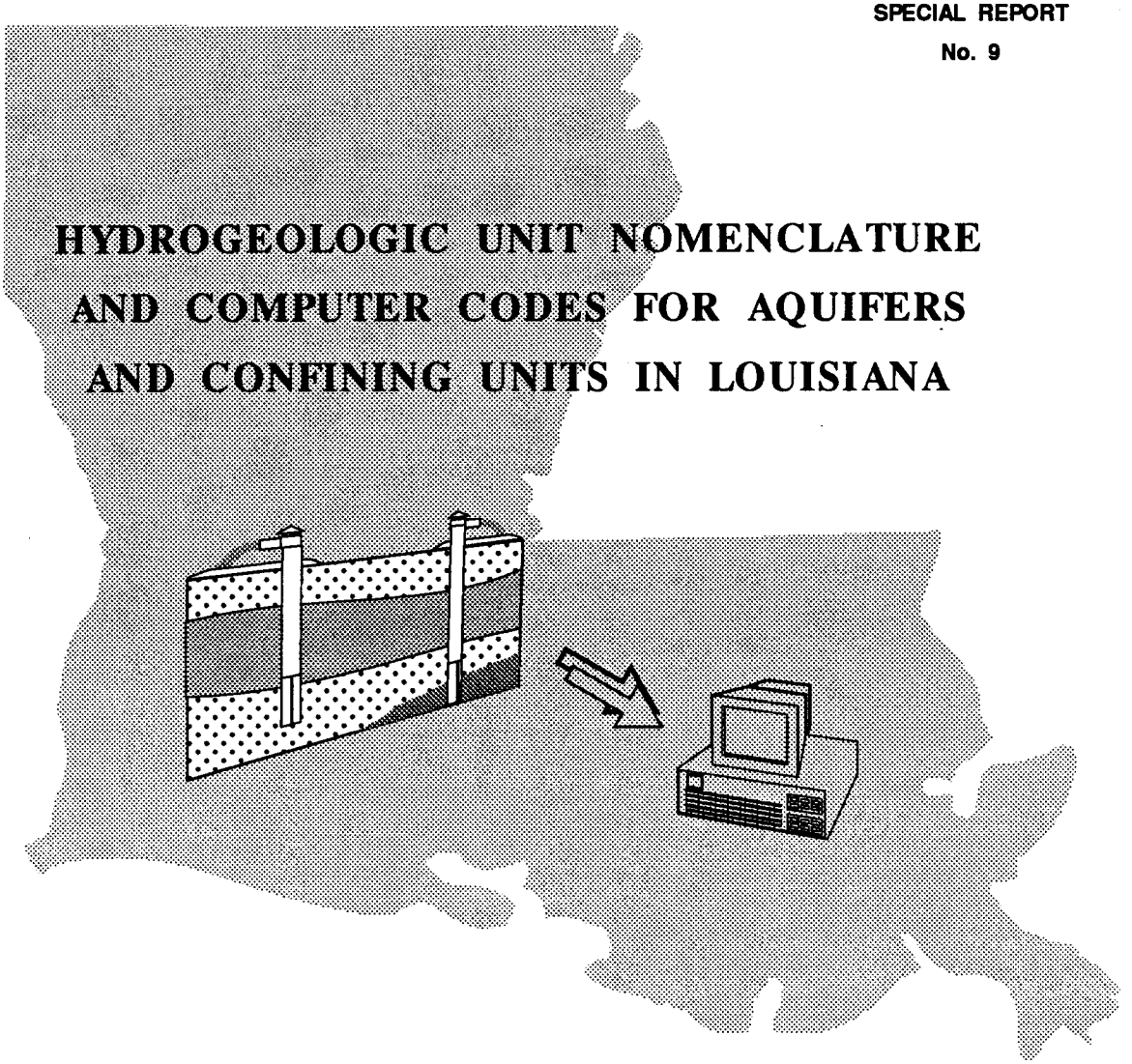
STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
PUBLIC WORKS AND FLOOD CONTROL DIRECTORATE
WATER RESOURCES SECTION

WATER RESOURCES
SPECIAL REPORT
No. 9

HYDROGEOLOGIC UNIT NOMENCLATURE AND COMPUTER CODES FOR AQUIFERS AND CONFINING UNITS IN LOUISIANA



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By
John K. Lovelace and Wendell M. Lovelace
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STATE OF LOUISIANA

EDWIN W. EDWARDS, Governor

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

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PUBLIC WORKS AND FLOOD CONTROL DIRECTORATE

Curtis G. Patterson, Director

WATER RESOURCES SECTION

Zahir "Bo" Bolourchi, Chief

Cooperative projects with the

U.S. DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY

Gordon P. Eaton, Director

For additional information write to:

Edward H. Martin
District Chief
U.S. Geological Survey, WRD
3535 S. Sherwood Forest Blvd.
Suite 120
Baton Rouge, LA 70816
Telephone: (504) 389-0281

Zahir "Bo" Bolourchi, P.E.
Chief, Water Resources Section
Louisiana Department of
Transportation and Development
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245
Telephone: (504) 379-1434

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HYDROGEOLOGIC UNIT NOMENCLATURE AND COMPUTER CODES FOR AQUIFERS AND CONFINING UNITS IN LOUISIANA

By John K. Lovelace and Wendell M. Lovelace

Abstract

Investigators have used 177 names and 143 computer codes to describe the hydrogeologic units (aquifers and confining units) located in Louisiana. This report presents a common nomenclature for aquifers and confining units in Louisiana that was developed by Federal, State, and local agencies. The lists of current (1995), archaic, and superseded hydrogeologic unit names and computer codes are intended as a guide for identifying aquifers and confining units in Louisiana.

INTRODUCTION

Louisiana has abundant ground-water resources available. Since the early 1900's, the U.S. Geological Survey, in cooperation with other Federal, State, and local agencies, has studied this valuable resource to define the extent and availability of ground water throughout the State. As additional aquifers and confining units were studied and defined, they often were named by the investigator. These names usually were published with the results of the studies in reports. In later years, investigators divided and subdivided units, often creating a new nomenclature that superseded or modified the original nomenclature. At present (1995), 177 names and 143 computer codes have been used to describe the hydrogeologic units in Louisiana.

In 1992, a committee (see Acknowledgments), whose members represented various Federal, State, and local agencies involved in ground-water studies in Louisiana, was formed to define a common hydrogeologic nomenclature that could be used by their agencies. The committee agreed upon a list of 101 current and 40 archaic or superceded hydrogeologic names and corresponding computer codes. Twenty-three hydrogeologic unit names and two computer codes have been slightly modified and retained for current use. Thirteen additional aquifer or aquifer system names for which computer codes have not been assigned are also listed.

Purpose and Scope

This report lists current (1995), archaic, and superseded hydrogeologic unit names and computer codes for the State of Louisiana. The names and codes are intended for use by government agencies, researchers, and the general public as a guide for identifying Louisiana's aquifers and confining units.

Acknowledgments

The members of the committee who organized the effort to develop a standard list of hydrogeologic unit nomenclature are listed below:

Zahir "Bo" Bolourchi--Water Resources Section, Louisiana Department of Transportation and Development
George T. Cardwell--Capital Area Ground Water Conservation Commission
Howard Fielding--Ground Water Protection Division, Louisiana Department of Environmental Quality
John E. Johnston, III--Geological Survey, Louisiana Department of Natural Resources
Darwin Knochenmus--U.S. Geological Survey
Bill Walter--Office of Conservation, Louisiana Department of Natural Resources

The members of the working group who classified and compiled the hydrogeologic unit nomenclature from published reports are listed below:

George T. Cardwell--Capital Area Ground Water Conservation Commission
Darwin Knochenmus--U.S. Geological Survey
Wendell M. Lovelace--U.S. Geological Survey

HYDROGEOLOGIC UNIT NOMENCLATURE AND COMPUTER CODES

Hydrogeologic unit names and computer codes for Louisiana's aquifers and confining units have been divided into three major groups: current (1995), archaic, and superseded. The current (1995) group lists hydrogeologic names and computer codes that are in current use (table 1).

The archaic group lists hydrogeologic names and computer codes that have been established in published reports but are not in general use (table 2). Some of the names and codes in this group may, however, have application for local usage.

The superseded group lists geologic names and local aquifer names that were used in previous reports, but have been replaced by more appropriate hydrogeologic names and regional aquifer names and are no longer in use (table 3). In addition to the three major groups, table 4 lists other aquifer and aquifer system names that have been used in reports but do not have assigned computer codes. Figure 1 shows the hydrogeologic column of aquifers and aquifer systems in Louisiana. Figure 2 shows the surface extent of Louisiana's aquifers and aquifer systems.

Table 1. *Current (1995) Group - hydrogeologic unit names and computer codes for Louisiana's aquifers and confining units in current use and preferred for future use*

CENOZOIC ERA

Quaternary System

Holocene Series

Computer code	Hydrogeologic unit
111HLCN	Holocene Alluvium (formerly referred to as Holocene Series)
111NLLV	Natural levee deposits
111NORLC	New Orleans aquifer system surficial confining unit
111PNBR	Point-bar deposits (generally, but not limited to, the Lower Mississippi River Valley)
111SLNO	Shallow aquifers of New Orleans area

Pleistocene Series

112ACFL	Atchafalaya aquifer
112ALVL	Alluvial aquifers, undifferentiated
112ALVLC	Alluvial aquifers surficial confining units
112CHCT	Chicot aquifer, undifferentiated
112CHCTE	Chicot equivalent aquifer system (southeast Louisiana)
112CHCTL	Chicot aquifer, lower sand unit
112CHCTS	Chicot aquifer, shallow sand unit
112CHCTU	Chicot aquifer, upper sand unit
112CHCTC	Chicot aquifer system surficial confining unit
112GRMC	Gramercy aquifer
112GZNO	Gonzales-New Orleans aquifer
112MGMR	Montgomery aquifer (formerly referred to as Montgomery Formation)
112MRVA	Mississippi River alluvial aquifer
112MRVAC	Mississippi River alluvial aquifer surficial confining unit
112NORC	Norco aquifer
112ORVA	Ouachita River alluvial aquifer
112ORVAC	Ouachita River alluvial aquifer surficial confining unit
112PLQM	Plaquemine aquifer
112PNCLU	Upper Ponchatoula aquifer (Chicot equivalent)
112PRIR	Prairie aquifer (formerly referred to as Prairie Formation)
112RRVA	Red River alluvial aquifer
112RRVAC	Red River alluvial aquifer surficial confining unit
112SESC	Southeast Louisiana aquifer system surficial confining unit
112SLBR	Shallow sands of Baton Rouge area (Chicot equivalent)

Table 1. *Current (1995) Group - hydrogeologic unit names and computer codes for Louisiana's aquifers and confining units in current use and preferred for future use*--Continued

Pleistocene Series--continued

Computer code	Hydrogeologic unit
112UPTC	Upland terrace aquifer (formerly referred to as Upland terrace deposits)
112UPTCC	Upland terrace aquifer surficial confining unit
112WLBN	Williana-Bentley aquifer
11202LC	"200-foot" sand of Lake Charles area
11204BR	"400-foot" sand of Baton Rouge area (Chicot equivalent)
11205BR	"400 and 600 foot" sands of Baton Rouge area (Chicot equivalent)
11205LC	"500-foot" sand of Lake Charles area
11206BR	"600-foot" sand of Baton Rouge area (Chicot equivalent)
11207BR	"600 and 800 foot" sands of Baton Rouge area
11207LC	"700-foot" sand of Lake Charles area
11212NO	"1,200-foot" sand of New Orleans area
	Tertiary System
	Pliocene Series
120ABIT	Abita aquifer (Evangeline equivalent)
120CVGN	Covington aquifer (Evangeline equivalent)
120KNTD	Kentwood aquifer (Evangeline equivalent)
120SLDL	Slidell aquifer (Evangeline equivalent)
121BGBC	Big Branch aquifer (Evangeline equivalent)
121EVGL	Evangeline aquifer (Pliocene-Miocene)
121EVGLC	Evangeline aquifer surficial confining unit
121EVGLE	Evangeline equivalent aquifer system (southeast Louisiana)
121PNCLL	Lower Ponchatoula aquifer (Evangeline equivalent)
12101FP	Zone 1 Florida Parishes and Pointe Coupee Parish
12102FP	Zone 2 Florida Parishes and Pointe Coupee Parish
12108BR	"800-foot" sand of Baton Rouge area (Evangeline equivalent)
12109BR	"800 and 1,000 foot" sands of Baton Rouge area (Evangeline equivalent)
12110BR	"1,000-foot" sand of Baton Rouge area (Evangeline equivalent)
12111BR	"1,000 and 1,200 foot" sands of Baton Rouge area (Evangeline equivalent)
12112BR	"1,200-foot" sand of Baton Rouge area (Evangeline equivalent)
12113BR	"1,200 and 1,500 foot" sands of Baton Rouge area (Evangeline equivalent)
12115BR	"1,500-foot" sand of Baton Rouge area (Evangeline equivalent)
12116BR	"1,500 and 1,700 foot" sands of Baton Rouge area (Evangeline equivalent)
12117BR	"1,700-foot" sand of Baton Rouge area (Evangeline equivalent)

Table 1. *Current (1995) Group - hydrogeologic unit names and computer codes for Louisiana's aquifers and confining units in current use and preferred for future use*--Continued

Miocene Series

Computer code	Hydrogeologic unit
122AMIT	Amite aquifer (Jasper equivalent)
122CRCK	Castor Creek aquifer (formerly referred to as Castor Creek Member of Fleming Formation)
122CRCKC	Castor Creek confining unit
122CRNB	Carnahan Bayou aquifer (formerly referred to as Carnahan Bayou Member of Fleming Formation)
122CTHL	Catahoula aquifer (formerly referred to as Catahoula Formation)
122CTHLE	Catahoula equivalent aquifer system (southeast Louisiana)
122DGHL	Dough Hills aquifer (formerly referred to as Dough Hills Member of Fleming Formation)
122DGHLC	Dough Hills confining unit
122FRKL	Franklinton aquifer (Jasper equivalent)
122HMND	Hammond aquifer (Jasper equivalent)
122JSPR	Jasper aquifer system (formerly referred to as Jasper aquifer)
122JSPRC	Jasper aquifer system surficial confining unit
122JSPRE	Jasper equivalent aquifer system (southeast Louisiana)
122LENAC	Lena confining unit (formerly referred to as 122LENA, Lena Member of Fleming Formation)
122RMSY	Ramsay aquifer (Jasper equivalent)
122TCFC	Tchefuncte aquifer (Jasper equivalent)
122WMCK	Williamson Creek aquifer (formerly referred to as Williamson Creek Member of Fleming Formation)
12203FP	Zone 3 Florida Parishes and Pointe Coupee Parish
12219BR	"1,700 and 2,000 foot" sands of Baton Rouge area (Jasper equivalent)
12220BR	"2,000-foot" sand of Baton Rouge area (Jasper equivalent)
12223BR	"2,000 and 2,400 foot" sands of Baton Rouge area (Jasper equivalent)
12224BR	"2,400-foot" sand of Baton Rouge area (Jasper equivalent)
12226BR	"2,400 and 2,800 foot" sands of Baton Rouge area (Jasper equivalent)
12228BR	"2,800-foot" sand of Baton Rouge area (Jasper equivalent)

Oligocene Series

123VKBJC	Vicksburg-Jackson confining unit (formerly referred to as 123VKBG, Vicksburg-Jackson Groups, undifferentiated)

Table 1. *Current (1995) Group - hydrogeologic unit names and computer codes for Louisiana's aquifers and confining units in current use and preferred for future use*--Continued

Eocene Series

Computer code	Hydrogeologic unit
124CCKF	Cockfield aquifer (formerly referred to as Cockfield Formation)
124CCKFC	Cockfield aquifer surficial confining unit
124CKMN	Cook Mountain aquifer (formerly referred to as Cook Mountain Formation).
124CKMNC	Cook Mountain confining unit
124CRRZ	Carrizo aquifer (formerly referred to as Carrizo sand)
124CRWL	Carrizo-Wilcox aquifer (Wilcox-Carrizo in earlier reports)
124CRWLC	Carrizo-Wilcox aquifer system surficial confining unit
124CRVR	Cane River aquifer (formerly referred to as Cane River Formation)
124CRVRC	Cane River confining unit
124DLHL	Dolet Hills aquifer (formerly referred to as Dolet Hills Formation; generally an aquifer, locally functions as a confining unit)
124NBRN	Naborton aquifer (formerly referred to as Naborton Formation)
124NBRNC	Naborton confining unit
124SPRT	Sparta aquifer (formerly referred to as Sparta sand)
124SPRTC	Sparta aquifer surficial confining unit
124WLCX	Wilcox aquifer (formerly referred to as Wilcox Group)
124WLCXU	Wilcox aquifer, upper (formerly referred to as Wilcox Group, upper)

Table 2. *Archaic Group - hydrogeologic names and computer codes that have been established in published reports and may have local application but are not in general use*

CENOZOIC ERA

Computer code	Hydrogeologic unit
100PNCL	Ponchatoula aquifer, undifferentiated
	Quaternary System
110QRNR	Quaternary System
	Holocene Series
111DLTCY	Deltaic deposits, younger
	Pleistocene Series
112ABVL	Abbeville aquifer
112DDMRO	Deltaic deposits of Mississippi River valley, older
112NORL	New Orleans aquifer system
112SRVA	Sabine River alluvial aquifer (currently Alluvial aquifers, undifferentiated)
	Tertiary System
	Pliocene Series
121BLCK	Blounts Creek aquifer (currently Evangeline aquifer; formerly referred to as Blounts Creek Member of Fleming Formation)
	Oligocene Series
123SNDL	Sandel Formation
123VKBG	Vicksburg Group
	Eocene Series
124CLBR	Claiborne Group
124JCKS	Jackson Group
	Palocene Series
125CLTN	Clayton Formation
125MDWY	Midway Group
125PRCK	Porters Creek clay

MESOZOIC ERA

Cretaceous System

210CRCS	Cretaceous System

Table 3. *Superseded Group - geologic names and local aquifer names that were used in previous reports but have been replaced by other hydrogeologic unit names*

CENOZOIC ERA

Computer code	Hydrogeologic unit
100CNZC	Cenozoic Erathem
	Quaternary system
100LMYN	Le Moyen Formation
	Holocene Series
111MRMN	Mermentau Member of Le Moyen Formation
	Pleistocene Series
112BNTL	Bentley Formation (currently Williana-Bentley aquifer)
112GZLS	Gonzales aquifer (currently Gonzales-New Orleans aquifer)
112LEBU	Lebeau Member of Le Moyen Formation
112PLSC	Pleistocene Series
112SLGZ	Shallow aquifer of Gonzales area (currently Norco aquifer)
112WLLN	Williana Formation (currently Williana-Bentley aquifer)
11202NO	"200-foot" sand of New Orleans area (currently Gramercy aquifer)
11204NO	"400-foot" sand of New Orleans area (currently Norco aquifer)
11207NO	"700-foot" sand of New Orleans area (currently Gonzales-New Orleans aquifer)
	Tertiary System
120TRTR	Tertiary System
	Pliocene Series
121FOLY	Foley Formation (currently Evangeline aquifer)
121MMOU	Mamou Member of Foley Formation (currently Evangeline aquifer)
121PCMC	Pliocene-Miocene Series
121PLCN	Pliocene Series
121SPGL	Steep Gully Member of Foley Formation (currently Evangeline aquifer)

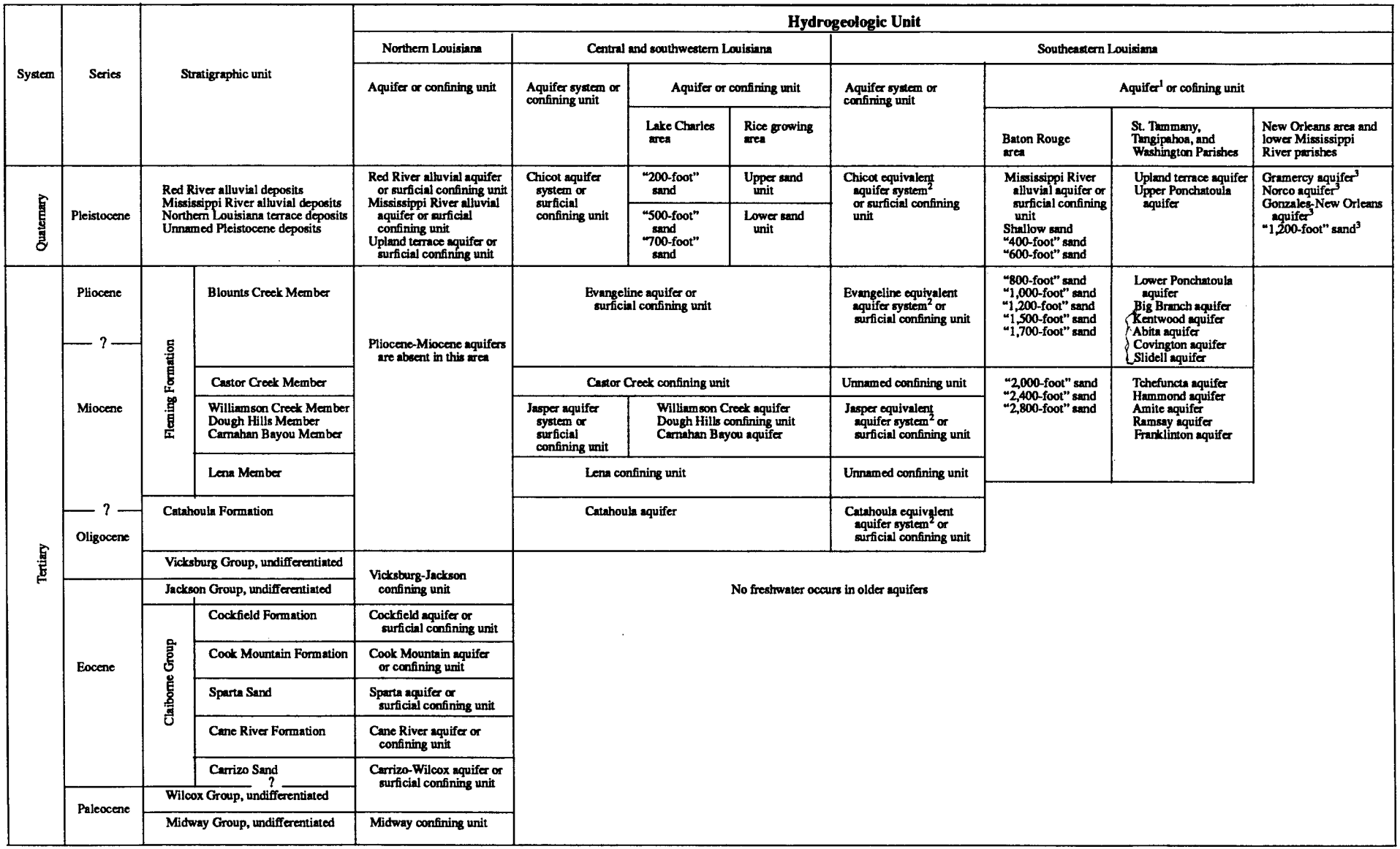
Table 3. *Superseded Group - geologic names and local aquifer names that were used in previous reports but have been replaced by other hydrogeologic unit names*--Continued

Computer code	Hydrogeologic unit
	Miocene Series
122FLMG	Fleming Formation
122MOCN	Miocene Series
	Oligocene Series
123OGCE	Oligocene-Eocene Series
123OLGC	Oligocene Series
	Eocene Series
124ECPC	Eocene-Paleocene Series
124EOCN	Eocene Series

Table 4. *Other aquifer and aquifer system names used in reports, but having no assigned computer code*

Burkville aquiclude (Miocene)
Chicot aquifer system[a] (Pleistocene; southwestern Louisiana)
Citronelle Formation (Pleistocene)
Southern Hills aquifer system[a] (Pleistocene, Pliocene, and Miocene; southeastern Louisiana)
Shallow aquifer, southeastern Louisiana (Pleistocene; currently Upland terrace aquifer)
University sand (Pleistocene, currently Shallow sand of Baton Rouge area)
"100-foot" sand of Bogalusa area (Pleistocene; currently Upland terrace aquifer)
"600-foot" sand of Bogalusa area (Pliocene)
"700-foot" sand of Bogalusa area (Pliocene)
"1,500-foot" sand of Bogalusa area (Pliocene)
"1,300-foot" sand of Bogalusa area (Miocene)
"2,200-foot" sand of Bogalusa area (Miocene)
"2,400-foot" sand of Bogalusa area (Miocene)

[a]Designated sole source aquifer system by the U.S. Environmental Protection Agency.



[1]Clay units separating aquifers in southeastern Louisiana are discontinuous and unnamed.
[2]Four aquifers systems as a group are called the Southern Hills aquifer system.
[3]Four aquifers as a group are called the New Orleans aquifer system.

Figure 1. Hydrogeologic column of aquifers and aquifer systems in Louisiana (modified from Stuart and others, 1994).

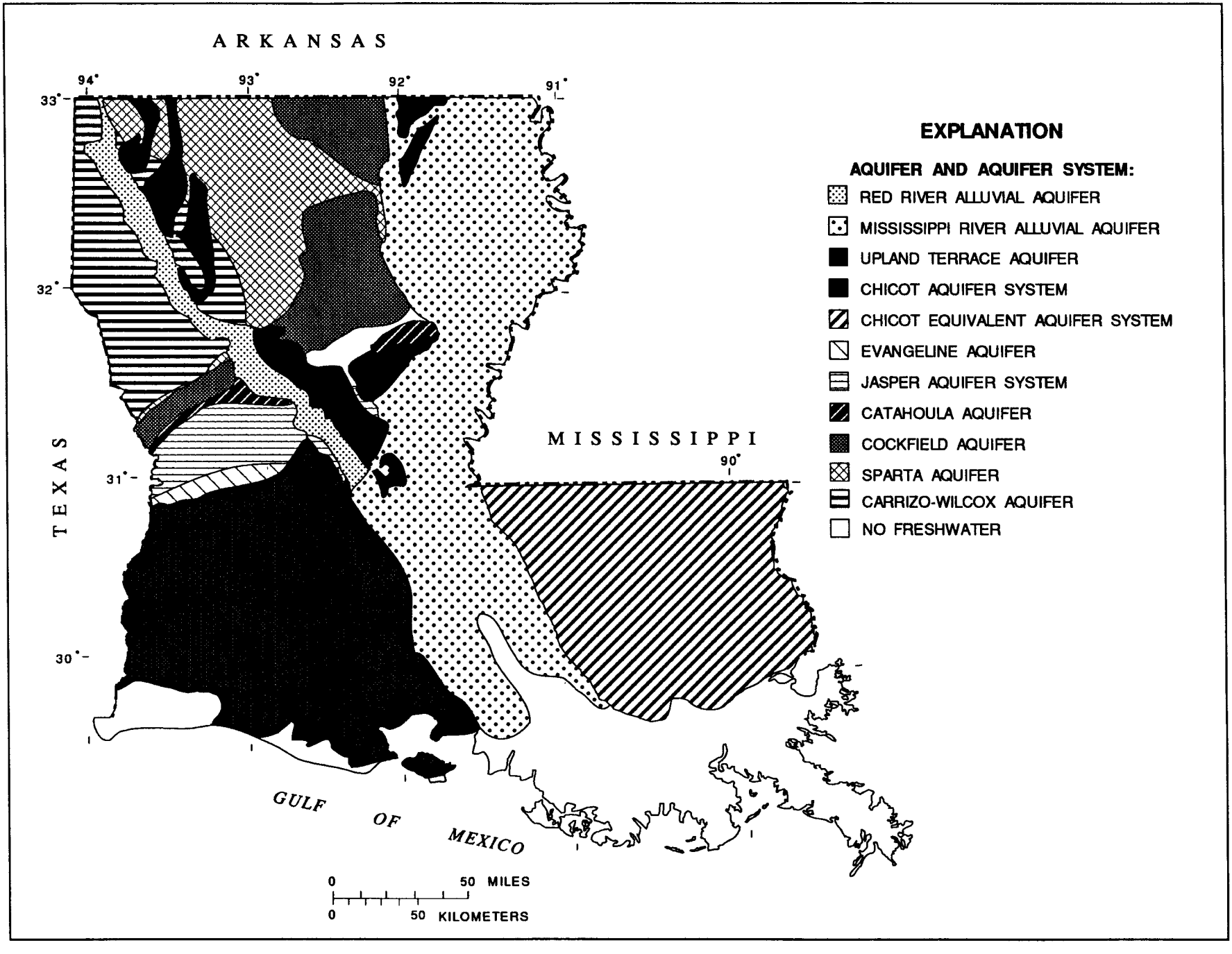


Figure 2. Surface extent of Louisiana's aquifers and aquifer systems (Stuart and others, 1994).

REFERENCE

Stuart, C.G., Knochenmus, Darwin, and McGee, B.D., 1994, Guide to Louisiana's ground-water resources: U.S. Geological Survey Water-Resources Investigations Report 94-4085, 55 p.