular drainage pattern - The rectangular pattern is characterized by right-angled bends in both the main stream and its tributaries. It differs from trellis pattern in that it is more irregular; there is not such perfect parallelism of side streams.

Regolith - A general term for the layer or mantle of fragmental and unconsolidated rock material, whether residual or transported, and of highly varied character, that nearly everywhere forms the surface of the land and overlies or covers the bedrock. Made up of rock waste of all sorts including alluvium, saprolite, and soils.

Saturated zone - A subsurface zone, also known as the zone of saturation, in which all the interstices are filled with water under pressure greater than that of the atmosphere. The top of the saturated zone is the water table.

Secondary opening - An opening that develops after a rock if formed, through such processes as solution or fracturing.

Secondary permeability - Permeability of a rock resulting from the development of interconnected secondary openings.

Stress-relief fracture - A horizontal or nearly horizontal fracture formed in bedrock--generally granite, gneiss, schist, and gneiss interlayered with schist--by the upward expansion of the rock column in response to erosional unloading.

Transpiration - The process by which water vapor excapes from a living plant and enters the atmosphere.

Trellis drainage pattern - A drainage pattern in which master and tributary streams are arranged nearly at right angles with respect to one another.

Table 10

Table 10.--Record of wells in the Athens Region

Well number	Water-bearing unit	Lati-tude	Longi-tude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Barrow County											
15FF01	B	335936	0834631	Adams, Jack	25	158	46	6	1950	Virginia	Domestic.
15GG01	A	340049	0834938	Auburn, Ga., 1	100	418	20	6	1954	--	Public supply.
15GG10	B	340028	0834936	Auburn, Ga., 2	60	425	26	6	1981	Robinson	Do.
15GG13	B/A	340350	0834706	Bethabra Church	100	68	40	6	1969	Martin	Institutional.
16GG08	A/A	340342	0834428	Brassfield, Ronnie	30	305	16	6	1981	Robinson	Domestic.
17FF21	A	335910	0833300	Brock, Virginia	20	10D	60	6	1971	McCannon	Do.
16FF16	A	335609	0834242	Buchanon, Tommy	60	98	90	6	1976	Martin	Do.
16FF15	A	335601	0834245	Burel, Frank	20	217	131	6	1956	Virginia	Do.
15GG11	B	340045	0835118	8urrel, R.H.	50	205	36	6	1981	Robinson	Do.
16FF18	A	335407	0834322	Caine, Leonard	200	415	30	6	1980	do.	Do.
16GG05	A	340116	0834115	Canup, James	60	245	63	6	1971	Martin	Do.
15GG14	B	340355	0834714	Carter, Albert	100	158	40	6	1974	do.	Do.
15GG05	B	340214	0834804	Chastain, Frank	20	100	20	6	1970	McCannon	Do.
15GG15	B	340227	0834838	Cook, T.H.	100	185	25	6	1973	Spray	Do.
16FF11	A	335924	0833938	Elder, Paul	20	240	43	6	1969	McCannon	Do.
15GG12	A	340228	0834937	Ellington, Jarrel	30	160	45	6	1972	do.	Do.
17FF20	A	335758	0833435	Ferguson, Karen	37	245	112	6	1980	Virginia	Do.
17FF22	A	335924	0833438	Greeson, Wesley	25	300	96	6	1979	Martin	Do.
16FF13	A	335852	0833816	Hardigree, Joe	75	390	42	6	1968	McCannon	Do.
16FF01	A	335548	0834223	Harrison Poultry Co.	76	800	113	8	1961	Martin	Industrial.
16FF05	A	335549	0834227	do.	77	438	83	8	1958	do.	Do.
16FF06	A	335545	0834224	do.	57	600	87	8	1959	do.	Do.
16FF07	A	335542	0834223	do.	180	253	70	8	1958	Virginia	Do.
16FF08	A	335540	0834223	do.	140	198	70	8	1958	do.	Do.
16FF09	A	335538	0834222	do.	225	300	230	8	1959	Martin	Do.
16FF14	A	335648	0833830	Hunter, J.C.	20	140	44	6	1970	do.	Domestic.
16FF10	B	335904	0834135	Johnson, Ralph	30	170	100	6	1970	do.	Do.
15FF08	A	335359	0834517	Lay, James	20	145	27	6	1979	Robinson	Do.
16GG07	B	340137	0834428	Loggins, Larry	20	225	--	6	1975	Baxter	Do.
15FF06	8	335934	0834836	Lovin, H.G.	60	245	30	6	1981	McCannon	Do.
17FF01	A	335754	0833240	Luke, Lewis	20	160	113	6	1972	do.	Do.
17FF23	A	335540	0833649	Perkins, Cheyrl	75	130	40	6	--	Oconee	Do.
15GG09	B	340003	0834735	Royster, R.L.	30	128	18	6	1950	Virginia	Do.
16FF20	A	335521	0834122	Scott, James	50	125	50	6	1981	McCannon	Do.
17FF19	A	335703	0833427	Southern 8ell	75	407	93	6	1969	Virginia	Do.
16FF12	A	335909	0833738	Taylor, Carey	25	220	80	6	1979	Martin	Do.
16FF17	A	335438	0834223	Tiller, John	25	405	75	6	1981	Oconee	Do.
17GG12	A	340052	0833524	Watkins, Terrin	20	200	110	6	1969	McCannon	Agricultural.
15FF04	B	335955	0834710	Westvaco	20	563	39	6	1977	Martin	Industrial.
15FF07	B	335854	0834738	Withers, John	30	165	65	6	1980	Baxter	Domestic.
15FF05	8	335922	0834838	Wood, S.W.	100	305	71	6	1981	Waller	Do.
16GG06	A	340124	0834040	Wright, C.J.	30	185	38	6	1970	Martin	Do.
16FF19	A	335456	0834155	Yearwood Farms	30	145	110	6	1977	McCannon	Do.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Lati-tude	Longi-tude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Clarke County											
19FF02	A	335816	0831646	Aikens, Mrs.	20	158	128	6	1972	Martin	Domestic.
22HH09	F	340847	0825506	Athens Boiler & Machine Works	50	210	10	6	1972	McCannon	Industrial.
19GG37	I	340033	0831939	Athens Christian School	30	280	100	6	--	Oconee	Institutional.
17FF17	A	335604	0833029	Athens Farm Implement	100	305	--	6	1977	Baxter	Domestic.
19GG05	I	340118	0831909	Athens Plumb & Well	40	200	92	6	1962	Martin	--
18FF49	D	335418	0832740	Barber Creek Estates	40	170	42	6	1971	do.	Public supply.
18GG20	A	340017	0832659	Beatenbaugh, Buddy	30	203	80	6	1974	do.	Domestic.
19GG34	A	340030	0832213	Bennett, Mrs. Buddy	25	233	104	6	1973	do.	Do.
19GG54	C	340437	0831603	Benton, Bruce	20	218	41	6	1976	do.	Do.
19GG29	A	340011	0831625	Bishop, Julius, 1	30	210	30	6	1951	Virginia	Do.
19GG30	A	340004	0831653	Bishop, Julius, 2	30	245	152	6	1951	do.	Do.
18FF40	A	335937	0832753	Boyd, A.B.	100	245	34	6	1975	Martin	Do.
20FF02	I	335347	0831452	Bray, Paul, 2 (home)	25	245	91	6	1970	do.	Do.
19GG53	C	340235	0831822	Brown, Ollie	80	145	50	6	1974	Spray	Do.
19GG41	I	340110	0831858	Brown, Timothy	20	568	119	6	1972	Martin	Do.
19FF49	A	335823	0831542	Bunce, Paul Sr.	35	215	87	6	1973	do.	Do.
18FF39	A	335936	0832855	Carmichael, Grant	50	280	85	6	--	Oconee	Do.
19FF13	B	335532	0831557	Clarke Co. Landfill Area	25	188	79	6	1976	Holder	Do.
19FF04	I	335640	0831948	Clarke Co. Prison Well	52	105	54	6	1948	Virginia	Public supply.
19FF40	I	335232	0831811	Classic Nursery	20	703	59	6	1973	Martin	Irrigation.
19FF05	A	335601	0831903	Cone, John W.	30	125	33	6	1958	do.	Domestic.
18GG26	A	340140	0832700	Crooked Creek Village	100	530	60	6	1972	Spray	Public supply.
19FF32	C	335445	0831706	Dixon, Gene	100	255	65	6	--	Oconee	Domestic.
19EE48	I	335136	0831850	Duttweiler, David	100	385	38	6	1975	Martin	Do.
19FF16	A	335424	0831742	Edwards, Wayne	40	398	143	6	1972	do.	Do.
18FF13	A	335629	0832629	Elks Club 790	75	105	52	6	1978	McCannon	Public supply.
19GG32	A	340018	0832206	Endsley, Richard	23	230	178	6	1971	Martin	Domestic.
19EE31	I	335142	0831639	Fain, Slaughter	25	300	135	6	1981	do.	Do.
20FF04	I	335357	0831445	Fleming, Calvin	20	248	48	6	1976	do.	Do.
19GG49	C	340222	0831743	Fuller, William	30	83	21	6	1972	do.	Do.
19GG47	C	340226	0831730	do.	43	95	35	6	1971	do.	Do.
19GG48	C	340225	0831732	do.	20	80	35	6	1971	do.	Do.
19GG50	C	340221	0831744	do.	120	190	38	6	1971	do.	Do.
19GG51	C	340222	0831746	do.	20	170	3	6	1972	Spray	Do.
19GG38	I	340021	0831945	Ga. Bureau of Investigation	40	125	90	6	1978	McCannon	Public supply.
19FF47	I	335710	0832025	Gainesville Stone Co.	112	200	18	6	1971	Martin	Industrial.
19GG39	I	340051	0832022	Garnett, Rhodes	40	125	21	6	1970	do.	Domestic.
19FF15	A	335540	0831733	Gay, M.C.	34	100	34	6	1949	do.	Do.
19FF10	I	335230	0831700	Gazda, George	60	308	84	6	1977	do.	Do.
19FF27	I	335327	0832000	Gibson, Ted	20	260	16	6	1980	do.	Do.
18FF18	A	335714	0832857	Giles, Dr. Norman	30	203	29	6	1972	do.	Do.
19FF29	I	335452	0832045	Glenn Forest Subdivision	30	263	93	6	1975	do.	Public supply.
19FF30	I	335432	0832053	do.	50	220	40	6	1978	Montgomery	Do.
19FF25	I	335806	0831854	Gossens, T.D.	60	170	27	6	1970	Martin	Agricultural.
19FF18	A	335845	0831624	Hagen, Elliot	20	233	77	6	1975	do.	Domestic.
19FF22	I	335746	0831953	Hallmark Trailer Park	125	218	96	6	--	Holder	Public supply.
19FF23	I	335749	0831949	do.	100	203	54	6	1979	Martin	Do.
19FF24	I	335759	0831947	do.	120	218	76	6	1976	Holder	Do.
18FF21	A	335628	0832800	Hanson, Paul E.	21	705	46	6	1970	Martin	Domestic.
19EE36	I	335127	0831902	Harris, James	20	275	21	6	1970	do.	Do.
19FF01	A	335845	0831625	Harrold, T.J.	20	185	111	6	1957	Virginia	Agricultural.
18EE41	D	335029	0832834	Herd, John	50	265	30	6	1979	McCannon	Domestic.
19FF33	I	335723	0831923	Hicks, James	30	140	120	6	1971	Martin	Domestic.
19EE30	I	335119	0831838	Hill, Jerry	100	248	36	6	1974	do.	Do.
18FF44	A	335521	0832858	Holbrook, J.B.	20	160	8	6	1972	McCannon	Do.
19FF08	I	335447	0832032	Holcomb, Clyde	100	230	90	6	1970	Martin	Do.
18FF32	A	335846	0832755	Howard, Jeff, Subdivision	75	120	62	6	1980	do.	None.
18FF33	A	335843	0832752	do.	20	240	35	6	1980	do.	Do.
18FF25	F	335555	0832459	Howington, O.C.	20	180	70	6	1969	McCannon	Domestic.
19GG42	A	340007	0832211	Hunnicutt, John	23	158	56	6	1970	Holder	Do.
19GG40	A	340040	0831820	Hunsinger, Dick	40	155	35	6	1954	Martin	Do.
18FF14	A	335715	0832818	Ivey, Clark Sr.	30	120	92	6	1980	do.	Do.
18FF15	A	335723	0832820	Ivey, Marion	20	173	58	6	1976	do.	Do.
18FF01	A	335649	0832608	John Thurmond Furniture	45	175	34	6	1946	Virginia	Do.
19EE37	B	335107	0831627	Johnson, Monroe Jr.	30	175	60	6	1958	Martin	Do.
18GG19	A	340207	0832636	Johnson, Steve	20	160	42	6	1981	do.	Do.
18FF27	F	335542	0832338	Keller, Paul	25	220	19	6	1981	do.	Irrigation.
19FF28	C	335407	0831725	Laird, Bill	60	305	127	6	1971	do.	Domestic.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Latitude	Longitude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Clarke County--Continued											
19FF48	I	335615	0831956	Lane, Brit	75	248	27	6	1975	Martin	Domestic.
19FF34	C	335544	0831634	Largo Trailer Park	60	265	--	6	1978	Baxter	Public supply.
18FF19	A	335721	0832846	Lege, Randy	35	248	100	6	1972	Martin	Domestic.
18GG18	A	340002	0832535	Logan, Dayton	35	308	53	6	1973	do.	None.
19FF09	C	335353	0831713	Lyda, Fred	30	200	47	6	1970	do.	Domestic.
18FF34	A	335605	0832658	Maddox, Clyde	25	400	132	6	1981	do.	Irrigation.
19FF37	A	335709	0831750	Martin, Mrs. W.J.	20	398	113	6	1977	do.	Public supply.
19FF38	A	335656	0831710	do.	60	75	15	6	1972	do.	Agricultural.
19FF39	A	335706	0831749	do.	35	250	--	--	1966	do.	Public supply.
19FF46	C	335406	0831720	Memory, Joe	80	280	120	6	1971	do.	Domestic.
18GG17	A	340020	0832538	Middendorp, Wayne	50	400	65	6	1982	do.	Do.
19GG44	I	340119	0832025	Mineral Springs Subdivision	30	128	127	6	1975	do.	Public supply.
18FF24	F	335549	0832451	Nesmith, Donald	100	170	63	6	1971	do.	Domestic.
19FF36	I	335447	0831557	Nichols, Carl	50	308	105	6	1975	do.	Public supply.
18FF37	A	335959	0832727	Nicholson, J.P.	20	223	41	6	1955	Virginia	Domestic.
18FF12	A	335802	0832839	Nix, Harold	30	425	75	6	1972	Sullivan	Do.
18FF17	A	335613	0832632	Owens, C.E.	50	161	35	6	1975	Martin	Do.
18FF23	F	335453	0832256	Parks, A.O.	55	343	48	6	1976	do.	Do.
19GG55	C	340713	0831510	Pearson, Paul	40	245	--	6	1977	Baxter	Do.
19GG35	A	340028	0832227	Penn, L.W.	100	340	--	6	1975	Spray	Do.
18FF46	A	335758	0832910	Pharr, Roger	80	205	--	6	1977	Baxter	Do.
19GG01	C	340305	0831824	Piedmont Park MHP	30	200	50	6	1974	McCannon	Public supply.
19FF06	I	335450	0832121	Pinecrest Lodge	60	145	--	6	1978	Baxter	Do.
18FF41	A	335957	0832705	Pleger, Gary	50	160	104	6	1971	Martin	Domestic.
18GG21	A	340216	0832814	Prewitt, Jesse	20	113	40	6	1972	do.	Do.
18FF38	A	335842	0832734	Richardson, John	25	120	83	6	1972	McCannon	Do.
19GG36	A	340029	0832224	Ryan, Tom	30	295	60	6	--	Oconee	Do.
19GG46	I	340206	0832118	Sandy Trailer Park	60	200	120	6	1970	McCannon	Public supply.
19FF17	A	335623	0831710	Shealy, Kenneth J. (egg farm)	27	200	119	6	1970	Martin	Domestic.
19FF03	I	335748	0831844	Smith, Thurman	50	305	75	6	1975	Sullivan	Do.
19GG52	B	340104	0831716	Spratlin, Craig	20	242	87	6	1954	Virginia	Do.
19FF21	I	335810	0831845	Spring Valley MHP	65	300	96	6	1959	Martin	Public supply.
19GG43	A	340437	0832223	Stone, A.L.	20	203	63	6	1974	do.	Domestic.
19FF35	I	335720	0831903	Strickland, T.G.	60	160	36	6	1981	do.	Public supply
19EE43	I	335123	0831850	Taylor, Mrs. Rosemary	60	285	145	6	1975	Spray	Agricultural.
19FF26	I	335855	0832035	The Loef Co., Inc.	20	320	84	6	1970	Martin	Industrial.
19FF12	I	335424	0832121	Thomas Textiles	45	500	27	8	1948	Virginia	Do.
19GG33	A	340018	0832209	Titshaw, William	20	260	218	6	1973	--	Domestic.
18FF20	A	335800	0832843	Trice, Dr. John	30	475	100	6	1971	Martin	Do.
18FF31	A	335823	0832712	Uhde, Robert	55	105	55	6	1975	Spray	Do.
18FF22	F	335526	0832231	Univ. Ga. Vet. School, 2	23	353	53	6	1970	Martin	Institutional.
19FF41	I	335348	0832143	Univ. Georgia	61	445	139	6	1980	Virginia	Irrigation.
19FF42	I	335338	0832134	do.	57	500	105	6	1979	do.	Do.
19FF43	I	335313	0832108	do.	38	338	77	6	1973	Martin	Agricultural.
19FF44	I	335242	0832104	do.	20	400	71	6	1978	Virginia	Institutional.
19EE28	B	335052	0831641	Ward, Garnett	30	225	70	6	1979	Sullivan	Domestic.
19EE44	I	335129	0831854	Wordaski, John	60	353	44	6	1974	Martin	Do.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Latitude	Longitude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Elbert County											
25FF01	K	335810	0823431	Bobby Brown State Park	57	203	94	6	1966	Virginia	Public supply.
25FF02	K	335807	0823445	do.	27	160	--	6	1968	do.	Do.
23HH02	A	341251	0824701	Bonds, H.B.	35	225	43	6	1974	Sullivan	Domestic.
21HH02	B	341209	0830155	Bowman, Ga., 1	57	272	65	6	1951	Virginia	Public supply.
21HH04	B	341215	0830157	Bowman, Ga., 2	75	450	91	6	1959	Martin	Do.
21HH03	B	341146	0830151	Bowman, Ga., 3	47	680	144	6	1974	do.	Do.
22HH03	C	340913	0825508	Brady, Homer	40	80	30	6	1971	McCannon	Domestic.
23GG04	K	340021	0824649	Brown, Billie Ray	20	280	107	6	1968	do.	Do.
22HH07	B	341016	0825745	Butler, Morris	30	150	30	6	--	Gunter	Do.
23GG21	K	340520	0824649	Coggins, Frank	100	180	108	6	1976	Hughes	Do.
22GG07	F	340558	0825526	Coggins, Frank (Ga. Granite)	20	529	36	8	1936	Georgia	Industrial.
23HH06	F	340915	0825201	Colvard, Joe	50	140	60	6	1977	McCannon	Domestic.
22HH05	B	340917	0825601	Davis Floral Co.	25	200	90	6	1975	do.	Do.
22GG05	F	340335	0825434	Davis, Carl	40	170	28	6	1970	Martin	Do.
22GG06	F	340523	0825520	Dove Creek Recreation Center	30	207	61	6	1951	Virginia	Institutional.
23HH04	A	341401	0824858	Dunn, Tharon	27	90	45	6	1981	McCannon	Domestic.
23GG13	K	340223	0824607	Oye, Jack	75	125	15	6	--	Gunter	Do.
22GG04	F	340422	0825720	Eberhardt, Rhoda	30	225	46	6	1971	do.	Do.
22HH08	C	341023	0825244	Edwards, Gene	60	185	71	6	1971	Martin	Do.
23GG15	K	340215	0824730	Evans, Woodrow	25	181	32	6	--	Gunter	Do.
23GG03	F	340458	0825052	Falling Creek School	40	241	75	6	1951	Virginia	Institutional.
22HH06	B	340918	0825604	Florist, Davis	50	190	115	6	1979	McCannon	Domestic.
24GG03	K	340235	0824342	Franklin, J.P.	30	190	50	6	--	Gunter	Do.
22GG01	F	340556	0825521	Ga. Granite Co.	20	790	--	8	1937	Georgia	Industrial.
22GG02	F	340458	0825648	Guest, Andrew	20	100	70	6	1970	McCannon	Domestic.
24GG04	K	340338	0824346	Heardmont Healthcare Center	28	200	102	6	1957	Virginia	Institutional.
23GG08	F	340403	0824930	Hollis, Raymond	32	52	--	6	1982	Gunter	Domestic.
23GG19	F	340329	0825041	Hubbard, Mrs. B.R.	30	120	55	6	1973	McCannon	Do.
23GG01	F	340414	0825230	Hudson, J.C.	35	129	50	6	1955	--	Do.
23GG10	K	340320	0824923	Johnson, Dewey	30	150	35	6	1955	Williams	Do.
22HH02	F	340857	0825502	Jones, Albert	20	200	82	6	1977	McCannon	Do.
23GG11	F	340522	0825228	Mann, Charles C.	46	295	52	6	1982	do.	Do.
22HH04	A	341347	0825429	Maple Spring Church	100	320	23	6	1970	Martin	Institutional.
24GG01	K	340232	0824312	Mitchell, John	20	125	73	6	--	Gunter	Domestic.
23GG07	F	340506	0825154	Oglesby, Lanier	30	480	18	6	1973	McCannon	Do.
23GG14	K	340120	0824637	Piedmont Land & Sheep Co.	75	140	70	6	1971	do.	Do.
23GG05	F	340215	0825205	Raft, Charles	60	125	75	6	1972	do.	Do.
23HH03	A	341422	0824726	Rock Branch Comm. Rec. Area	60	302	23	6	1953	Martin	Public supply.
23GG18	K	340051	0825226	Ruff, Greg	60	200	104	6	1980	Gunter	Domestic.
24GG02	K	340219	0823801	Scott, James Jr.	25	100	71	6	--	do.	Do.
23GG06	F	340446	0825011	Searcy, Kendall	20	160	57	6	1969	McCannon	Do.
23HH01	A	341231	0824818	Shifflett, William	20	175	38	6	--	Gunter	Do.
23GG12	K	340222	0824757	Simpkins, Mamie Dye	30	90	35	6	1969	McCannon	Do.
23GG20	F	340556	0824908	Statum, Nora	40	143	73	6	1974	Martin	Do.
25GG01	K	340142	0823710	Tates Grove Church	20	100	7	6	1974	McCannon	Institutional.
23JJ01	A	341631	0824707	Taylor, Melvin	25	130	47	6	1981	do.	Domestic.
23GG16	F	340603	0825023	Turner Concrete	60	280	44	6	1972	do.	Industrial.
23GG17	F	340601	0825017	do.	27	350	47	6	1971	Martin	Do.
25GG02	K	340143	0823652	U.S. Army Corps of Engineers	30	235	94	6	1975	do.	Public supply.
22GG03	F	340424	0825805	Webb, Milton	100	185	35	6	1972	Sullivan	Domestic.
23GG09	F	340359	0824923	Whispering Pines MHP	20	200	63	6	--	Gunter	Public supply.
23HH05	A	341105	0824941	Williams, Ray	50	125	35	6	1978	McCannon	Domestic.
22HH01	A	341308	0825230	Young, F.M.	75	200	100	6	1970	do.	Do.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Latitude	Longitude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Greene County											
20CC08	K	333533	0831232	Adams, William	30	250	100	6	1979	Gunter	Agricultural.
20CC10	K	333339	0831323	Adams, Willie	30	141	80	6	1977	Spray	Do.
21CC17	J	333011	0830030	Alexander Estate	40	68	19	6	1972	Martin	Public supply.
21CC10	F	333317	0830613	Alexander, Sim	20	200	38	6	1972	McCannon	Domestic.
19BB01	K	332938	0831601	Askew, Charles	40	300	58	6	1960	Martin	Do.
20BB04	K	332652	0831137	Beaverdam Subdivision	25	515	120	6	1977	McCannon	Public supply.
21CC16	F	333005	0830229	Bell, Tony	35	150	57	6	1982	Gunter	Agricultural.
19CC09	K	333309	0831720	Bird, Leroy	30	128	109	6	1965	Virginia	Do.
20CC20	K	333604	0830734	Brown, Cosby	20	80	30	6	1970	McCannon	Domestic.
21CC07	J	333324	0830049	Bryant, Sibley	20	275	135	6	--	Gunter	Do.
21CC08	J	333323	0830037	do.	20	275	121	6	--	do.	Do.
20CC01	K	333652	0830954	Cannon, J.T.	44	168	62	6	1958	Martin	Do.
20DD02	F	333958	0831025	Cannon, John	20	275	168	6	--	Gunter	Do.
20CC24	F	333357	0830919	Cawthon, Jeff	30	105	33	6	1958	Martin	Do.
20CC04	K	333531	0830843	Clean Car Wash	60	65	8	6	1981	McCannon	Industrial.
20CC12	K	333210	0831300	Cofer, P.A.	30	260	101	6	1971	Virginia	Domestic.
20CC13	K	333055	0831335	Copeland, E.G.	44	165	96	6	1959	Martin	Agricultural.
21DD05	K	333741	0830251	Cronic, D.H.	20	200	70	6	1968	McCannon	Domestic.
21D004	K	333738	0830301	Cronic, J.D.	25	140	51	6	1969	do.	Do.
19DD04	B	334144	0831947	Curtis, Mrs. R.B.	20	300	90	6	1971	do.	Do.
19DD06	B	333812	0831800	D & Dairy	30	200	137	6	1980	Gunter	Agricultural.
20BB06	K/F	332625	0831102	Oeerfield Estate Subdivision	60	425	76	6	1978	McCannon	Public supply.
20BB07	K	332639	0831103	do.	25	265	140	6	1978	do.	Do.
21DD06	K	333839	0830056	Oingler, Mrs. G.D.	20	200	98	6	1972	do.	Domestic.
21DD07	J	334013	0830127	Ourham, Mercer	75	125	90	6	1982	Gunter	Do.
21CC13	F	333055	0830555	Duval, Frank	100	209	30	6	1975	do.	Do.
19CC03	B	333627	0831824	Duvall, Harold	25	200	100	6	--	do.	Agricultural.
21CC12	F	333219	0830453	Edwards, James	20	138	44	6	1956	Virginia	Domestic.
21CC11	F	333241	0830512	Ga. Dept. of Transportation	25	124	47	6	1954	do.	None.
20CC19	F	333227	0830956	Georgia Kraft	30	173	20	6	1977	Martin	Industrial.
20CC02	F	333601	0830857	Guthrie, T.	25	125	8	6	1981	McCannon	Domestic.
21DD02	F	333907	0830600	Hall, T.J.	30	186	132	6	1956	Virginia	Agricultural.
20CC11	K	333247	0831404	Head, Truman	100	230	138	6	1981	Oconee	Do.
20CC22	F	333403	0830904	Hillcrest Farms	30	315	144	6	1963	Virginia	Do.
20CC23	F	333416	0830917	do.	22	365	29	8	1964	do.	Do.
21BB03	F	332902	0830215	Holcomb, David	100	463	9	6	1972	Gunter	Domestic.
20CC17	F	333220	0830738	Holcomb, Julian	40	150	50	6	1970	do.	Do.
20CC18	F	333225	0830738	do.	60	125	58	6	--	do.	Do.
21CC09	F	333419	0830638	Jordon, Mark	75	105	90	6	--	do.	Do.
19DD01	B	334337	0831748	L.C. Curtis & Son	20	400	50	6	1962	Oconee	None.
19DD03	B	334325	0831815	do.	20	125	31	6	--	Gunter	Do.
19DD05	B	334158	0831845	Lewis, Toombs Jr.	40	233	60	6	1974	Martin	Domestic.
20CC14	K	333057	0831103	Marchman, Claude	20	150	90	6	--	Gunter	Agricultural.
19CC04	B	333616	0831710	McGraw, Bill	50	175	60	6	--	Oconee	Domestic.
20BB01	K	332914	0831115	Meyer & Kearney	60	345	60	6	1973	Spray	Agricultural.
20BB02	K	332911	0831104	do.	20	185	53	6	1960	Virginia	Domestic.
20CC15	F	333017	0830844	Moon, Mrs. Richard	50	440	23	6	1978	McCannon	Do.
20CC09	K	333517	0831259	Murphy, Neil	30	120	58	6	1970	do.	Do.
21CC18	J	333053	0830002	Neal, C.F.	60	325	--	6	1972	Spray	Do.
20CC03	F	333608	0830830	Nibco Manufacturing Co.	25	500	29	6	--	Oconee	Industrial.
19CC07	K	333014	0831638	Parks Mill Crossing Subdiv.	60	265	60	6	1981	McCannon	Public supply.
20BB03	F	332923	0830906	Point Royal Subdivision	40	505	110	6	1980	do.	Do.
20DD03	K	334125	0831351	Reynolds, Jamie III	45	145	--	6	1975	Spray	Domestic.
20BB08	F	332510	0831021	Rocky Creek Subdivision	25	225	45	6	1981	McCannon	Public supply.
20CC21	F	333351	0830834	Roper, Sam	35	167	104	6	1953	Virginia	Domestic.
21DD03	K	333732	0830532	Rutherford, O.O.	20	261	121	6	1955	do.	Do.
20BB05	F	332643	0831031	Sandy Creek Subdivision	25	265	140	6	1981	McCannon	Public supply.
21CC15	F	333100	0830324	Stewart, C.E.	25	141	87	6	1958	Martin	Agricultural.
21CC14	F	333104	0830327	Stewart, Milton	40	135	87	6	1956	Virginia	Domestic.
21CC02	F	333053	0830317	Stewart, Russell	30	138	45	6	1958	do.	Do.
19CC06	B	333557	0831720	Thomas, George	25	145	101	6	1958	Martin	Do.
20BB11	K	332524	0831428	Timber Ridge Subdivision	22	405	50	6	1980	McCannon	Public supply.
20BB12	K	332547	0831415	do.	28	385	46	6	1980	do.	Do.
21CC03	J	333659	0830425	Union Point, Ga., 1	20	600	100	8	1935	Virginia	Do.
21CC01	J	333651	0830431	Union Point, Ga., 2	22	--	--	8	1948	--	Do.
21CC04	J	333656	0830440	Union Point, Ga., 3	40	600	221	8	1943	Virginia	Do.
21CC05	J	333641	0830353	Union Point, Ga., 4	35	600	100	8	1956	--	Do.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Lati-tude	Longi-tude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Greene County--Continued											
19CC05	K	333331	0831710	Walker, George	200	436	70	6	1969	McCannon	Domestic.
20CC05	F	333503	0830944	Webb, John	22	100	14	6	1971	Martin	Do.
21CC06	K	333606	0830710	Weekly, Ed	200	100	25	6	1974	McCannon	Do.
20CC06	K	333441	0831110	Wellington Puritan Mills	100	700	--	10	--	--	Industrial.
20CC07	K	333453	0831128	do.	53	450	151	8	1948	Virginia	Do.
20BB09	F	332413	0831030	Whispering Pines Subdivision	50	225	26	6	1980	McCannon	Public supply.
20BB10	F	332417	0831050	do.	30	185	120	6	1980	do.	Do.
21BB01	J	332825	0830105	White Plains, Ga.	51	465	75	8	1969	Virginia	Do.
20CC16	F	333004	0830814	Wilson, William	30	200	40	6	1979	Spray	Domestic.
21BB02	F	332717	0830203	Woodruff, Charlie	40	203	18	6	1977	Martin	Do.
21DD01	F	334022	0830620	Woodville, Ga.	48	605	110	6	1980	Virginia	Public supply.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Latitude	Longitude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Jackson County											
19HH17	A	340804	0832218	Baxter, Henry Jr.	100	245	115	6	--	Baxter	Domestic.
15GG02	A	340630	0834549	Braselton, Ga., 1	39	235	100	6	1946	Virginia	Public supply.
15GG03	A	340635	0834554	Braselton, Ga., 2	35	455	--	--	1965	do.	Do.
15GG04	A	340616	0834643	Braselton, Ga., 3	75	480	84	6	1976	do.	Do.
15HH05	B	340733	0834628	Braselton, Ga., 4	162	350	25	6	1976	do.	Do.
18GG24	A	340145	0832626	Braswell, R.M. Jr.	20	140	105	6	1969	McCannon	Domestic.
18GG25	A	340125	0832619	do.	20	310	150	6	1981	Montgomery	Do.
18GG22	A	340147	0832806	Cartledge, Morris	25	154	30	6	--	do.	Do.
18HH04	A	341031	0832859	Clinkscales, Maylon B.	30	265	--	6	1975	Baxter	Do.
18GG02	A	340032	0832821	Colony MHP	100	240	95	6	1970	McCannon	Public supply.
15GG06	B	340706	0834711	Cronic, Ed	40	185	--	6	1977	Baxter	Domestic.
18GG10	A	340602	0832317	Dial, Eula Mae	50	145	43	6	1981	McCannon	Do.
16HH10	A	341159	0834200	Dubnik, Nicholas	25	205	--	6	1975	Baxter	Do.
15HH06	B	340826	0834623	Dulton, R.B.	125	330	25	6	1976	Spray	Do.
18GG04	A	340033	0832714	Fields, James H.	28	200	18	6	--	Martin	Agricultural.
16HH06	G	341008	0834450	Flowers, Marelle	25	205	--	6	1977	Baxter	Domestic.
17HH07	A	341009	0833323	Ga. International Speedway	30	205	24	6	1981	do.	Institutional.
17GG10	A	340710	0833255	Gee, Kenney, 1	50	125	73	6	1978	McCannon	None.
17GG09	A	340715	0833302	Gee, Kenney, 2	35	350	30	6	1980	Baxter	Domestic.
16HH14	B	340946	0834038	Gee, Roy Jr.	25	215	49	6	1955	Virginia	Do.
17GG02	A	340455	0833549	Glass, Robert J.	30	65	31	6	1981	McCannon	Do.
18HH06	A	341022	0832558	Gold Kist	100	250	--	6	1976	Baxter	Industrial.
17JJ02	A	341500	0833337	Golden Pantry	30	205	64	6	--	Oconee	Institutional.
18HH02	A	341136	0832658	Harmony Grove Mills	165	500	35	8	1949	Virginia	Industrial.
18GG11	A	340533	0832231	Hawks, T.J.	100	205	73	6	1981	Baxter	Domestic.
18GG13	A	340413	0832320	Hembree, Randolf	20	375	122	6	1981	Oconee	Do.
17HH02	A	341424	0833716	Hensley, Phillip	150	320	30	6	1981	Murphy	Do.
17JJ05	A	341523	0833643	Hiland, Otis	30	225	60	6	1981	Baxter	Agricultural.
17GG08	A	340644	0833201	Hill, Burt Jr.	20	345	--	6	1977	do.	Domestic.
15GG07	A	340529	0834544	Hoschton, Ga.	124	509	40	6	1964	Virginia	Public supply.
17GG07	A	340627	0833237	Howington, Jack	20	230	--	6	1971	McCannon	Domestic.
17GG11	A	340654	0833235	Jackson, Joe	100	400	--	6	1978	Baxter	Agricultural.
17GG13	A	340532	0833642	James, John	50	200	65	6	1959	Martin	Domestic.
16JJ04	A	341529	0833845	Jarrett, Foster L.	75	340	64	6	1974	Virginia	Do.
16HH20	A	340902	0833932	Jewell By-Products	65	225	150	6	1946	--	None.
16HH22	A	340903	0833946	Jewell Farm	25	300	118	6	1955	Virginia	Do.
16HH23	A	340916	0833943	do.	30	250	64	6	1956	do.	Do.
16HH24	A	340918	0833940	do.	60	500	63	6	1957	do.	Do.
18GG14	A	340403	0832329	Johnson, A.D.	25	205	--	6	1979	Baxter	Domestic.
17GG06	A	340614	0833225	Johnson, David	25	335	116	6	1979	McCannon	Do.
16HH08	B	341212	0834254	Jones J.B.	30	160	35	6	1973	do.	Do.
16GG03	A	340530	0834130	Justiss	30	125	23	6	1981	Baxter	Agricultural.
16HH12	A	340908	0833902	Katherines Kitchen	100	263	54	6	1975	Martin	Institutional.
17JJ01	A	341512	0833347	Maysville, Ga., 1	60	500	108	8	1948	do.	Public supply.
18HH05	A	341248	0832519	McClure, Sam	20	300	--	6	1976	Baxter	Domestic.
18GG05	A	340122	0833000	McLeroy, Lester	20	95	73	6	1971	Martin	Do.
16HH07	G	341032	0834446	McNeil, Larry	50	305	--	6	1977	Baxter	Do.
18GG12	A	340504	0832317	Micheal, Douglas	25	325	--	6	1979	do.	Do.
17JJ03	A	341552	0833515	Moon, J.L.	80	145	48	6	1981	Biddy	Do.
18GG23	A	340219	0832712	Morang, James	100	213	50	6	1978	Spray	Do.
16HH19	G	341127	0834344	Mott Prepared Foods, Inc.	30	200	55	6	1944	Virginia	None.
16HH25	G	341136	0834336	do.	60	328	48	6	1984	Biddy	Industrial.
16HH16	G	341127	0834341	Mott Prepared Foods, Inc., 1	50	413	36	6	1979	Martin	Industrial.
16HH17	G	341126	0834343	Mott Prepared Foods, Inc., 3	75	500	53	6	1971	do.	Do.
16HH18	G	341130	0834352	Mott Prepared Foods, Inc., 6	35	553	39	6	1974	do.	Do.
17HH10	A	341153	0833652	Norris, Frank L.	30	260	45	6	1970	McCannon	Domestic.
16HH15	B	341039	0834147	North Jackson School	47	300	147	--	1955	Minish	Institutional.
16GG04	A	340320	0833914	Ottley, J.D.	60	203	65	6	1972	Martin	Domestic.
17HH03	B	341251	0833245	Perry, Talmadge	20	200	38	6	1980	Baxter	Do.
18GG16	A	340317	0832523	Petrillo, Frank	25	125	62	6	1981	Oconee	Do.
16GG01	A	340604	0834442	Pirkle, Jack	20	135	47	6	1951	Virginia	Do.
18GG09	A	340553	0832309	Pittman, Clifford	50	205	--	6	1978	Baxter	Do.
17HH09	A	340856	0833623	Porter, Don D.	20	150	28	6	1970	Martin	Do.
17GG01	A	340721	0833006	Redd, Ellis	50	68	33	6	1972	do.	Institutional.
18GG03	A	340334	0832517	Savramis, Steve	25	280	175	6	1981	Oconee	Domestic.
17GG03	A	340420	0833320	Sears, Charles	20	192	45	6	1956	Virginia	Agricultural.
17GG04	A	340016	0833053	Shackleford, Tom	20	140	35	6	1973	McCannon	Domestic.
18GG15	A	340404	0832505	Shedd, Harold	100	300	160	6	1979	Baxter	Public supply

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Latitude	Longitude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Jackson County--Continued											
17HH05	A	340915	0833304	Smith, O.G.	22	158	45	6	1972	--	Domestic.
17GG05	A	340122	0833000	Sprinkles, Roger	20	125	50	6	1979	Virginia	Do.
18GG06	A	340309	0832555	Sprinkles, T.L.	60	125	50	6	1981	do.	Do.
18GG07	A	340651	0832558	Staple Gin	50	180	--	6	1947	--	None.
17HH08	A	340918	0833610	Story, Mack	60	285	60	6	1970	McCannon	Domestic.
15GG08	B	340710	0834747	Thompson Mill Forest	100	478	42	6	1982	Virginia	Institutional.
18GG27	A	340307	0832440	Tolbert, John	35	185	113	6	1982	Martin	Public supply.
17JJ04	A	341501	0833622	Unity Church	20	205	--	6	--	Baxter	Institutional.
18GG01	A	340710	0832926	Venable, Mrs. Mays	60	155	114	6	1973	Martin	Domestic.
16HH13	A	340910	0833857	Waffle House	100	143	58	6	1971	do.	Institutional.
18GG08	A	340545	0832253	Wardlaw, Jack	50	275	--	6	1977	Baxter	Agricultural.
16HH11	G	341035	0834335	Waters, W.A.	20	302	9	6	1949	Virginia	Domestic.
16HH01	B	341046	0834012	Wayne Poultry Co., 1	46	121	--	12	1966	do.	Industrial.
16HH02	B	341040	0834026	Wayne Poultry Co., 2	107	223	103	6	1966	do.	Do.
16HH03	B	341039	0834033	Wayne Poultry Co., 3	114	210	123	6	1966	do.	Do.
16HH04	B	341037	0834047	Wayne Poultry Co., 4	137	250	147	6	1966	do.	Do.
16HH05	B	341042	0834037	Wayne Poultry Co., 8	87	265	105	6	1966	do.	Do.
17HH06	A	340840	0833409	Weeks, Lamar	40	165	--	6	1975	Baxter	Domestic.
19GG45	I	340157	0831946	Westbrook MHP	30	275	63	6	1971	Martin	Public supply.
16GG02	A	340559	0834009	White Plains Church	20	245	54	6	1970	do.	Institutional.
18HH03	A	340854	0832310	Windy Hill Farm	25	325	122	6	1980	Baxter	Agricultural.
17HH01	A	341118	0833711	Wright, Mrs. H.J.	45	295	50	6	1970	Martin	Do.
17HH04	B	341303	0833117	Yonce, Roy Jr.	25	310	17	6	1981	Baxter	Domestic.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Latitude	Longitude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Madison County											
19GG09	C	340727	0831745	Adams, Gene	25	245	100	6	1981	Baxter	Domestic.
19GG25	C	340121	0831716	Adams, J.B.	45	85	--	6	1962	Martin	Irrigation.
20GG05	B	340339	0831226	Applebaum, S.H.	25	355	70	--	1959	do.	Domestic.
19GG06	A	340151	0831827	Athens Plumb & Well	100	248	52	6	1978	do.	Do.
19GG10	I	340648	0831941	Bannister, H.G.	35	124	87	6	1950	do.	Do.
20HH12	C	341036	0831208	Blue Stone Church	25	205	38	6	1981	Baxter	Institutional.
19GG22	C	340440	0831859	Boswell, C.J., 1	53	167	69	6	1961	Martin	Domestic.
19GG23	A/C	340445	0831858	Boswell, C.J., 2	35	145	80	6	1973	Sullivan	Do.
19GG15	B	340139	0831525	Bray, Doug	100	218	100	6	1975	Martin	Do.
20GG17	F	340316	0831442	Bray, Junior	100	200	30	6	1982	do.	Do.
19HH16	C	340743	0831503	Brewer, Ken	30	200	65	6	1974	McCannon	Do.
19GG08	C	340436	0831523	Browning, H.M.	60	125	--	6	1977	Baxter	Do.
19GG16	C	340656	0831721	Bryant, George	23	185	--	6	1976	do.	Do.
19HH13	C	340932	0831621	Camp Maranatha	50	145	42	6	1981	McCannon	Institutional.
19HH19	C	340926	0831612	do.	67	257	121	6	1950	Virginia	Do.
21GG03	B	340234	0830215	Carlton, Ga., 2	33	502	68	10	1955	Martin	Public supply.
21GG04	B	340229	0830254	Carlton, Ga., 3	35	500	28	6	1977	do.	Do.
19HH11	C	340757	0831808	Chandler, George	30	305	40	6	1979	Baxter	Agricultural.
19GG24	A	340328	0831917	Cherry, E.C.	50	110	69	6	1971	Martin	Domestic.
20GG18	B	340219	0831250	Colbert, Ga.	33	452	124	8	1951	do.	None.
20GG19	B	340222	0831303	Colbert, Ga., 1	100	600	--	--	1965	Oconee	Public supply.
20GG20	B	340215	0831232	Colbert, Ga., 2	42	400	57	8	1957	Virginia	Do.
20GG21	B	340207	0831235	Colbert, Ga., 3	85	660	60	6	1964	Martin	Do.
20GG22	B	340224	0831251	Colbert, Ga., 4	50	185	104	6	1982	McCannon	Do.
20GG04	F	340452	0831254	Cole, Curtis	60	300	32	6	1981	Martin	Agricultural.
19HH10	C	340802	0831613	Coley, Walt	20	95	74	6	1973	do.	Domestic.
20GG23	C/F	340539	0831400	Colonial Pipeline	150	290	23	--	1966	Virginia	Industrial.
21GG02	B	340343	0830720	Comer, Ga., 1	75	507	90	8	1920	Sullivan	Public supply
21GG01	B	340319	0830714	Comer, Ga., 2	55	500	102	8	1955	Martin	Do.
21GG08	B	340700	0830541	Cooper, E.G.	20	80	45	6	1971	McCannon	Domestic.
20GG01	C	340656	0831249	Crowe, W.P.	100	180	43	6	1968	do.	Do.
20GG06	B	340039	0831249	Daniels, Dan	40	200	36	6	1956	Martin	Agricultural.
20HH04	C	340732	0831324	Danielsville, Ga., 1	200	302	35	8	1958	do.	Public supply
20HH05	C	340732	0831324	Danielsville, Ga., 2	27	230	22	8	1946	Virginia	Do.
20HH11	C	341338	0830856	Dickson, Dr. L.G.	60	205	30	6	1981	McCannon	Domestic.
20HH08	C	340947	0831013	Dobb, James	20	225	--	6	1979	Baxter	Do.
21GG05	B	340216	0830346	Drake, James	120	215	21	6	1971	Martin	Agricultural.
19GG14	C	340700	0831509	Fanning, J.W.	60	148	58	6	1970	do.	Domestic.
19HH05	A	341104	0832038	Fitzpatrick, Ellis	30	250	110	6	1981	Baxter	Do.
19HH04	A	341318	0831612	Fitzpatrick, Lee	75	185	123	6	1981	do.	Do.
19HH07	A	341133	0831932	Fitzpatrick, R.L.	25	145	69	6	1958	Martin	Agricultural
21GG07	B	340441	0830705	Gantt, Larry	40	325	--	6	1972	Spray	Domestic.
19GG17	A	340330	0831936	Gibson, Mike	40	185	--	6	1978	Baxter	Do.
22GG08	F	340341	0825955	Greensboro Lumber Co.	40	265	55	6	1973	Spray	Industrial.
19GG12	C	340424	0831527	Griffith Bros.	42	220	82	6	1959	Martin	--
20GG03	C	340635	0831247	Griffith, Knox	60	285	105	6	1981	McCannon	Domestic.
19GG21	A	340449	0831901	Gunnells, Robert	25	100	52	6	1956	Martin	Do.
19HH14	C	340908	0831600	Harper, Gerald	50	265	--	6	1975	Baxter	Do.
19GG13	C	340712	0831705	Hayes, Bill	50	188	58	6	1973	Martin	Do.
19HH15	C	340939	0831527	Haynes, James	75	158	84	6	1970	Holder	Do.
19GG02	C	340230	0831709	Higgenbotham, Richard	20	204	43	6	1973	Martin	Do.
19GG26	B	340058	0831635	Holcomb, James A.	20	225	90	6	1974	Sullivan	Agricultural.
19HH06	A	341416	0831901	Hunt, Marrian	30	165	--	6	1976	Baxter	Domestic.
19HH09	A	341026	0831741	Ila School	67	380	76	6	1955	Martin	Institutional
19HH08	A	341015	0831744	Ila, Ga.	117	600	111	6	1982	Virginia	Public supply
19HH20	A	341210	0832020	Jones, Alfred	60	325	125	6	1981	--	Domestic.
19GG19	C	340357	0831604	Kesler, T.A., 1	25	58	--	6	1978	Martin	Agricultural.
19GG20	C	340357	0831602	Kesler, T.A., 2	35	100	40	--	1982	do.	Do.
20HH10	C	341408	0831248	Laurel Spring, Inc.	30	165	85	6	1974	Spray	--
21HH06	C	340939	0830721	Layng, Carolyn	20	145	--	6	1979	Baxter	Domestic.
19HH03	A	341312	0831623	Ledford, Wilbur	75	345	--	6	1978	do.	Do.
20HH09	C	340843	0831417	Madison Co. Training Center	80	165	--	6	1977	do.	Institutional
19GG18	I	340404	0832019	Massey, Stewart	60	345	149	6	1975	Sullivan	Domestic.
20GG13	C	340606	0831042	Mathes, Greg	40	165	90	6	1981	McCannon	Do.
19HH12	A	341020	0832017	Meadow Lake Estate	100	185	50	6	1973	Spray	None.
20HH13	C	340837	0831304	Meixsel, Perry	50	280	36	6	1981	Baxter	Domestic.
20HH07	C	341037	0830929	Morgan, David	30	60	30	6	1979	McCannon	Do.
20GG12	B	340129	0831233	Morris, Cliff	37	98	42	6	1970	Martin	None.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Latitude	Longitude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Madison County--Continued											
19GG28	A	340107	0831812	Nash, Jerry	60	143	40	6	1977	Martin	Domestic.
19HH02	A	341139	0831821	Oglesby, Leslie	20	200	84	6	1970	do.	Do.
20HH06	C	341227	0831316	Pate, W.H.	25	205	--	6	1978	Baxter	Do.
21HH05	B	341203	0830549	Ray, Boyd	30	380	45	6	1973	McCannon	Do.
20GG02	B	340344	0830947	South Madison Middle School	132	377	95	6	1955	Martin	Institutional.
19HH18	A	341135	0832023	Sartain, Sam	25	135	32	6	1980	Baxter	Agricultural.
19GG31	I	340200	0832027	Self, Mrs. Homer	30	125	20	6	1981	McCannon	Do.
20GG07	F	340341	0831401	Sewell, Jack	60	365	--	6	1976	Baxter	Domestic.
20GG14	B	340304	0831445	Sharp, L.B.	100	270	--	6	1978	do.	Do.
18GG28	A	340325	0832234	Shinnick, William	25	80	34	6	1970	McCannon	Do.
19GG27	B	340113	0831659	Tranquility MHP	42	290	124	6	1971	Martin	Public supply.
20HH02	C	340859	0830828	Transco, 2	50	255	54	6	1951	Virginia	Industrial.
20HH03	C	340847	0830854	Transco, 3	200	450	86	6	1958	do.	Do.
20GG09	B	340358	0831219	Turner, Larry	50	225	21	6	1981	McCannon	None.
20GG10	B	340330	0831217	Ward, Pat	30	110	47	6	1971	Martin	Domestic.
20GG11	B	340328	0831214	do.	100	245	72	6	1971	do.	Do.
19GG11	I	340147	0831947	Westbrook MHP, 2	30	275	--	6	1971	Sullivan	Public supply.
20GG08	B	340236	0831334	Williams, Barry	27	158	54	6	1972	Martin	Domestic.
21GG06	B	340356	0830137	Willoughby, Albert	30	205	37	6	1978	Spray	Do.
19HH21	A	341219	0832001	Wood, Escoe	30	290	--	6	--	--	Agricultural.
19GG07	C	340509	0831556	Zellner, Chuck	100	400	30	6	1969	McCannon	Domestic.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Latitude	Longitude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Morgan County											
18CC05	D	333552	0832737	Allgood, R.L.	50	265	104	6	1980	Virginia	Irrigation.
19CC14	D	333420	0831939	Apalachee Wood Subdivision	50	165	68	6	1981	McCannon	Public supply.
17BB02	A	332959	0833312	Baker, Bill	30	305	55	6	1980	Robinson	Domestic.
17CC05	D/A	333337	0833331	Bannister, Dr. James	125	285	128	6	1973	Virginia	Do.
19CC15	K	333231	0832206	Bell, Curtis	100	145	95	6	--	Oconee	Agricultural.
18BB05	A	332900	0832736	Bennett, C. Ray	20	236	154	6	1955	Martin	Do.
19CC01	K	333223	0831814	Bird, Leroy	50	285	120	6	1951	Oconee	Do.
19CC10	D	333439	0831947	Blackwell, Nancy	40	155	65	6	--	Holder	Domestic.
19CC08	K	333227	0831748	Blue Springs Subdivision	24	405	126	6	1981	McCannon	Public supply.
17DD06	D	334337	0833129	Bostwick School	38	300	75	6	1956	Martin	Institutional.
17DD07	D	334413	0833055	Bostwick, Ga., 1	200	495	60	8	1964	do.	Public supply.
17EE10	D	334900	0833021	Bracewell, Gaynor	200	263	34	6	1975	Holder	Domestic.
18CC04	D	333548	0832738	Brown, Mrs. Raymond	125	335	66	6	1980	Virginia	Irrigation.
18DD04	D	334325	0832853	Cabaniss, Dan	100	205	52	6	--	Oconee	Agricultural.
17DD10	D	333920	0833023	Cedar Lane Farms	25	125	87	6	1979	McCannon	Irrigation.
18BB02	K	332825	0832529	Clark, J. (dairy)	30	413	62	6	1972	Spray	Agricultural.
18BB03	K	332844	0832526	Clark, J. (house)	25	565	60	6	--	Oconee	Domestic.
18CC07	D	333622	0832312	Daniels, Guy W.	30	210	109	6	1961	Martin	Do.
18CC06	D	333626	0832526	Delaigle, Vince	20	225	58	6	1979	Robinson	Agricultural.
17CC02	A	333337	0833304	Grubs, Kenneth D.	25	100	52	6	1968	McCannon	Do.
18BB06	A	332953	0832751	Hanson, J. (dairy)	75	185	75	6	1971	Martin	Agricultural.
18BB07	A	332939	0832751	Hanson, J. (house)	40	140	76	6	1974	Spray	Domestic.
19BB02	K	332952	0832129	Hennessey, Walt	50	260	118	6	1979	Martin	Agricultural.
18BB01	K	332817	0832521	Hillsman, Dan	26	150	117	6	1965	Virginia	Do.
17CC04	A	333116	0833154	Hillsman, Robert J., 1	30	280	100	6	1969	McCannon	Do.
17CC03	A	333107	0833211	Hillsman, Robert J., 2	30	190	55	6	1980	Oconee	Domestic.
18DD06	D	334059	0832545	Holbert, Charlie	20	260	173	6	1970	Martin	Agricultural.
17CC07	D	333531	0833130	Jackson, Charles	70	173	73	6	--	Holder	Do.
17DD08	D	334218	0833146	Jackson, Dery	75	260	125	6	1981	Oconee	Do.
18CC08	A	333104	0832648	Maddox, John	20	300	110	6	1969	McCannon	Do.
18CC01	D	333606	0832752	Madison, Ga., 1	203	346	93	6	1978	Virginia	Public supply.
18CC02	D	333502	0832846	Madison, Ga., 2	76	645	98	6	1980	do.	Do.
18CC03	D	333353	0832859	Madison, Ga., 3	63	605	85	6	1980	do.	None.
17DD11	D	334034	0833150	McClain, J.B.	48	160	41	6	1961	Martin	Domestic.
18CC12	D	333330	0832624	McIntyre, Mrs. C.	25	430	35	6	1981	Holder	Do.
16CC07	A	333456	0833950	Mullins, Fred	60	45	35	6	1972	Spray	Agricultural.
17DD12	D	334355	0833235	Olsen, Jack	28	500	88	6	1981	Oconee	Irrigation.
19CC13	K	333244	0831752	Poole, Clarence	20	120	89	6	1975	McCannon	Domestic.
19CC16	K	333118	0832220	Porter, W.D.	20	240	125	6	1972	do.	Do.
18DD03	D	334130	0832710	Price, Joe	37	225	84	6	1974	Spray	Do.
17EE25	D	334532	0833234	Pritchard, A.B.	50	248	31	6	1972	Virginia	Irrigation.
18DD10	D	334057	0832630	Pritchett, Herbert	40	85	40	6	1981	McCannon	Agricultural.
18CC09	A	333020	0832321	Rice, Randall	150	455	91	6	1981	Holder	Do.
17DD05	A	333745	0833632	Rutledge, Ga., 1	25	280	60	8	1933	Virginia	Public supply.
17CCD1	D/A	333724	0833703	Rutledge, Ga., 5	115	400	--	--	--	do.	Do.
18DD08	D	334137	0832623	Sidwell, Raymond	60	485	126	6	1982	Robinson	Domestic.
18DD07	D	334127	0832612	Thompson, Neal	20	325	65	6	1979	do.	Do.
18CC10	D	333209	0832845	Turner, George L.	120	140	63	6	1972	McCannon	Do.
19CC11	K	333244	0832105	Vance, Jimmy	20	100	60	6	1972	do.	Agricultural.
19CC12	K	333007	0831720	White, Grayson	50	290	70	6	1974	do.	None.
17DD09	A	334158	0833255	Willett, Dwaine	35	200	40	6	1981	Oconee	Domestic.
18BB04	K	332753	0832456	Wilson, Jake	20	128	63	6	1977	Martin	Agricultural.
18CC11	D	333329	0832848	Wilson, Marty	40	480	95	6	1981	Holder	Irrigation.
18DD05	D	334210	0832742	Wynn, Gene	20	325	22	6	1974	Spray	Domestic.
18DD09	D	333939	0832657	Youngblood, Scott	50	265	125	6	1981	Robinson	Do.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Latitude	Longitude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Newton County											
14CC39	A	333459	0835757	Abide Awhile Mobile Home Court	40	100	36	6	1979	Robinson	Public supply.
14CC22	A	333721	0835536	Almon, Ga.	60	220	86	6	1977	Holder	Do.
15CC33	A	333029	0834920	Anderson, J.W.	30	173	30	6	1972	do.	Domestic.
14CC28	A	333328	0835457	Apostle Church Campground	20	505	87	6	1970	do.	Institutional.
15DD35	B	333737	0835038	Arthur, James	60	380	19	6	1980	do.	Domestic.
15CC35	A	333601	0834501	Autry, Bessie	60	225	48	6	1979	Robinson	Do.
15CC20	A	333532	0834653	Beacon Hill	75	218	80	6	1971	Holder	Public supply.
14CC13	A	333548	0835815	Bell, W. Charles	36	154	77	6	1953	Virginia	Domestic.
14CC14	A	333546	0835814	do.	34	200	10	6	1955	do.	Do.
16CC14	D	333118	0834313	Benton, James P.	30	150	76	6	1953	Martin	Do.
15DD30	B	333921	0835221	Berry, J.H.	20	228	13	6	1969	Holder	Do.
14BB03	A	332739	0835232	Bert Adams Boy Scout Camp	25	113	50	6	1976	do.	Institutional.
15BB04	A	332808	0834838	Betts, H.E.	20	173	30	6	1972	do.	Domestic.
14CC15	A	333407	0835706	Bloodworth, Grady Sr.	25	180	107	6	1955	Virginia	Do.
14DD76	B	334039	0835235	Bo-Peep Nursery	75	277	42	6	1978	Holder	Irrigation.
15BB02	A	332950	0834714	Bouchilon, W.L.	20	205	67	6	1981	do.	Domestic.
14CC20	A	333342	0835550	Braden, W. Russell	45	240	30	6	1955	Virginia	Do.
14BB04	C	332951	0835828	Brandenburg, C.M.	60	225	90	6	1980	Robinson	Do.
16CC04	D	333311	0834422	Breedlove, Tommy	200	285	40	6	1975	Holder	Do.
15BB08	A/D	332254	0835211	Buffington, Harold	35	293	21	6	1969	Martin	Do.
14CC23	A	333024	0835516	Byce, James	20	173	91	6	1977	Holder	Do.
15CC08	A	333458	0834635	Capes, Johnny	60	173	96	6	1974	do.	Do.
16CC03	D	333303	0834423	Cherry, Arnold	100	203	43	6	1975	do.	Do.
14DD78	B	333949	0835418	Chitwood, Ken	60	385	18	--	1980	Robinson	Do.
15CC11	A	333351	0834505	Clybel Farms	150	335	50	6	1977	Holder	Do.
15CC32	A	333129	0834805	Cook, Ronald (hog house)	75	402	67	6	1979	do.	Agricultural.
14CC29	A/H	333210	0835459	Cooksey, Waymon	20	98	30	6	1971	do.	Domestic.
14BB01	A	332851	0835453	County Line Baptist Church	30	158	58	6	1976	Robinson	Institutional.
15DD11	B	333739	0835045	Covington Recreation Dept.	200	220	95	6	1975	Holder	Public supply.
15DD06	B	333939	0834749	Crews, W. Henry	100	120	42	6	1974	Virginia	Domestic.
15CC19	A	333605	0834607	Daniel, J.A.	100	158	70	6	1975	Holder	Do.
14CC38	A	333646	0835626	Davis, Michael	30	390	37	6	1968	Martin	Do.
14CC27	A/A	333341	0835506	Day, Donald	30	152	55	6	1979	Holder	Do.
14CC36	A	333329	0835436	Day, Robert	30	158	12	6	1972	do.	Do.
15DD03	B	333852	0835145	Dial, Ray	100	128	80	--	1975	do.	Do.
15DD33	B	333904	0835148	do.	55	140	56	6	1969	Martin	Do.
15DD34	B	333959	0835137	do.	20	398	25	6	1972	Holder	Do.
14DD74	A	333832	0835437	Dimery, Ron	30	255	14	6	1982	do.	Do.
14CC16	H	333331	0835504	Dooley, Benny J.	100	240	62	6	1975	do.	Do.
14DD51	B	334221	0835411	Ellington, C.T.	50	205	--	--	1977	Virginia	Do.
15DD04	B	334032	0835207	Evans, Bobby	150	158	80	6	1974	Holder	Do.
15CC06	A	333442	0834654	Evans, Guy V.	100	143	50	6	1977	do.	Do.
15CC10	A	333535	0834526	Fairburn, John	100	124	94	6	1975	do.	Do.
15BB09	D	332606	0834941	FFA & FHA Camp	65	410	36	6	1979	Robinson	Institutional.
15BB10	D	332601	0834947	do.	22	645	47	6	1979	do.	Do.
15CC01	A	333141	0835101	Gazaway, R.H.	50	500	--	--	1975	Waller	Domestic.
15DD31	B	334008	0835109	George, Christine	30	325	97	6	1978	Robinson	Do.
15CC27	A	333458	0834708	Glass (McLean)	40	218	12	6	1973	Holder	Do.
15DD08	A	333836	0834642	Gober, Gilbert	150	323	30	6	1975	do.	Do.
15CC28	A	333515	0834548	Gregory, Buster	20	158	87	6	1975	do.	Do.
15DD27	B	333816	0835215	Gruenhut, Werner	30	203	--	6	1976	do.	Do.
16CC02	A	333304	0834423	Hale, Ralph	100	83	60	6	1975	Holder	Domestic.
15DD26	B	334043	0835059	Harris, James	38	140	99	6	1972	do.	Do.
15DD32	A	334044	0834903	Harwood, Shirley	30	230	65	6	1981	do.	Do.
15CCD5	A	333157	0835008	Hay, Sam Jr.	100	250	45	6	1975	do.	Do.
15CC14	B	333353	0835003	do.	35	96	32	--	1955	Virginia	Do.
15CC15	B	333353	0835003	do.	30	127	37	6	1979	Holder	Do.
14CC18	A	333459	0835758	Hayes, James L.	40	250	148	6	1970	Virginia	Do.
16CC12	D	333004	0834406	Hayes, W.P.	30	125	38	6	1953	Martin	Do.
15BB07	A	332826	0834854	Haynes, Billy R.	50	235	38	6	1971	do.	Do.
16CC15	D	333314	0834426	Heilman, John (Pony Express)	20	130	35	6	1977	Holder	Do.
14DD77	B	333758	0835250	Herrington, Bruce	20	308	49	6	1974	do.	Do.
15DD29	B	333807	0834815	Higgins, Richard	75	127	67	6	--	do.	Do.
16CC05	A	333609	0834409	Holder, H.G.	150	333	91	6	1975	do.	Do.
15CC29	B	333444	0834637	Jackson, Tommy	20	180	75	6	1982	do.	Do.
14DD50	B	334353	0835457	Jakes, Marion	100	98	36	6	1976	do.	Do.
15DD25	B	333834	0834945	Jenkins, Joe	60	83	18	6	1973	do.	Do.

Well number	Water-bearing unit	Lati-tude	Longi-tude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Newton County--Continued											
14CC30	A	333029	0835427	Johnson, Bill	40	248	56	6	1974	Martin	Domestic
15CC31	A	333108	0835115	Johnson, Phil	25	430	34	6	--	Holder	None.
14CC12	A	333408	0835841	Jones	100	148	46	6	1975	do.	Domestic.
15CC09	A	333519	0834634	Jones, Warren	150	395	50	6	1974	do.	Do.
15CC34	A	333106	0835135	Jordan, Roger	50	155	80	6	1980	do.	Do.
15CC39	A	333327	0834501	Kelley, T.F.	200	175	42	6	1979	do.	Do.
16CC23	A	333338	0834456	Kimbell, Maley	60	135	40	6	1982	do.	Do.
15DD23	A/B	333931	0835058	Kinard, Bob, 81-Loop Trl. Park	40	353	115	6	1969	do.	Public supply.
14CC24	A	333418	0835414	King, Chester	45	203	20	6	1970	do.	Domestic.
14CC34	B	333701	0835416	Knight, Edna	40	240	50	6	1974	do.	Do.
15CC03	A	333132	0834852	Knox, D.L.	60	158	37	6	1975	do.	Do.
15CC16	A	333130	0834841	Lackey, Cecil	40	115	60	6	1977	dc.	Do.
15CC17	A	333138	0834802	Lowery, Ronnie	30	202	74	6	1978	do.	Do.
14CC21	B	333706	0835352	Madden, Claude I.	50	150	50	6	1975	Virginia	Do.
13CC60	C	333043	0840025	Manning and Manning	45	145	90	6	1978	Holder	Do.
15CC22	A	333148	0834648	Marks Bros. Dairy	60	230	75	6	1981	do.	Agricultural.
14DD75	A	333824	0835514	Martin, Paul	25	100	20	6	1978	do.	Domestic.
15CC07	B	333456	0834644	McGiboney, Guy	75	200	118	6	1976	do.	Do.
15CC21	B	333458	0834708	Meadowbrook Mobile Home Park	85	269	85	6	1969	do.	Public supply.
15CC18	A	333505	0834600	Melody Farm	20	128	28	6	1970	do.	Agricultural.
15BB05	D	332735	0834557	Montgomery	100	295	15	6	1978	do.	Domestic.
14CC19	A	333456	0835758	Moore, H.L. Roy	35	208	116	6	1957	Virginia	Do.
15BB06	D	332733	0834549	Moore, Martha	40	165	47	6	1983	Robinson	Do.
13CC59	A	333221	0840040	Morgan, D.A. (J. Gulick)	30	385	16	--	1981	do.	Do.
14CC35	C	333307	0835825	McCord, Harold	150	530	35	6	1979	do.	Do.
15BB03	A	332838	0834926	McDonald, W.S.	25	230	12	6	1971	Holder	Do.
16CC10	D	333240	0834419	McKensie	25	158	70	6	1972	do.	Do.
15DD38	B	334108	0835148	Noble, H.W.	60	165	50	6	1981	Robinson	Do.
14CC31	A	333658	0835502	O. H. Materials Co.	150	555	64	6	1980	Holder	Industrial.
15CC25	A	333411	0834625	Oakridge Subdivision (Sigman)	100	230	44	6	1980	do.	Public supply.
14CC33	A	333645	0835450	Piper, V., Yellow R. Trl. Park	35	255	61	6	1978	do.	Do.
14CC32	A	333645	0835450	Piper, Virgil	100	345	47	6	1980	do.	Public supply
16BB03	D	332948	0834132	Polk, Steve	25	533	52	6	1975	do.	Domestic.
15AA02	D	332211	0835141	Purcell, Dr. James	40	165	64	--	1983	Robinson	Do.
16CC13	A	333459	0834406	Randolph, Willard	100	205	45	6	1972	Spray	Do.
15DD07	B	333833	0834731	Reed, Thomas	100	113	35	6	1975	Holder	Domestic.
15CC38	A	333320	0834558	Remes, Dr. Robert	30	345	100	6	1978	Robinson	Do.
15CC36	B	333605	0834853	Roberts, John	300	454	75	6	1981	Holder	Do.
15CC04	B	333251	0834801	Robinson, A.J.	60	173	75	6	1975	do.	Do.
15BB01	A	332601	0835118	Rodgers, Benny	200	188	24	6	1974	do.	Do.
15CC30	A	333106	0835108	Scruggs, Ralph L. (P. Johnson)	20	158	33	6	1974	do.	Do.
14BB02	A	332646	0835401	Shaffer, O.L.	30	83	16	6	1976	do.	Do.
15CC24	A	333421	0834618	Sigman, Gene	35	250	58	6	1977	do.	Do.
16CC02	D	332928	0834428	Spears, Jack	25	53	53	6	1981	do.	Do.
16CC01	D	332912	0834438	Spears, Ralph	20	455	20	6	1981	do.	Do.
14CC37	B	333514	0835334	Spillers Lumber Co.	20	202	33	6	1979	do.	Industrial.
14CC17	B	333513	0835330	Spillers, Otis	65	158	95	6	1974	do.	Domestic.
14DD52	B	334026	0835350	Spring Valley Subdivision	100	375	30	6	1976	do.	Public supply.
15CC02	A	333135	0835037	Steel, Bryant	20	354	--	--	1973	Waller	Domestic.
15DD36	A	333745	0834734	Stephenson, Jack	30	375	84	6	1979	Holder	Do.
15DD02	B	333812	0835030	Stewart, R.L.	150	415	44	6	1975	do.	Do.
15DD22	B	333925	0835123	Stone, Sarah	20	245	41	6	1981	Robinson	Do.
16CC08	A	333455	0834358	Strass, John	60	205	60	6	1979	Holder	Do.
15CC37	A	333152	0834732	Stuck, Dr. Robert	100	205	48	6	1980	do.	Do.
14DD80	B	334253	0835303	Thomas, Phil	20	145	60	6	1977	do.	Do.
14CC25	A	333533	0835837	Utheim, Andor E.	30	218	95	6	1971	do.	Do.
16CC09	D	333323	0834416	Vandergriff, Buford	200	285	40	6	1977	do.	--
15DD24	B	333824	0835106	Vaughn, Glenn	20	225	20	6	1966	Martin	Domestic.
15CC40	G	333310	0835030	Walker, W.J. (Alcovy MHP)	150	98	89	6	1969	Holder	Public supply.
16CC11	D	333402	0834310	Wallace, Gene	100	202	78	6	1978	do.	Domestic.
15DD05	A	334035	0835015	White, William	60	143	84	6	1972	do.	Do.
15CC26	A	333453	0834522	Whitney	60	188	48	6	1970	do.	Do.
15DD37	B	333903	0834940	Williams, John A. & Ester	175	580	302	6	1981	do.	Do.
15DD28	B	333902	0835139	Williams, Tom	20	220	160	6	1977	do.	Do.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Lati-tude	Longi-tude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Oconee County											
18EE44	D	334716	0832809	Adair, J.B. & Mary	30	98	27	6	1972	Martin	Domestic.
17FF10	I	335447	0833115	Adams, Fredrick	75	205	27	6	--	Oconee	Do.
19EE12	C	334800	0832017	Adams, Seamore	25	460	102	6	1981	Martin	Do.
19EE11	B	334743	0831956	Almand, Scott	25	325	107	6	1979	Oconee	Do.
18EE05	D	335213	0832601	Athens Plumbing & Well Supply	75	395	63	6	1973	Martin	Do.
19EE32	I	335056	0831752	Banister, Dr. Royce	50	263	18	6	1977	do.	Do.
17EE07	I	335046	0833146	Bates, Doyle	100	200	50	6	1981	do.	Do.
17EE04	D	334915	0833021	Beal, Robert	30	225	45	6	1981	Oconee	Do.
18EE46	D	335033	0832830	Beckwith, J.R.	60	113	38	6	1972	Martin	Do.
18EE20	D	335041	0832424	Bell, Lamar	25	405	23	6	1981	Oconee	Do.
19DD02	B	334338	0832019	Bell, Ricky A.	30	220	125	6	1980	Martin	Do.
18EE16	D	334622	0832530	Bennett, Mrs. Florence	70	200	40	6	1979	Sullivan	Do.
17FF08	A	335657	0833155	Bensons Bakery	51	500	184	6	1943	Virginia	Do.
18FF54	D	335418	0832650	Birchmoor Hills Subdivision	20	550	78	6	1981	Martin	Public supply.
18FF55	D	335404	0832654	do.	20	700	100	6	1981	do.	Do.
18FF56	D	335404	0832638	do.	25	400	100	6	1981	do.	Do.
18FF57	D	335434	0832648	do.	100	200	40	6	1981	do.	Do.
18FF43	D	335357	0832753	Boles, Preston	60	170	15	6	1971	McCannon	Domestic.
18EE45	D	334824	0832550	Branch, David	50	265	10	6	--	Oconee	Do.
18FF50	I	335429	0832926	Briar Lake Subdivision	75	173	30	6	1977	Martin	Public supply.
18FF51	D	335339	0832745	Brookwood Subdivision	100	225	38	6	1981	Robinson	Do.
18FF52	D	335346	0832759	do.	100	430	59	6	1980	Martin	Do.
19EE06	I	335051	0831831	Brown, Cindy	60	306	50	6	--	Oconee	Domestic.
17EE03	I	335109	0833046	Budd, R.E.	60	173	30	6	1975	Holder	Do.
17FF05	A	335515	0833207	Carr, Roger	30	500	160	6	1977	McCannon	Do.
18EE38	D	334517	0832235	Carson, Lester	50	295	60	6	--	Oconee	Do.
19EE27	I	335121	0832057	Colwin, John	50	310	59	6	--	do.	Do.
18EE25	D	334830	0832254	Cooper, Alfred	40	200	70	6	--	do.	Do.
18EE26	D	334830	0832317	Cooper, Leroy	100	265	35	6	--	do.	Do.
18EE27	D	334833	0832311	Cooper, Sam	100	190	20	6	--	do.	Do.
18EE37	D	334811	0832307	Cooper, Sam (hog parlor)	100	488	102	6	--	do.	Agricultural.
18EE10	D	334922	0832651	Copper, Leroy	25	180	55	6	1981	do.	Domestic.
19EE08	I	335056	0831954	Crawford, T.P.	40	165	38	6	1974	Sullivan	Do.
17EE09	I	335150	0833340	Croy, Fred	100	220	44	6	1981	Martin	Do.
17FF14	I	335353	0833124	Cutshaw, R.J.	30	113	51	6	1971	do.	Do.
19EE04	I	334858	0832038	Dalton, Jimmie	25	160	40	6	--	Oconee	Do.
18EE30	D	335056	0832608	Dan Elder	100	220	27	6	1972	Martin	Do.
17FF09	A	335713	0833216	Deerwood Estates Subdivision	50	205	80	6	1981	McCannon	Public supply.
18EE22	D	335207	0832815	Dooley, Mrs. Griffin	30	145	31	6	1982	do.	Domestic.
17EE08	I	335154	0833146	Downs, Buddy	75	250	20	6	--	Oconee	Do.
17FF07	A	335652	0833125	E.J. Van Buren Oil Co.	60	305	110	6	1980	McCannon	Industrial.
18EE04	D	335201	0832652	Edwards, Jerry	100	158	26	6	1974	Martin	Domestic.
18EE56	D	335106	0832555	Edwards, Lawrence	150	210	16	6	1972	do.	Do.
18EE48	D	335046	0832911	Elder Heights Subdivision	100	400	90	6	1975	McCannon	Public supply.
18EE32	D	335047	0832615	Elder, Dan	150	300	38	6	1981	Oconee	Domestic.
19EE17	I	334903	0832158	Elder, James	75	220	67	6	--	do.	Do.
19EE24	I	335031	0832157	Elder, Mrs. Hazel	60	220	40	6	1969	McCannon	Do.
18EE57	D	334955	0832902	Family Life	20	250	48	6	--	Oconee	Public supply.
18EE58	D	334958	0832904	do.	40	430	45	6	--	do.	Do.
18FF05	D	335401	0832751	Fegerson, Curtis	40	200	40	6	1981	Martin	Domestic.
17EE05	I	335134	0833138	Gentry, Henry	30	130	50	6	--	Oconee	Do.
18FF04	D	335400	0832748	Golden Pantry	90	220	--	6	1979	Baxter	Domestic.
18EE13	D	334613	0832347	Graves, Grady	30	220	128	6	1962	Virginia	Do.
18EE15	D	334610	0832459	Graves, Mrs. Avery	60	203	75	6	1979	Martin	Do.
18FF11	D	335354	0832817	Grayson, Norman	50	460	30	6	1968	McCannon	Do.
18EE28	D	335039	0832808	Grayson, Richard	50	398	100	6	1975	do.	Do.
19EE42	I	335115	0831845	Green Hills Country Club	30	200	60	6	1982	Martin	--
19EE49	I	335112	0831845	do.	100	215	18	6	1972	do.	--
19EE50	I	335115	0831843	do.	20	280	60	6	1974	McCannon	Irrigation.
19EE20	I	335013	0832144	Hancock, Harry	50	260	90	6	1981	Martin	Domestic.
19EE19	I	334855	0832201	Hansford, Sammy	75	250	65	6	--	Oconee	Do.
18FF28	D	335323	0832557	Hanson, Ray	50	220	90	6	1974	McCannon	Do.
18EE51	D	334836	0832919	Hartley, Duane	27	185	40	6	1972	Spray	Do.
18FF47	D	335251	0832259	Hickory Hills Subdivision	55	350	68	6	1972	Martin	Public supply.
18FF48	D	335250	0832320	do.	75	293	26	6	1972	do.	Do.
18FF61	D	335303	0832332	do.	150	275	55	6	1983	do.	Do.
17EE06	I	335222	0833205	Hillcrest Hatchery, 2	40	490	120	6	1980	do.	Domestic.
17FF24	A	335351	0833551	Hodges, Donald	45	310	50	6	1979	Oconee	--

Well number	Water-bearing unit	Latitude	Longitude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Oconee County--Continued											
17FF25	A	335337	0833600	Hodges, Donald	35	265	38	6	1980	Oconee	Domestic
17FF26	A	335338	0833600	do.	30	340	85	6	1980	do.	--
17FF27	A	335329	0833604	do.	100	200	120	6	1982	do.	--
19EE18	I	334906	0832200	Holloway, James	50	220	130	6	--	do.	Domestic.
18EE33	0	335029	0832834	Jones, Dr. Sam	50	280	35	6	--	do.	Do.
17EE11	D	334922	0833027	Kennedy, Ms. Minnie L.	40	180	40	6	1981	Martin	Do.
19EE07	I	334951	0832039	Kirkland, Walter	50	180	40	6	1973	McCannon	Do.
18EE47	D	334924	0832652	Lagwin, Willie	25	125	35	6	1981	Oconee	Do.
18EE17	0	334624	0832528	Lay, Johnny	50	260	25	6	1981	do.	Do.
18EE31	D	335057	0832722	Lee, Starr	30	295	108	6	1979	do.	Do.
18EE06	D	335216	0832611	Lewis, Ron	50	160	40	6	1981	Martin	Do.
19EE05	B	334640	0831830	Lindgren, Mary	100	220	70	6	--	Oconee	Do.
17FF02	A	335646	0833251	Marks, John	30	100	50	6	1979	Martin	Do.
19EE26	C	334922	0831830	Marshall, James	20	180	65	6	1970	McCannon	Do.
18EE23	0	335124	0832928	Maxey, C.W.	100	380	--	6	--	Oconee	Do.
18EE24	D	335152	0832657	Maxey, Cecil	100	200	90	6	1978	do.	Do.
18FF30	I	335452	0832952	McCarty, Horace	40	445	55	6	1974	Spray	Do.
18FF09	I	335257	0832233	McDaniel, William	100	120	60	6	1968	--	Do.
17FF13	A	335633	0833130	McLeroy, Ben (Bogart Comm.Cen.)	120	170	47	6	1970	Martin	Public supply.
18EE29	D	335057	0832801	McNally, John W.	50	385	35	6	--	Oconee	Domestic.
18EE52	D	335102	0832915	Meeler, Roy	40	240	102	6	1982	Martin	Do.
18EE19	D	335013	0832722	Michael, Donald	25	205	20	6	1981	Oconee	Do.
18EE18	D	334629	0832527	Middlebrooks, P.B.	25	413	25	6	1979	Martin	Do.
17EE24	D	334929	0833036	Mize, Ralph E. Jr.	20	98	20	6	1976	do.	Do.
18FF03	D	335401	0832725	Moon, Ward	30	230	22	6	1981	Oconee	Do.
18EE36	D	335217	0832423	Murray, Joel	100	205	30	6	1981	do.	Do.
18FF02	A	335517	0832919	Norris, Wayne	30	158	23	6	1972	Martin	Do.
18EE59	D	335229	0832804	Northwest Woods Subdivision	120	240	110	6	1975	do.	Public supply.
18EE60	D	335207	0832743	do.	250	275	79	6	1976	do.	Do.
18FF42	D	335235	0832804	do.	150	390	180	6	1973	Spray	Do.
18FF60	D	335239	0832716	do.	100	465	25	6	1972	Martin	Do.
17FF06	I	335332	0833151	Nuckolls, Dan	30	240	--	6	1982	Spray	Domestic.
17FF11	A	335636	0833303	Oak Grove Subdivision	25	405	99	6	1980	McCannon	Public supply.
19EE25	I	335025	0831956	Oak Hill Baptist Church	100	265	25	6	1976	Sullivan	Institutional.
18FF58	A	335420	0832808	Oak Ridge Subdivision	55	585	76	6	1974	Spray	Public supply.
18FF59	0	335415	0832753	do.	100	165	42	6	1974	do.	Do.
18EE35	D	335147	0832431	Oconee Well (warehouse)	75	415	15	6	1979	Oconee	Domestic.
18EE49	0	335145	0832434	Oconee Well Drillers	75	415	15	6	1980	do.	Do.
18FF45	I	335439	0832925	Osburn, Robert L.	45	200	70	6	1981	Spray	Do.
17FF12	I	335616	0833159	Osceola Village Subdivision, 1	80	185	100	6	1978	McCannon	Public supply.
18FF53	0	335309	0832849	Palomino Pass Subdivision	55	203	105	6	1977	Martin	Do.
17FF03	I	335257	0833316	Parrish, Joe	50	310	85	6	--	Oconee	Domestic.
18EE14	0	334518	0832447	Peck, John	30	140	113	6	1972	McCannon	Do.
18EE43	D	334736	0832534	Phillips, J.W.	50	190	50	6	--	Oconee	Do.
19EE22	I	335025	0832134	Pine Hill Subdivision, 1	40	340	170	6	1972	do.	Public supply.
19EE23	I	335013	0832138	Pine Hill Subdivision, 2	50	340	40	6	1972	McCannon	Do.
19EE16	I	334822	0832145	Pitts, Mike	25	230	55	6	1981	Oconee	Domestic.
18EE50	D	335146	0832439	Porterfield, Bobby	100	325	15	6	1981	do.	Do.
19EE41	I	335002	0832006	Powell, T.W.	75	345	35	6	1978	McCannon	Do.
17FF18	I	335546	0833039	Power Building Products	45	465	42	6	1973	Spray	--
18FF08	D	335311	0832235	Register, Sonny	100	245	75	6	1973	Martin	Domestic.
17FF04	A	335627	0833431	Reynolds, Kenneth	25	365	50	6	1977	McCannon	Do.
18FF35	D	335433	0832358	Rivermont Village	30	605	52	6	1975	Spray	Public supply.
18FF36	0	335428	0832353	do.	20	605	52	6	1975	do.	Do.
17FF15	I	335324	0833201	Roberts, B.W.	30	125	23	6	1972	do.	Domestic.
18EE12	D	334706	0832355	Rubinstein, N.	75	415	70	6	--	Oconee	Do.
18FF29	D	335356	0832800	Sellers, Jim	75	125	23	6	1973	Martin	Do.
19EE21	I	335156	0832031	Shack, Elders	50	295	17	6	--	Oconee	Do.
18EE61	0	335229	0832248	Sherwood Forest Subdivision	20	398	76	6	1976	Martin	Public supply.
18EE62	D	335226	0832245	do.	30	428	66	6	1976	do.	Do.
19EE10	B	334607	0832045	Strickland, Tommy	25	310	93	6	--	Oconee	Domestic.
18EE40	D	334905	0832944	Tarpley, William	75	250	55	6	1981	do.	Do.
18EE21	D	335051	0832458	Thaxton, Jim	25	200	22	6	1970	Martin	Do.
19EE13	B	334712	0831901	Thomas, C.H.	30	26	--	6	--	McCannon	Do.
19EE15	C	334813	0832028	do.	20	140	65	6	1971	do.	Do.
19EE14	C	334829	0832049	Thomas, C.H. (orchard)	25	240	50	6	1969	do.	Irrigation.
18EE34	D	335020	0832520	Thomas, Jerry	20	325	25	6	1981	Oconee	Domestic.
18EE39	D	335109	0832844	Thompson, J.H.	60	270	80	6	1972	McCannon	Do.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Lati-tude	Longi-tude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Oconee County--Continued											
18DD01	D	334346	0832254	Tomlinson, Jim	80	158	45	6	1976	Martin	Domestic.
17FF28	I	335520	0833011	Wagner, W.A.	300	160	80	6	1969	McCannon	Do.
18EE53	D	335158	0832419	Watkinsville, Ga.	50	500	--	6	--	Oconee	Public supply.
18EE54	D	335207	0832509	do.	200	700	--	8	1977	do.	Do.
18EE55	D	335119	0832451	do.	85	500	--	6	--	do.	Do.
18FF10	D	335338	0832722	Wheeler, Johnny	20	220	50	6	1970	McCannon	Domestic.
18FF07	D	335239	0832650	Whitehead, Coleman	100	113	53	6	1976	Martin	Do.
18FF06	I	335257	0832230	Wilhoyt, Sterling	20	215	--	6	1969	McCannon	Do.
19EE03	I	334936	0832222	Wilkes, W.C. (daughters house)	100	150	81	6	1982	Oconee	Do.
18EE07	I	335037	0832245	Wilkes, W.C. (hog parlor)	50	260	58	6	1981	do.	Agricultural.
18EE09	I	335017	0832307	Wilkes, W.C. (home well)	25	200	--	6	--	do.	Domestic.
18EE08	0	335019	0832334	Wilkes, W.C. (tenant house)	25	125	69	6	1981	do.	Do.
19EE02	I	334951	0832133	Wilkes, W.C. (turkey house)	40	200	105	6	1974	McCannon	Agricultural.
19EE09	I	334951	0832133	Wilkes, William (Bubba)	75	250	100	6	1979	Oconee	Domestic.
17FF16	I	335429	0833020	Williams, Steve	25	225	120	6	1981	McCannon	Do.
18EE42	D	334927	0832603	Wilson, James	80	205	60	6	--	Oconee	Do.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Lati-tude	Longi-tude	Owner	Yield (gal/min)	Depth (ft)	Casing		Year drilled	Driller	Use
							Depth (ft)	Diam. (in.)			
Oglethorpe County											
21FF11	F	335309	0830301	Adair, Stephen	20	220	73	6	1975	McCannon	Domestic.
20FF17	I	335555	0831254	Arnold, Bobby	70	185	24	6	1974	Sullivan	Do.
20FF08	I	335457	0831243	Arnoldsville, Ga., 1	30	705	30	6	1973	do.	Public supply.
20FF09	B	335418	0831301	Arnoldsville, Ga., 2	30	265	68	6	1973	do.	Do.
20EE06	B	335014	0830904	Ashley, A.C. III	40	165	70	6	1974	do.	Domestic.
20EE05	B	334900	0831156	Ashley, Faye	75	530	--	6	1975	do.	Do.
20GG15	B	340055	0831056	Beaverdam Estates	45	260	72	6	1981	Martin	Public supply.
20GG16	B	340103	0831046	do.	50	240	57	6	1981	do.	Do.
21EE07	B	335000	0830300	Bettis, Charlie	20	220	82	6	1974	McCannon	Domestic.
20FF01	B	335336	0831406	Bray, Paul, 1	20	140	48	6	1970	Martin	Do.
20EE13	B	335225	0831328	Brewer, John	40	98	38	6	1976	do.	Domestic.
21FF04	B	335824	0830611	Bruebaker, Dr. Dale	50	360	78	6	1979	McCannon	Agricultural.
21EE11	J	334754	0830508	Bryant, Billy, 2	20	200	90	6	1980	Martin	Do.
22GG09	F	340125	0825922	Carter, John	25	280	105	6	1981	do.	Domestic.
19FF20	A	335814	0831530	Chambers, Gaines	50	220	113	6	1970	do.	Do.
19EE45	B	335052	0831632	Coils, Curtis	100	188	59	6	1979	Spray	Do.
20FF14	B	335420	0830931	Compton, Mrs. Katie	30	85	30	6	1982	McCannon	Do.
20EE14	B	335214	0831345	Cone, Davis	60	160	40	6	1982	Sullivan	Do.
21FF14	B	335710	0830715	Culp, Daniel	30	205	48	6	1981	Oconee	None.
21FF01	F	335310	0830248	Cunningham, J.G.	27	160	60	6	1981	Martin	Domestic.
20FF20	I	335712	0831146	Dover, Guy Jr.	100	125	60	6	1972	Sullivan	Do.
19EE39	I	334925	0831632	Elder, Rodney	100	325	42	6	1975	do.	Do.
21FF07	F	335417	0830102	Faust, Jimmy	20	340	70	6	1969	McCannon	Do.
21FF13	F	335522	0830149	do.	20	325	--	6	1979	--	Agricultural.
22FF04	F	335923	0825356	Faust, Sanders Jr.	20	120	55	6	1970	McCannon	Domestic.
20FF06	B	335304	0831203	Fleming, Vernon	38	365	110	6	1973	Sullivan	Do.
21FF02	F	335435	0830032	Forrester, James	25	165	96	6	1977	do.	Do.
21EE08	J	335055	0830109	Francis, Mrs. Lamont	20	80	50	6	1971	McCannon	Do.
20FF11	I	335602	0831300	Fuller, Stan	20	140	80	6	1981	Martin	Do.
19EE40	I	335029	0831651	Graves, Bill	75	325	160	6	1972	do.	Do.
22FF02	F	335919	0825455	Green, George	30	185	72	6	1981	McCannon	Do.
21FF03	F	335543	0830110	Griffith, Mrs. E.	23	278	99	6	1970	Martin	Agricultural.
20EE15	B	335112	0831412	Hoescht, David	25	70	--	6	1979	Oconee	Public supply.
20EE16	B	335112	0831412	do.	20	175	12	6	1979	do.	Do.
20EE17	B	335112	0831412	do.	20	115	10	6	1979	do.	Do.
20EE18	B	335112	0831412	do.	30	175	44	6	--	do.	Do.
20FF18	I	335505	0831335	Hughes, Nevin	75	205	95	6	1978	McCannon	Domestic.
20EE03	B	334503	0831025	Jackson, Alfonso	20	152	60	6	1956	Martin	Do.
21EE02	J	334802	0830118	Johnson, V.L.	20	69	20	6	1974	McCannon	Do.
20EE04	B	334905	0831015	Kennebrew, Roy B.	20	218	75	6	1970	Martin	Do.
20FF24	B	335312	0831044	Kings Cafe	75	485	190	6	1982	McCannon	Public supply.
20EE12	B	335214	0831343	Komac, Al	50	140	32	6	1979	Martin	Domestic.
21FF09	F	335245	0830631	Lexington, Ga., 1	40	440	30	6	1970	McCannon	Public supply.
21FF08	F	335249	0830634	Lexington, Ga., 2	75	383	294	6	1974	Martin	Do.
20EE19	B	335205	0831407	Maddux, J. Nelson	30	225	70	6	1978	Spray	Domestic.
20FF26	I	335439	0831431	Majors, Ken	100	160	--	6	1981	do.	Do.
21FF10	F	335423	0830620	Mathews, Robert	30	200	40	6	1980	Martin	Do.
20EE20	B	334533	0831029	Maxeys, Ga., 1	105	600	47	8	1968	Virginia	Public supply.
20EE21	B	334526	0831027	Maxeys, Ga., 2	46	645	96	6	1981	do.	Do.
20EE09	B	335220	0831348	Maxwell, Ralph	30	165	50	6	1981	McCannon	Domestic.
21FF06	F	335654	0830105	McCannon, Mrs. Richard	35	160	55	6	1981	Martin	Do.
20FF21	A	335930	0831433	Melton, Dub	80	113	--	3	1978	do.	Do.
20FF07	A	335926	0831431	Melton, Dub (old house)	40	150	94	6	1970	do.	Do.
20FF22	I	335714	0831222	Meyer, Arthur	35	565	30	6	1982	Martin	Domestic.
19FF19	B	335707	0831536	Miller, Mrs.	30	188	68	6	1970	do.	Do.
21EE06	J	335125	0830004	Norman, David	30	98	27	6	1972	Sullivan	Do.
20FF10	I	335630	0831335	Ogle, Shep	100	310	40	6	1981	Martin	Do.
22FF03	F	335515	0825858	Oglethorpe Salvage, Lexington	50	265	125	6	1981	McCannon	Do.
21EE09	B	334841	0830505	Paradice, Lincoln	30	165	120	6	1981	do.	Do.
21EE10	B/J	334742	0830601	Parker, Larry (P&P Collection)	100	205	--	6	1978	Sullivan	Do.
21FF12	F	335302	0830257	Pettit, W.D.	40	160	42	6	1982	Martin	Do.
20EE10	B	335211	0831332	Purvis, Hilton	80	220	95	6	--	Oconee	Do.
20EE07	B	335222	0831331	Rothery, Milton O.	150	145	38	6	1976	Sullivan	Do.
20FF15	I	335654	0831200	Sanders, Billy	50	245	130	6	1976	do.	Do.
20FF23	B	335955	0831103	Scott, Guy	25	260	145	6	1981	Martin	Do.
19FF14	I	335512	0831517	Shealy, Kenneth	100	105	60	6	--	do.	Do.
20FF05	B	335231	0831445	do.	40	353	105	6	1978	do.	Do.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Latitude	Longitude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Oglethorpe County--Continued											
19FF45	B	335633	0831550	Smith, James	20	240	38	6	1980	do.	Do.
21EE04	J	335047	0830113	Smith, John	50	105	80	6	1981	McCannon	Do.
19EE38	I	335009	0831642	Southers, Jimmy	20	85	50	6	1973	Sullivan	Do.
22EE01	J	335129	0825953	Stephens Grove Baptist Church	100	113	25	6	1976	Martin	Institutional.
21FF05	F	335233	0830544	Thaxton, Rollin	25	305	105	6	1971	do.	Domestic.
21EE03	J	334800	0830119	Thaxton, Tommy	50	305	15	6	1981	McCannon	Do.
20EE11	B	335138	0831424	Todd, William	120	240	45	6	1981	Martin	Do.
20FF16	I	335620	0831406	Turner, John	50	245	200	6	1960	do.	Do.
20FF25	B	335331	0831210	Tweedell, Louis	30	165	90	6	1982	McCannon	Do.
20FF13	C	335543	0831017	Tyner, Samual Mark	25	165	36	6	1975	do.	Do.
20EE02	B	335145	0831426	Wages, Rodney	50	305	40	6	1981	Baxter	Do.
21EE05	J	335051	0830120	Webb, Paul	30	200	62	6	1981	Martin	Irrigation.
20FF12	C	335533	0831141	White, Darrell	25	300	150	6	1981	do.	Agricultural.
20FF19	B	335754	0831354	Wilkins Industries	30	248	62	6	1974	do.	Industrial.
20EE08	B	335208	0831357	Williams	60	158	30	6	1976	do.	Domestic.
19EE46	B	335112	0831545	Wright Nurseries, 1	20	308	40	6	1976	do.	Irrigation.
19EE47	B	335120	0831554	Wright Nurseries, 2	20	400	45	6	1980	do.	None.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Lati-tude	Longi-tude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Walton County											
16DD08	A	334458	0833731	Adcock, Otis	75	143	12	6	1972	Martin	Domestic.
17DD02	A	334453	0833711	Adcock, Thomas Jr.	30	105	75	6	1972	Spray	Do.
16DD05	A	333905	0834026	Almand, Gene	200	288	27	6	--	Holder	Do.
15DD17	B	334312	0835106	Anderson, Gene	100	295	42	6	--	do.	Do.
16EE10	A	334844	0833836	Arnold, Bill	25	335	81	6	1971	Martin	Do.
17EE19	D	334530	0833457	Arnold, George	100	245	60	6	1979	Robinson	Do.
14EE22	B	334705	0835659	Bennett, Jack	30	225	28	6	1982	Waller	Do.
14EE26	B	334541	0835553	Bennett, John	100	425	40	6	1980	Robinson	Do.
15EE02	B	334943	0834742	Berryman, E.E.	60	400	31	6	1976	Holder	Do.
15DD19	B	334304	0835135	Billings, Tom	60	225	75	6	1978	Robinson	Do.
15EE08	A	335227	0834822	Blackburn, Elizabeth	45	285	22	6	1978	do.	Do.
15EE09	B	335021	0835126	Boss, L.G.	200	155	41	6	1981	Holder	Do.
15DD01	B	334437	0835109	Byrd, Robert	35	365	8	6	1946	Virginia	Do.
15EE04	B	334727	0834937	Carter Hill Church	60	205	14	6	1981	Robinson	Institutional.
16EE13	A	335042	0834224	Cash, Ernest W.	20	200	138	6	1973	Martin	Domestic.
14EE09	B	334849	0835449	Chandler, Ralph	50	397	48	6	1974	Virginia	Do.
17EE02	D	334558	0833506	Chandler, Thomas	60	203	100	6	1977	Holder	Do.
16EE12	A	335142	0834133	Cooper, R.H.	60	145	80	6	1982	Robinson	Do.
16EE02	A	334527	0834454	Dillard, Russell	40	240	87	6	1977	Virginia	Do.
14EE25	B	334745	0835745	Eberhardt, Steve	60	365	17	6	1980	Robinson	Do.
15EE01	B	335030	0835113	Escoe, Robert	50	157	66	6	1964	Virginia	Do.
15FF03	A	335404	0834808	Euwin, Mrs. A.B.	20	105	88	6	1979	Robinson	Do.
15EE06	A	335209	0834757	Fane, Fred	70	305	82	6	1980	do.	Do.
17EE17	D	334510	0833307	Farmer and Courts	20	183	63	6	1972	Martin	Do.
17EE15	D	334500	0833337	Farmer, Bobby	150	245	30	6	1980	Robinson	Do.
16FF04	A	335326	0834312	General Telephone	20	465	63	6	1980	do.	Do.
17EE23	A	335102	0833723	Glass, W.C.	20	163	112	6	1973	Holder	Do.
17EE12	A	334717	0833637	Good Hope Comm. Center	139	--	--	6	--	Virginia	Public supply.
15DD09	B	334412	0834912	Goransky, Vincent	60	250	160	6	1974	do.	Domestic.
16EE05	A	334531	0834432	Gordon, Tom	40	240	87	6	1977	Virginia	Do.
16EE08	A	334955	0834419	Griffin, Pete	20	405	44	6	1978	Robinson	Do.
17EE18	D	334610	0833353	Hale, John	60	285	35	6	1979	do.	Do.
14EE10	B	334617	0835522	Henderson, J.W.	100	70	40	6	1978	Holder	Do.
15DD18	A	334425	0834811	Henderson, James	60	300	140	6	1982	do.	Do.
14DD79	B	334324	0835249	Hines, Claude	45	158	11	6	1975	do.	Do.
15EE05	B	334946	0834855	Holcomb, Billy	150	463	28	6	1972	Martin	Do.
17DD04	A	334354	0833621	Jackson, Tommy	20	180	75	6	--	Holder	Do.
15DD13	A	334255	0834802	Jersey, Ga., 1	28	500	80	8	1967	Virginia	Public supply.
15DD12	A	334324	0834812	Jersey, Ga., 2	50	565	140	6	1979	do.	Do.
15DD14	A	334256	0834749	Jersey, Ga. School	39	327	43	6	1943	do.	Institutional.
16DD02	A	334152	0834158	Kitchens, Kenneth	100	160	60	6	1972	Spray	Domestic.
16DD04	A	333944	0834236	Leggett & Platt	100	240	17	6	1973	Holder	None.
16EE07	A	335148	0833747	Leidell, Edward	20	200	45	6	1981	Martin	Domestic.
16DD06	A	334139	0834105	Lipscomb, Jack	100	465	150	6	1982	Robinson	Do.
17EE01	D	334713	0833618	Lowe, Harris	100	120	28	6	1970	Virginia	Do.
16DD03	A	334108	0834443	Martin, Ed	30	188	68	6	1973	Holder	Do.
16DD10	A	334224	0834036	Mathis Dairy, 1	60	385	90	6	1980	Robinson	Agricultural
16DD11	A	334218	0834031	Mathis Dairy, 2	75	305	70	--	1981	do.	Do.
16EE11	A	335146	0834113	McElhannon, Susie B.	25	140	64	6	1954	Martin	Domestic.
17DD03	A	334430	0833702	McGaughey, Harry, 2	22	100	42	6	1982	do.	Do.
14DD72	B	334454	0835410	McMichael, Hugh	100	365	13	6	1981	Holder	Do.
16FF03	A	335425	0833917	Mitchell, Charles	20	225	40	6	1981	Robinson	Do.
16DD09	A	334117	0834107	Mitchell, R.S.	60	265	50	6	1982	Robinson	Do.
14EE21	B	334702	0835657	Mitchell, Roy	60	225	24	6	1982	Waller	Do.
16EE01	A	335132	0834134	Moody, Bernard	25	270	130	6	1953	Virginia	Agricultural
14EE28	B	334842	0835347	O'Connor, Dale	60	445	16	6	1979	Robinson	Domestic.
17EE21	A	334624	0833628	Orr, Larry	80	185	32	6	1979	do.	Do.
17EE14	D	334519	0833402	Poss, Donald	25	248	16	6	1974	Holder	Do.
17EE20	A	334536	0833652	Prather, Tony	125	265	49	6	1978	Robinson	Do.
15EE07	A	334821	0834524	Preston, Bill	60	98	52	6	1972	Martin	Do.
16EE03	A	334725	0833957	Rolling Hills MHP	30	500	170	6	1973	Virginia	Public supply
17EE22	A	335147	0833611	Sharp, Lucy	30	158	143	6	1977	Martin	Do.
14EE27	B	334857	0835451	Smith, Floyd M.	75	180	87	6	1981	Holder	Do.
15DD10	B	334405	0834857	Smith, Paul	30	265	70	6	1977	Virginia	Do.
16DD07	A	333922	0834304	Social Circle, Ga.	20	540	30	10	1919	McCrary	None.
14EE29	B	335030	0835344	Stearns, Emmett	38	325	66	8	1948	Virginia	--
15EE03	B	334804	0834722	Steel, Tommy Sr.	30	308	76	6	1971	do.	Domestic.
15DD21	B	334247	0835056	Story, Ronald	30	285	120	6	1972	Spray	Do.

Table 10.--Record of wells in the Athens Region--Continued

Well number	Water-bearing unit	Latitude	Longitude	Owner	Yield (gal/min)	Depth (ft)	Casing Depth (ft)	Casing Diam. (in.)	Year drilled	Driller	Use
Walton County--Continued											
14EE23	B	334626	0835623	Taylor, William	70	230	30	6	1982	Waller	Do.
14EE24	B	334643	0835507	Thomas, Mrs. Annie	35	125	30	6	1970	Martin	Do.
15DD20	B	334257	0835104	Thompson, Clyde	30	225	120	6	1972	Spray	Do.
15DD15	B	334205	0835008	Townly, Mr. Hubert	30	245	127	6	1981	Robinson	Do.
16EE04	A	334949	0834133	Transcontinental Gas	120	436	89	6	1957	Virginia	Industrial.
15DD16	B	334259	0835132	Wade, W.R.	60	225	18	6	1979	Robinson	Domestic.
16EE06	A	334631	0834430	Walker, Tinnie	48	195	56	6	1970	Virginia	Do.
16EE14	A	335014	0834402	Walton Co. Board of Education	20	420	41	6	1955	do.	Institutional.
16EE09	A	334707	0834244	Walton Mills	128	110	60	6	1946	Ragan	None.
17EE13	D	334625	0833605	Walton-Morgan Service Center	23	400	--	6	--	Virginia	Institutional.
15FF02	B	335316	0834549	Warren, Daniel H.	50	285	26	6	1977	do.	Domestic.
14EE13	B	334812	0835343	White, J.C.	30	205	77	6	1977	do.	Do.
16DD12	A	334203	0834133	Wood, Steve (C.C. Whitten)	60	305	50	6	1980	Robinson	Do.

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