SELECTED AQUIFER-TEST INFORMATION FOR THE COASTAL PLAIN AQUIFERS OF SOUTH CAROLINA

By Walter R. Aucott and Roy Newcome, Jr.

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SELECTED AQUIFER-TEST INFORMATION FOR THE COASTAL PLAIN AQUIFERS OF SOUTH CAROLINA

By Walter R. Aucott[1] and Roy Newcome, Jr.[2]

ABSTRACT

Aquifer and well hydraulic characteristics are determined from more than 100 multiple-well and single-well aquifer tests in the Coastal Plain of South Carolina. Specific-capacity data are presented for many areas where aquifer-test information is sparse. The characteristics determined are based largely on well performance tests conducted by well drillers and consulting engineers. Although use of this information has many limitations, it has value in establishing comparative hydraulic properties for the Coastal Plain aquifers.

INTRODUCTION

Ground-water from the Coastal Plain aquifers of South Carolina is a valuable resource. Many municipalities and industries located in the Coastal Plain are dependent on ground water for their water supply. Efforts to describe, develop, plan the use of, and manage this resource require knowledge of the hydraulic characteristics of the aquifers. The results of only a few aquifer tests have been published to date, for areas in South Carolina.

The objective of this report is to present the results of representative aquifer tests and specific-capacity tests for the Coastal Plain aquifers of South Carolina. This report is limited in scope to data from the files of the U.S. Geological Survey and the South Carolina Water Resources Commission for the Coastal Plain aquifers of South Carolina. The data from most of the aquifer tests has not been previously analyzed to determine hydraulic characteristics of the aquifers. Published reports containing the results of aquifer tests are noted for reference.

The U.S. Geological Survey has been conducting a series of investigations of major aquifers throughout the United States as part of the Regional Aquifer Systems Analysis (RASA) program. These studies provide a more comprehensive understanding of ground-water availability throughout the Nation. The Coastal Plain aquifers in South Carolina are being studied as a part of this program. This report has been produced as a part of the RASA program.

[1] Hydrologist, U.S. Geological Survey
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Definition of Terms

Several terms are used frequently in this report. Transmissivity, storage coefficient, specific capacity, hydrologic boundary, multiple-well aquifer test, and single-well aquifer test are defined below to avoid confusion in their use.

Transmissivity is defined as the rate at which water of the prevailing kinematic viscosity is transmitted through a unit width of the aquifer under a unit hydraulic gradient. It is generally expressed in units of cubic feet per day per foot, reduced to feet squared per day. Transmissivity is the most important and widely used parameter that describes the transmission of water through an aquifer. It can be used to predict the potential yield of a proposed well for a specified drawdown and to estimate the pumping effect of wells on one another.

The storage properties of an aquifer are indicated by the storage coefficient. The storage coefficient is defined as the volume of water an aquifer releases from or takes into storage per unit surface area of the aquifer per unit change in head. The term is dimensionless. In confined aquifers, water released from storage is the result of compression of the aquifer and expansion of the water. Storage coefficients generally are between 0.001 and 0.00001 for confined aquifers. In unconfined aquifers, water is released from storage mostly by gravity drainage of the aquifer pores. This results in much higher storage coefficients; 0.2 is typical.

Specific capacity is defined as the rate of discharge from a well divided by the drawdown of the water level in that well and is expressed in gallons per minute per foot. For comparability, specific capacity ideally is based on a 1-day period of pumping when possible, or a shorter period may be graphically projected to 1 day. Estimates of aquifer transmissivity can be made from specific-capacity data, although well efficiency, which is independent of transmissivity, affects specific capacity.

Hydrologic boundary is used to denote a significant change in hydraulic characteristics, such as that produced by a stream penetrating the aquifer or substantial changes in aquifer permeability or thickness. This concept is commonly used in the analysis of aquifer tests to explain the effects of nonhomogeneities or finite nature of the aquifer on the test data.

A multiple-well aquifer test in this report refers to a test where drawdown is measured in one or more observation wells other than the pumped well. The storage coefficient can be computed in a multiple-well test. A single-well aquifer test is a test where drawdown is measured only in the pumped well.

Previous Investigations

Although this report is the first comprehensive listing of the results of aquifer tests in the Coastal Plain of South Carolina, and it presents the results of many tests for the first time, it is not the first effort concerned with the subject. Results of aquifer tests in the Coastal Plain of South Carolina were included in reports by Siple (1957 and 1967), Marine and Root (1976), Root (1977), Zack (1977), Hayes (1979), Park (1980 and 1985), and Cahill (1982). Most of the data in these reports were either original analyses of tests conducted by the investigator or the reporting of results obtained by other investigators and consulting engineers. In addition, a considerable amount of specific-capacity data, mostly from drillers' records, were reported by Siple (1975), Hayes (1979), and Park (1980 and 1985). Other tests have been reported individually by the consulting engineers or drilling companies conducting the tests. All of the above information, where used in the tabulation of aquifer test results in this report, is appropriately referenced.

GENERALIZED GEOHYDROLOGIC FRAMEWORK OF THE COASTAL PLAIN AQUIFERS

The Coastal Plain (fig. 1) is underlain by a coastward-thickening wedge of sediment consisting of sand, silt, clay, and limestone of Holocene to Late Cretaceous age. These sediments are underlain by pre-Cretaceous rocks consisting of consolidated sedimentary rocks of Triassic age and a complex of metamorphic and igneous rocks similar to those found near the surface in the Piedmont.

The wedge of sediments underlying the Coastal Plain of South Carolina (figs. 2 and 3) has been divided into six regional aquifers, with intervening confining units, by Aucott and others (in press). These six aquifers; the surficial aquifer, the Floridan aquifer system, the Tertiary sand aquifer, the Black Creek aquifer, the Middendorf aquifer, and the Cape Fear aquifer; are correlated with geologic formational units in table 1. A detailed description of the configuration and characteristics of these aquifers can be found in Aucott and others (in press) and in Colquhoun and others (1983).

AQUIFER-TEST DATA

Sources

Published aquifer-test information and analyses for the Coastal Plain aquifers of South Carolina are available from the following sources: Siple (1957, 1967, 1975), Marine and Root (1976), Root (1977), Zack (1977), Hayes (1979), Park (1980, 1985), and Cahill (1982). Distribution of previously published aquifer test information, by county, is shown in figure 4. These sources include multiple-well tests, single-well tests, and specific-capacity tests. Previously published aquifer tests were reanalyzed and included herein only if the measurement data were available. Otherwise, results previously published are not repeated here.

A great quantity of raw data from the files of the U.S. Geological Survey and the South Carolina Water Resources Commission was utilized in this study. This consisted mostly of well-performance tests conducted by drillers. The largest part of these data consisted of specific capacity tests only, although many aquifer tests, mostly single-well, were available. Almost none of the information was collected by or under the supervision of U.S. Geological Survey or South Carolina Water Resources Commission personnel.

Limitations

Aquifer tests provide their most reliable information when they are conducted with wells tapping a substantial part of the aquifer. Much less representative data result when a minor fraction of the aquifer thickness is tapped or when two or more separate aquifers are screened by the same well.

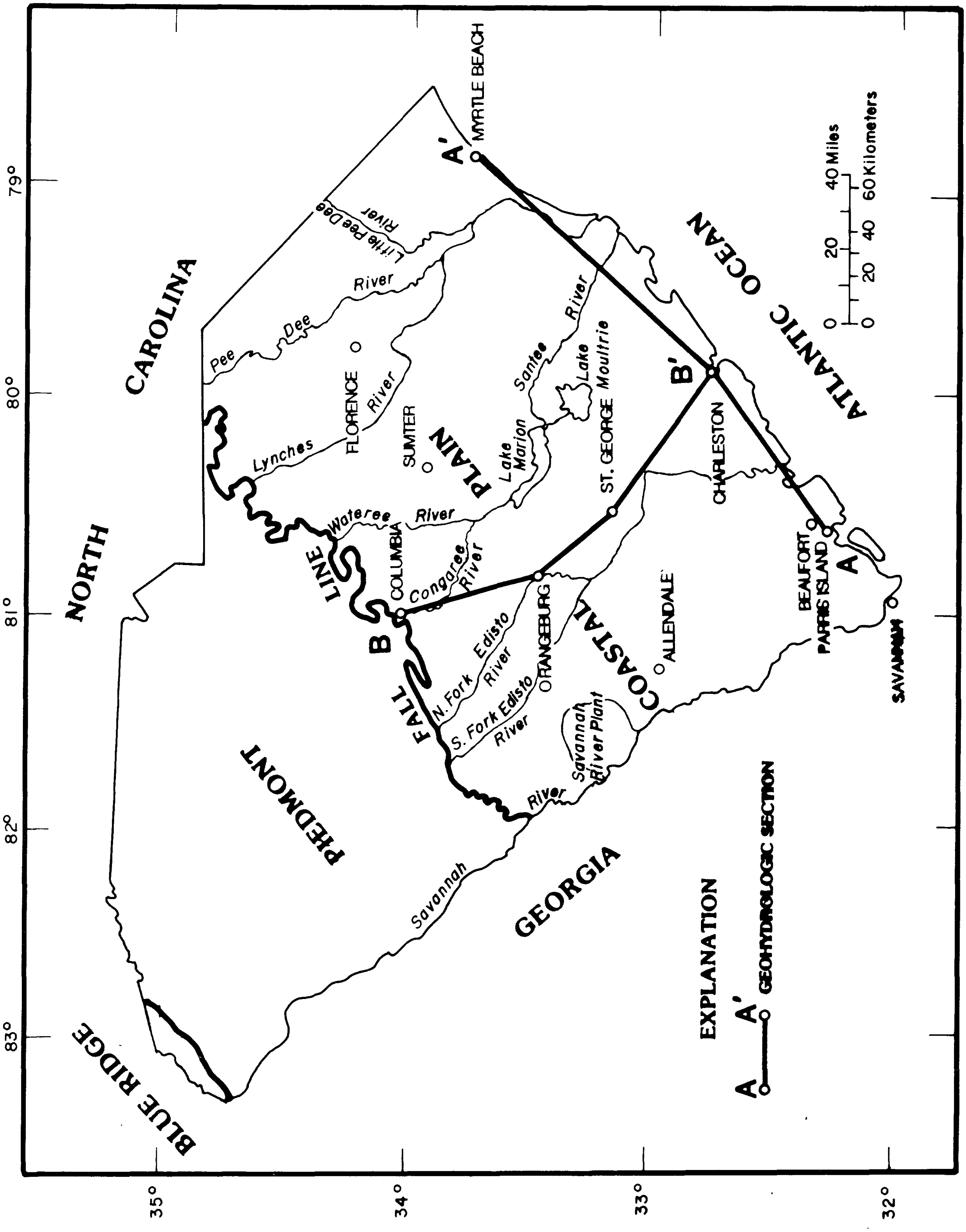

Figure 1.--Location of the Coastal Plain of South Carolina (modified from Aucott and Speiran, 1985a).

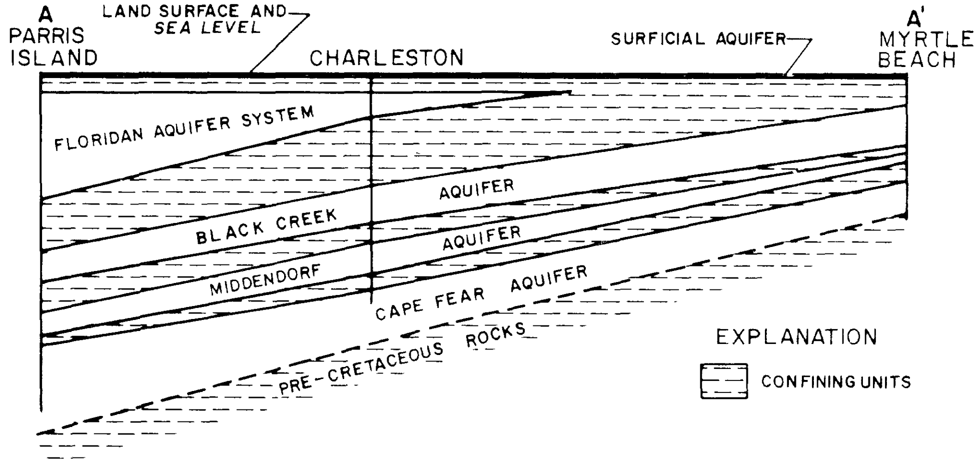

Figure 2.--Generalized geohydrologic section A-A' (modified from Aucott and Speiran, 1985a).

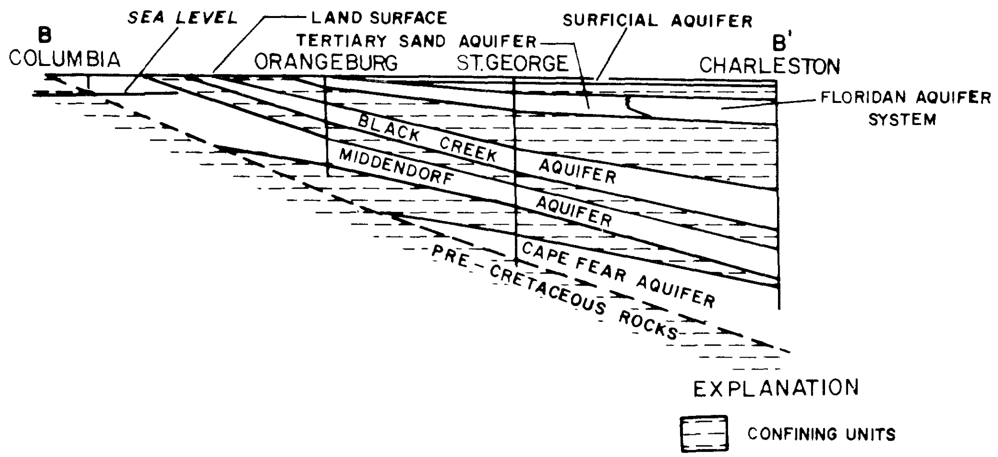

Figure 3.--Generalized geohydrologic section B-B' (modified from Aucott and Speiran, 1985a).

Table 1.--Generalized geohydrologic correlation chart

[Adapted from Siple, 1959]

Aquifer	System	Geologic formations[1]	Description
Surficial	Quaternary	Coastal terrace deposits	Sand and clay, reddish-brown, orange and white.
Floridan aquifer system[2] (downdip)	Tertiary	Cooper Group (lower part)	Limestone and marl, gray to white, silty to sandy, phosphatic.
		Ocala Limestone	Limestone, white to cream, calcitized, fossiliferous, glauconitic.
		Santee Limestone	Limestone, white to creamy yellow, fossiliferous, glauconitic; interbedded in part with gray to yellow sandstone.
Tertiary sand (updip)	Tertiary	Barnwell Formation	Sand, red to brown, fine- to coarse-grained, massive.
		McBean Formation	Sand, green to yellow, fine-grained, glauconitic; gray-green glauconitic marl.
		Congaree Formation	Sand and sandstone, yellowish-brown to green, fine- to coarse-grained, quartzose, glauconitic; dark green to gray clay.
		Black Mingo Formation (upper part)	Shale, gray, sandy; black sandy limestone, may be carbonaceous and fossiliferous in places.
Black Creek	Cretaceous	Black Creek Formation	Sand, gray to white, quartzose, calcareous, micaceous, phosphatic, glauconitic; dark gray to black thinly laminated clay containing nodules of pyrite and marcasite and fragments of lignite.
Middendorf	Cretaceous	Middendorf Formation	Sand, light-gray, fine- to coarse-grained, micaceous, glauconitic, and in part calcareous; green, purple, and maroon clay; greenish-gray micaceous silty sandstone.
Cape Fear	Cretaceous	Cape Fear Formation	Clay, reddish-brown, gray and green; yellow to white fine- to coarse-grained sand with traces of mica.

[1]These are geologic formations that are generally associated with a given aquifer. However, a given aquifer may not consist of the same formations in all areas, and locally, an aquifer may consist of parts of additional formations not listed.

[2]Carbonate equivalent of the Tertiary sand aquifer.

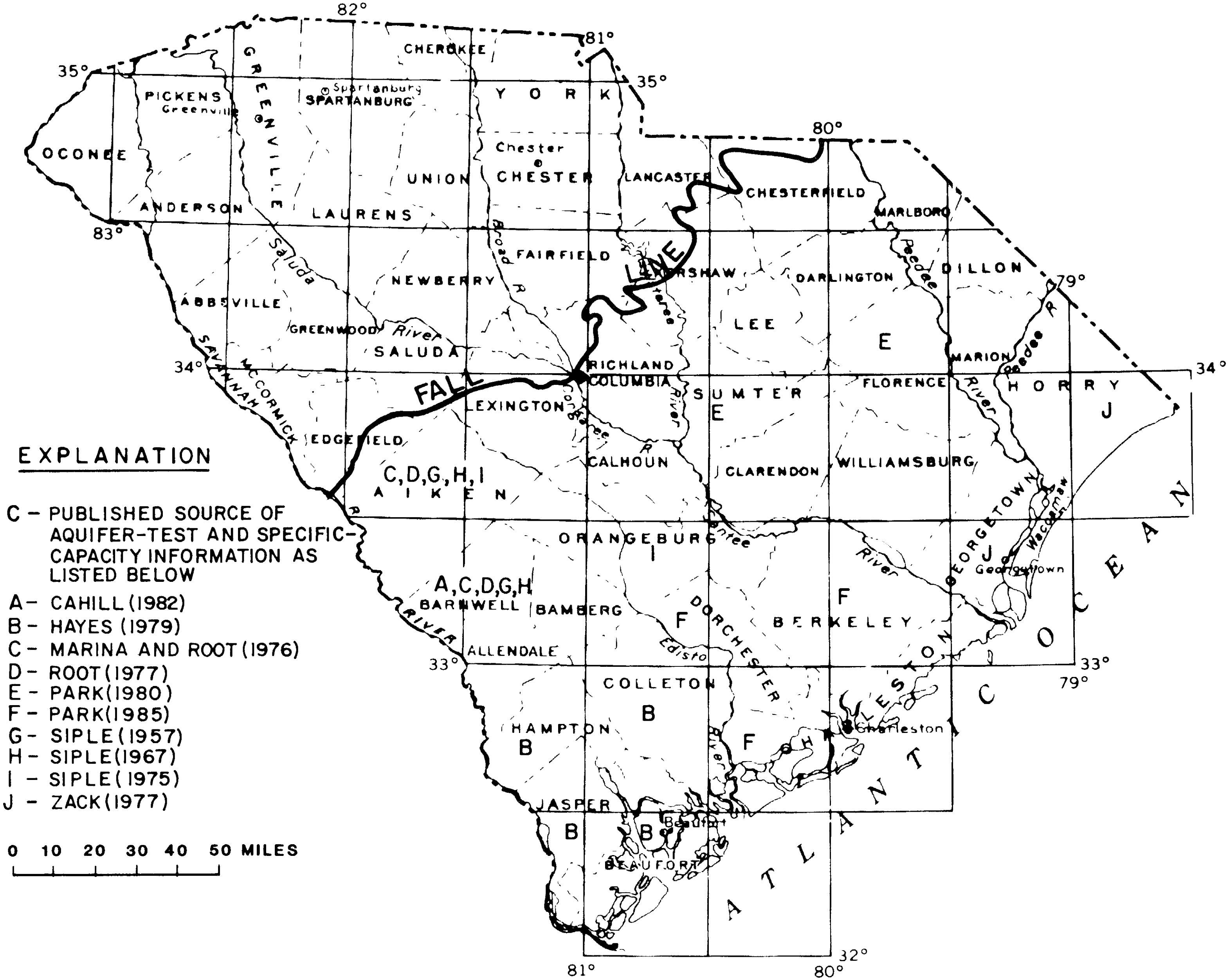

Figure 4.--Distribution of previously published aquifer-test and specific-capacity test information.

In South Carolina it is common for wells to have multiple screened intervals in order to obtain as much water as possible from a particular well. Where several water-bearing beds are separated by thin nonproducing beds, the entire zone often behaves as a unit having a common water level, or hydrostatic pressure, and a common water quality. If water-bearing beds are separated by thick beds of much lower permeability, the water-bearing beds are likely to represent separate aquifers with differing hydrostatic pressures and possibly differing water-quality characteristics.

Some of the aquifer tests were made at wells in which the producing zones probably represent parts of more than one aquifer. In these situations it is not known what proportion of the well discharge is provided by each aquifer; therefore, the values for transmissivity derived from multiple-aquifer wells that are reported in table 2 should be considered as minimum estimates of the total transmissivity of these combined aquifers.

Simplifying Assumptions

The nature of the available data required that several assumptions be made. The first assumption is that the data available accurately represent the particular test conducted. The absence of control over test procedures means that the quality of the data is uncertain. This is particularly true for specific-capacity tests where a series of measurements over time that can be evaluated to detect possible unusual occurrences is unavailable. A number of single-well and multiple-well aquifer tests were not used because of data irregularities that may have reflected improper test procedures.

Partial penetration is a potential problem with many of the tests. No correction was made for partial penetration, for three reasons. First, most of the tests used were from large-scale municipal or industrial wells that screen most of an aquifer. Second, most drillers are likely to screen only the most permeable sediments in an aquifer, leaving the least permeable part of the aquifer unscreened. Last, many of the wells that are partially screened use multiple screens and it would be difficult to accurately make corrections. As a result of the lack of correction for partial penetration, the transmissivities presented are probably underestimates.

The effects of well loss and inadequate development can produce a significant error in estimates of transmissivity derived from specific-capacity data. Because no corrections for these effects can be made with the available data, transmissivity estimates derived from specific-capacity data will tend to be underestimates of the actual values. Multiple-well and single-well aquifer tests provide the most accurate estimates of transmissivity. In areas of high data density, some tests yielding lower transmissivities have not been presented because they seem unrepresentative of aquifer transmissivity in that area. Where aquifer tests are sparse or nonexistent, selected specific-capacity data are presented. The greater specific capacities in each aquifer in a general area were considered to be the most free of test errors and, therefore, most representative of the actual aquifer transmissivity. This is because most errors would tend to result in an underestimation of the transmissivity.

Table 2.--Aquifer-test and general well information

County well No.	SCWRC No.	Latitude	Longitude	Location	Aquifer[1]	Screened interval (feet)	Screen length[2] (feet)	Well diameter (inches)	Date of test[3]	Duration of test dd/recov.[4] (hours)	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft][5]	Transmissivity (ft^2/d)	Remarks[6]
Aiken County														
AK-452	39W-x1	332015	814359	Savannah River Plant	Middendorf/ Black Creek	445-690	115	18	7/77	12/2	2,005	31	9,400	
Allendale County														
AL-66	37Z-q3	330655	813356	Morris Farm	Black Creek/ Tertiary	390-715	125	18/8	2/79	24/4	1,500	16	9,000	
AL-268	34AA-q2	330101	811807	Allendale	Floridan	240-328	(OH)	16/6	5/80	24/-	752	7.4	2,900	Also known as AL-310.
AL-326	33BB-p1	325631	811420	Fairfax	Floridan	257-339	40	10	5/83	24/2	298	1.3	500	
Bamberg County														
BAM-24	31X-m5	331715	810228	Bamberg	Tertiary	140-356	80	12	2/75	6.5/-	500	2.9	500	
Barnwell County														
BW-75	34W-s5	322140	811540	Blackville	Tertiary/ Black Creek	204-465	50	12	9/75	21/-	703	6.9	4,400	
BW-79	35W-f1	332348	812407	Williston	Middendorf	490-680	100	10	1/78	12/6	1,404	12	13,000	
BW-269	38Y-o1	331229	813937	Savannah River Plant	Middendorf	430-600	110	8	12/52	----	567	38	14,000	Listed as LA-33 in Siple, (1957).
Beaufort County														
BFT-795	27II-l5	322219	804134	Port Royal	Surficial	45-94	(OH)	8	5/76	23/23	322	54	15,000	S=0.0001; Hayes (1979) reported T=15,000 ft^2/d and S=0.0001.
BFT-1560	25HH-p6	322602	803456	Datha Island	Surficial	50-58	(OH)	4	11/83	4/1	40	8.3	2,400	
BFT-1566	25HH-p12	322615	803432	Datha Island	Surficial	59-66	(OH)	4	11/83	4/0.5	40	10.	4,300	
BFT-1570	25HH-p17	322628	803432	Datha Island	Surficial	51-59	(OH)	4	11/83	4/0.5	40	9.8	2,700	
Berkeley County														
BRK-141	16W-x1	332423	795602	St. Stephen	Middendorf	1,094-1,260	60	18/10/6	7/80	24/-	305	17	3,500	
BRK-175	18AA-u1	330031	795526	Goose Creek	Floridan	200-280	75	10	8/73	24/7	130	2.7	790	
BRK-443	18AA-e4	330438	795935	Mt. Holly	Middendorf	1,530-1,642	80	14/8	7/82	72/-	800	17	4,500	S=0.0005.
BRK-457	19Z-b3	330927	800130	Moncks Corner	Floridan	177-246	50	6	1/84	24/-	350	2.0	710	

Table 2.--Aquifer-test and general well information--Continued

County well No.	SCWRC No.	Latitude	Longitude	Location	Aquifer[1]	Screened interval (feet)	Screen length (feet)[2]	Well diameter (inches)	Date of test[3]	Duration of test dd/recov. (hours)[4]	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft][5]	Transmissivity (ft^2/d)	Remarks[6]
Calhoun County														
CAL-27	29R-f2	334836	805454	Teepak	Middendorf	305-405	65	6	2/76	22/3.5	524	9.7	3,000	
CAL-30	28T-b1	333954	804632	St. Matthews	Tertiary/ Black Creek	170-408	50	10	4/80	20/3	500	26	6,200	
CAL-34	27U-h1	333343	804236	Cameron	Tertiary/ Black Creek	250-280	30	8	5/76	24/-	250	11	4,600	
CAL-41	28S-k1	334150	804524	St. Matthews	Middendorf	510-770	100	12/8	7/78	6/1.7	1,120	14	5,600	Also known as CAL-601.
CAL-42	26S-o1	334235	803934	Ft. Motte	Tertiary/ Black Creek	220-300	80	10	2/81	14/-	525	27	10,000	Also known as CAL-602.
CAL-43	27S-t1	334138	804057	St. Matthews	Tertiary/ Black Creek	260-340	60	10	12/75	10/-	535	24	13,000	Also known as CAL-600.
CAL-48	28T-b2	333952	804623	St. Matthews	Tertiary	100-200	100	12	2/81	5/-	450	7.5	2,200	Also known as CAL-608.
Charleston County														
CHN-163	17DD-m5	324717	795218	Mount Pleasant	Middendorf	1,829-1,912	83	16	2/83	24/-	750	4.7	1,600	
CHN-173	16CC-y1	325042	794940	Snee Farms	Middendorf	1,575-1,862	95	16	2/84	24/24	450	2.5	1,200	
CHN-186	20FF-v1	323600	800622	Kiawah Island	Middendorf	2,018-2,210	166	8	3/77	24/-	430	1.7	3,500	
Chesterfield County														
CTF-62	18G-u1	344031	795558	Cheraw	Middendorf	80-125	30	6	8/77	24/-	105	5.3	700	Also known as CTF-601.
Clarendon County														
CLA-29	21S-y1	334025	801455	Manning	Black Creek/ Middendorf	525-700	55	8	11/74	8/1	754	15	5,400	
CLA-30	19Q-j1	335312	800046	Turbeville	Black Creek	164-417	40	10	3/76	23/1	503	13	2,700	
Colleton County														
COL-232	30AA-c4	330402	805714	Lodge	Floridan/ Black Creek	480-520	30	6	10/81	24/2	240	5.3	2,300	
Darlington County														
DAR-89	16L-q1	341608	794827	Darlington	Cape Fear	530-624	50	12	4/73	8/-	600	4.5	900	S=0.00005; Park (1980) reported T=940 ft^2/d and S=0.0003.
DAR-94	19K-o2	342219	800424	Hartsville	Middendorf	214-306	60	10	9/76	24/-	1,022	16	5,100	
DAR-112	16L-x1	341554	794817	Darlington	Cape Fear/ Middendorf	314-620	100	12	10/78	24/17	951	5.3	1,300	

Table 2.--Aquifer-test and general well information--Continued

County well No.	SCWRC No.	Latitude	Longitude	Location	Aquifer[1]	Screened interval (feet)	Screen length (feet)[2]	Well diameter (inches)	Date of test[3]	Duration of test dd/recov. (hours)[4]	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft][5]	Transmissivity (ft^2/d)	Remarks[6]
Dorchester County														
DOR-88	21BB-m3	325734	801207	Summerville	Middendorf	1,622-1,750	73	6	7/79	24/-	900	6.3	3,800	
DOR-206	21AA-r2	330150	801220	Summerville	Middendorf	1,587-1,746	75	6	10/81	24/2	510	2.4	400	
Florence County														
FLO-146	16M-w1	341011	794718	Florence	Middendorf	354-665	155	12	4/62	24/-	1,400	11	2,700	
FLO-147	13P-d1	335934	793328	Pamplico	Black Creek	210-300	60	8	2/65	12/-	536	7.2	3,000	Park (1980) reported 3,100 ft^2/d.
FLO-221	13N-d3	340800	793300	Mars Bluff	Black Creek	106-124	18	8	12/80	4/-	118	2.4	2,400	
FLO-247	15Q-p3	345144	794421	Lake City	Black Creek/ Middendorf	406-613	85	18	8/83	24/7	75	15	3,400	
Georgetown County														
GEO-73	7U-q1	333157	790343	Inlet Oaks	Black Creek	475-610	50	8	3/83	5/-	100	4.3	1,700	
GEO-125	7U-j1	333343	790044	Garden City	Black Creek	330-600	75	6	2/77	24/2	188	1.2	600	
GEO-173	11U-i1	333324	792134	Browns Ferry	Black Creek	551-672	70	8	3/80	25/2	201	3.4	1,200	
GEO-185	11W-r1	332125	792255	Georgetown	Black Creek	625-655	30	8	9/80	6/-	37	.40	200	
GEO-188	12W-r1	332143	792742	Sampit	Black Creek	654-800	100	8/4		-/12	175	.45	400	
GEO-228	10V-v1	332524	791659	Georgetown	Black Creek	440-686	132	10	3/85	24/12	517	2.1	600	
Horry County														
HO-284	6T-q2	333643	785851	Surfside Beach	Black Creek	419-616	70	10/8	1/72	7.5/1	503	5.8	2,000	
HO-287	7Q-p1	335111	790418	Conway	Middendorf	612-728	71	8	4/73	23/1	517	10.	3,400	Zack (1977) reported 3,500 ft^2/d.
HO-309	6R-q3	334607	785805	Conway	Black Creek	360-375	15	4	8/77	32/-	32	1.1	600	Zack (1977) reported 600 ft^2/d.
HO-333	6T-i1	333834	785640	Myrtle Beach	Black Creek	314-746	110	20	5/72	24/4	500	6.3	1,900	
HO-335	3R-b2	334900	784154	N. Myrtle Beach	Black Creek	308-700	195	10/8	5/74	8/8	503	9.7	3,100	Zack (1977) reported 2,760 ft^2/d.
HO-335A	3R-b2	334900	784154	N. Myrtle Beach	Black Creek	308-412	70	10/8	5/74	8/4	305	4.8	1,700	Packer test of top 4 screens in HO-335.

Table 2.--Aquifer-test and general well information--Continued

County well No.	SCWRC No.	Lati-tude	Longi-tude	Location	Aquifer[1]	Screened interval (feet)	Screen length (feet)[2]	Well diameter (inches)	Date of test[3]	Duration of test dd/recov. (hours)[4]	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft][5]	Transmis-sivity (ft^2/d)	Remarks[6]
Horry County--Continued														
HO-336	3Q-u1	335020	784011	N. Myrtle Beach	Black Creek	300-580	150	10/8	8/74	24/8	503	6.1	2,000	Zack (1977) reported 2,000 ft^2/d.
HO-345	7R-j1	334834	790019	Conway	Black Creek/ Middendorf	495-780	100	20/8	5/75	24/-	703	23	9,700	
HO-353	6T-m5	333715	785741	Garden City	Black Creek	396-482	70	8	3/75	24/23	300	2.2	800	
HO-410	6S-s1	334143	785632	Myrtle Bch. AFB	Black Creek	348-458	90	8	11/76	26/4	201	1.4	400	
HO-416	6T-h1	333815	785742	Garden City	Black Creek	334-680	120	10	4/77	24/23	400	5.9	2,700	
HO-463	2Q-y4	335056	783908	N. Myrtle Beach	Black Creek	302-560	95	10	9/80	24/2	508	4.6	1,400	
HO-467	3Q-p1	335123	784417	Wampee	Black Creek	92-390	70	10	9/79	24/11	300	11	6,000	
HO-473	3R-g1	334855	784301	N. Myrtle Beach	Black Creek	324-530	84	10	12/80	24/2	390	2.8	700	
HO-482	4R-s1	334627	784646	Myrtle Beach	Black Creek	340-624	142	10	4/80	24/8	450	3.7	1,200	
HO-483	4R-x2	334508	784831	Myrtle Beach	Black Creek	346-602	150	10	6/80	24/8	450	5.4	1,500	
HO-571	7Q-o1	335214	790448	Conway	Middendorf	654-795	80	10	9/78	24/2	503	14	3,900	
HO-596	7T-h1	333834	790231	near Bucksport	Black Creek	655-748	50	8	10/79	24/23	200	3.0	900	
HO-663	6T-p5	333607	785907	Surfside Beach	Black Creek	410-624	70	8	3/81	25/2	513	2.3	1,100	
HO-666	8S-r4	334118	790709	Bucksport	Black Creek	388-575	90	8	8/81	24/2	226	4.6	1,300	
HO-683	5S-g1	334314	785358	Myrtle Beach	Black Creek	366-634	150	10	12/81	24/7	503	5.7	2,000	
HO-688	6T-b4	333925	785613	Myrtle Bch. AFB	Black Creek	395-597	85	10	8/82	24/9	403	3.2	1,200	
HO-696	7R-t5	334608	790040	Burning Ridge	Black Creek/ Middendorf	408-802	189	12	2/82	24/6	1,001	10.	2,000	
HO-730	5S-i8	334303	785136	Myrtle Beach	Black Creek	370-660	150	10	10/82	24/4	503	5.8	2,000	
HO-742	3R-f2	334805	784422	N. Myrtle Beach	Black Creek	326-622	150	10	2/83	24/23	510	3.8	1,000	
HO-752	3R-o7	334752	784456	Myrtle Beach	Black Creek	290-658	150	10	6/83	24/23	520	5.4	2,500	
HO-858	5S-y10	334036	785431	Myrtle Beach	Black Creek	369-635	150	10	4/84	24/12	503	8.0	2,200	
HO-859	7T-u4	333535	790040	Garden City	Black Creek	340-700	200	12	7/84	24/24	760	4.3	1,200	
HO-867	3Q-b3	335408	784158	Little River	Black Creek	203-372	72	10	11/83	35/24	370	2.5	1,300	
Jasper County														
JAS-104	29II-o1	322206	805458	Ridgeland	Floridan	145-330	(OH)	12	5/57	25/9	1,600	100	47,000	S=0.0004; Hazen & Sawyer (1957) & Hayes (1979) reported T=47,000 ft^2/d & S=0.00036.

Table 2.--Aquifer-test and general well information--Continued

County well No.	SCWRC No.	Latitude	Longitude	Location	Aquifer[1]	Screened interval (feet)	Screen length (feet)[2]	Well diameter (inches)	Date of test[3]	Duration of test dd/recov. (hours)[4]	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft][5]	Transmissivity (ft^2/d)	Remarks[6]
Kershaw County														
KER-19	23J-u2	342526	802015	Bethune	Middendorf	140-190	35	8	9/53	46/24	300	2.6	400	S=0.0002.
KER-139	25M-g1	341306	803324	Camden	Middendorf	94-134	20	6	6/78	24/1	102	3.0	900	Also known as KER-601.
KER-148	23K-i1	342349	802319	Bethune	Middendorf	123-152	18	8	2/77	24/2	300	7.5	4,800	
Lee County														
LE-18	19O-g1	340351	800356	Lynchburg	Middendorf	316-511	60	16/8	11/72	28/-	805	9.0	3,400	
LE-19	19O-g2	340350	800353	Lynchburg	Middendorf	391-536	65	16/8	3/73	24/-	798	6.0	3,000	
LE-36	23L-k1	341724	802029	Lucknow	Middendorf	175-258	35	8	5/78	20/-	268	2.5	2,600	
Lexington County														
LEX-89	37P-v2	335529	813102	Leesville	Middendorf	38-93	36	8	3/76	21/12	115	---	2,500	
LEX-156	32R-b1	334910	810605	Gaston	Middendorf	296-326	30	8	5/72	24/2	200	14	3,300	
Marion County														
MRN-67	9M-p2	341156	791404	Mullins	Black Creek	228-356	50	10/8	5/72	12/10	570	14	2,800	
MRN-89	9M-p1	341143	791428	Mullins	Black Creek	194-334	48	10	7/79	24/2	602	5.5	1,600	
MRN-91	10M-k3	341248	791544	Mullins	Black Creek	326-346	20	12	6/72	3/1	372	3.0	900	
Marlboro County														
MLB-117	15J-d3	343004	794253	near Blenheim	Middendorf	68-124	27	10	6/59	28.5/4	362	21	4,900	
MLB-145	14K-b1	342416	793558	Brownsville	Middendorf	150-240	76	12/8	4/82	24/2	1,002	33	8,000	Also known as MLB-600.
Orangeburg County														
ORG-217	24V-g1	332757	802912	Santee	Tertiary	244-356	50	10	3/77	24/5	254	5.0	1,500	Also known as ORG-601.
ORG-200	29V-t1	332642	805059	Orangeburg	Middendorf	835-950	100	20/10	7/78	6/-	1,000	15	18,000	
Richland County														
RIC-52	27Q-l3	335244	804133	Eastover	Black Creek	102-112	10	6	4/76	2/2	120	3.3	1,900	
RIC-62	26R-c2	334944	803810	Wateree	Middendorf	380-544	103	20/10	10/74	24/8	2,000	22	9,300	S=0.0001.

Table 2.--Aquifer-test and general well information--Continued

County well No.	SCWRC No.	Lati-tude	Longi-tude	Location	Aquifer[1]	Screened interval (feet)	Screen length (feet)[2]	Well diameter (inches)	Date of test[3]	Duration of test dd/recov. (hours)[4]	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft][5]	Transmis-sivity (ft^2/d)	Remarks[6]
Sumter County														
SU-120	23Q-r3	335147	802253	Sumter	Middendorf/ Black Creek	294-670	100	24/12	10/65	24/-	1,800	19	7,100	
SU-151B	24S-d2	334413	802810	Pinewood	Middendorf	690-740	50	8	7/76	7/1	265	5.8	2,700	Park (1980) reported 2,800 ft^2/d.
SU-153	23Q-r1	335154	802236	Sumter	Middendorf	533-633	100	22/12	8/76	24/46	1,400	14	7,100	S=0.0005.
SU-156	25O-g1	340306	803235	Rembert	Middendorf	145-318	95	12/10	6/77	24/1	1,212	36	12,000	
SU-159	24P-g1	335801	802858	Shaw AFB	Black Creek	182-242	40	20	9/75	7/-	650	12	4,200	
SU-179	24O-t1	340235	802528	Dalzell	Middendorf	140-435	120	12/10	3/79	22/-	1,302	22	15,000	
Williamsburg County														
WIL-26	16S-g2	334350	794820	near Kingstree	Black Creek/ Middendorf	565-755	50	10/8	1/61	24/-	700	10.	2,700	
WIL-33	17U-r1	333124	795235	Lane	Black Creek	580-636	30	6	6/69	24/-	150	1.1	460	
WIL-109	16T-e2	333928	794908	Kingstree	Black Creek	304-660	110	18	5/78	72/96	754	10.	2,900	Also known as WIL-75.
WIL-118	17S-u1	334021	795013	Kingstree	Cape Fear/ Middendorf	750-944	50	18	11/76	24/1	500	3.5	450	

[1] See table 1 for aquifer correlation. Aquifer names separated by a slash indicate a multiaquifer well or a well in which the aquifer designation is less certain. The first aquifer listed is the one for which the water level is considered to be most representative. "Tertiary" indicates the Tertiary sand aquifer.

[2] "(OH)" indicates the well is an open hole throughout the designated interval. Screen lengths may be less than screened interval because of multiple well screens.

[3] Month/year or year only of test.

[4] Upper number refers to drawdown, lower number refers to recovery.

[5] Specific capacity based on drawdown at 24 hours or projected to 24 hours where test duration is less than 24 hours.

[6] S is the storage coefficient.

METHODS OF ANALYSIS

Aquifer Tests

Table 2 is a compilation of selected aquifer-test information and related well information for the Coastal Plain aquifers of South Carolina. This table includes only the tests deemed to be representative of the respective aquifer transmissivities. Between one-half and one-third of the multiple-well and single-well aquifer tests that were evaluated have been incorporated into this table. The distribution of the tests, by county, is shown in figure 5.

Multiple-well aquifer tests, those using an observation well, were generally analyzed by either the Theis method for nonleaky aquifers (Theis, 1935), or the Hantush-Jacob method for leaky aquifers (Hantush-Jacob, 1955). Both of these methods involve a type-curve matching technique. Reported transmissivity results for multiple-well tests are derived considering all available data, including measurements from observation wells and the pumped well.

Multiple-well test results reflect the aquifer properties between the pumped well and one or more observation wells; however, single-well aquifer tests reflect the aquifer transmissivity in the general vicinity of the pumped well. Single-well aquifer tests generally were analyzed by using straight-line solutions for drawdown (Cooper and Jacob, 1946) or recovery (Theis, 1935). Curve-matching solutions are usually not feasible with single-well data because of the general lack of good early-time data and the interference from other factors in the pumped well early in the pumping period. The slope of the best-fit line through data points plotted as water level or drawdown versus time was used to compute transmissivity in the equation:

$$T = 35.2Q/(\Delta s/\Delta \log t)$$

where T = transmissivity, in feet squared per day;
Q = discharge rate, in gallons per minute; and
$\Delta s/\Delta \log t$ = slope of best-fit line of drawdown versus log time.

This method is usually adequate before leakage becomes significant because u, which is equal to $r^2S/4Tt$, is less than 0.01 at small values of time (t) considering the small effective radius (r) of the pumping well and reasonable storage coefficients (S) (Lohman, 1972, p. 23). Although recovery data frequently yield better analyses than drawdown data, most analyses relied on drawdown data because they were more available. Storage coefficients cannot be accurately determined from single-well aquifer test data.

Problems previously mentioned, such as partial penetration and lack of control over data collection, will affect analysis of aquifer tests. Many more single-well aquifer tests were not used than were used. The drawdown versus log time plots of the rejected tests were not linear or they formed no consistent pattern, indicating either that the assumptions of the method of analysis were violated or that inadequate test procedures were used in the data collection. In some cases, insufficient data were available for an adequate analysis. Some multiple-well aquifer tests were also rejected for similar reasons. Well losses and aquifer losses resulting from poor well

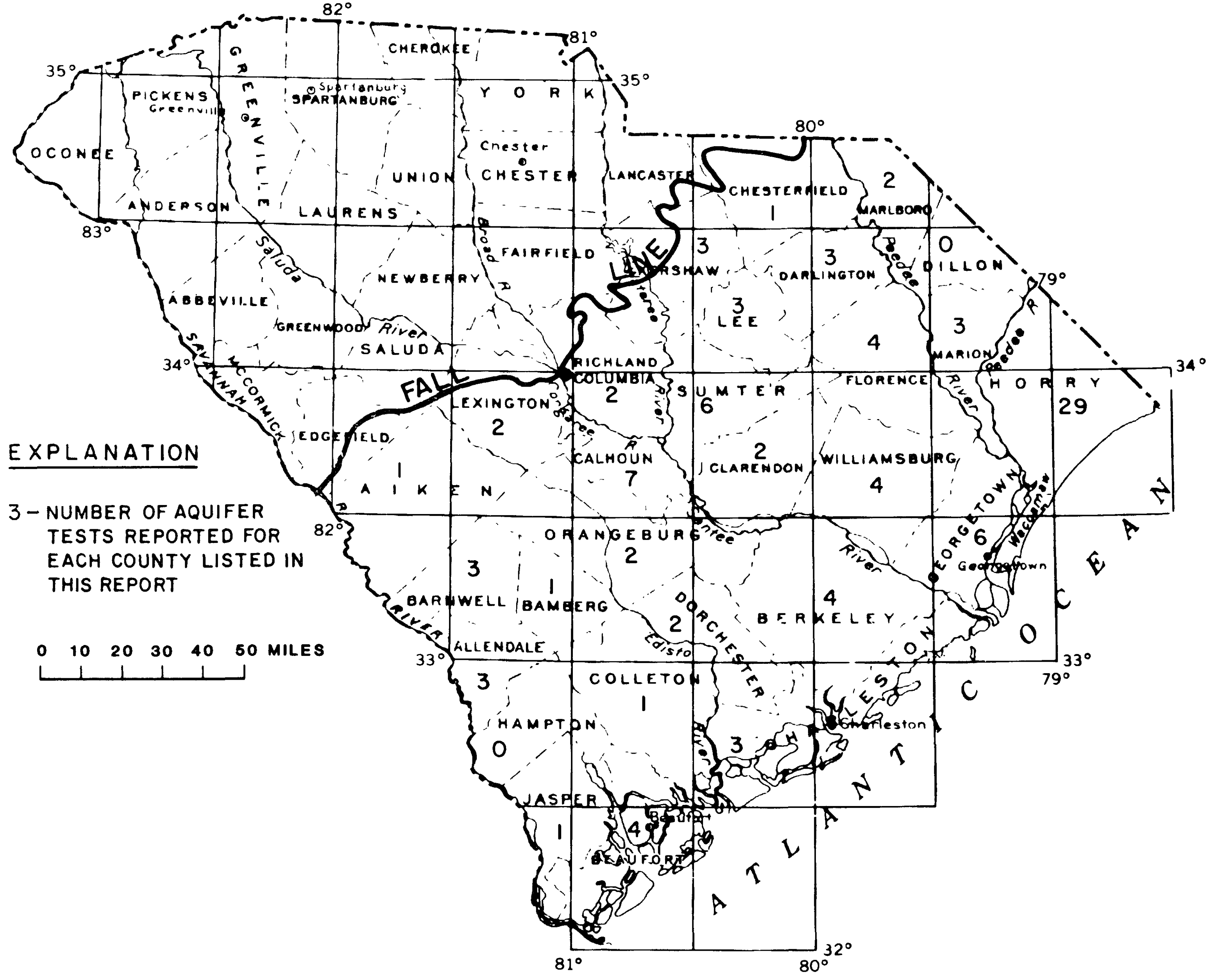

Figure 5.--Distribution of aquifer tests.

development do not affect multiple-well tests and probably affect single-well tests only very early in the tests, a period not relied on in the analysis of the single-well tests.

Specific Capacities

Selected specific-capacity tests for areas where aquifer-test data were unavailable or sparse are presented in table 3. About 10 percent of the available specific-capacity tests are included in this table. The distribution of tabulated specific-capacity tests is shown in figure 6.

The specific-capacity of a well can provide the basis for an estimate of a minimum aquifer transmissivity. Estimates of transmissivity can be obtained from specific-capacity data by a number of methods, including those of Brown (1963) and Bedinger and Emmett (1963). There is a direct relation between specific-capacity and aquifer transmissivity for a given condition of effective well diameter, duration of test, and storage coefficient. In actual practice, however, well loss varies widely resulting in a wide range of specific-capacity derived transmissivities in locations where numerous tests are available.

USE OF TEST DATA

Application of the transmissivity data should be made keeping in mind the limitations of the available test data and the methods of analysis, as previously discussed. The nature of the aquifer sediments also has bearing on the use of these data. Aquifers in the Coastal Plain of South Carolina typically consist of lenses of sand of varying thickness and areal extent. These lenses are idealized together both laterally and vertically as if they were a continuous, homogeneous single mass, although they are really not. This nonhomogeneity directly results in the common occurrence of hydrologic boundaries, as recognized in the analysis of the aquifer tests. It also results in significant variation in transmissivity over short distances.

The use of these data must be with the above uncertainties in mind. In areas where the density of data is relatively high, more confidence can be placed in the range of transmissivity values. Conversely, where the data density is low or consists mostly of transmissivity estimates derived from specific-capacity tests less confidence is appropriate. Extrapolation of these test results into nearby areas can yield meaningful results if the aquifer materials and the screened intervals are similar. Extrapolation of test results from one aquifer to estimate transmissivity in another aquifer has little meaning. In any case, the use of these data must be done with consideration of their limitations.

SUMMARY

Aquifer and well hydraulic characteristics obtained from more than 100 multiple-well and single-well aquifer tests in the Coastal Plain of South Carolina were tabulated by county. Multiple-well aquifer tests were analyzed by the Theis method for nonleaky aquifers and the Hantush-Jacob method for leaky aquifers. Single-well tests were analyzed by straight-line solution techniques for drawdown (Cooper-Jacob) and recovery (Theis recovery) tests. Specific-capacity test data are presented for areas where aquifer-test information is sparse. The data are based largely on well performance tests conducted by well drillers and consulting engineers. Many tests are

Table 3.--Selected specific-capacity test and general well information

County well No.	SCWRC No.	Lati-tude	Longi-tude	Location	Aquifer[1]	Screened interval (feet)	Screen length[2] (feet)	Well diameter (inches)	Date of test[3]	Duration of test[4] (hours)	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft]
Aiken County												
AK-440	41U-u4	333059	815053	Burnettown	Middendorf	160-200	30	6	5/69	24	197	12
AK-476	41U-v2	333058	815115	Burnettown	Middendorf	126-169	30	6	6/69	24	197	20.
AK-516	39X-k6	331714	814028	Savannah River Plant	Middendorf	600-850	100	11	9/82	24	1,400	14
AK-538	38X-n2	331713	813828	Savannah River Plant	Middendorf/ Black Creek	425-850	195	18	2/52	--	560	60.
Allendale County												
AL-22	34BB-k1	325850	811634	Allendale	Black Creek	672-825	75	10	2/80	2	1,250	24
AL-47	35DD-f1	324639	812227	Groton Plantation	Tertiary/ Black Creek	820-990	140	8	3/78	--	1,750	28
AL-48	33Z-y1	330518	811420	Ulmer	Floridan	180-300	50	10	1/79	24	700	18
Bamberg County												
BAM-22	32X-g2	331855	810820	Denmark	Tertiary	162-297	60	12	2/73	24	503	3.4
BAM-23	32X-d1	321927	810825	Denmark	Tertiary	194-286	50	12	3/78	24	503	4.1
BAM-27	31X-m6	331714	810229	Bamberg	Black Creek	448-539	50	12	5/78	24	1,500	18
Barnwell County												
BW-57	25Y-c4	331410	812245	Barnwell	Tertiary	180-295	40	18	7/62	12	536	8.2
BW-60	35Y-b8	331410	812200	Barnwell	Tertiary	218-320	48	8	6/68	12	500	16
BW-61	35Y-c7	331410	812100	Barnwell	Tertiary	220-308	44	8	5/68	12	520	15
BW-63	35X-v1	331500	812130	Barnwell	Tertiary	282-312	30	12	9/68	--	554	11
BW-78	36W-j1	332358	812520	Williston	Middendorf	568-770	65	12	1/78	17	1,404	11
BW-268	37Y-f2	331328	813447	Savannah River Plant	Middendorf/ Black Creek	360-600	125	18	11/51	24	540	25
BW-310	38Y-d1	331452	813852	Savannah River Plant	Black Creek/ Middendorf	285-576	55	8	10/77	12	754	14
Beaufort County												
BFT-449	24JJ-c1	321930	802737	Fripp Island	Floridan	96-150	(OH)	12	3/74	8	280	6.7
BFT-652	27KK-h1	321313	804301	Hilton Head Island	Floridan	140-200	(OH)	12	6/75	8	1,500	250
BFT-671	27LL-d2	320922	804356	Hilton Head Island	Floridan	145-221	(OH)	16	12/80	12	2,255	80.

Table 3.--Selected specific-capacity test and general well information--Continued

County well No.	SCWRC No.	Latitude	Longitude	Location	Aquifer[1]	Screened interval (feet)	Screen length[2] (feet)	Well diameter (inches)	Date of test[3]	Duration of test[4] (hours)	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft]
Beaufort County--Continued												
BFT-1389	28JJ-n2	321703	804859	Waddell Mari-culture Center	Floridan	125-190	(OH)	14	3/83	24	1,205	120
Berkeley County												
BRK-26	15X-n1	331735	794110	Jamestown	Black Creek	700-880	50	16/6	5/80	24	275	2.3
BRK-47	22Y-w1	331016	801717	Ridgeville	Floridan	283-372	40	6	1/65	--	300	4.7
BRK-159	17BB-g1	325824	805302	Cainhoy	Floridan	219-315	(OH)	6	1976	--	421	30.
BRK-166	18X-r1	331619	795752	Macbeth	Floridan	40-102	(OH)	4	1974	--	50	3.8
BRK-201	19Z-s1	330647	800107	Oakley	Floridan	64-252	(OH)	6	1974	--	250	6.2
BRK-210	19AA-w2	330006	800256	Mt. Holly	Floridan	65-323	(OH)	8	11/60	--	550	14
BRK-213	19BB-c1	325938	800219	Goose Creek	Floridan	TD=322	(OH)	8	5/64	--	326	5.6
BRK-459	19Z-b5	330938	800110	Moncks Corner	Floridan	195-305	75	18	3/84	24	437	6.6
Charleston County												
CHN-136	18DD-b1	324920	795657	Charleston Heights	Floridan/ Tertiary	504-573	69	6	4/60	--	220	5.4
CHN-167	17DD-g7	324829	795330	Mount Pleasant	Middendorf	1,800-1,986	80	8	2/83	24	1,040	7.8
CHN-189	19EE-d1	324401	800323	Riverland Terrace	Floridan/ Tertiary	148-581	(OH)	4	1/71	--	110	12
CHN-294	18CC-e1	325413	795915	Hanahan	Floridan	198-361	(OH)	6	5/66	--	400	17
CHN-314	20DD-y2	324544	800952	Rantowles	Floridan/ Tertiary	150-611	(OH)	6	1979	--	300	5.3
CHN-3[illegible]	21EE-e3	324403	801452	Ravenel	Floridan	148-555	(OH)	4	7/56	--	10	5.0
CHN-360	22FF-p2	323634	801953	Little Edisto Island	Floridan	103-521	(OH)	4	4/69	--	60	6.0
Chesterfield County												
CTF-55	22J-j1	342802	801529	McBee	Middendorf	214-325	40	10	12/73	14	348	35
Clarendon County												
CLA-16	21S-r3	334137	801247	Manning	Black Creek/ Middendorf	565-605	25	6	1953	--	200	15
CLA-20	21S-m1	334117	801137	Manning	Black Creek/ Middendorf	590-640	50	8	1964	--	752	22

Table 3.--Selected specific-capacity test and general well information--Continued

County well No.	SCWRC No.	Latitude	Longitude	Location	Aquifer[1]	Screened interval (feet)	Screen length (feet)[2]	Well diameter (inches)	Date of test[3]	Duration of test (hours)[4]	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft]
Clarendon County--Continued												
CLA-22	19Q-i1	335330	800115	Turbeville	Black Creek	200-320	15	8	1956	24	150	8.3
CLA-25	23T-v1	333539	802119	Summerton	Middendorf	636-740	60	8	1970	24	525	12
Colleton County												
COL-20	26BB-q1	325610	803801	Walterboro	Floridan	102-628	(OH)	10	1942	--	240	17
COL-38	29AA-k1	330214	805033	Williams	Black Creek	650-700	50	10	1963	--	328	9.3
COL-49	26BB-q3	325702	803758	Walterboro	Middendorf	1,602-1,664	62	6	3/70	--	1,254	16
COL-50	26CC-e2	325447	803846	Walterboro	Middendorf	1,698-1,760	62	6	9/70	--	1,431	22
Darlington County												
DAR-35	17I-v5	343021	795122	Society Hill	Middendorf	127-378	168	8	1954	--	240	6.0
DAR-71	20K-t1	342150	800536	Hartsville	Middendorf	205-293	50	10	1962	19	800	42
DAR-77	19K-g1	342311	800401	Hartsville	Middendorf	126-166	23	8	1967	--	278	14
DAR-80	19K-f1	342301	800412	Hartsville	Middendorf	204-236	32	10	1970	24	530	15
DAR-82	20K-r1	342115	800701	Hartsville	Middendorf	208-294	50	12	3/71	24	1,430	39
DAR-86	17L-m1	341754	795202	Darlington	Middendorf	282-360	40	12	1972	--	465	18
DAR-87	19M-y1	341012	800406	Lamar	Middendorf	368-476	60	8	1972	24	626	8.0
DAR-96	17I-v3	343021	795122	Society Hill	Middendorf	175-373	85	18	11/75	24	250	2.7
DAR-105	19K-g3	342309	800357	Hartsville	Middendorf	133-163	20	8	-----	8	375	9.1
DAR-123	17L-m2	342154	794510	Mechanicville	Middendorf	171-371	200	16	-----	--	800	29
Dillon County												
DIL-8	11J-w	342521	792209	Dillon	Middendorf	190-257	38	10	1949	10	780	11
DIL-74	11J-j2	342800	792030	Hamer	Middendorf	171-405	140	8	1956	21	360	14
DIL-85	11J-k6	342756	792026	Hamer	Middendorf	138-236	60	10	10/65	24	525	12
DIL-86	11J-j5	342807	792030	Hamer	Middendorf	172-316	50	12	1973	14	521	9.1
DIL-88	9L-b1	341958	791100	Lake View	Middendorf	503-569	35	8	1972	--	500	4.2
DIL-93	11J-v1	342512	792141	Dillon	Middendorf	258-319	61	8	1976	--	703	10.
DIL-94	12K-v1	342009	792600	Latta	Middendorf	340-390	50	20/10	1980	--	650	8.4
Dorchester County												
DOR-36	24Y-h1	331337	802701	Harleyville	Floridan	163-289	55	10	1972	--	500	8.6
DOR-40	22Z-g	330820	802340	Dorchester	Floridan	206-325	(OH)	6	-----	--	660	41
DOR-42	23Y-h	331330	802700	Harleyville	Floridan	270-489	90	10	1960	24	708	6.2
DOR-73	22Z-x1	330538	801852	Ridgeville	Floridan	227-325	(OH)	12	9/70	--	250	14

Table 3.--Selected specific-capacity test and general well information--Continued

County well No.	SCWRC No.	Lati-tude	Longi-tude	Location	Aquifer[1]	Screened interval (feet)	Screen length (feet)[2]	Well diameter (inches)	Date of test[3]	Duration of test (hours)[4]	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft]
Dorchester County--Continued												
DOR-74	23Z-g2	330900	802315	Dorchester	Floridan	206-325	(OH)	6	10/73	--	600	37
DOR-149	23AA-h1	330359	802238	Ridgeville	Floridan	65-396	(OH)	6	9/63	--	238	6.4
Florence County												
FLO-4	16M-t1	341153	794550	Florence	Middendorf/ Cape Fear	261-726	80	6	1/37	--	1,180	11
FLO-8	18N-i3	340812	795620	Timmonsville	Black Creek	156-170	14	8	1911	--	234	6.2
FLO-10	13P-e1	335944	793405	Pamplico	Black Creek	182-192	10	10	-----	--	100	1.3
FLO-17	16Q-k2	335200	794500	Lake City	Black Creek	451-481	30	10	3/47	--	250	2.5
FLO-33	16M-l1	341202	794540	Florence	Middendorf	325-648	70	10	8/47	--	1,150	14
FLO-95	16M-d3	341413	794847	Florence	Middendorf	330-375	40	6	2/53	--	340	6.4
FLO-105	16Q-k1	335220	794557	Lake City	Black Creek	152-426	50	10	5/54	--	1,250	12
FLO-113	16M-w	341055	794756	Florence	Black Creek	60-276	34	10	6/55	--	450	4.2
FLO-114	18P-s1	335606	795601	Olanta	Black Creek	240-338	36	8	12/55	--	450	6.3
FLO-118	18N-i6	340801	795653	Timmonsville	Black Creek	211-256	30	6	9/53	--	488	8.9
FLO-125	15M-p1	341134	794452	Florence	Middendorf	260-495	99	12	1/59	24	1,000	11
FLO-127	16M-s3	341159	794619	Florence	Middendorf	309-495	100	10	1958	--	700	12
FLO-148	12R-b3	334952	792640	Johnsonville	Black Creek	264-496	75	10	10/76	2	500	9.3
FLO-153	18N-i2	340813	795619	Timmonsville	Middendorf	355-475	70	8	2/68	24	517	6.1
FLO-154	16M-r1	341155	794715	Florence	Middendorf/ Cape Fear	303-706	150	24	12/67	25	1,469	14
FLO-155	12R-b2	334958	792648	Johnsonville	Middendorf	789-870	80	12	8/68	1	668	14
FLO-156	18P-v1	335559	795623	Olanta	Black Creek	175-220	30	8	5/68	36	300	3.3
FLO-161	16M-x1	341038	794851	Florence	Middendorf/ Cape Fear	230-660	159	24	7/71	71	1,250	9.5
FLO-162	16Q-t2	335129	794543	Lake City	Black Creek/ Middendorf	160-556	52	10	1969	24	750	12
FLO-179	17M-t1	341157	795057	Florence	Middendorf	306-578	146	12	-----	--	1,300	6.5
FLO-184	12R-b4	334804	792652	Johnsonville	Black Creek	285-410	70	10	1963	24	350	5.3
FLO-188	15Q-e3	335500	794444	Scranton	Black Creek	205-420	40	8	1978	--	700	10.
FLO-189	15Q-e2	335445	794434	Scranton	Black Creek	200-430	40	8	1978	--	912	14
FLO-200	15Q-q2	335140	794414	Lake City	Black Creek/ Middendorf	280-580	110	12	11/79	24	754	6.6
FLO-201	13N-d2	340854	793339	Mars Bluff	Black Creek	106-122	16	8	12/80	26	115	2.3
FLO-202	14M-p2	341122	793920	Florence	Middendorf	291-346	40	8	10/78	12	302	6.0
FLO-204	18N-i5	340819	795609	Timmonsville	Middendorf	372-476	82	18	3/81	7	580	3.7

Table 3.--Selected specific-capacity test and general well information--Continued

County well No.	SCWRC No.	Latitude	Longitude	Location	Aquifer[1]	Screened interval (feet)	Screen length[2] (feet)	Well diameter (inches)	Date of test[3]	Duration of test[4] (hours)	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft]
Florence County--Continued												
FLO-211	16Q-i2	335321	794608	Lake City	Black Creek/ Middendorf	285-574	90	12	8/82	24	751	10
FLO-247	15Q-p3	335144	794421	Lake City	Black Creek/ Middendorf	406-613	85	18	8/83	24	751	15
Georgetown County												
GEO-9	10W-l1	332206	791633	Georgetown	Black Creek	385-875	50	8	11/43	--	375	2.9
GEO-24	10W-m4	332217	791725	Georgetown	Cape Fear	1,190-1,344	55	8	10/49	--	90	1.0
GEO-39	13V-q1	332627	793345	Andrews	Black Creek	710-790	80	24/8	3/65	24	602	4.5
GEO-90	13V-s1	332642	793111	Andrews	Black Creek	730-810	80	20	9/74	48	351	4.6
GEO-105	7U-n1	333255	790330	Murrells Inlet	Black Creek	450-770	100	8	5/77	24	250	2.3
GEO-117	8V-a1	332919	790512	No. Litchfield Beach	Black Creek	507-557	50	10	2/79	7	21	4.2
GEO-193	13V-o2	332729	793451	Andrews	Black Creek	598-792	67	20	1/75	48	354	2.3
GEO-210	8V-n1	332706	790806	Pawleys Island	Black Creek	420-602	170	10	10/82	24	230	1.0
GEO-211	9V-u2	332555	791002	Pawleys Island	Black Creek	450-686	130	10	10/82	23	300	1.5
GEO-220	11S-s2	334157	792112	Deep Creek Elem. School	Black Creek	380-425	30	6	8/83	24	112	1.3
GEO-222	13V-o3	332704	793412	Andrews	Black Creek	700-800	80	16	9/84	22	380	2.4
GEO-227	9U-r2	333144	791256	Plantersville	Black Creek	464-643	110	8	11/84	24	200	2.0
Hampton County												
HAM-31	34DD-y2	323900	805325	Yemassee	Floridan	90-145	(OH)	12	1953	--	900	30
HAM-36	33DD-y5	324521	811400	Estill	Floridan	105-152	(OH)	10	1959	24	421	28
HAM-46	32CC-l1	325238	810457	Hampton	Tertiary	640-841	125	16	1965	--	1,890	18
Horry County												
HO-314	5O-g5	340357	785346	Loris	Black Creek	280-320	40	10	8/73	24	400	1.9
HO-475	4P-u1	335020	784512	Longs	Black Creek	132-369	60	10	7/79	26	246	3.2
HO-513	8R-l1	334736	790621	Bucksport	Black Creek	420-590	90	8	5/81	26	205	5.5
HO-659	6R-e26	334919	785954	Black Mine	Surficial	10-47	37	4	2/78	26	46	8.2
HO-751	5O-h1	340319	785240	Loris	Black Creek	260-320	60	10	6/83	24	402	2.6
HO-859	7T-u4	333535	790040	Garden City	Black Creek	340-700	200	12	7/84	24	760	4.3

Table 3.--Selected specific-capacity test and general well information--Continued

County well No.	SCWRC No.	Latitude	Longitude	Location	Aquifer[1]	Screened interval (feet)	Screen length (feet)[2]	Well diameter (inches)	Date of test[3]	Duration of test (hours)[4]	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft]
Jasper County												
JAS-101	30HH-f1	322920	805850	Ridgeland	Floridan	190-450	(OH)	12	1954	3	1,012	140
JAS-108	31GG-f1	322850	805850	Cypress Woods	Floridan	70-340	(OH)	12	1953	8	1,865	120
JAS-111	31JJ-o2	321726	810437	Hardeeville	Floridan	182-600	(OH)	16	1969	24	1,040	98
JAS-158	29FF-g1	323757	805311	Pocotaligo	Floridan	90-167	(OH)	12	1953	4	900	45
JAS-346	30HH-o1	322759	805936	Ridgeland	Floridan	130-220	(OH)	8	7/84	10	270	78
Kershaw County												
KER-69	22J-y5	342522	801951	Bethune	Middendorf	90-147	40	8	1960	--	448	6.1
KER-87	24K-p1	342112	802853	Cassatt	Middendorf	61-92	31	8	1970	48	264	7.8
KER-101	28M-w2	341018	804754	Elgin	Middendorf	116-141	25	8	1976	8	203	2.7
KER-141	28N-j1	340859	804533	Elgin	Middendorf	115-147	25	8	4/77	24	150	2.3
KER-159	25L-c1	341927	803235	Shepard	Middendorf	136-170	34	8	1/83	24	250	9.3
Lee County												
LE-12	21M-g1	341341	801332	Bishopville	Middendorf	243-320	25	8	1951	--	510	28
LE-15	21M-f1	341306	801446	Bishopville	Middendorf	276-312	36	10	1968	--	542	26
LE-20	21M-o1	341242	801419	Bishopville	Middendorf	217-337	55	12	1974	22	750	13
LE-27	21M-b2	341402	801103	Bishopville	Middendorf	138-330	100	8	1977	24	1,100	13
LE-55	23N-b3	340938	802102	Red Hill	Black Creek	64-125	40	8	1/81	24	454	17
Lexington County												
LEX-32	37Q-a8	335459	813032	Leesville	Middendorf	30-88	35	10	-----	--	150	5.0
LEX-154	33Q-k3	335240	811000	Edmund	Middendorf	150-264	68	20	2/70	24	500	6.5
LEX-159	33P-o1	335710	811430	Lexington	Middendorf	75-105	15	10	1973	24	150	1.9
LEX-180	34R-t1	334612	811525	Pelion	Middendorf	275-305	30	6	1970	--	284	5.5
LEX-191	31S-n1	334215	810310	Swansea	Black Creek/ Middendorf	286-425	80	8	11/77	12	1,000	29
LEX-195	37P-u11	335501	813047	Leesville	Middendorf	33-53	20	4	4/76	46	60	3.3
LEX-249	32Q-k1	335252	810528	Glenn Village	Middendorf	290-388	60	6	1981	22	120	5.2
LEX-608	36P-u1	335550	812504	Summit	Middendorf	70-170	80	6	1981	24	95	3.7
Marion County												
MRN-37A	11M-q1	341101	792347	Marion	Black Creek/ Middendorf	200-430	40	10	1948	--	400	10
MRN-42	11M-x1	341026	792342	Marion	Middendorf/ Black Creek	350-520	40	20/10	5/50	--	525	8.8

Table 3.--Selected specific-capacity test and general well information--Continued

County well No.	SCWRC No.	Lati-tude	Longi-tude	Location	Aquifer[1]	Screened interval (feet)	Screen length[2] (feet)	Well diameter (inches)	Date of test[3]	Duration of test[4] (hours)	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft]
Marion County--Continued												
MRN-43	10M-k2	341219	791530	Mullins	Black Creek	331-374	43	12/10	1951	62	514	7.9
MRN-65	11N-c1	340910	792215	Marion	Black Creek	100-235	48	10	1970	24	339	6.4
MRN-66	10N-g1	340855	791827	near Mullins	Black Creek	96-123	27	6/4	1972	--	87	3.6
MRN-72	11M-r1	341041	792312	Marion	Middendorf/ Black Creek	290-497	55	10	1977	--	955	7.0
MRN-81	10M-q1	341138	791836	Marion	Black Creek	182-355	55	10	7/67	24	402	6.8
MRN-83	10M-l1	341226	791658	Mullins	Black Creek	178-322	50	12	6/78	24	400	3.8
Marlboro County												
MLB-51	15H-s3	343626	794102	Bennettsville	Middendorf/ Cape Fear	40-375	110	10	6/77	24	350	3.3
MLB-93	13G-w	344012	793224	McColl	Middendorf	54-105	14	8	1954	--	340	5.2
MLB-94	15H-t5	343628	794036	Bennettsville	Middendorf/ Cape Fear	45-351	48	10	1954	--	800	5.6
MLB-109	15J-d1	342943	794250	Blenheim	Middendorf	107-357	141	10	1957	24	508	15
MLB-110	15J-d2	342935	794310	Blenheim	Middendorf	75-115	40	10	1957	--	325	16
MLB-112	15H-l2	343715	794115	Bennettsville	Cape Fear	220-345	125	8	1958	12	200	2.0
MLB-131	14G-l1	344212	793626	near McColl	Middendorf	65-100	20	6	11/77	24	151	5.4
MLB-139	15I-a1	343404	794046	Bennettsville	Middendorf	65-125	60	10	-----	--	350	18
MLB-140	15I-i1	343356	794106	Bennettsville	Middendorf	72-132	60	10	-----	--	560	4.6
MLB-142	15H-j2	343848	794002	Bennettsville	Middendorf	60-160	80	10	9/78	25	351	6.1
MLB-149	15H-t4	343636	794052	Bennettsville	Middendorf	45-132	62	---	7/77	23	500	10.
MLB-160	15H-r1	343647	794200	Bennettsville	Middendorf	60-140	40	8	1/80	24	200	12
MLB-180	13H-c2	343931	793216	McColl	Middendorf	80-212	75	10	9/84	2	403	2.1
Orangeburg County												
ORG-30	29V-c	332910	805230	Orangeburg	Tertiary	TD=192	29	8	-----	--	500	10.
ORG-35	31T-n1	333750	810400	North	Tertiary	131-162	31	8	1956	--	350	50.
ORG-37	32T-s3	333650	810600	North	Tertiary	95-121	16	8	1957	--	260	19
ORG-49	29V-l1	332750	805130	Orangeburg	Middendorf	764-912	90	10	1963	--	1,012	37
ORG-84	30W-k	332240	810020	Cope	Tertiary	TD=147	(OH)	12	1964	20	600	15
ORG-97	32V-r3	332655	810730	Norway	Tertiary	170-231	60	8	1973	5	710	19
ORG-108	27W-u2	332100	804044	Bowman	Black Creek/ Middendorf	588-940	75	10	1980	24	1,100	12

Table 3.--Selected specific-capacity test and general well information--Continued

County well No.	SCWRC No.	Latitude	Longitude	Location	Aquifer[1]	Screened interval (feet)	Screen length[2] (feet)	Well diameter (inches)	Date of test[3]	Duration of test[4] (hours)	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft]
Orangeburg County--Continued												
ORG-109	32T-r	333641	810608	North	Black Creek	238-476	50	10	11/79	24	759	22
ORG-123	31T-t1	333625	810006	Orangeburg	Black Creek	218-318	25	4	1968	--	100	17
ORG-200	29V-t1	332646	805058	Orangeburg	Middendorf	843-944	101	10	1980	24	1,585	48
ORG-216	23W-k2	332237	802007	Eutawville	Floridan/ Black Creek	179-460	281	16	1980	4	1,742	29
ORG-218	23V-x1	332522	802303	Eutawville	Floridan/ Black Creek	140-424	284	16	1980	--	1,253	16
ORG-221	26V-o1	332739	804001	Elloree	Middendorf	707-1,007	300	16	1980	12	2,200	60.
ORG-222	26X-g1	331838	803858	Bowman	Floridan	40-300	(OH)	6	1981	--	50	18
ORG-227	31V-q2	332653	810317	Norway	Tertiary/ Black Creek	429-489	60	10	1980	--	750	17
ORG-228	31W-g1	332340	810250	Cope	Tertiary	90-187	(OH)	16	1980	6	1,500	21
ORG-604	32T-j	333846	810541	North	Tertiary	210-261	51	8	1975	--	503	17
ORG-605	31T-m	333752	810209	North	Tertiary	122-163	41	8	1975	24	250	11
Richland County												
RIC-25	28Q-d1	335500	804800	Congaree	Middendorf	80-160	20	8	1942	--	150	3.5
RIC-63	26R-c1	334950	803820	Eastover	Middendorf	417-542	103	20	8/74	24	2,000	22
RIC-78	29P-r3	335631	805211	Columbia	Middendorf	162-294	16	8	1956	15	300	3.5
RIC-293	29Q-n1	335244	805336	Columbia	Middendorf	TD=161	---	6	1968	--	325	7.7
RIC-301	26Q-x2	335045	803802	Eastover	Black Creek	220-250	30	12	1970	--	524	4.6
Sumter County												
SU-7	23P-t10	335608	802053	Sumter	Middendorf	415-625	80	8	1941	24	1,250	29
SU-64	23P-t8	335607	802100	Sumter	Middendorf	493-607	55	10	1951	--	900	28
SU-72	24P-f1	335851	802915	Shaw AFB	Black Creek	270-340	70	10	-----	--	600	19
SU-72A	24P-f2	335830	802903	Shaw AFB	Black Creek	240-340	40	10	7/51	--	503	7.2
SU-78	23R-o1	334727	802447	Sumter	Black Creek	126-312	34	10	1956	--	752	10.
SU-84	22Q-e1	335459	801928	Sumter	Middendorf	452-720	100	10	5/59	8	1,404	9.7
SU-85	24P-d1	335905	802832	Shaw AFB	Black Creek	167-278	45	10	1959	--	850	17
SU-122	22Q-h1	335900	801200	Sumter	Black Creek	73-97	8	6	1958	--	100	11
SU-132	22P-y1	335506	801924	Sumter	Middendorf	406-626	100	12	5/68	20	1,825	12
SU-136	23Q-r2	335156	802251	Sumter	Middendorf/ Black Creek	292-663	100	22	10/65	24	1,750	23

Table 3.--Selected specific-capacity test and general well information--Continued

County well No.	SCWRC No.	Lati-tude	Longi-tude	Location	Aquifer[1]	Screened interval (feet)	Screen length[2] (feet)	Well diameter (inches)	Date of test[3]	Duration of test[4] (hours)	Pumping rate (gal/min)	Specific capacity [(gal/min)/ft]
Sumter County--Continued												
SU-137	24P-d2	335904	802834	Shaw AFB	Black Creek	227-292	65	10	1964	--	752	18
SU-141	25N-w1	340555	803213	Rembert	Black Creek	145-161	16	6	1970	24	55	3.2
SU-142	24P-e5	335930	803001	High Hills	Black Creek	299-328	26	6	1970	24	300	15
SU-145	24P-e2	335938	802940	High Hills	Black Creek	242-402	65	8	10/76	24	465	14
SU-154	25Q-a2	335541	803055	Wedgefield	Black Creek	211-237	26	6	5/69	24	100	2.4
SU-166	24P-e3	335940	802925	High Hills	Black Creek	292-444	72	8	3/74	24	461	4.9
SU-170	23Q-t1	335118	802044	Pocalla	Black Creek	TD=203	15	6	-----	--	250	8.1
SU-198	18P-q1	335642	795847	Woods Bay	Middendorf	560-570	10	6	1976	8	115	3.5
SU-201	25Q-b1	335459	803103	Wedgefield	Black Creek	231-286	30	10	9/80	24	225	3.8
Williamsburg County												
WIL-3	16T-e1	333954	794951	Kingstree	Black Creek	400-630	60	18/8	1941	--	1,600	10.
WIL-12	16S-y2	334005	794915	Kingstree	Black Creek	455-520	50	16/6	8/52	--	307	5.8
WIL-37	12S-c1	334451	792710	Hemingway	Middendorf	833-891	58	16/8	1970	18	743	14
WIL-38	16S-d1	334400	794805	near Kingstree	Middendorf/ Cape Fear	660-1,000	110	16/12	1969	--	1,200	19

[1] See table 1 for aquifer correlation. Aquifer names separated by a slash indicate a multiaquifer well or a well in which the aquifer designation is less certain. The first aquifer listed is the one for which the test is considered to be most representative. "Tertiary" indicates Tertiary sand aquifer.

[2] "(OH)" indicates the well is an open hole throughout the designated interval. TD=x indicates total depth of well. Screen length may be less than screened interval because of multiple well screens.

[3] Month/year or year only of test.

[4] Because most tests listed in this table are well performance tests on large capacity municipal or industrial wells, it is expected that the duration of most of the tests, for which no duration was noted, is at least 8 hours.

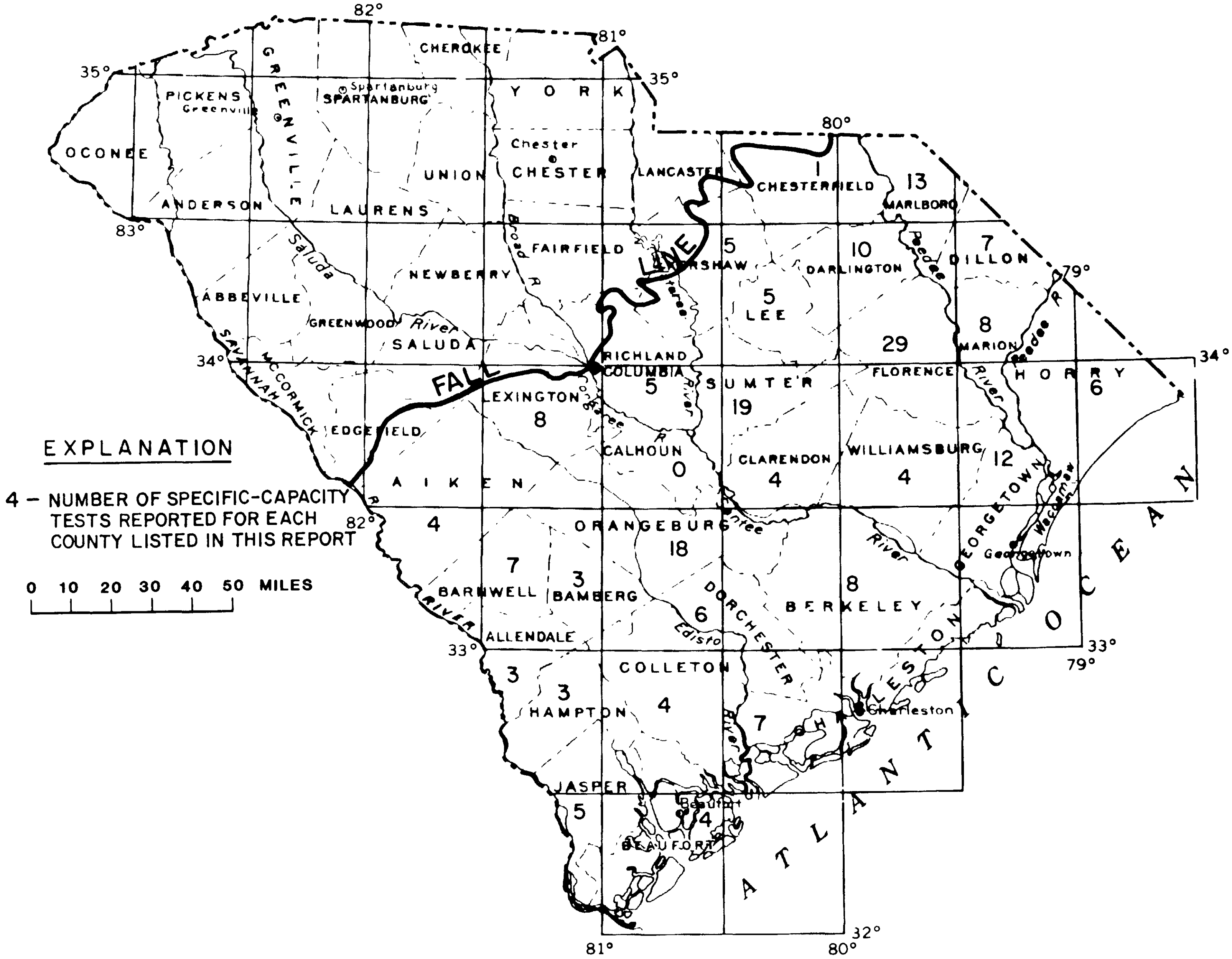

Figure 6.--Reported specific-capacity tests.

not reported because they do not appear to be representative of aquifer transmissivity. Although this information should be applied cautiously, it is of value in estimating transmissivity and storage-coefficient values for the Coastal Plain aquifers.

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