USGS
science for a changing world

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Prepared in cooperation with the Louisiana Department of Transportation and Development

Water Resources of West Baton Rouge Parish, Louisiana

Introduction

Information concerning the availability, use, and quality of water in West Baton Rouge Parish, Louisiana (fig. 1), is critical for proper water-resource management. The purpose of this fact sheet is to present information that can be used by water managers, parish residents, and others for stewardship of this vital resource. Information on the availability, past and current use, use trends, and water quality from groundwater and surface-water sources in the parish is presented. Previously published reports (see References Cited section) and data stored in the U.S. Geological Survey's National Water Information System (http://waterdata.usgs.gov/nwis) are the primary sources of the information presented here.

In 2010, about 10.9 million gallons per day (Mgal/d) of water were withdrawn in West Baton Rouge Parish, including about 10.2 Mgal/d from groundwater sources and 0.73 Mgal/d from surface-water sources[1] (table 1). Withdrawals for public supply accounted for about 66 percent (7.21 Mgal/d) of the total water withdrawn (table 2). Other categories of use included industrial, rural domestic, livestock, general irrigation, and aquaculture. Water-use data collected at 5-year intervals from 1960 to 2010 (fig. 2) indicated that water withdrawals peaked in 2000.

[1]Water-withdrawal data are based on estimated or reported site-specific data and aggregated data, which are distributed to sources. For a full description of water-use estimate methodology, see "Data Collection" in Sargent (2011). Tabulation of numbers in text and tables may result in different totals because of rounding; nonrounded numbers are used for calculation of totals.

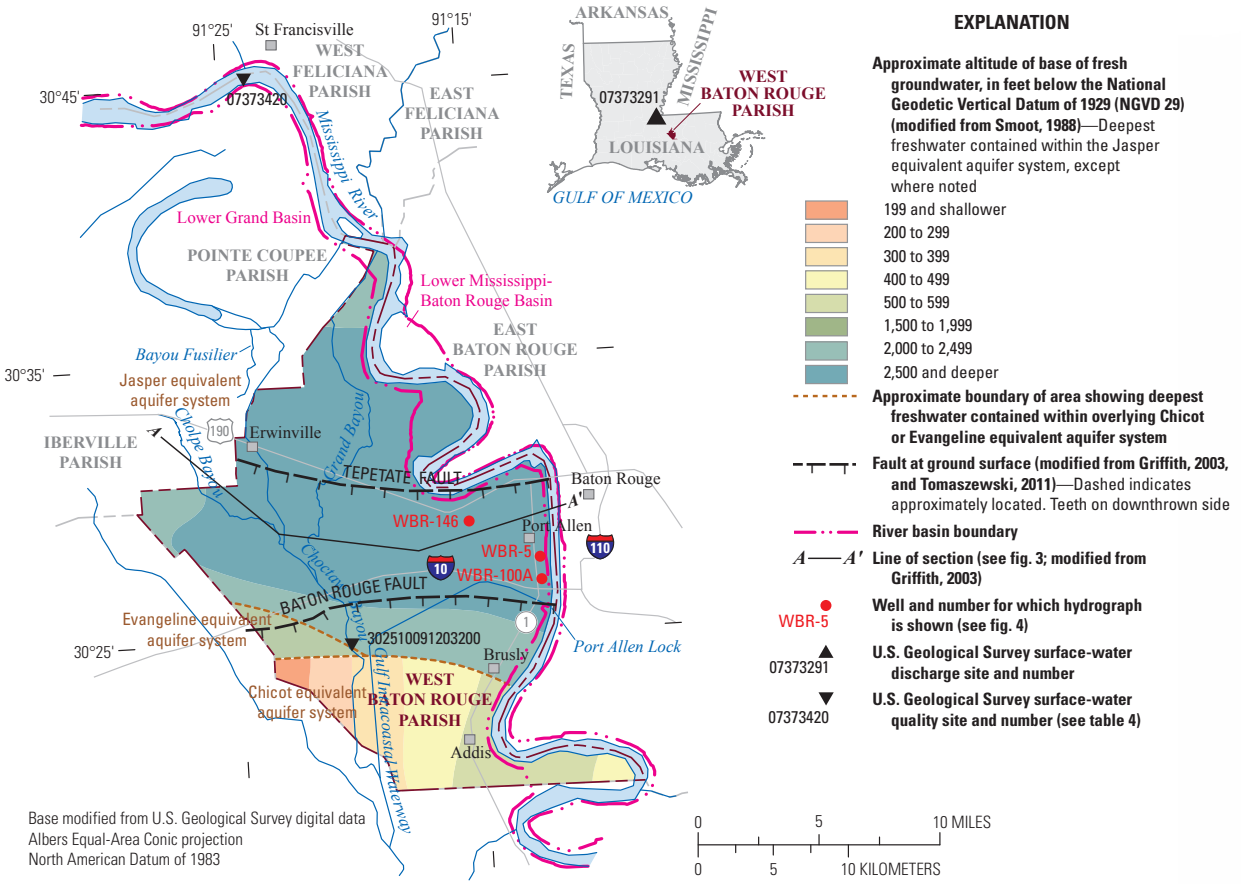

Figure 1. Location of study area, West Baton Rouge Parish, Louisiana.

Table 1. Water withdrawals, in million gallons per day, by source in West Baton Rouge Parish, Louisiana, 2010 (Sargent, 2011; B.P. Sargent, U.S. Geological Survey, written commun., 2015).

Aquifer, aquifer system, or surface-water body	Groundwater	Surface water
Mississippi River alluvial aquifer	2.88	
Chicot equivalent aquifer system	0.01	
Evangeline equivalent aquifer system	7.31	
Jasper equivalent aquifer system	0.01	
Gulf Intracoastal Waterway		0.54
Miscellaneous streams		0.19
Total	**10.20**	**0.73**

Table 2. Water withdrawals, in million gallons per day, by category in West Baton Rouge Parish, Louisiana, 2010 (modified from Sargent, 2011).

Use category	Groundwater	Surface water	Total
Public supply	7.21	0.00	7.21
Industrial	1.50	0.00	1.50
Rural domestic	0.05	0.00	0.05
Livestock	0.03	0.01	0.04
General irrigation	0.35	0.18	0.53
Aquaculture	1.07	0.54	1.61
Total	**10.20**	**0.73**	**10.93**

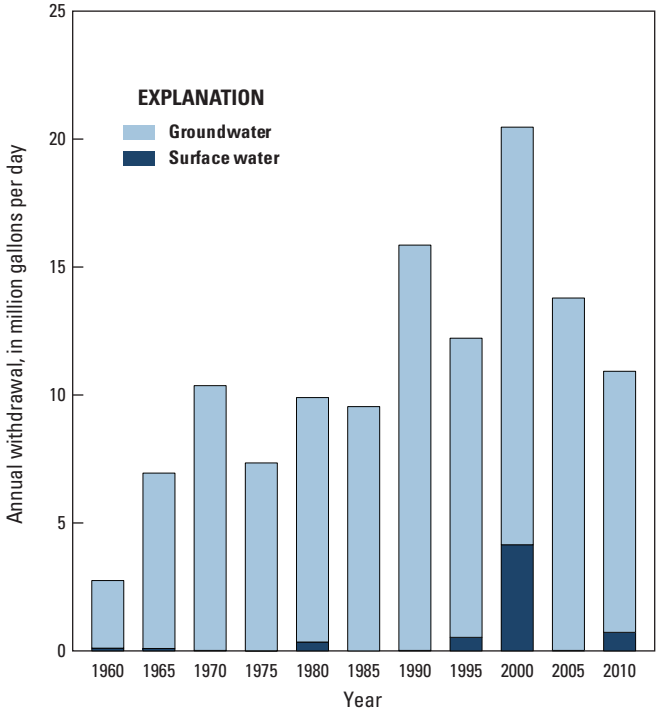

Figure 2. Water withdrawals in West Baton Rouge Parish, Louisiana, 1960–2010 (Sargent, 2011).

Groundwater Resources

The primary sources of fresh groundwater (water with a chloride concentration of 250 milligrams per liter [mg/L] or less) in West Baton Rouge Parish are, from shallowest to deepest, the Mississippi River alluvial aquifer and the Chicot, Evangeline, and Jasper equivalent aquifer systems (fig. 3). The base of fresh groundwater is deepest (over 2,500 feet [ft] below the National Geodetic Vertical Datum of 1929 [NGVD 29]) in south-central West Baton Rouge Parish north of the Baton Rouge Fault (Griffith, 2003) and is present in the Jasper equivalent aquifer system. The base of freshwater is shallowest (less than 200 ft below NGVD 29) south of the Baton Rouge Fault near the southern parish line and is present in the Chicot equivalent aquifer system (fig. 1). Generally, the Baton Rouge Fault coincides with an abrupt change in depth to the base of freshwater such that the base of freshwater is substantially deeper north of the fault than it is south of the fault (Griffith, 2003). In West Baton Rouge Parish, the Mississippi River alluvial aquifer is relatively flat lying, whereas the rest of the aquifer systems in the parish dip in a southerly direction toward the Gulf of Mexico (Griffith, 2003).

Precipitation in southeastern Louisiana and southwestern Mississippi is the primary source of recharge to the Chicot equivalent, Evangeline equivalent, and Jasper equivalent aquifer systems (Griffith, 2003). Recharge to the Mississippi River alluvial aquifer within West Baton Rouge Parish results from infiltration of precipitation through the surface clays; flow from the alluvial aquifer to the north, adjacent, and underlying aquifers; and localized flow from the Mississippi River. Discharge from the parish's groundwater sources results from well pumping and flow into other aquifers. Groundwater in the Chicot equivalent, Evangeline equivalent, and Jasper equivalent aquifer systems north of the Baton Rouge Fault generally flows in an eastward direction toward East Baton Rouge Parish, where the highest local withdrawal rates from these aquifers are reported (Tomaszewski, 1996; Sargent, 2011). Groundwater generally flows southward in the Mississippi River alluvial aquifer (Stuart and others, 1994).

The Mississippi River Alluvial Aquifer

The Mississippi River alluvial aquifer is a regional aquifer, which extends through several States along the Mississippi River, and is present throughout West Baton Rouge Parish. In West Baton Rouge Parish, the aquifer is generally composed of fine sand to pea gravel with a base of gravel (Griffith, 2003). The base of the Mississippi River alluvial aquifer ranges from less than 200 ft below NGVD 29 in the northern parts of the parish to more than 600 ft below NGVD 29 at the southern parish border and near the Port Allen Lock (fig. 1). Aquifer thickness ranges from over 550 ft near the Port Allen Lock to less than 150 ft near Highway 190 at the eastern parish border (Kuniansky and others, 1989). Because the alluvial aquifer is hydraulically connected to the Mississippi River, water levels in wells screened in the aquifer can fluctuate in response to river stage fluctuations (Kuniansky and others, 1989). The Mississippi River alluvial aquifer is also hydraulically connected to the "400-foot" and "600-foot" sands of the Chicot equivalent aquifer system (fig. 3).

State well-registration records listed 87 active water wells screened in the Mississippi River alluvial aquifer and surficial confining unit in West Baton Rouge Parish in 2015, including 38 irrigation wells, 22 industrial wells, 24 domestic wells, and 3 public-supply wells. Depths of these wells ranged from 52 to

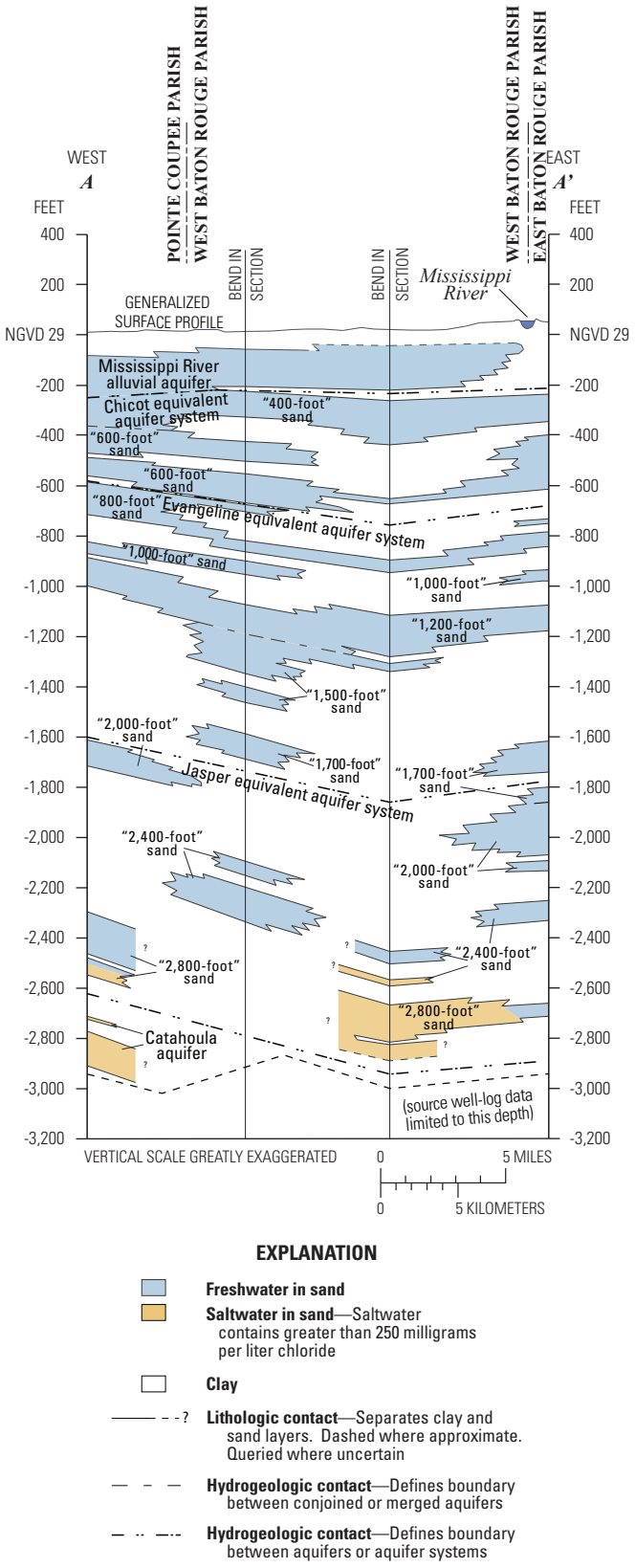

Figure 3. West-to-east hydrogeologic section through West Baton Rouge Parish, Louisiana (modified from Griffith, 2003). Trace of section shown on figure 1.

384 ft below land surface, and reported yields ranged from 5 to 4,200 gallons per minute (gal/min) (Louisiana Department of Natural Resources, written commun., 2015). In 2010, about 2.88 Mgal/d were withdrawn from the Mississippi River alluvial aquifer in West Baton Rouge Parish (table 1), including 0.19 Mgal/d for public supply, 1.23 Mgal/d for industrial use, 0.02 Mgal/d for rural-domestic use, 0.01 Mgal/d for livestock, 0.35 Mgal/d for general irrigation, and 1.07 Mgal/d for aquaculture (B.P. Sargent, U.S. Geological Survey, written commun., 2015).

The Chicot Equivalent Aquifer System

The aquifers composing the Chicot equivalent aquifer system in West Baton Rouge Parish are the shallow sands (not shown on fig. 3 cross-section) and the "400-foot" and "600-foot" sands of the Baton Rouge area (fig. 3). The base of the Chicot equivalent aquifer system ranges from less than 350 ft in the northern part of the parish to more than 950 ft in the southern part of the parish. The "600-foot" sand merges with the "400-foot" and "800-foot" sands in a few localized areas (Kuniansky and others, 1989). Grain size ranges from fine sand to pea gravel (Griffith, 2003). Water levels at well WBR-146 (site number 302853091150201), screened in the "400-foot" sand in West Baton Rouge Parish, generally fluctuate from 15 to 20 ft annually but remained relatively stable during 1996–2015 (fig. 4).

State well-registration records listed 11 active water wells screened in the Chicot equivalent aquifer system in West Baton Rouge Parish in 2015, including 8 domestic wells and 3 public-supply wells. Well depths ranged from 359 to 560 ft below land surface, and reported yields ranged from 20 to 100 gal/min (Louisiana Department of Natural Resources, written commun., 2015). In 2010, about 0.01 Mgal/d were withdrawn from the Chicot equivalent aquifer system in West Baton Rouge Parish (table 1) for rural-domestic purposes (B.P. Sargent, U.S. Geological Survey, written commun., 2015).

The Evangeline Equivalent Aquifer System

The Evangeline equivalent aquifer system in West Baton Rouge Parish comprises the "800-foot," "1,000-foot," "1,200-foot," "1,500-foot," and "1,700-foot" sands of the Baton Rouge area (fig. 3). The altitude of the base of the aquifer system ranges from about 1,300 ft below NGVD 29 near the extreme northern end of the parish to about 2,400 ft below NGVD 29 near the southeastern parish line. The aquifer system is about 1,000 ft thick in West Baton Rouge Parish and is composed of generally fine- to coarse-grained sand (Griffith, 2003).

In 2001, water levels in wells screened in the "1,200-foot" sand north of the Baton Rouge Fault ranged from about NGVD 29 along the extreme western and northern edges of the parish to nearly 70 ft below NGVD 29 at well WBR-5 (site number 302732091121901) located at Port Allen (Griffith and Lovelace, 2003). In 2003, water levels in wells screened in the "1,500-foot" and "1,700-foot" sands north of the Baton Rouge Fault ranged from about 33 ft below NGVD 29 along the western edge of the parish to about 91 ft below NGVD 29 at well WBR-100A (site number 302652091121401) located at Port Allen (Griffith and Lovelace, 2003; Prakken, 2004). Water levels at well WBR-5, screened in the "1,200-foot" sand, declined during 1996–2015, and water levels at well WBR-100A, screened in the "1,700-foot" sand, fluctuated seasonally during 1996–2012, declined during 2012–13, and saw a slight increase going into 2015 (figs. 1, 4). "1,500-foot" and "1,700-foot" sand wells typically have similar water levels, indicating hydraulic connectivity.

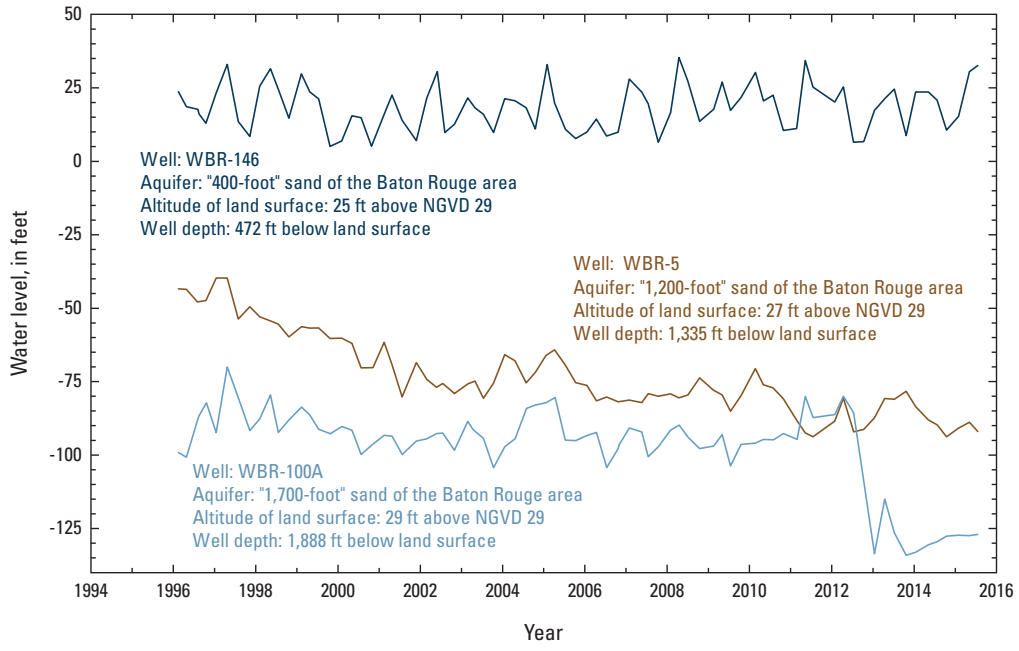

Figure 4. Water levels in well WBR-146 screened in the "400-foot" sand of the Baton Rouge area, well WBR-5 screened in the "1,200-foot" sand of the Baton Rouge area, and WBR-100A screened in the "1,700-foot" sand of the Baton Rouge area in West Baton Rouge Parish, Louisiana (see fig. 1 for well locations; U.S. Geological Survey, 2015a). Land surface and water levels are measured in feet (ft) relative to the National Geodetic Vertical Datum of 1929 (NGVD 29).

State well-registration records listed 48 active water wells screened in the Evangeline equivalent aquifer system in West Baton Rouge Parish in 2015, including 30 public supply, 10 domestic, 6 industrial, and 2 irrigation. Well depths ranged from 860 to 2,242 ft below land surface, and reported yields ranged from about 10 to 1,300 gal/min (Louisiana Department of Natural Resources, written commun., 2015). In 2010, about 7.30 Mgal/d were withdrawn from the Evangeline equivalent aquifer system in West Baton Rouge Parish (table 1), and uses included about 7.02 Mgal/d for public supply, 0.26 Mgal/d for industry, 0.01 Mgal/d for rural domestic, and 0.01 Mgal/d for livestock (B.P. Sargent, U.S. Geological Survey, written commun., 2015).

The Jasper Equivalent Aquifer System

The Jasper equivalent aquifer system in West Baton Rouge Parish comprises the "2,000-foot," "2,400-foot," and "2,800-foot" sands of the Baton Rouge area (fig. 3), which are generally fine to coarse grained. The Jasper equivalent aquifer system is present at depths ranging from about 1,300 ft to at least 2,300 ft below NGVD 29 at the northern end of the parish and at depths ranging from 1,900 to over 2,800 ft in central parts of the parish. The lower portion of the aquifer system, including the "2,800-foot" sand, contains saltwater north of the Baton Rouge Fault. South of the fault, the entire aquifer system generally contains saltwater (Griffith, 2003).

State well-registration records listed seven active water wells screened in the Jasper equivalent aquifer system in West Baton Rouge Parish in 2015, including 2 public supply and 5 domestic. Well depths ranged from 1,532 to 2,650 ft below land surface, with reported yields of 53 and 750 gal/min (Louisiana Department of Natural Resources, written commun., 2015). In 2010, about 0.01 Mgal/d were withdrawn from the Jasper equivalent aquifer system in West Baton Rouge Parish (table 1) for rural-domestic purposes (B.P. Sargent, U.S. Geological Survey, written commun., 2015).

Groundwater Quality

A summary of groundwater samples collected from 25 wells screened in the Mississippi River alluvial aquifer and 62 wells screened in the Evangeline equivalent aquifer system are presented in table 3. Evangeline equivalent aquifer system samples were generally soft,[2] with median hardness for the Mississippi River alluvial aquifer samples falling in the very hard range. Median values from both aquifers did not exceed the U.S. Environmental Protection Agency's Secondary Maximum Contaminant Levels (SMCLs)[3] for color, pH, and dissolved-solids concentrations. Median iron and manganese concentrations in the Evangeline equivalent aquifer system were below the SMCLs, whereas the Mississippi River alluvial aquifer samples exceeded the SMCLs.

Surface-Water Resources

Surface-water resources in West Baton Rouge Parish are present in two drainage basins. The Lower Mississippi-Baton Rouge Basin (Hydrologic Unit Code [HUC] 08070100 runs in a narrow strip along the Mississippi River and the Lower Grand Basin (HUC 08070300) covers the rest of the parish (U.S. Geological Survey, 2016) (fig. 1).

The Mississippi River drains little land area within the parish because of the presence of levees; however, the upstream drainage area, which includes more than 40 percent of the conterminous United States, contributed to an average flow of the Mississippi River near Red River Landing (site number 07373291; fig. 1 index map) of about 460,000 cubic feet per second for the period 1928–76 (Wells, 1980; Demcheck and others, 2004).

The Lower Grand Basin drains in a general southerly direction, and the largest waterway in this basin is the Gulf Intracoastal Waterway (GIWW) (fig. 1). The GIWW intersects the Mississippi River at the Port Allen Lock and flows west and then south into Iberville Parish. As its course changes toward the south, the GIWW is intersected by Choctaw Bayou, which is fed by Grand Bayou and Cholpe Bayou. The Port Allen Lock and GIWW in West Baton Rouge Parish form part of an important commercial

[2]Hardness ranges, expressed as milligrams per liter of calcium carbonate, are as follows: 0–60, soft; 61–120, moderately hard; 121–180, hard; greater than 180, very hard (Hem, 1985).

[3]The SMCLs are nonenforceable Federal guidelines regarding cosmetic effects (such as tooth or skin discoloration), aesthetic effects (such as taste, odor, or color), or technical effects (such as damage to water equipment or reduced effectiveness of treatment for other contaminants) of drinking water. SMCLs were established as guidelines by the U.S. Environmental Protection Agency (2016).

Table 3. Summary of selected water-quality characteristics for freshwater in the Mississippi River alluvial aquifer and Evangeline equivalent aquifer system in West Baton Rouge Parish, Louisiana (U.S. Geological Survey, 2015b).

[Values are in milligrams per liter, except as noted. °C, degree Celsius; PCU, platinum cobalt unit; µS/cm, microsiemen per centimeter; SU, standard unit; $CaCO_3$, calcium carbonate; µg/L, microgram per liter; SMCL, Secondary Maximum Contaminant Level established by the U.S. Environmental Protection Agency (2016); NA, not applicable; <, less than]

	Temperature (°C)	Color, (PCU)	Specific conductance, field (µS/cm at 25 °C)	pH, field (SU)	Hardness (as $CaCO_3$)	Chloride, filtered (as Cl)	Iron, filtered (µg/L as Fe)	Manganese, filtered (µg/L as Mn)	Dissolved solids, filtered
Mississippi River alluvial aquifer, 1942–93 (25 wells)									
Median	21.0	10	485	7.4	200	8.0	1,300	110	296
10th percentile	19.5	5	347	7.1	110	5.1	50	2	238
90th percentile	22.0	21	666	7.8	330	21	6,400	590	366
Number of samples	11	6	17	15	25	25	16	11	7
Percentage of samples that do not exceed SMCLs	NA	83	NA	100	NA	100	25	18	100
Evangeline equivalent aquifer system, 1942–2011 (62 wells)									
Median	26.5	5	308	8.4	2	3.6	30	16	210
10th percentile	24.4	0	274	7.3	0	2.2	<10	<10	193
90th percentile	30.9	35	377	9.1	14	7.7	880	130	249
Number of samples	43	36	54	48	51	62	28	21	35
Percentage of samples that do not exceed SMCLs	NA	78	NA	54	NA	100	79	76	100
SMCLs									
	NA	15	NA	6.5–8.5	NA	250	300	50	500

waterway, which greatly reduces the shipping distance between the Gulf of Mexico and ports in the Mississippi River to the north of and near Baton Rouge. In 2010, about 0.54 Mgal/d were withdrawn from the GIWW for aquaculture in West Baton Rouge Parish. An additional 0.19 Mgal/d were withdrawn from unidentified streams in the parish for livestock (0.01 Mgal/d) and general irrigation (0.18 Mgal/d) purposes (tables 1 and 2) (B.P. Sargent, U.S. Geological Survey, written commun., 2015).

Surface-Water Quality

Water samples collected between 1978 and 2010 from the Mississippi River near St. Francisville (site number 07373420) (fig. 1) indicated that samples were generally hard (table 4) and did not exceed SMCLs for pH and concentrations of chloride, sulfate, and iron. Dissolved-oxygen concentrations were generally greater than 5 mg/L, which is considered the minimum value for a diverse population of fresh, warmwater biota, including sport fish (Louisiana Department of Environmental Quality, 2008). Mississippi River water quality varies seasonally because of the rate and distribution of precipitation and land-use patterns within its drainage basin. Water-quality constituents, such as agricultural pesticides and nutrients, generally have the highest concentrations in June and July, representing the "spring flush," which results from the runoff of upstream applications of these pesticides and nutrients (Demcheck and others, 2004). Suspended-sediment concentrations are generally highest in late winter and early spring and lowest in late summer and fall (Wells, 1980).

Four samples taken from Choctaw Bayou near Brusly (site number 302510091203200) (fig. 1) were found to be hard to very hard (137–222 mg/L). Samples had a pH range from 7.5 to 8.1 standard units and dissolved solids ranged from 194 to 323 mg/L. Concentrations of chloride, iron, sulfate, and manganese were below SMCLs (U.S. Geological Survey, 2015b).

Table 4. Summary of selected water-quality characteristics for the Mississippi River near West Baton Rouge Parish, Louisiana (U.S. Geological Survey, 2015b).

[Values are in milligrams per liter, except as noted. µS/cm, microsiemen per centimeter; °C, degree Celsius; SU, standard unit; $CaCO_3$, calcium carbonate; µg/L, microgram per liter; <, less than; SMCL, Secondary Maximum Contaminant Level established by the U.S. Environmental Protection Agency (2016); NA, not applicable]

	Specific conductance, field (µS/cm at 25 °C)	Oxygen, dissolved	pH, field (SU)	Hardness (as $CaCO_3$)	Calcium, filtered (as Ca)	Magnesium, filtered (as Mg)	Sodium, filtered (as Na)	Chloride, filtered (as Cl)	Sulfate, filtered (as SO_4)	Iron, filtered (µg/L as Fe)
Mississippi River near St. Francisville, 1978–2010[1]										
Median	380	8.6	7.8	150	38	12	17	20	44	10
10th percentile	298	6.5	7.3	110	31	8.7	11	14	32	<10
90th percentile	473	11.8	8.0	180	46	16	27	28	66	40
Number of samples	412	402	407	400	400	405	346	410	409	393
Percentage of samples that do not exceed SMCLs	NA	NA	100	NA	NA	NA	NA	100	100	100
SMCLs										
	NA	NA	6.5–8.5	NA	NA	NA	NA	250	250	300

[1]Site number 07373420 (see fig. 1).

References Cited

Demcheck, D.K.; Tollett, R.W.; Mize, S.V.; Skrobialowski, S.C.; Fendick, R.B., Jr.; Swarzenski, C.M.; and Porter, Stephen, 2004, Water quality in the Acadian-Pontchartrain Drainages, Louisiana and Mississippi, 1999–2001: U.S. Geological Survey Circular 1232, 41 p., accessed May 16, 2016, at https://pubs.er.usgs.gov/publication/cir1232.

Griffith, J.M., 2003, Hydrogeologic framework of southeastern Louisiana: Louisiana Department of Transportation and Development Water Resources Technical Report no. 72, 21 p., 18 pls.

Griffith, J.M., and Lovelace, J.K., 2003, Louisiana ground-water map no. 15—Potentiometric surface of the "1,200-foot" sand of the Baton Rouge area, Louisiana, spring 2001: U.S. Geological Survey Water-Resources Investigations Report 03–4020, 2 sheets, accessed December 6, 2012, at http://pubs.er.usgs.gov/publication/wri034020.

Hem, J.D., 1985, Study and interpretation of the chemical characteristics of natural water (3d ed.): U.S. Geological Survey Water-Supply Paper 2254, 264 p., accessed February 20, 2013, at http://pubs.er.usgs.gov/publication/wsp2254.

Kuniansky, E.L., Dial, D.C., and Trudeau, D.A., 1989, Maps of the "400-foot," "600-foot," and adjacent aquifers and confining beds, Baton Rouge area, Louisiana: Louisiana Department of Transportation and Development Water Resources Technical Report no. 48, 16 p., 28 pls.

Louisiana Department of Environmental Quality, 2008, Environmental Regulatory Code, Title 33, Part IX, Subpart 1: Baton Rouge, Louisiana Department of Environmental Quality, accessed June 9, 2009, at http:www.deq.louisiana.gov/portal/tabid/1674/Default.aspx.

Prakken, L.B., 2004, Louisiana ground-water map no. 17—Generalized potentiometric surface of the Kentwood aquifer system and the "1,500-foot" and "1,700-foot" sands of the Baton Rouge area in southeastern Louisiana, March–April 2003: U.S. Geological Survey Scientific Investigations Map 2862, 2 sheets, accessed February 24, 2012, at http://pubs.er.usgs.gov/publication/sim2862.

Sargent, B.P., 2011, Water use in Louisiana, 2010: Louisiana Department of Transportation and Development Water Resources Special Report no. 17, 135 p.

Smoot, C.W., 1988, Louisiana hydrologic atlas map no. 3—Altitude of the base of freshwater in Louisiana: U.S. Geological Survey Water-Resources Investigations Report 86–4314, 1 sheet, accessed November 2, 2011, at http://pubs.er.usgs.gov/publication/wri864314.

Stuart, C.G., Knochenmus, Darwin, and McGee, B.D., 1994, Guide to Louisiana's groundwater resources: U.S. Geological Survey Water-Resources Investigations Report 94–4085, 55 p., accessed January 18, 2012, at http://pubs.er.usgs.gov/publication/wri944085.

Tomaszewski, D.J., 1996, Distribution and movement of saltwater in aquifers in the Baton Rouge area, Louisiana, 1990–92: Louisiana Department of Transportation and Development Water Resources Technical Report no. 59, 44 p.

Tomaszewski, D.J., 2011, Water-level surface in the Chicot equivalent aquifer system in southeastern Louisiana, 2009: U.S. Geological Survey Scientific Investigations Map 3173, 2 pls., accessed February 24, 2012, at http://pubs.usgs.gov/sim/3173/.

U.S. Environmental Protection Agency, 2016, Secondary Drinking Water Standards: Guidance for Nuisance Chemicals, accessed April 13, 2016, at https://www.epa.gov/dwstandards-regulations/secondary-drinking-water-standards-guidance-nuisance-chemicals.

U.S. Geological Survey, 2015a, Ground-water levels for Louisiana: National Water Information System Web Interface, accessed December 29, 2015, at http://nwis.waterdata.usgs.gov/la/nwis/gwlevels.

U.S. Geological Survey, 2015b, Water-quality samples for Louisiana: National Water Information System Web Interface, accessed December 23, 2015, at http://nwis.waterdata.usgs.gov/la/nwis/qw.

U.S. Geological Survey, 2016, Science in your watershed: U.S. Geological Survey Web page, accessed May 17, 2016, at http://water.usgs.gov/wsc/sub/0807.html.

Wells, F.C., 1980, Hydrology and water quality of the lower Mississippi River: Louisiana Department of Transportation and Development, Office of Public Works Water Resources Technical Report no. 21, 83 p.

This fact sheet was published by the U.S. Geological Survey in cooperation with the Louisiana Department of Transportation and Development.

By Vincent E. White and Lawrence B. Prakken

For additional information, contact:

Director, USGS Lower Mississippi-Gulf Water Science Center
3535 S. Sherwood Forest Blvd., Suite 120
Baton Rouge, LA 70816
E-mail: gs-w-lmg_center_director@usgs.gov
Fax: (225) 298–5490
Telephone: (225) 298–5481
Home Page: http://la.water.usgs.gov

ISSN 2327-6916 (print) ISSN 2327-6932 (online) http://dx.doi.org/10.3133/fs20163068