

**Brazoria County Groundwater
Conservation District
Groundwater Management Plan**

October 12, 2017

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I. District Mission

The mission of the Brazoria County Groundwater Conservation District (BCGCD, hereafter referred to as the District) is to maintain the quality and availability of Brazoria County's groundwater resources for current users and future generations.

Groundwater is one of Brazoria County's most precious resources and represents an important contributor to the county's water supply. Because it is such a valuable resource, groundwater must be protected to ensure that it will always be available to residential, agricultural, municipal, and industrial water users.

A groundwater conservation district such as the District plays a key role in protecting groundwater resources. The District's five-member board will proactively work with groundwater users in the district to address issues such as how to most efficiently use groundwater, control and prevent waste, control and prevent subsidence, and address drought conditions.

II. Purpose of Management Plan

In 1997, the 75th Texas Legislature established a statewide comprehensive regional water planning initiative with the enactment of Senate Bill 1 (SB1). Among the provisions of SB1 were amendments to Chapter 36 of the Texas Water Code requiring groundwater conservation districts to develop a groundwater management plan that is to be submitted to the Texas Water Development Board (TWDB) for approval as to the way in which it addresses several key considerations. The groundwater management plan is specified to contain management goals for each district, estimates on the availability of groundwater in the District, and details of how the District would manage and conserve groundwater resources. In 2001, the 77th Texas Legislature further clarified the water planning and management provisions of SB1 with the enactment of Senate Bill 2 (SB2). Additionally, House Bill (HB) 1763 enacted in 2005 by the 79th Texas Legislature requires joint planning among groundwater districts within a common Groundwater Management Area (GMA). Districts must jointly establish aquifer Desired Future Conditions (DFCs) and submit these conditions to TWDB. TWDB in turn provides to the GMA values of Modeled Available Groundwater (MAG) for each member district of the GMA.

The Brazoria County Groundwater Management Plan fulfills all requirements for groundwater management plans in SB1, SB2, HB 1763, Chapter 36 Texas Water Code, and administrative rules of the TWDB.

III. Time Period of Management Plan

This plan shall be in effect for a period of five years from the date of approval by TWDB, unless a new or amended management plan is adopted by the District Board of Directors and certified by TWDB. In accordance with Title 31, §356 of the Texas Administrative Code (TAC), the District Board must readopt, and the TWDB reapprove, the management plan every 5 years. The documentation of the administrative processes required for the approval of the Groundwater Management Plan is included in **Appendix A**.

IV. District Information

IV.a Creation

The District was created in September 2003 by the 78th Texas Legislature enacting HB 4114 (an amendment to HB 3602). This act is recorded in Section 2, Chapter 772, Acts of the 78th Texas Legislature. The District was confirmed by a local election held in Brazoria County on November 8, 2005 with 56.35 percent of the voters in favor of the District.

IV.b Location, Extent, Geography, and Surface Water Resources

The District is located in Brazoria County, Texas, within the Gulf Coastal Plains region. The District boundaries are the same as the area and extent of Brazoria County, Texas. The District comprises approximately 1,597 square miles of both rural and urbanized areas, with rapid urbanization and population growth prominent in the northern portion of the County. The county population in 2010 was 313,166 as reported by the 2010 US Census (<http://www.census.gov/>), with the Texas Demographic Center estimating an increased population of 345,717 in July of 2015 (<http://osd.texas.gov/>). Water use in the southern portion of the county is largely dominated by industrial use which has relied on surface water resources to a greater degree than groundwater.

The District is bounded by Matagorda, Wharton, Fort Bend, Harris, and Galveston Counties. As of the plan date, confirmed groundwater conservation districts (GCD) or subsidence districts (SD) exist in all surrounding counties. The conservation or subsidence districts neighboring the District, as shown in **Figure 1**, are: Coastal Plains GCD (Matagorda), Coastal Bend GCD (Wharton), Fort Bend SD (Fort Bend), and Harris-Galveston SD (Harris and Galveston). The District is located in GMA 14. Chapter 36 Texas Water Code authorizes the District to coordinate its management of groundwater with other GCDs in GMA 14. The other counties located in GMA 14 are shown in **Figure 2**.

Figure 1. Neighboring Districts to the Brazoria Groundwater Conservation District

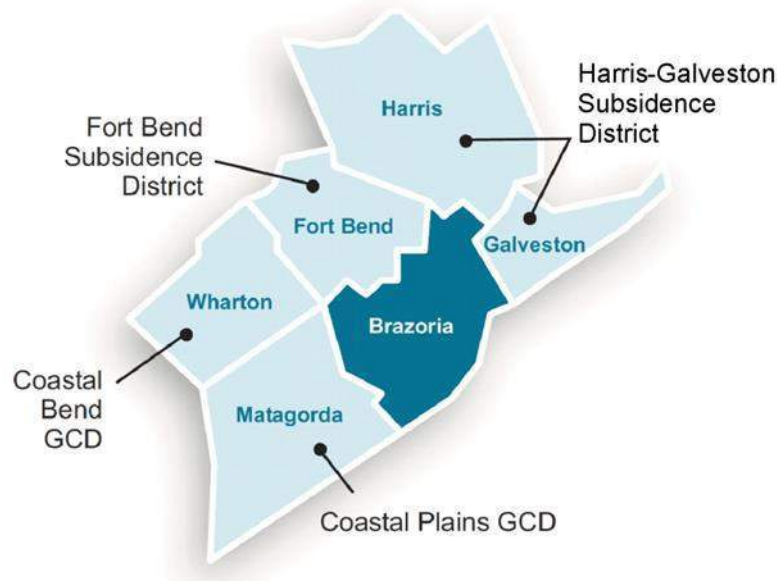
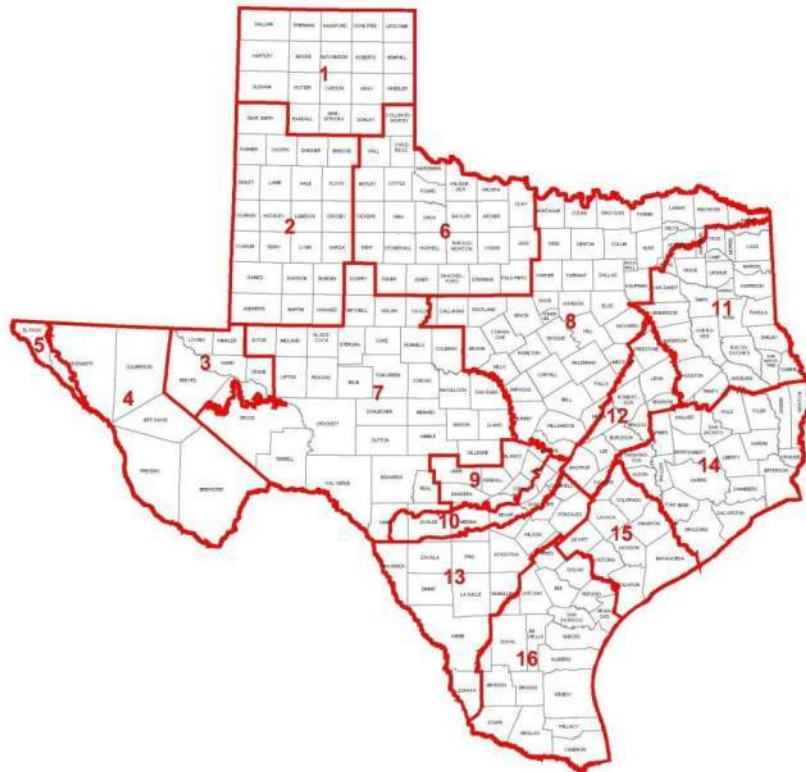


Figure 2. Groundwater Management Areas in Texas

The principal streams flowing through Brazoria County into the Gulf of Mexico include the Brazos and San Bernard Rivers, Oyster Creek, Bastrop Bayou, and Chocolate Bayou. The Gulf Intracoastal Waterway crosses Brazoria County near the coast. The Brazos River divides the county into two sections; the western one-third is covered by hardwoods, and the rest is generally prairieland (Texas State Historical Association, 2016).

IV.c Organization of District

The District Board of Directors is composed of five members elected to staggered four-year terms. Four directors are elected from county precincts and one director is elected at-large. The Board of Directors normally meets at the District offices at 111 E. Locust Street in Angleton, Texas, at 4 P.M. on the second Thursday of each month, unless otherwise posted. All meetings of the Board of Directors are public meetings, subject to public notice, and held in accordance with all public meeting requirements. The Board of Directors meetings are announced on the District website (<http://www.bcggroundwater.org>) along with information on District rules and fees, meeting minutes, District forms and other items of interest posted by the District.

V. Authority and Regulatory Framework of the District

The District derives its authority to manage groundwater within the District by virtue of the powers granted and authorized in the District's enabling act, HB 4114 of the 78th Texas Legislature, and subsequent amendments. The District exercises the power that it was granted under the authority of

the enabling legislation, and with voter approval, and assumes all the rights and responsibilities of a groundwater conservation district specified in Chapter 36 of the Texas Water Code. The authority and procedures to manage the groundwater resources in the District will be governed at all times by the due process specified in the District Rules. District Rules in place at the time of adoption of this Groundwater Management Plan are included in **Appendix B**.

VI. Groundwater Resources of Brazoria County

Brazoria County is located within the Gulf Coast Aquifer system that parallels the Gulf Coast as shown in **Figure 3** (TWDB, 2006). Except for the Quaternary alluvium, the geologic formations crop out in belts nearly parallel to the Gulf of Mexico. The formations dip toward the coast and younger formations crop out closer to the Gulf and older formations crop further inland. Faults are common and some of them have displacements of up to several hundred feet. The displacements tend to decrease upward and may not appear at the surface. Faulting generally does not disrupt regional hydraulic continuity. Major geologic and hydrologic units of the Gulf Coast Aquifer in Brazoria County are shown in **Figure 4**.

VI.a Chicot Aquifer

The Chicot aquifer, the main source of groundwater in Brazoria County, is composed of sediments of the Willis Formation, the Lissie Formation, the Beaumont Formation, and the overlying Holocene alluvium. It consists of all sediments from the ground surface down to the top of the Evangeline aquifer. The Chicot typically ranges between 600 feet to 1,200 feet of thickness in Brazoria County and consists of discontinuous layers of sand and clay. Separation of the Chicot from the Evangeline aquifer is based on differences in lithology, permeability, water level, and stratigraphic positions (Sandeen and Wesselman, 1973). The Chicot is subdivided into an upper Chicot unit and a lower Chicot unit typically separated by clay. The Chicot aquifer contains mostly fresh water in Brazoria County, but total dissolved solids (TDS) increases towards the Gulf, and the groundwater becomes unusable near the coast. The transmissivity of the Chicot aquifer ranges from 1,000 ft²/d to 25,000 ft²/d (Kasmarek and Strom, 2002).

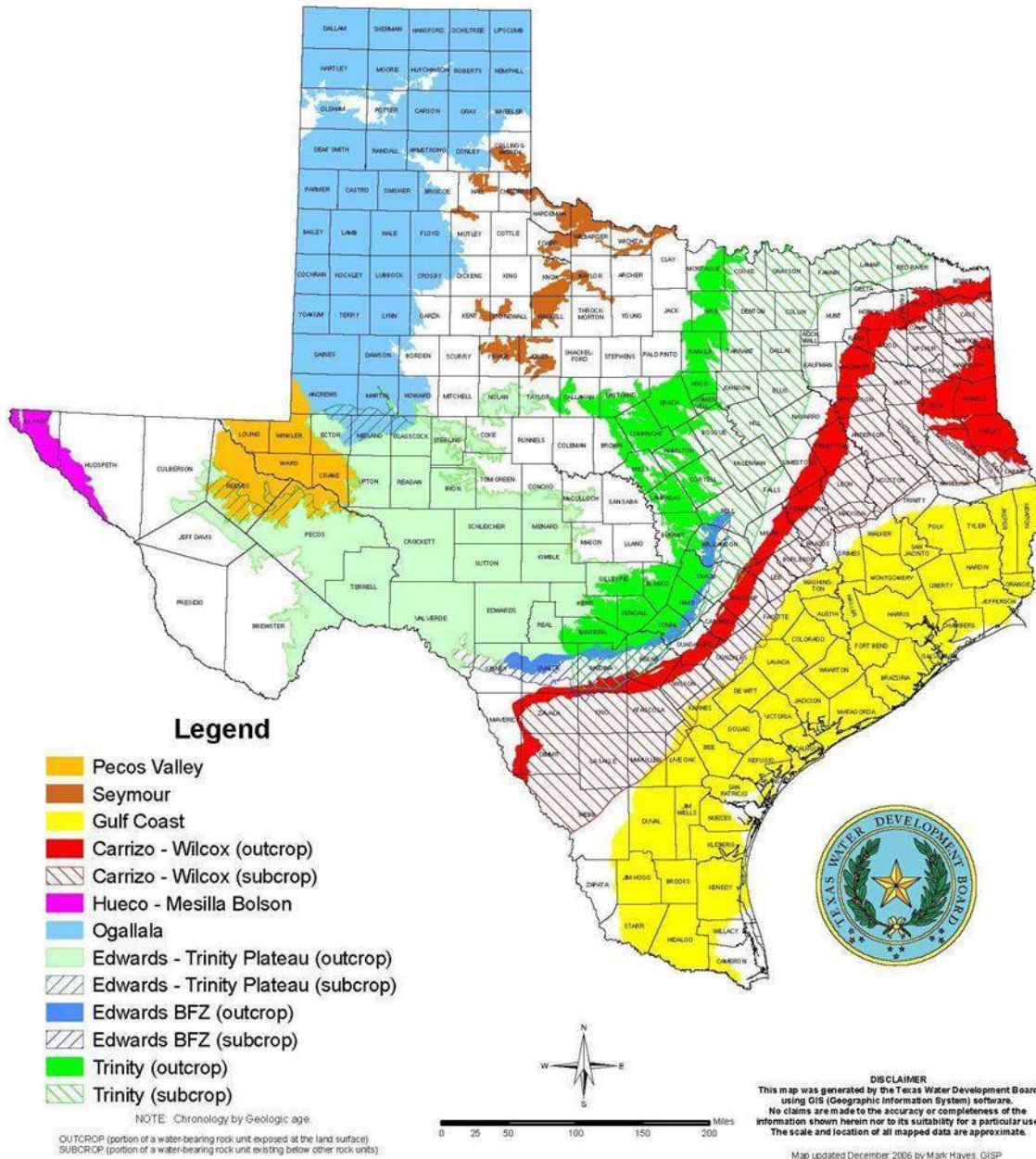
VI.b Evangeline Aquifer

The Evangeline aquifer is composed of a sequence of alternating sands and clays of the Goliad Sand and the underlying Fleming Formation. These sediments thicken to more than 3,500 feet along the coast. Fresh water is typically found in the upper beds of the Evangeline aquifer, with TDS increasing towards the Gulf, as with the Chicot (Baker, 1979 and 1986).

VI.c Burkeville Confining Layer

The Burkeville confining system consists of silt and clay. These fine-grained sediments are generally interbedded with sand lenses, which may contain fresh to slightly saline water. The relatively large percentage of silt and clay of the Burkeville confining system, when compared to the overlying Evangeline aquifer and the underlying Jasper aquifer, acts as a confining unit. The Burkeville ranges from 300 to 500 feet in thickness (Baker, 1979 and 1986).

Figure 3. Major Aquifers of Texas



**Figure 4. Geologic and Hydrologic Units of the Gulf Coast Aquifer in Brazoria County
Modified from (Baker, 1979 and 1986; Aronow, 2004).**

System	Series	Stratigraphic Unit		Hydrologic Unit
Quaternary	Holocene	Alluvium		Chicot aquifer
	Pleistocene	Beaumont Clay		
		Montgomery Formation	Lissie Formation	
		Bentley Formation		
		Willis Sand		
Tertiary	Pliocene	Goliad Sand		Evangeline aquifer
	Miocene	Fleming Formation		Burkeville Confining Zone

**VII. Estimate of Amount of Groundwater Annually Used in the District
31 TAC §356.52(a)(5)(B) and TWC §36.1071(e)(3)(B)**

TWDB estimates of annual surface water and groundwater use within the District for years 2000 to 2015 are included in **Appendix C**. The average of results for the most recent 5 years of data included in Appendix C (2011-2015) indicate an average groundwater use for recent years of approximately 39,750 acre-feet per year, with groundwater use over the same period showing a decreasing trend. Recent analysis of exempt groundwater use by the District, which applied conservative assumptions in calculating exempt use, indicated the potential for groundwater use of approximately 46,750 acre-feet per year. The difference in these two estimates is driven in part by differences in exempt groundwater use estimates and municipal groundwater use estimates and may also be influenced by historical estimates of production for permitted small-volume water users. Groundwater usage within the District can vary widely from year to year based on a number of factors including precipitation and population growth. The District has adopted metering requirements to characterize water use in greater detail and has also revised the permitting and permit renewal process to more closely align permitted pumpage totals to reported pumpage. The District, through its permitting and data collection programs, will continue to evaluate groundwater use and impacts to facilitate achievement of management goals.

**VIII. Estimate of Amount of Recharge, Discharge, and Groundwater Flow in the District
31 TAC §356.52(a)(5)(C-E) and TWC §36.1071(e)(3)(C-E)**

The groundwater availability model (GAM) for the northern part of the Gulf Coast Aquifer System (Kasmarek, 2013) was run by the TWDB as GAM Run 16-021 (Wade, 2016a) to estimate recharge, inflow and outflow of groundwater to the district, and inter-aquifer flow. The GAM was run with

the MODFLOW-2000 software. TWDB's report on GAM Run 16-021 modeling, including a summary of relevant parameters specified in 31 TAC §356.52(a)(5)(C)-(E), is included in **Appendix D**.

**IX. Estimate of the Projected Surface Water Supply of the District
31 TAC §356.52(a)(5)(F) and TWC §36.1071(e)(3)(F)**

Estimates of projected surface water supply within the District as projected by the 2017 State Water Plan are summarized in **Appendix C**. Surface water supplies in the State Water Plan represent firm (reliable under a repeat of the drought of record) supplies estimated to be physically and legally accessible by an entity. Surface water may be self-supplied or reflect water received through a contractual arrangement with another entity.

**X. Estimate of the Total Projected Water Demand within the District
31 TAC §356.52(a)(5)(G) and TWC §36.1071(e)(3)(G)**

Estimates of projected water demands within the District as projected by the 2017 State Water Plan are summarized in **Appendix C**. Projected demands in the State Water Plan are intended to accommodate a conservative approach necessary for long term supply planning and therefore reflect projected demands under dry conditions.

**XI. Estimate of the Water Supply Needs within the District
TWC §36.1071(e)(3)(E)**

Estimates of projected water needs within the District as projected by the 2017 State Water Plan are summarized in **Appendix C**. Note that needs are projected water demands in excess of existing supplies that would be available during a repeat of the drought of record.

**XII. Water Management Strategies to Meet Needs of Water User Groups
TWC §36.1071(e)(4)**

The projected water supplies and demand totals for the District in the 2017 State Water Plan indicate projected demands in excess of existing supplies for some water user groups. To meet the needs of water user groups in the District, recommended water management strategies to develop additional supplies were included in the State Water Plan. A detailed listing of recommended water management strategies from the 2017 Water Plan is included in **Appendix C**.

**XIII. Management of Groundwater Supplies within the District
31 TAC §356.52(a)(4)**

The District derives its authority to manage groundwater within the District by virtue of the powers granted and authorized in the District's enabling act, HB 4114 of the 78th Texas Legislature, and subsequent amendments, and Chapter 36 of the Texas Water Code. The authority and procedures to manage the groundwater resources in the District will be governed at all times by the due process specified in the District rules (**Appendix B**). The District will manage the supply of groundwater within the District in order to conserve the resource and achieve the DFC while maintaining the economic viability of all groundwater user groups. The District will identify and engage in such activities and practices, that if implemented would result in more efficient use of groundwater and preserve groundwater quality and availability for future generations.

The District will make a regular assessment of water supply and groundwater storage conditions and will report those conditions to the Board and to the public. An observation network shall be maintained in order to monitor water levels and subsidence and may further monitor water quality as determined by the District to be needed. The District currently participates with other agencies in existing monitoring well and subsidence measurement networks. The District will undertake and cooperate with investigations of the groundwater resources within the District and will make the results of investigations available to the public upon adoption by the Board, as needed and as District resources allow. The District may, as it deems necessary, engage in strategic initiatives and studies to increase available information regarding aquifer conditions, assist in managing groundwater resources, and facilitate DFC achievement.

The District is committed to maintaining a sustainable, adequate, reliable, cost-effective, and high-quality source of groundwater to promote the vitality, economy, and environment of the District. The District, in pursuit of its mission to protect groundwater resources, may adopt rules to regulate groundwater withdrawals by means of spacing and production limits in order to minimize the drawdown of the water table or the reduction of artesian pressure, to control subsidence, to prevent interference between wells, to prevent degradation of water quality, to prevent waste, and to facilitate DFC achievement. The determination to seek action will be based on aquifer conditions observed by the District, including but not limited to subsidence, water quality, production, water levels, and consistency with achievement of adopted DFCs. In order to manage the groundwater in a manner compatible with the District's mission, the District may elect to establish management zones and rules specific for those zones for:

- Each aquifer, aquifer subdivision, or geologic stratum located entirely or partially within the District;
- Geographic areas located entirely or partially within the District.

The factors to be considered in making a determination to deny a permit or limit groundwater withdrawals shall include those specified in Chapter 36 of the Texas Water Code, the District's enabling legislation, and the District Rules.

The District will employ technical resources at its disposal to evaluate the groundwater resources available within the District and to determine the effectiveness of regulatory or conservation measures. A public or private user may appeal to the Board for discretion in enforcement of the provisions of the water supply deficit contingency plan on grounds of adverse economic hardship or unique local conditions. The exercise of said discretion by the Board shall not be construed as limiting the power of the Board. The District will enforce the terms and conditions of permits and the rules of the District by enjoining the permit holder in a court of competent jurisdiction as provided for in Texas Water Code Chapter 36.102.

XIV. Estimate of Modeled Available Groundwater 31 TAC §356.52(a)(5)(A) and TWC §36.1071(e)(3)(A)

As noted above, HB 1763 requires joint planning among groundwater districts within a common GMA. In compliance with this requirement, the member districts of GMA 14 developed DFCs for underlying aquifer formations. The approach taken by the GMA was primarily aquifer water level (drawdown)

based. DFCs were adopted by Resolution No. 2016-01-01 of GMA 14 and submitted to TWDB on May 5, 2016.

The DFC for the Gulf Coast Aquifer within Brazoria County is such that:

- From estimated year 2009 conditions, the average drawdown of the Chicot Aquifer should not exceed approximately 23 feet after 61 years.
- From estimated year 2009 conditions, the average drawdown of the Evangeline Aquifer should not exceed approximately 27 feet after 61 years.

In accordance with Texas Water Code, §36.1084, Subsection (b), the TWDB Executive Administrator developed and provided to the District a value of Modeled Available Groundwater based on the adopted DFC. Texas Water Code, Section 36.001, Subsection (25), defines Modeled Available Groundwater as “the amount of water that the executive administrator determines may be produced on an average annual basis to achieve a desired future condition established under Section 36.108.” These results were developed using the TWDB GAMs, with relevant MAG values for the Gulf Coast Aquifer in GMA 14 produced by GAM Run 16-024 MAG (Wade, 2016b) and submitted to member districts of GMA 14 on December 15, 2016. The Gulf Coast Aquifer MAG for Brazoria County is shown in **Table 1** and **Table 2** below. Values in the tables are shown to the nearest acre-foot. The county-wide MAG is estimated as 50,369 acre-feet per year for modeled 2010 conditions, increasing slightly to 50,721 acre-feet per year for modeled 2070 conditions.

Table 1. Gulf Coast Aquifer MAG for BCGCD by Aquifer Formation (acre-feet/year)

Formation	2010	2020	2030	2040	2050	2060	2070
Chicot Aquifer	38,994	39,042	39,164	39,208	39,251	39,295	39,345
Evangeline Aquifer	11,376	11,376	11,376	11,376	11,376	11,375	11,376
Burkeville Confining Unit	0	0	0	0	0	0	0
Jasper Aquifer	0	0	0	0	0	0	0
Total	50,369	50,418	50,540	50,583	50,626	50,670	50,721

Table 2. Gulf Coast Aquifer MAG for BCGCD by River Basin (acre-feet/year)

River Basin	2020	2030	2040	2050	2060	2070
Brazos-Colorado	9,135	8,930	8,737	8,476	8,219	7,988
Brazos	3,223	3,057	2,992	2,923	2,865	2,821
San Jacinto-Brazos	38,059	38,552	38,855	39,228	39,587	39,911
Total	50,418	50,540	50,583	50,626	50,670	50,721

XV. Actions, Procedures, Performance, and Avoidance Necessary to Effectuate the Plan TWC §36.1071(e)(2)

The District will implement the provisions of this management plan and will utilize the objectives of the plan as a guide for District actions, operations, and decision-making. The District will ensure that its planning efforts, activities, and operations are consistent with the provisions of this plan.

The District has adopted rules in accordance with Chapter 36 of the Texas Water Code, and all rules will be followed and enforced. The development of rules was based on the best scientific information and technical evidence available to the District. Due to the rapid growth of the County and evolving nature of water demands, the District annually evaluates the District Rules to determine whether any amendments are recommended to decrease the amount of waste of groundwater within the District and to support the District's mission and management plan.

The District will encourage cooperation and coordination in the implementation of this plan. All operations and activities will be performed in a manner that encourages the cooperation of the citizens of the District and with the appropriate water management entities at the state, regional, and local level.

XVI. Methodology for Tracking the District's Progress in Achieving Management Goals

The general manager of the District will prepare and submit an annual report (Annual Report) to the District Board of Directors. The Annual Report will include an update on the District's performance in achieving the management goals contained in this plan. The general manager will present the Annual Report to the Board of Directors within ninety (90) days following the completion of the District's Fiscal Year. A copy of the annual audit of District financial records will be included in the Annual Report. The District will maintain a copy of the Annual Report on file for public inspection at the District offices, upon adoption by the Board of Directors.

XVII. Management Goals

XVII.a Providing the Most Efficient Use of Groundwater 31 TAC §356.52(a)(1)(A) and TWC §36.1071(a)(1)

A.1 - Permitting System

Objective - Each year, the District will regulate the production of groundwater by maintaining a system of permitting the use and production of groundwater within the boundaries of the District in accordance with the District Rules and will require registration or permitting of all new wells within the boundaries of the District.

Performance Standard - The number and type of applications made for the permitted use of groundwater in the District and the number of exempt and permitted wells registered or permitted by the District for the year will be incorporated into the Annual Report submitted to the Board of Directors of the District.

A.2 - Production Monitoring

Objective - Each year, the District will monitor production from the permitted wells within the boundaries of the District.

Performance Standard - The total reported and estimated production from the permitted wells within the boundaries of the District will be incorporated into the Annual Report submitted to the Board of Directors of the District.

A.3 - Activity Report

Objective - Each year, the District will receive an update from the District's inspector or other representative summarizing activities undertaken to promote compliance with the District's permitting requirements.

Performance Standard - A summary of the work of the District promoting compliance with permitting requirements will be included in the Annual Report submitted to the Board of Directors of the District.

XVII.b Controlling and Preventing Waste of Groundwater 31 TAC §356.52(a)(1)(B) and TWC §36.1071(a)(2)

B.1 - Rule Review

Objective - Each year, the District will make an evaluation of the District Rules to determine whether any amendments are recommended to decrease the amount of waste of groundwater within the District.

Performance Standard - The District will include a discussion of the annual evaluation of the District Rules and the determination of whether any amendments to the rules are recommended to prevent the waste of groundwater in the Annual Report of the District provided to the Board of Directors.

B.2 - Public Information Regarding Reducing Waste

Objective - Each year, the District will provide information to the public on eliminating and reducing wasteful practices in the use of groundwater by including information on groundwater waste reduction on the District's website.

Performance Standard - Each year, a copy of the information provided on the groundwater waste reduction page of the District's website will be included in the District's Annual Report to be given to the District's Board of Directors.

XVII.c Controlling and Preventing Subsidence 31 TAC §356.52(a)(1)(C) and TWC §36.1071(a)(3)

C.1 - Joint Conference

Objective - Each year, the District may participate in a joint conference with the neighboring Groundwater Conservation or Subsidence Districts focused on sharing information regarding subsidence and the control and prevention of subsidence through the regulation of groundwater.

Performance Standard - If a joint conference is held with neighboring Groundwater Conservation or Subsidence Districts, a summary of the joint conference on subsidence issues will be included in the Annual Report submitted to the Board of Directors of the District.

C.2 - Public Information Regarding Subsidence

Objective - Each year, the District will provide one article on the District's website to educate the public on the subject of subsidence.

Performance Standard - The Annual Report submitted to the Board of Directors will include a copy of the article posted on the District's website.

C.3 - PAM Monitoring

Objective - Each year, the District will maintain Periodically Active Monitoring (PAM) subsidence monitoring locations within the District boundaries and may pursue installation of additional PAM subsidence monitoring locations.

Performance Standard - Each year, a summary of activities related to PAM sites within the District and installation of additional sites will be included in the Annual Report submitted to the Board of Directors of the District.

C.4 - Subsidence Evaluation

Objective - At least once every two years, the District will request data from relevant entities on subsidence measurement data or summary information, including information for PAM subsidence monitoring locations within the District boundaries.

Performance Standard – At least once every two years, a summary of subsidence information will be included in the Annual Report submitted to the Board of Directors of the District.

XVII.d Conjunctive Surface Water Management Issues 31 TAC §356.52(a)(1)(D) and TWC §36.1071(a)(4)

D.1 - Surface Water Coordination

Objective - Each year, the District will participate in the regional planning process by attending, as able, the Region H - Regional Water Planning Group meetings to encourage the development of surface water supplies to meet the needs of water user groups in the District.

Performance Standard - The attendance of a District representative in at least one Region H Regional Water Planning Group meeting will be noted in the Annual Report presented to the District Board of Directors.

**XVII.e Natural Resource Issues That Affect the Use and Availability of Groundwater or are Affected by the Use of Groundwater
31 TAC §356.52(a)(1)(E) and TWC §36.1071(a)(5)**

E.1 - Salt Water and Waste Disposal Wells

Objective - Each year the District will query the Texas Railroad Commission database to determine if any new salt water or waste disposal injection wells have been permitted by the Texas Railroad Commission to operate within the District.

Performance Standard - Each year a summary of any salt water or waste disposal injection wells in the District permitted by the Texas Railroad Commission will be included in the Annual Report submitted to the Board of Directors of the District.

E.2 - Groundwater Quality Evaluation

Objective - Each year, the District will evaluate available data regarding the aquifers of the District and the quality of groundwater within the District.

Performance Standard - A progress report on the work of the District regarding monitoring water quality within the District will be included in the Annual Report submitted to the Board of Directors of the District.

E.3 - Activity Report

Objective - Each year, the District will receive an update from the District's inspector or other representative summarizing activities undertaken to protect groundwater quality.

Performance Standard - A summary of the work of the District to protect groundwater quality will be included in the Annual Report submitted to the Board of Directors of the District.

**XVII.f Addressing Drought Conditions
31 TAC §356.52(a)(1)(F) and TWC §36.1071(a)(6)**

F.1 - Drought Monitor

Objective - Each month, the District will check for the periodic updates to the Drought Monitor (<http://droughtmonitor.unl.edu/>).

Performance Standard - Copies of the monthly Drought Monitor will be included in the District Annual Report to the Board of Directors.

XVII.g Conservation, Recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, or Brush Control Where Appropriate and Cost Effective

31 TAC §356.52(a)(1)(G) and TWC §36.1071(a)(7)

Recharge enhancement, precipitation enhancement, and brush control are not appropriate or cost-effective programs for the District at this time because there is not an existing precipitation enhancement program operating in nearby counties in which the District could participate and share costs. The cost of operating a single-county precipitation enhancement program is prohibitive and would require the District to gather substantial capital in order to fund such a project. The District has determined that addressing recharge enhancement, precipitation enhancement, and brush control is not applicable to the District at this time.

G.1 - Public Information Regarding Water Conservation

Objective - Each year, the District will provide one article or a link to an article on the District's website regarding water conservation.

Performance Standard - The Annual Report submitted to the Board of Directors will include a copy of the article posted on the District's website.

G.2 - Public Information Regarding Rainwater Harvesting

Objective - Each year, the District will provide one article or a link to an article on the District's website regarding rainwater harvesting.

Performance Standard - The Annual Report submitted to the Board of Directors will include a copy of the article posted on the District's website.

XVII.h Addressing in a Quantitative Manner the Desired Future Condition of the Groundwater Resources

31 TAC §356.52(a)(1)(H) and TWC §36.1071(a)(8)

H.1 - Strategic Initiatives

Objective - In order to facilitate District operations and achievement of management goals, the District may undertake strategic initiatives such as evaluation of historic use, establishment of permit limits, model evaluations, or other studies or programs.

Performance Standard - If the District undertakes strategic initiatives in support of operations and management goals, progress on these activities will be reported in the Annual Report to the Board of Directors.

H.2 - Water Level Evaluation

Objective - At least once every two years, the District will examine water level data for the Chicot Aquifer and Evangeline Aquifer from the USGS monitoring well network, the TWDB groundwater database, or other data sources.

Performance Standard - At least once every two years, a summary of water level analyses and recommendations regarding anticipated DFC achievement will be included in the Annual Report submitted to the Board of Directors of the District.

H.3 - Rule Review

Objective - At least once every two years, the District will make an evaluation of the District Rules to determine whether any amendments are recommended to support achievement of the DFCs adopted by the District.

Performance Standard - At least once every two years, the District will include a discussion of the evaluation of the District Rules and the determination of whether any amendments to the rules are recommended to support achievement of the DFCs adopted by the District in the Annual Report of the District provided to the Board of Directors.

XVIII. References

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Appendix A

Administrative Processes

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AFFP
NOTICE OF PUBLIC HEARING TOCON

Affidavit of Publication

STATE OF TEXAS }
COUNTY OF BRAZORIA } SS

NOTICE OF PUBLIC HEARING TO
CONSIDER ADOPTION OF A
GROUNDWATER MANAGEMENT PLAN

BRAZORIA COUNTY GROUNDWATER CONSERVATION DISTRICT
BOARD OF DIRECTORS

Cindy Comette, being duly sworn, says:

That she is Advertising Director of the The Facts, a daily newspaper of general circulation, printed and published in Clute, Brazoria County, Texas; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

September 22, 2017

Notice is hereby given that the Board of Directors of the Brazoria County Groundwater Conservation District will hold a public hearing at 4:00 p.m. on Thursday, October 12, 2017 in the District Office, Court House West Annex, 451 N. Velasco Street, Suite 140, Angleton, Texas.

The purpose of the public hearing is to receive comments on the proposed Groundwater Management Plan prepared in accordance with Sec. 36.1071, Water Code. Comments may be made orally at the public hearing or may be submitted in writing at any time until the end of the public hearing. A draft of the proposed Groundwater Management Plan is available for viewing at the District office and at the District's website at: www.bcgroundwater.org.

The Board of Directors will conduct an open meeting immediately following the conclusion of the public hearing where the Board may consider adoption of the proposed Groundwater Management Plan.

For any additional information please contact the District at the address above, at the mailing address below, or call any of the phone numbers listed below.

Mailing Address: 111 E. Locust, Bldg. A-29, Suite 140, Angleton, TX 77515

Angleton Area Phone: (979) 864-1078
Fax: (979) 864-1079


Clute Area Phone: (979) 388-1078
Fax: (979) 388-1079

Alvin Area Phone: (281) 756-1078
Fax: (281) 756-1079

Sherilyn Plentl
Administrator for District

That said newspaper was regularly issued and circulated on those dates.

SIGNED:



Advertising Director

Subscribed to and sworn to me this 22nd day of September 2017.



Jamie Glockzin, , Brazoria County, Texas

My commission expires: June 01, 2019



00004488 00073514

Brazoria County Groundwater Conservation District
451 N Velasco, Ste 140
ANGLETON, TX 77515

Joyce Hudman

Joyce Hudman
County Clerk
Brazoria County, Texas

**NOTICE OF PUBLIC HEARING
TO CONSIDER ADOPTION OF A
GROUNDWATER MANAGEMENT PLAN**

**BRAZORIA COUNTY GROUNDWATER CONSERVATION DISTRICT
BOARD OF DIRECTORS**

Notice is hereby given that the Board of Directors of the Brazoria County Groundwater Conservation District will hold a public hearing at **4:00 p.m. on Thursday, October 12, 2017** in the District Office, Court House West Annex, 451 N. Velasco Street, Suite 140, Angleton, Texas.

The purpose of the public hearing is to receive comments on the proposed Groundwater Management Plan prepared in accordance with Sec. 36.1071, Water Code. Comments may be made orally at the public hearing or may be submitted in writing at any time until the end of the public hearing. A draft of the proposed Groundwater Management Plan is available for viewing at the District office and at the District's website at: www.bcgroundwater.org.

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Alvin area Phone: (281) 756-1078 Fax: (281) 756-1079

Sherilyn Plentl

**Sherilyn Plentl
Administrator for District**

Joyce Hudman

Joyce Hudman
 County Clerk
 Brazoria County, Texas

**NOTICE OF MEETING OF THE
 BRAZORIA COUNTY GROUNDWATER CONSERVATION DISTRICT
 BOARD OF DIRECTORS**

Notice is hereby given that the Board of Directors of the Brazoria County Groundwater Conservation District will meet at 4:00 p.m. on Thursday, October 12, 2017 in the District Office, Court House West Annex, 451 N. Velasco Street, Suite 140, Angleton, Texas. At said meeting the Board will deliberate, discuss, consider and / or take final action on any or all of the following matters:

AGENDA

- I. CALL TO ORDER**
- II. ROLL CALL**
- III. APPROVE MINUTES OF THE MEETING OF: September 20, 2017**
- IV. PUBLIC COMMENT:**

Members of the public may request permission to address the Board of Directors. Specific factual information or a recitation of existing policy may be furnished in response to an inquiry made by a member of the general public, but any deliberation or discussion regarding any subject about which inquiry was made shall be limited to a proposal to place that subject on the agenda for a subsequent meeting. Public comments are limited to five (5) minutes per speaker as outlined in Brazoria County Groundwater Conservation District Order #07-06-05 dated June 14, 2007.

- V. NEW BUSINESS:**
 - A. Fiscal:
 - 1. Financial & Investment Report & Budget Status Update
 - 2. Approve invoices for payment
 - B. Administrative:
 - 1. Conduct public hearing to receive comments on the proposed Groundwater Management Plan prepared in accordance with Sec. 36.1071, Water Code and consider adoption of the proposed Groundwater Management Plan.

Joyce Hudman

Joyce Hudman
County Clerk
Brazoria County, Texas

2. Approve District Policy Regarding the Collection of Fees.
3. Approve Schedule A, Task Authorization #4 for Freese & Nichols, Inc. to prepare and present the 2017 Annual Report.
4. Discuss funding Brazoria County water well testing fees for owners of private residential wells flooded by Hurricane Harvey.
5. Discuss District Personnel Policy.
6. Exempt Use Well Registration Report.
7. Review current drought monitor report.
8. Schedule public hearing on Thursday, November 9, 2017 at 4:00 p.m. in the District Office to consider permit or permit amendment applications or permit cancelations.
9. Consultation with General Counsel on recent litigation regarding groundwater issues.

VI. POSSIBLE FUTURE AGENDA ITEMS:

- Public hearing regarding proposed amendments to the District Rules – November 9, 2017
- Renew public officials liability policy

VII. ADJOURN

Sherilyn Pluntz

General Manager

NOTE: Items will not necessarily be presented in the order they are posted

If, during the course of the meeting covered by this Agenda, the Board should determine that an executive session of the Board should be held or is required in relation to any item included in this Agenda, then such executive session, as authorized by the Texas Open Meetings Act, will be held by the Board at the date, hour, and place given in this Agenda concerning any and all subjects and for any and all purposes permitted by Sections 551.071-551.084 of the Texas Government Code, including, but not limited to, Section 551.071 - for the purpose of a private consultation with the Board's attorney on any or all subjects or matters authorized by law.

The Brazoria County Groundwater Conservation District is committed to compliance with the Americans with Disabilities Act (ADA). Reasonable accommodations and equal opportunity for effective communications will be provided upon request. Please contact the Brazoria County Groundwater Conservation District Office at (979) 864-1078 at least 24 hours in advance if accommodation is needed.

Philip Taucer

From: Philip Taucer
Sent: Thursday, October 19, 2017 09:35
To: Ronald Woodruff (Brazosport Water Authority)
Subject: Brazoria County Groundwater Conservation District Groundwater Management Plan
Attachments: BCGCD_2017_GMP.PDF

Dear Mr. Woodruff,

We are contacting you on behalf of the Brazoria County Groundwater Conservation District ("District"). In 1997 the 75th Texas Legislature established a statewide comprehensive regional water planning initiative with the enactment of Senate Bill 1 (SB1). Among the provisions of SB1 were amendments to Chapter 36 of the Texas Water Code requiring groundwater conservation districts to develop a groundwater management plan that is to be submitted to the Texas Water Development Board (TWDB). The groundwater management plan is specified to contain management goals for each district, estimates on the availability of groundwater in the District, and details of how the District would manage and conserve groundwater resources. Groundwater management plans must periodically be readopted in accordance with statutory requirements.

The District has revised and readopted its Groundwater Management Plan, which will be submitted for approval to the TWDB. Historically, the District has coordinated with all surface water management entities within its boundaries. Therefore, attached you will find the District Groundwater Management Plan for your records. Should you have any questions, please contact me at (713) 600-6835.

Sincerely,

Philip I. Taucer, P.E.
Water Resources

Freese and Nichols, Inc.
10497 Town and Country Way, Suite 600
Houston, Texas 77024
713.600.6800 office
713.600.6835 direct

Philip Taucer

From: Philip Taucer
Sent: Thursday, October 19, 2017 09:35
To: Phil Ford (Brazos River Authority)
Subject: Brazoria County Groundwater Conservation District Groundwater Management Plan
Attachments: BCGCD_2017_GMP.PDF

Dear Mr. Ford,

We are contacting you on behalf of the Brazoria County Groundwater Conservation District ("District"). In 1997 the 75th Texas Legislature established a statewide comprehensive regional water planning initiative with the enactment of Senate Bill 1 (SB1). Among the provisions of SB1 were amendments to Chapter 36 of the Texas Water Code requiring groundwater conservation districts to develop a groundwater management plan that is to be submitted to the Texas Water Development Board (TWDB). The groundwater management plan is specified to contain management goals for each district, estimates on the availability of groundwater in the District, and details of how the District would manage and conserve groundwater resources. Groundwater management plans must periodically be readopted in accordance with statutory requirements.

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Philip I. Taucer, P.E.
Water Resources

Freese and Nichols, Inc.
10497 Town and Country Way, Suite 600
Houston, Texas 77024
713.600.6800 office
713.600.6835 direct

Philip Taucer

From: Philip Taucer
Sent: Thursday, October 19, 2017 09:35
To: Ivan Langford (Gulf Coast Water Authority)
Subject: Brazoria County Groundwater Conservation District Groundwater Management Plan
Attachments: BCGCD_2017_GMP.PDF

Dear Mr. Langford,

We are contacting you on behalf of the Brazoria County Groundwater Conservation District ("District"). In 1997 the 75th Texas Legislature established a statewide comprehensive regional water planning initiative with the enactment of Senate Bill 1 (SB1). Among the provisions of SB1 were amendments to Chapter 36 of the Texas Water Code requiring groundwater conservation districts to develop a groundwater management plan that is to be submitted to the Texas Water Development Board (TWDB). The groundwater management plan is specified to contain management goals for each district, estimates on the availability of groundwater in the District, and details of how the District would manage and conserve groundwater resources. Groundwater management plans must periodically be readopted in accordance with statutory requirements.

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Sincerely,

Philip I. Taucer, P.E.
Water Resources

Freese and Nichols, Inc.
10497 Town and Country Way, Suite 600
Houston, Texas 77024
713.600.6800 office
713.600.6835 direct

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Appendix B

Rules of the District

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**RULES OF THE
BRAZORIA COUNTY
GROUNDWATER CONSERVATION DISTRICT**

**ADOPTED ON:
May 8, 2008**

**LAST AMENDED:
January 12, 2017**

**RULES OF THE
BRAZORIA COUNTY
GROUNDWATER CONSERVATION DISTRICT**

BOARD OF DIRECTORS

Alan Mueller – President

Dennis Davenport – Vice President

Raymond Felder – Secretary

Ronnie Goolsby – Assistant Secretary

Patrick O’Day - Director

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CHAPTER 1. GENERAL PROVISIONS

SUBCHAPTER A: GENERAL

§1.1 PURPOSE OF RULES.

- (a) The purpose of these Rules of the Brazoria County Groundwater Conservation District (the “District Rules”) is to implement the powers and duties of the District under its enabling Act as amended, Texas Water Code Chapter 36, and other applicable laws and to establish the general policies and procedures of the District.
- (b) The District's Rules are promulgated under the District's statutory authority to achieve the following objectives: to provide for conserving, preserving, protecting, and recharging of the groundwater or of a groundwater reservoir or its subdivisions, and to control subsidence, or prevent waste of groundwater. The District's orders, rules, regulations, requirements, resolutions, policies, guidelines, or similar measures have been implemented to fulfill these objectives.
- (c) The Rules of the Brazoria County Groundwater Conservation District will guide, define, and achieve the District goals of water conservation and pollution prevention in an effort to preserve, protect, and enhance the groundwater within the District's jurisdictional boundaries.

§1.2 USE AND EFFECT OF RULES.

- (a) The District uses these Rules as guides in the exercise of the powers conferred to it by law and in the accomplishment of the purposes of the Act. They may not be construed as a limitation or restriction on the exercise of any discretion, where it exists; nor shall they be construed to deprive the District or Board of the exercise of any powers, duties or jurisdiction conferred by law; nor shall they be construed to limit or restrict the amount and character of data or information that may be required to be collected for the proper administration of the Act as amended.
- (b) Except as otherwise specified, the District rules are effective on the date of adoption by the Board of Directors. References to Texas Water Code Chapter 36 include subsequent revisions and are effective upon the effective date of the District Rules or upon the effective date of subsequent amendments to Texas Water Code Chapter 36.

§1.3 AMENDING RULES.

The Board may, following notice and hearing, amend the District Rules or adopt new rules from time to time.

§1.4 HEADINGS AND CAPTIONS.

The section and other headings and captions contained in the District Rules are for reference purposes only and may not affect in any way the meaning or interpretation of the District Rules.

§1.5 CONSTRUCTION OF RULES.

- (a) Unless otherwise expressly provided for in the District Rules, the past, present and future tense shall each include the other; the masculine, feminine and neuter gender shall each include the other; and the singular and plural number shall each include the other.
- (b) The verbs “may,” “can,” “might,” “should,” or “could” are used when an action is optional or may not apply in every case. The verbs “will,” “shall,” or “must” are used when an action is required. The verb “cannot” is used when an action is not allowed or is unachievable.

§1.6 SEVERABILITY.

In case any one or more of the provisions contained in the District Rules shall for any reason be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability may not affect any other Rules, or provisions hereof, and the District Rules shall be construed as if such invalid, illegal, or unenforceable rule or provision had never been contained herein.

§1.7 SAVINGS CLAUSE.

If any section, sentence, paragraph, clause, or part of the District Rules should be held or declared invalid for any reason by a final judgment of the courts of this state or of the United States, such decision or holding may not affect the validity of the remaining portions of the District Rules; and the Board does hereby declare that it would have adopted and promulgated such remaining portions irrespective of the fact that any other sentence, section, paragraph, clause, or part thereof may be declared invalid.

§1.8 COMPUTING TIME.

In computing any period of time prescribed or allowed by the District Rules, by order of the Board, or by any applicable statute, the day of the act, event, or default from which the designated period of time begins to run, is not to be included, but the last day of the period so computed is to be included, unless it be a Saturday, Sunday, or legal holiday on which the District is closed, in which event the period runs until the end of the next day that is neither a Saturday, Sunday, or a legal holiday on which the District is closed.

§1.9 TIME LIMITS.

Applications, requests, or other papers or documents required or permitted to be filed under the District Rules must be received for filing at the District, within the time limit, if any, for such filing. The date of receipt and not the date of posting is determinative.

§1.10 REGULATORY COMPLIANCE.

Where District rules and regulations are more stringent than those of other governmental entities, the District rules and regulations shall control, provided the rules and regulations are within the scope of the District’s statutory authority and are not otherwise preempted by state or federal law.

SUBCHAPTER B: RULEMAKING PROCEDURES

§1.20 PUBLIC HEARINGS ON PROPOSED RULES.

- (a) The Board shall hold at least one public hearing on proposed rules prior to adoption of the proposed rules as final rules.
- (b) The Board may direct the General Manager or any other person to serve as the presiding officer and to conduct the public hearings on the proposed rules.
- (c) Public hearings will be conducted in the manner the Board or General Manager deems most suitable to conveniently, inexpensively, and expeditiously provide a reasonable opportunity for interested persons to submit relevant data, views, or arguments, in writing or orally, on proposed rules.

§1.21 NOTICE OF PUBLIC HEARINGS ON PROPOSED RULES.

- (a) The Board will set a time and place for any public hearing on proposed rules of the District.
- (b) The General Manager shall give prior notice of the public hearing at least twenty (20) days before the public hearing by:
 - (1) posting the notice in the location where notices of the District’s Board meetings are posted;
 - (2) providing notice to the Brazoria County Clerk;
 - (3) publishing notice in one or more newspapers of general circulation in Brazoria County; and

- (4) providing notice by mail, facsimile, or electronic mail to any person who has requested notice.
- (c) The notice shall advise the public of the following:
 - (1) the time, date, and location of the rulemaking hearing;
 - (2) a brief explanation of the subject of the rulemaking hearing; and
 - (3) a location or Internet site at which a copy of the proposed rules may be reviewed or copied.

§1.22 ADOPTION OF RULES.

- (a) The Board may adopt proposed rules as final rules at any time after the completion of the public hearing(s) and after the close of a written comment period if provided by the Board.
- (b) The Board will compile its rules and make them available for public use and inspection at the District's principal office.

CHAPTER 2. DEFINITIONS

§2.1 APPLICABILITY.

- (a) The District employs two types of definitions. General definitions apply to all Rules the District. Specific definitions apply only to the chapter in which they are located. Specific definitions applying only to a particular chapter are set out in that chapter.
- (b) The District follows the definitions of terms set forth in Texas Water Code Chapter 36, the District Act and other definitions as set forth herein.

§2.2 DEFINITIONS.

Unless the context clearly indicates a contrary meaning, the following words and terms shall have the following meanings in the District Rules:

- (1) **“Abandoned well”** - a well that has not been used for six consecutive months. A well is considered to be in use in the following cases: (a) a non-deteriorated well which contains the casing, pump, and pump column in good condition; (b) a non-deteriorated relief well; or (c) a non-deteriorated well which has been capped.
- (2) **“Aggregate System”** – two or more wells that are permitted by the District for a total aggregate withdrawal.

- (3) **“Aggregate Withdrawal”** - the amount of water withdrawn from two or more wells permitted for a total pumpage volume of all wells in the aggregate.
- (4) **“Agriculture” or “Agricultural Use”** – any of the following activities:
 - (A) cultivating the soil to produce crops for human food, animal feed, or planting seed or for the production of fibers;
 - (B) the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or nonsoil media, by a nursery grower;
 - (C) raising, feeding, or keeping animals for breeding purposes or for the production of food or fiber, leather, pelts, or other tangible products having a commercial value;
 - (D) planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure;
 - (E) wildlife management; and
 - (F) raising or keeping equine animals.
- (5) **“Annular Space”** - the space between two cylindrical objects, one of which surrounds the other, such as the space between the walls of a drilled hole and the installed casing.
- (6) **“Aquifer”** - a geologic formation with water in sufficient quantities to make the production of water from this formation feasible for beneficial use.
- (7) **“Artesian Zone”** - a zone where water is confined in an aquifer under pressure so that the water will rise in the well casing or drilled hole above the bottom of the confining bed overlying the aquifer.
- (8) **“AWWA”** - American Water Works Association
- (9) **“Beneficial Use”** - the use of groundwater in a nonwasteful manner for one or more economically beneficial purposes including but not limited to agricultural use, domestic use, stock-raising, municipal use, mining, industrial use including manufacturing, commercial use, non-agricultural irrigation, recreational use, oil and gas operations, or other uses including extraction for the purposes of remediation, injection operations, or leachate operations.

- (10) “**Board**” - the Board of Directors of the Brazoria County Groundwater Conservation District.
- (11) “**Capped Well**” – a well that is closed or capped with a covering capable of preventing surface pollutants from entering the well and sustaining weight of at least 400 pounds. A well cap must be constructed in such a way that the covering cannot be easily removed by hand.
- (12) “**Casing**” – a watertight pipe installed in an excavated or drilled hole, temporarily or permanently, to maintain the hole sidewalls against caving, advance the borehole, and in conjunction with cementing or bentonite grouting, to confine the groundwaters to their respective zones or origin, or to prevent surface contaminant infiltration.
- (13) “**Cement Grout**” - a mixture of water and cement, which may also include a bentonite clay component.
- (14) “**Commercial Use**” - a well used to supply water to properties or establishments in business to provide goods or services or repairs and use water either in those processes or incidental to the maintenance of the property or establishment including landscape irrigation; or a well used to supply water to a business establishment primarily for employee and customer sanitary purposes.
- (15) “**Conservation**” - those water-saving practices, techniques, and technologies that will reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that more water is made available for future or alternative uses.
- (16) “**De-watering Well**” – an artificial excavation that is constructed to produce groundwater for the purpose of lowering the water table or potentiometric surface in order to prevent flooding in an excavation, mine, construction project, building or other economic activity and is not primarily for the purpose of utilizing the groundwater that is produced.
- (17) “**Director**” - an elected or appointed member of the Board of Directors of the Brazoria County Groundwater Conservation District.
- (18) “**Discharge**” - the volume of water that passes a given point within a given period of time.
- (19) “**District**” - the Brazoria County Groundwater Conservation District.
- (20) “**District Act**” - the District's enabling legislation, Chapter 8826, Special District Local Laws Code, in conjunction with Texas Water Code Chapter 36, as amended.

- (21) “**Domestic Use**” - the use of water by an individual or a single family unit, or household to support domestic activity inside a residence. Such use may include water for drinking, cooking, laundering, sanitation, and other personal comforts and necessities. Groundwater withdrawn from a well for domestic use may also be used for irrigation of lawns, or a family garden or orchard; for watering domestic animals; and for water recreation if such use is on the same lot or property where the well and the single family residence are located. Domestic use does not include water used to support activities for which consideration is given or received or for which the product of the activity is sold.
- (22) “**Drill**” - drilling, equipping, completing wells, or modifying the size of wells or well pumps/motors (resulting in an increase in pumpage volume) whereby a drilling or service rig must be on location to perform the activity.
- (23) “**Drilling Permit**” – a permit issued by the district authorizing a well owner or well operator to drill or otherwise construct a water well.
- (24) “**Existing Well**” - a well that was drilled and completed prior to December 31, 2006.
- (25) “**Export**” – the transfer of groundwater out of the District.
- (26) “**Export Fee**” – a fee assessed by the District for groundwater that is exported out of the District. The fee may be assessed against pumpage from permitted and unpermitted wells.
- (27) “**Export Permit**” – a permit issued by the district authorizing transfer of groundwater outside the District’s boundaries.
- (28) “**Extraction well**” - a well used to extract contaminated fluids from the subsurface for the purpose of conducting an environmental remediation.
- (29) “**Fees**” - charges imposed by the District pursuant to a Rule, an Order, or the Act.
- (30) “**Fiscal Year**” - the business year of the District beginning October 1 of each year and ending on September 30 of the following year.
- (31) “**Groundwater or Underground Water**” - water located beneath the earth's surface but does not include water produced with oil and gas production or water that is discharged from a relief well or associated piezometers.
- (32) “**Groundwater Reservoir**” - a specific subsurface water-bearing reservoir having ascertainable boundaries and containing groundwater.

- (33) “**Incidental Use**” - a beneficial use of water which is of a minor amount that is incident to but not the primary purpose of the overall water use.
- (34) “**Industrial Use**” - the use of water integral to the production of primary goods or services provided by industrial, manufacturing or commercial facilities and used primarily in the building, production, manufacturing, or alteration of a product or goods, or a well used to wash, cleanse, cool, or heat such goods or products. Industrial use includes the use of water in the generation of electricity by means other than hydroelectric, including the use of water for cooling purposes, for uses associated with plant personnel, fire protection at the facility, and in maintaining associated property and facilities including mitigation and habitat areas.
- (35) “**Injection well**” - an artificial excavation or opening in the ground made by digging, boring, drilling, jetting, driving, or some other method, and used to inject, transmit, or dispose of industrial and municipal waste or oil and gas waste into a subsurface stratum; or a well initially drilled to produce oil and gas that is used to transmit, inject, or dispose of industrial and municipal waste or oil and gas waste into a subsurface stratum; or a well used for the injection of any other fluid; but the term does not include any surface pit, surface excavation, or natural depression used to dispose of industrial and municipal waste or oil and gas waste.
- (36) “**Leachate well**” - a well used to remove leachate from soil or groundwater. For the purposes of this definition, “leachate” means a liquid that has percolated through or drained from solid waste or hazardous waste and contains soluble, suspended, or miscible materials removed from such waste.
- (37) “**Licensed Water Well Driller**” - any person who holds a license issued by the State of Texas pursuant to the provisions of the Texas Water Well Drillers Act and the substantive rules of the Texas Department of Licensing and Regulation’s Water Well Drillers and Pump Installers Program.
- (38) “**Licensed Water Well Pump Installer**” - any person who holds a license issued by the State of Texas pursuant to the provisions of the Texas Water Well Pump Installers Act and the substantive rules of the Texas Department of Licensing and Regulation’s Water Well Drillers and Pump Installers Program.
- (39) “**Meter**” - a water flow measurement device that meets AWWA standards for the applicable line size, pressures, and flows, and is properly installed according to the manufacturer’s specifications.
- (40) “**Modify**” - to alter the physical or mechanical characteristics of a well, its equipment, or production capabilities. This does not include repair of equipment, well houses or enclosures, or replacement with comparable equipment.

- (41) “**Monitoring Well**” - a well used exclusively for collecting water-quality or quantity and movement data, or water-level data. Included within this definition are environmental soil borings, piezometer wells, observation wells, and recovery wells.
- (42) “**Mean Sea Level (MSL)**” - an average sea level reference datum determined by the National Oceanic Atmospheric Administration. Used as a reference in the measurement of elevations.
- (43) “**Municipal use**” - the use of water in a public water system for residential, commercial, or public and institutional uses, including the application of potable water for irrigation of golf courses, parks and recreational uses; it does not include water for industrial uses even when industrial users are receiving potable water.
- (44) “**New Well**” - a well that is not an existing well as defined in the District Rules.
- (45) “**Nursery Grower**” means a person who grows more than 50 percent of the products that the person either sells or leases, regardless of the variety sold, leased, or grown. For the purpose of this definition, "grow" means the actual cultivation or propagation of the product beyond the mere holding or maintaining of the item prior to sale or lease and typically includes activities associated with the production or multiplying of stock such as the development of new plants from cuttings, grafts, plugs, or seedlings.
- (46) “**Open or Uncovered Well**” - an artificial excavation at least 10 feet deep and not more than six feet in diameter, that is dug or drilled either for the purpose of producing groundwater, or for injection, monitoring, or de-watering, and is not capped or covered
- (47) “**Operate or Operations**” - to produce or cause to produce water from a well or to use a well for injection or closed loop heat exchange purposes.
- (48) “**Operating Permit**” – a permit issued by the district authorizing groundwater withdrawals in the amounts and under the conditions stated in the permit.
- (49) “**Overpumpage**” - to produce water from a well in excess of the amount authorized to be withdrawn in accordance with the permitted pumpage volume issued by the District.
- (50) “**Person**” - includes a corporation, individual, organization, cooperative, government or governmental subdivision or agency, business trust, estate, trust, partnership, association, or any other legal entity.
- (51) “**Plug**” - to close a well permanently in accordance with approved District standards.

- (52) “**Potable Water**” – water that is safe for human consumption in that it is free from impurities in amounts sufficient to cause disease or harmful physiological effects.
- (53) “**Potentiometric Surface**” - the elevation to which water from a specific aquifer will rise in a well.
- (54) “**Public Water System**” – a system that provides water for human consumption as defined by the rules of the Texas Commission on Environmental Quality.
- (55) “**Pumpage or Groundwater Production**” - all groundwater withdrawn from the ground.
- (56) “**Permit Amendment**” - a minor or major change in a permit.
- (57) “**Recreational Use**” – the use of water for fishing, swimming, water skiing, boating, hunting, and other forms of water recreation, including aquatic and wildlife enjoyment, and aesthetic land enhancement of a subdivision, or irrigating a golf course or similar development.
- (58) “**Red Tag**” - an official seal, tag, or label placed on a well or its equipment, or the act of placing the tag or label, to indicate that further pumping of groundwater, or operation of the well, or continuing with other District regulated activities is not permitted by the District, will be in violation of District Rules, and may subject the well owner or well operator to civil suit or penalties.
- (59) “**Relief Well**” – an artesian well and associated piezometers used to maintain the structural integrity of a reservoir embankment system or other similar structures.
- (60) “**Remediation Well**”- means a well used to clean up, treat, or prevent contamination of underground sources of water.
- (61) “**Rules**” - standards and regulations promulgated by the District.
- (62) “**Salt dome**” – geologic structure resulting from the upward movement of a salt mass caused by gravitational instability of a low density salt layer overlain by high density layer.
- (63) “**Special Provisions**” - conditions or requirements added to a permit that may be more or less restrictive than the District Rules as a result of circumstances unique to a particular situation.
- (64) “**Spring**” - a point(s) of natural discharge from an aquifer.
- (65) “**Stratum**” - a layer of rock having a similar composition throughout.

- (66) “**Surface Completion**” - sealing off access of undesirable water, surface material, or other potential sources of contamination to the well bore by proper casing or cementing procedures.
- (67) “**Subsidence**” – sinking of a portion of the land surface resulting from removal of fluids from subsurface reservoirs such as oil and gas deposits, groundwater, or salt domes.
- (68) “**Total Dissolved Solids or (TDS)**” - a measurement of the quantity of minerals, chemicals, elements, or other matter contained in a state of solution by water.
- (69) “**User**” - a person who produces, distributes, or uses water from the aquifer(s).
- (70) “**Water Level Elevation or Altitude**” - the measure or estimate of a water surface in a well or aquifer as measured in feet relative to mean sea level.
- (71) “**Water Meter Seal**” - a physical seal that is installed in or on the water meter to prevent tampering with meter readings.
- (72) “**Water-Quality Report**” - a report prepared by the Texas Department of Health, the U.S.G.S. or any other governmentally or District-approved laboratory that is the product of testing the water for bacteria, solids, elements, chemicals, or contaminants.
- (73) “**Water Table**” - the upper boundary of the saturated zone in an unconfined aquifer.
- (74) “**Water Tight Seal**” - a seal that prohibits the entrance of liquids or solutions, including water, that may enter through the wellhead and potentially, contaminate the well.
- (75) “**Water Table Zone**” - that part of the aquifer confined only by atmospheric pressure (water levels will not rise in the well above the water table).
- (76) “**Well**” - any artificial excavation or borehole constructed for the purposes of exploring for or producing groundwater, or for injection, monitoring, or de-watering purposes.
- (77) “**Well Elevation**” - the ground surface elevation of the well bore.

- (78) “**Well Log**” - an accurately kept record made during the process of drilling on forms prescribed by the Texas Department of Licensing and Registration (TDLR), showing the depth of the well bore, thickness of the formations, character of casing installed, together with any other data or information required by the Water Well Drillers Team; or any other special purpose well log that may be available for a given well, such as a gamma ray log, a temperature log, an electric log, or a caliper log.
- (79) “**Well Pumps and Equipment**” - devices and materials used to obtain water from a well, including the seals and safeguards necessary to protect the water from contamination.
- (80) “**Well owner or well operator**” means the person who owns the land upon which a well is located or is to be located or the person who operates a well or a water distribution system supplied by a well.
- (81) “**Well Registration**” - the creation of a record of the well by use and a well identification number for purposes of registering the well as to its geographic location and for notification to the well owner or well operator in cases of spills or accidents, data collection, record keeping and for future planning purposes.
- (82) “**Withdraw or Withdrawal**” - the act of extracting groundwater by pumping or any other method, other than the discharge of natural springs.
- (83) “**Wildlife Management**” - Actively using land that at the time the wildlife management began was appraised as qualified open-space land in at least three of the following ways to propagate a sustaining breeding, migrating, or wintering population of indigenous wild animals for human use, including food medicine, or recreation:
- (A) habitat control;
 - (B) erosion control;
 - (C) predator control;
 - (D) providing supplemental supplies of water;
 - (E) providing supplemental supplies of food;
 - (F) providing shelters; or
 - (G) making census counts to determine population.

CHAPTER 3. REGISTRATION, PERMITS, FEES, AND OTHER REQUIREMENTS

SUBCHAPTER A: SCOPE AND APPLICABILITY

§3.1 REGISTRATION REQUIRED.

- (a) The Board has determined that registration of wells within the District benefits the public and supports the preservation and protection of groundwater within the District by providing detailed information regarding the size and location of wells located within the District.
- (b) Except as provided herein, all new wells within the District are required to be registered with the District by the well owner or an agent of the well owner prior to drilling, and a State Well Report must be submitted to the District within sixty (60) days of the drilling of a well. If the State Well Report is not submitted to the District within sixty (60) days of the drilling of a well, the continued operation of the well is a violation of District Rules and is subject to fines and fees in accordance with Section 10.9 of the Rules.
- (c) Temporary de-watering wells are not required to be registered with the District.

§3.2 REGISTRATION OF WELLS.

- (a) All existing wells for exempt use may be registered by the well owner or the agent of the well owner on a voluntary basis.
- (b) The well owner or well operator, the well driller or the authorized agent of the well owner or well operator shall register the well by completing a District registration application form provided by the District or by completing a District Drilling Permit application for provided by the District and submitting the completed form to the District.
- (c) It is a violation of the District's Rules to drill, equip, complete, or produce groundwater from a new well, or to operate an existing well for non-exempt use after December 31, 2006, without submitting a complete District registration form or permit application for review and approval by the District.
- (d) District staff will review the application and make a preliminary determination of whether the well meets the exemptions from permitting and will inform the registrant of their determination. If the staff's preliminary determination is that the well is exempt, the registrant may begin drilling or other activity immediately upon receiving the approved registration. If the preliminary determination is that the well is not exempt, the District staff will inform the registrant of any further application information or fees required to process the application as a permit application. If the preliminary determination is that the well is not exempt, the

well may not be drilled, equipped, completed, or substantially altered without first obtaining the appropriate permit or amendment thereto from the District.

- (e) A violation begins on the first day of such drilling, equipping, completion, production of groundwater or operation and continues each day thereafter until a complete District registration form is submitted to the District.
- (f) A registration will expire and be considered null and void by the District if the well is not drilled within one year of the date the registration is approved by the District. The registrant must file a new registration application and receive approval from the District before drilling may commence.
- (g) Well registrations do not require a hearing or Board action.

§3.3 PERMIT REQUIREMENTS.

- (a) The District shall issue the following types of permits:
 - (1) Drilling Permits;
 - (2) Operating Permits; and
 - (3) Export Permits.
- (b) A permit from the District is required prior to drilling, equipping, completing, operating, or producing groundwater from any well for non-exempt use within the District and for transporting groundwater outside the boundaries of the District. It is a violation of the District Rules for a well owner or well operator, water well driller, or any other person acting on behalf of the well owner or well operator, to drill, equip, complete, operate, or produce groundwater from a non-exempt well within the District, or transport groundwater outside the boundaries of the District without first obtaining the proper permit or permit amendment. Transport of water outside the District by a permittee that totals 5% or less (but in no case more than 5,000,000 gallons) of the permittee's annual permitted pumpage is considered incidental use.
- (c) A well must remain properly permitted unless and until the well casing or discharge pipe is capped or plugged.
- (d) An application for a permit, permit amendment, or permit renewal shall be submitted in accordance with Subchapter B of this Chapter.

§3.4 EXEMPTIONS FROM PERMITTING.

- (a) Well owners or operators are not required to have a permit to drill or operate a well for the following uses:

- (1) one new or existing water well on private property that serves no more than four single-family dwellings on the same property or adjoining properties and the groundwater is used only for domestic use;
 - (2) a new or existing water well used only for agriculture;
 - (3) one new or existing water well on private property drilled, completed, or equipped so that it is incapable of producing more than 25,000 gallons of groundwater a day and used solely for domestic use or for providing water for livestock or poultry if the well is located or to be located on a tract of land larger than 10 acres;
 - (4) a well used solely to supply water for a rig that is actively engaged in drilling or exploration operations for an oil or gas well permitted by the Railroad Commission of Texas provided that the person holding the Railroad Commission permit is responsible for drilling and operating the water well and the water well is located on the same lease or field associated with the drilling rig;
 - (5) a water well authorized under a permit issued by the Railroad Commission of Texas under Natural Resources Code Chapter 134, and to the extent the withdrawals are required for mining activities specified in the Railroad Commission permit, regardless of any subsequent use of the water;
 - (6) wells powered by windmills or hand pumps; and
 - (7) leachate wells, extraction wells, injection wells, relief wells, de-watering wells, and monitoring wells that produce less than 5,000 gallons per year.
- (b) A well exempt under Subsection (a) will lose its exempt status and the well owner or well operator must obtain a permit to continue operating the well if the well is subsequently used for a purpose or in a manner that is not exempt under Subsection (a). An exemption granted by subsection (a)(4) expires when the oil and gas drilling rig ceases operations or any groundwater is used for hydraulic fracturing treatment on an oil or gas well. A registered well on private property that serves no more than four single-family dwellings on the same property or adjoining properties and that the groundwater is used only for domestic use is not required to be permitted if a second or replacement well for exempt use was drilled on the same property or any of the adjoining properties served by that well prior to July 22, 2014.
- (c) Export Permits are not required under the following conditions:
- (1) the export of groundwater from the District for incidental use as defined in Chapter 2 of these Rules;

- (2) the export of groundwater for an agricultural operation that overlaps or is adjacent to the District boundary;
 - (3) the export of groundwater that occurs as a result of the distribution of water within a single, aggregate system of a retail public water system that overlaps the District boundary; or
 - (4) export of groundwater via a water truck or any other device that is incapable of holding more than 30,000 gallons of water.
- (d) A well owner or well operator of a well exempt under Subsection (a)(5) shall equip the well with a meter meeting the specifications provided in Chapter 4 of these Rules and shall report monthly to the District:
- (1) the total amount of water withdrawn during the month;
 - (2) the quantity of water necessary for mining activities; and
 - (3) the quantity of water withdrawn for other purposes.
- (e) In order to determine if an exemption under Subsection (a)(7) applies, the Board may require the well owner or well operator to submit information verifying the amount of annual production from the well. If the Board determines that there is no reasonable basis for determining the amount of production, the Board may require that a water meter be installed within a specified time period.
- (f) A water well exempt under Subsection (a) shall be equipped and maintained so as to conform to the District's rules requiring installation of casing, pipe, and fittings to prevent the escape of groundwater from a groundwater reservoir to any reservoir not containing groundwater and to prevent the pollution or harmful alteration of the character of the water in any groundwater reservoir.
- (g) Groundwater withdrawn under an exemption provided in accordance with this section and subsequently exported outside the boundaries of the District requires notice to the District and is subject to any applicable production and export fees.
- (h) An exemption under subsection (a)(4) and (a)(5) expires and the well must either be capped, plugged or ownership transferred to the owner of the surface estate within 90 days after the exploration or mining operations are complete and the well owner or well operator shall provide notice to the District that the capping, plugging or ownership transfer is complete.

§3.5 METER AND FEE EXEMPTIONS.

- (a) A new or existing water well on private property that serves only a single-family dwelling used only for domestic purposes is exempt from:

- (1) District fees of any type; and
- (2) District requirements that a meter be placed on the well.
- (b) A new or existing water well used only for agricultural use is exempt from:
 - (1) District fees of any type; and
 - (2) District requirements that a meter be placed on the well.
- (c) Any new or existing water well that is exempt from the permit requirements by Rule 3.4.

SUBCHAPTER B: APPLICATION REQUIREMENTS AND PROCESSING

§3.10 PREPARATION OF AN APPLICATION.

- (a) **Form of Application.** Application for a well registration, permit, permit amendment, or permit renewal shall be made on forms provided by the District. Applications shall be in writing and sworn to.
- (b) **Proper Registrant, Applicant, or Declarant.** The application must be submitted and signed by the well owner or well operator, or an authorized agent of the well owner or well operator. The agent may be required to provide the District with a notarized authorization from the landowner.
- (c) **Completeness of an Application.** An application shall be considered administratively complete if it includes all information required to be included in the application; is properly completed, and signed; is accompanied by payment of all applicable fees, including any penalties or past due fees; and includes any maps, documents, or supplementary information requested by the Board or staff. A determination of administrative completeness will be made by the General Manager.
- (d) **Action on Incomplete Applications.** The District will not take action on an application that is not administratively complete or has not proceeded in a manner consistent with District Rules. An application may be rejected as not administratively complete if the District finds that substantive information required by the application or District staff is missing, false, or incorrect. Applicants submitting incomplete applications will be notified by the District in writing.

§3.11 REQUIREMENTS FOR APPLICATIONS.

- (a) A separate application is required for each well.

(b) **Content Requirements.** An application must contain the following information in sufficient detail to be acceptable to the District:

(1) **Minimum Requirements.** All applications shall include the following:

- (A) the name, mailing address, and phone number of the applicant and the owner of the property on which the well is or will be located;
- (B) if the applicant is other than the owner of the property or authorized agent for the owner of the property, documentation establishing the applicable authority to construct and operate a well for the proposed use;
- (C) a detailed statement of the nature and purpose of the various proposed uses and the amount of groundwater proposed to be used for each purpose, including the anticipated pumpage volumes for each year of the permit term and any alternative water sources being used by the applicant;
- (D) the location of the well and the estimated maximum instantaneous rate at which water will be withdrawn from the well, and for a proposed aggregate system, a description of the system and the estimated annual pumpage for the system;
- (E) the proposed location(s) of use of the water from the well;
- (F) the proposed casing size and pump capacity;
- (G) a statement by the applicant that the water withdrawn under the permit will be put to a beneficial, non-wasteful use at all times and that the applicant will comply with all District Rules, orders, and permit provisions;
- (H) a water well closure plan or a declaration that the applicant will comply with well plugging and capping guidelines set forth in these Rules and will report well closures to the District;
- (I) a water conservation plan or a declaration that the applicant will comply with the district's management plan;

- (J) a drought contingency plan, if the applicant is required by law to have a drought contingency plan; and
 - (K) any other information deemed necessary for the evaluation of the application by the General Manager or the Board.
- (2) **Additional Requirements for Export Permit Applications.** An application for an Export Permit shall include the following additional information:
- (A) the location of the proposed receiving area for the water to be transferred and the availability of water in the district and in the proposed receiving area during the period for which the water supply is requested;
 - (B) a detailed statement of the nature and purpose of the various proposed uses in the proposed receiving area and the amount of groundwater to be used for each purpose;
 - (C) information describing the projected effect of the proposed exportation of water on aquifer conditions, depletion, subsidence, and existing permit holders or other groundwater users within the District;
 - (D) evidence that the project is included in the current approved regional water plan or State Water Plan; and
 - (E) a technical description of the facilities to be used for transportation of the groundwater and a time schedule for construction thereof.

§3.12 DEPOSITS FOR REGISTRATIONS/PERMITS.

- (a) **Deposits.** Each registration or permit application to drill a new well must be accompanied by a deposit, which will be accepted, receipted and deposited by the District. The amount of said deposit will be established from time to time by Board resolution.
- (b) **Return of Deposits.** The deposit tendered for each registration or permit application to drill a new well will be returned if:

- (1) in the case of a drilled and completed new well the registration or permit and the completed State of Texas Water Well Report are returned to the District office within the permit term;
 - (2) in the case of an abandoned location the registration or permit is returned to the District office within the permit term;
 - (3) in the case of the well not having been drilled the registration or permit is returned to the District office within the permit term; or
 - (4) the application is denied.
- (c) **Forfeiture of Deposit.** The deposit submitted for each registration or permit is forfeited when:
- (1) Drilling begins before a registration is received at the District or a permit is issued if a permit is required;
 - (2) A copy of the State well report is not submitted to the District within the permit term; or
 - (3) The registration or permit is not returned to the District within the permit term.

§3.13 SCHEDULING AND NOTICE OF HEARING ON AN APPLICATION.

- (a) **Staff Recommendation.** Once an application has been declared administratively complete by the General Manager, District staff will perform a technical review of the application and prepare a staff recommendation to the Board. The staff recommendation shall include a summary of the facts related to the application and staff's recommendations for Board action on the application.
- (b) **Scheduling of Hearing.** Unless these Rules specifically provide that a hearing is not required for an application, the General Manager or Board will schedule the application for a public hearing. The Board may preside over a hearing or may designate a hearings examiner. More than one permit application may be scheduled for consideration at a public hearing.
- (c) **Notice of Hearings.** The General Manager shall give notice of all hearings involving permit applications in the following manner:
 - (1) Notice of the date, time, and location of the hearing shall be sent to the applicant in writing at least ten calendar days before the date of the hearing by regular mail. The notice to the applicant shall include the staff recommendation on the application.

- (2) At least ten calendar days before the date of the hearing, a copy of the notice shall be posted at the District office and provided to the Brazoria County Clerk for posting at the county courthouse in the place where notices are usually posted.
- (d) **Contents of Notice.** The notice shall include:
- (1) the name of the applicant;
 - (2) the date, time, and location of the hearing;
 - (3) the address or approximate location of the well or proposed well and the proposed place of use or change in the place of use;
 - (4) a brief explanation of the proposed permit or permit amendment,
 - (5) the requested amount of groundwater withdrawals, the purpose of the proposed use or any change in use; and
 - (6) any other information the General Manager or Board deems relevant or appropriate.

§3.14 HEARING PROCEDURES.

- (a) **General Provisions.** Hearings on permit matters will be conducted by a quorum of the Board or an individual to whom the board has delegated the responsibility to preside as a hearings examiner. The board president, or another board member designated by the president, or the hearings examiner shall serve as the presiding officer for the hearing.
- (b) **Hearing Registration.** The District may require each person who attends a hearing to submit a hearing registration form stating the person's name, address, whom the person represents, and whether the person wishes to testify.
- (c) **Conduct of Hearings.** Hearings will be conducted in the manner the presiding officer deems most suitable to conveniently, inexpensively, and expeditiously provide a reasonable opportunity for interested persons to submit relevant data, views, or arguments, in writing or orally. In addition, the presiding officer may:
 - (1) convene the hearing at the time and place specified in the notice;
 - (2) set any necessary additional hearing dates;
 - (3) establish the order for presentation of evidence;
 - (4) administer oaths to all persons presenting testimony;

- (5) examine persons presenting testimony;
 - (6) limit testimony or the presentation of evidence to persons who, in the presiding officer's determination, are affected by the subject matter of the hearing;
 - (7) allow testimony to be submitted in writing and may require that written testimony be sworn to;
 - (8) ensure that information and testimony are introduced as conveniently and expeditiously as possible without prejudicing the rights of any party; and
 - (9) prescribe reasonable time limits for testimony and the presentation of evidence.
- (d) **Continuance.** The presiding officer may continue a hearing from time to time and from place to place without providing any additional notice by announcing at the hearing the time, date, and location of the continued hearing.
- (e) **Recording.** The District shall prepare and keep a record of each hearing in the form of either minutes, or audio or video recording, or court reporter transcription, or the report described by Subsection (f) of this section. If a hearing is transcribed at the request of a party to the hearing, the presiding officer may assess the costs associated with producing the transcript to one or more parties. If a hearing involves a contested application, then the District shall keep a record of the hearing in the form of audio or video recording or a court reporter transcription.

§3.15 ACTION ON APPLICATIONS.

- (a) Before granting or denying a permit, in whole or in part, the District shall consider whether the application conforms to the requirements prescribed by these Rules and Texas Water Code Chapter 36 and is accompanied by the prescribed fees and whether the applicant is in compliance with the District's rules.
- (b) In determining whether to issue a permit, and in setting the terms and provisions of the permit including the maximum authorized withdrawal, the District shall consider the purposes of the District and may consider all other relevant factors, including, but not limited to:
 - (1) the amount and purposes of use for which water is needed;
 - (2) whether the proposed use of water is dedicated to a beneficial, non-wasteful use;

- (3) whether the proposed use of water is consistent with the District's certified groundwater management plan and any applicable spacing requirements, production limits, and drought restrictions;
 - (4) the projected effect of the proposed use on aquifer conditions, including depletion, subsidence, spring flow, impacts on groundwater quality, or effects on existing permit holders or other groundwater users within the District;
 - (5) whether the applicant has agreed that reasonable diligence will be used to conserve water and protect groundwater quality and that the applicant will follow well plugging guidelines at the time of well closure; and
 - (6) whether the applicant is in compliance with all applicable District rules.
- (c) The District shall make a written determination granting or denying, in whole or in part, the application.

§3.16 TERM OF PERMITS.

- (a) Permit terms are as follows:
 - (1) A drilling permit shall be considered null and void by the District if the well is not drilled within twelve months of the date the permit is issued. The applicant must file a new permit application and obtain a new permit before drilling may commence. A Drilling Permit authorizes groundwater production from the date the well is drilled until the expiration of the permit term.
 - (2) Operating Permits are effective for a term of one year, unless otherwise stated on the permit. The Board may issue an operating permit with a term longer than one year, but not to exceed five years, when doing so aids the District in the performance of its duties and accomplishing the goals of the Act. The Board may issue an operating permit with a term of less than one year for the purpose of causing the permit to align with a renewal schedule established by the Board.
 - (3) Export Permits are effective for a term of three years if construction of a conveyance system has not been initiated prior to the issuance of the permit; or 30 years if construction of a conveyance system has been initiated prior to the issuance of the permit. A permit issued for a 3-year permit term shall automatically be extended to 30 years if construction of a conveyance system is begun before the expiration of the initial 3-year term.
- (b) The permit term will be shown on the permit.

§3.17 PERMIT ISSUANCE AND FORMAT.

- (a) **Permit Contents.** The permit shall include the following information in a format approved by the General Manager:
- (1) the name and address of the person to whom the permit is issued;
 - (2) the state well number or District-assigned well number for the well;
 - (3) the date the permit is issued;
 - (4) the date the permit is to expire;
 - (5) the location of the well(s);
 - (6) the maximum withdrawal authorized during the permit term;
 - (7) the type or purpose(s) of use of the groundwater;
 - (8) the place of use of the groundwater;
 - (9) a requirement that the water withdrawn under the permit be put to a beneficial use at all times;
 - (10) any other conditions, provisions, or restrictions the District prescribes;
and
 - (11) any other information the District deems necessary.
- (b) **Corrections or Administrative Modifications.** The General Manager, on his own or at the request of the permittee, may make non-substantive corrections or administrative modifications to any permit either by reissuing the permit or by issuing an endorsement to the permit, without observing formal amendment or public notice procedures. The General Manager must notify the permittee and file a copy of the endorsement or corrected permit in the District's official records.

§3.18 PERMIT CONDITIONS.

- (a) All permits are granted subject to these Rules, orders of the Board, and the laws of the State of Texas. Each permit issued shall be subject to the following conditions:
- (1) The permit is granted in accordance with the provisions of Chapter 8826, Special District Local Laws Code, ("District Act") in conjunction with Texas Water Code Chapter 36, and the Rules and orders of the District, and acceptance of the permit constitutes an

acknowledgment and agreement that the permittee will comply with all the terms, provisions, conditions, requirements, limitations, and restrictions embodied in the permit and with the Rules and orders of the District.

- (2) The permit confers no vested rights in the holder. The permit may be revoked or suspended or its conditions may be modified or amended pursuant to the requirements of the District Act and any applicable Rules and orders of the District. Upon the sale of the well covered by the permit, written notice must be given by the permittee to the District within 90 days after the closing.
- (3) The drilling and operation of the well for the authorized use shall be conducted in such a manner as to avoid waste, pollution, or harm to the aquifer.
- (4) The permittee shall maintain records indicating the amount of groundwater withdrawn each month, the purpose of the withdrawal, and the total amount of water exported, if any. Such records shall be available for inspection by District representatives. Monthly use shall be reported to the District. Written notice shall be given to the District in the event a withdrawal exceeds the quantity authorized by the permit.
- (5) The well site shall be reasonably accessible to District representatives for inspection. The permittee agrees to cooperate fully in any reasonable inspection of the well site and related monitoring or sampling by District representatives.
- (6) The application pursuant to which a permit has been issued is incorporated in the permit, and the permit is granted on the basis of and contingent upon the accuracy of the information supplied in that application and in any amendments thereof. A finding that false information has been supplied shall be grounds for immediate revocation of the permit. In the event of conflict between the provisions of the permit and the contents of the application, the provisions of the permit shall control.
- (7) Driller's logs must be submitted to the District within sixty (60) days of the drilling of a well. Failure to submit a driller's log will be grounds for revocation of a permit.
- (8) Violation of the permit's conditions, requirements, or special provisions, including pumping amounts in excess of authorized withdrawal, is a violation of the District Rules and shall be punishable by civil penalties as provided by the District Act and these Rules. Each day a violation continues is a separate violation, and each day pumping continues after

reaching the amount authorized to be withdrawn on the permit constitutes a separate violation.

- (9) If special provisions on a permit are inconsistent with other provisions or regulations of the District, the special provisions shall prevail.
- (10) Public water system permittees should maintain at least 85 percent accountability. If losses or unaccounted for water exceeds 15 percent, the District may require the public water system permittee to submit a report to the District outlining the steps the permittee will take to improve system accountability. Unaccounted for water is presumed to be waste unless the permittee can provide evidence the water was put to a beneficial use.
- (b) In addition to the standard permit provisions, the Board may add special permit provisions to address specific circumstances for that permit or pumping location.
- (c) If at any time the board receives evidence that an operating well or well system is causing harm to the aquifer or neighboring properties, causing unreasonable off-site impacts, causing subsidence, the Board may, on its own motion, reopen the permit for additional hearings. At the conclusion of the hearing the Board may revoke, suspend, terminate, cancel, modify or amend the permit in whole or in part as needed to alleviate the harm.

§3.19 PERMIT RENEWAL.

- (a) Well owners or well operators shall make application to renew permits required under these Rules prior to the expiration of the permit term on an abbreviated form provided by the District. The well owner or well operator shall indicate on the renewal application form whether any changes to the well, well operations, purpose of use, or special conditions have occurred.
- (b) Permit renewals may be approved by the General Manager without notice or hearing if the amount of authorized withdrawal remains the same or decreases and the conditions of operation listed in the permit have not changed, or the General Manager may refer the permit renewal to the Board.
- (c) If the well owner or well operator seeks to increase the amount of authorized withdrawal, or otherwise change any of the permit conditions in the renewal application, the application will be scheduled for a hearing and consideration by the Board.
- (d) If aquifer conditions at or near the well or well field indicate excessive drawdown or subsidence, the Board may renew the permit at a lower authorized withdrawal or with additional special provisions either limiting the rate of withdrawal or requiring other adjustments to mitigate the impact of the

groundwater withdrawals. The Board may consider waivers signed by landowners affected by the aquifer drawdown in setting the special permit provisions. A permittee may contest any special provision or other change made by the Board as part of a permit renewal.

§3.20 PERMIT AMENDMENTS.

- (a) It is a violation of these Rules for a permittee to violate any condition, provision, or restriction contained in a permit issued by the District. A permittee must apply for and receive an amendment to their permit prior to changing any term, provision, or restriction in the permit.
- (b) **Amendment Types.**
 - (1) Minor amendments include a request to:
 - (A) change the name or address of the well owner or well operator without any change in use;
 - (B) decrease the maximum authorized withdrawal;
 - (C) convert two or more wells individually permitted by the same permittee into an aggregate system under one permit.
 - (2) All other amendments, including all amendments to permits involving the export of groundwater, are major amendments.
- (c) Minor amendments may be granted by the General Manager without notice, hearing, or further action by the Board. If two or more minor amendments are requested during any permit term for an increase in maximum authorized withdrawal, and the combined increase in volume requested in the amendments exceeds the limits described in Subsection (b) for minor amendments, then the amendment will be considered a major amendment. Minor amendments considered by the General Manager will be reported to the Board at a board meeting.
- (d) Major amendments shall be subject to all the requirements and procedures applicable to issuance of a new permit for a new well.
- (e) An application for permit amendment shall be made on forms supplied by the District and must be accompanied by any applicable application processing fee established by the Board. No application processing fee will be required from permittees requesting a decrease in maximum authorized withdrawal.
- (f) An amendment to change the name of a well owner must be submitted within 90 days of the transfer of ownership, and the owner's name on file with the

District shall be responsible for all forms, reports and fees due until the District approves the amendment.

§3.21 PERMIT REVOCATION, CANCELLATION, OR MODIFICATION.

- (a) A permit is not a vested right of the holder.
- (b) After notice and an opportunity for hearing, a permit may be revoked, suspended, terminated, canceled, modified, or amended in whole or in part for cause, including, but not limited to (i) violation of any conditions of the permit, (ii) obtaining the permit by misrepresentation or failure to disclose relevant facts, or (iii) failure to comply with any applicable Rules, regulations, fee schedule, special provisions, requirements, or orders of the District. The permittee shall furnish to the District upon request, and within a reasonable time, any information to determine whether cause exists for revoking, suspending, terminating, canceling, modifying, or amending a permit.

§3.22 AGGREGATION.

- (a) In issuing a permit, the authorized withdrawal for a given well may be aggregated, at the discretion of the District, with the authorized withdrawal from other permitted wells designated by the District. The geographic location of each well and integrated distribution systems will be considered in determining whether or not to allow aggregation of withdrawal of groundwater.
- (b) For the purpose of categorizing wells by the amount of groundwater production, when wells are permitted with an aggregate withdrawal, the aggregate value shall be assigned to the group, rather than allocating to each well its prorated share or estimated production. .

§3.23 TEMPORARY APPROVALS.

- (a) **Basis for Temporary Permit.** Upon application to the District, the General Manager may issue a temporary permit that authorizes the withdrawal of water from a well not currently drilled or permitted, or from a permitted well that has already pumped the full amount authorized by the permit.
- (b) **Action on Request.** The General Manager may rule on any application for a temporary permit without notice, hearing, or further action by the Board, or with such notice and hearing as the General Manager deems practical and necessary under the circumstances. The General Manager may deny an application for a temporary permit on any reasonable ground, including, but not limited to, a determination that the applicant is currently in violation of these Rules or Texas Water Code Chapter 36, that the applicant has a previously unresolved violation on record with the District, or that the application does not meet the requirements of this Rule. Written notice of the ruling shall be given to the applicant, and any temporary permit granted shall include a statement that

the permittee is drilling the well at their own risk and granting the temporary permit does not bind the Board or District regarding a final decision on the application for a permit. Any applicant may appeal the General Manager's ruling by filing, within ten business days of the General Manager's ruling, a written request for a hearing before the Board. The Board will hear the applicant's appeal at the next available regular Board meeting.

- (c) **Board Notification.** The General Manager shall inform the Board of any temporary permits granted by placing any such requests on the next available Board agenda. On the motion of any Board member, and a majority concurrence in the motion, the Board may overrule the action of the General Manager.
- (d) **Term of Temporary Permit.** No temporary permit may be issued unless an application for a permit issued under Section 3.14 has been filed with the District addressing the same well. The term of any temporary permit issued by the General Manager under this rule shall extend only until the Board makes a final decision on the application for the permit.

§3.24 FINAL DECISION; APPEAL.

- (a) **Board Action.** After the record is closed and a permitting matter is submitted to the Board, the Board may take the matter under advisement, continue it from day to day, reopen or rest the matter, refuse the action sought, grant the action sought in whole or part, or take any other appropriate action. Board action takes effect at the conclusion of the meeting in which the Board took the action and is not affected by a request for rehearing.
- (b) **Requests for Rehearing.** A decision of the Board made under this Rule may be appealed by requesting a rehearing before the Board within 20 calendar days of the Board's decision. Such a rehearing request must be filed at the District Office in writing and must state clear and concise grounds for the request. Such a rehearing request is mandatory with respect to any decision or action of the Board before an appeal may be brought. The Board's decision is final if no request for rehearing is made within the specified time, upon the Board's denial of the request for rehearing, or upon the Board's rendering of a decision after rehearing. If the rehearing request is granted by the Board, the date of the rehearing will be within 45 calendar days thereafter unless otherwise agreed to by the parties to the proceeding. The failure of the Board to grant or deny a request for rehearing within 90 calendar days of the date of submission will be deemed to be a denial of the request.

- (c) **Requests for Rehearing of a Contested Case Hearing.** For any matter considered during a contested case hearing, only a party to the contested case proceeding may file a motion for rehearing. On or before the date of filing of a motion for rehearing, the party filing the motion shall mail or deliver a copy of the motion to all parties with certification of service furnished to the District. The motion shall contain:
- (1) the name and representative capacity of the person filing the motion;
 - (2) the style and official docket number assigned by the hearings examiner;
 - (3) the date of the decision or order; and
 - (4) the grounds for the motion, including a concise statement of each allegation of error.
- (d) **Costs of Record on Appeal.** A party who appeals a final decision in a contested case shall pay all costs of preparation of the record of the proceeding that is required to be transmitted to the reviewing court. A charge imposed is considered to be a court cost and may be assessed by the court in accordance with the Texas Rules of Civil Procedure.
- (e) **Appeal of Final Decision.** Not later than the 60th day after the date on which the decision became final and appealable, parties affected by the final decision of the Board in a contested case may file suit under Tex. Water Code § 36.251, to appeal the decision. A party may not file suit if a motion for rehearing was not timely filed. The record in a contested case hearing shall include the following:
- (1) all pleadings, motions and intermediate rulings;
 - (2) evidence received or considered;
 - (3) a statement of matters officially noticed;
 - (4) questions and offers of proof, objections and rulings on them;
 - (5) summaries of the results of any conferences held before or during the hearing;
 - (6) proposed findings, exceptions and briefs;
 - (7) any decision, opinion or report issued by the hearings examiner;
 - (8) pre-filed testimony;

- (9) all memoranda or data submitted to or considered by the hearings examiner; and
- (10) the final order and all interlocutory orders.

§3.25 APPLICABILITY.

Contested case hearings may be requested in connection with the following applications:

- (1) drilling permits;
- (2) operating permits;
- (3) export permits; and
- (4) major amendment to any existing permit.

§3.26 PROCEDURAL OPTIONS AVAILABLE TO APPLICANTS.

- (a) Applicants filing applications subject to a contested case hearing may respond to the proposed action of the General Manager in the following manner:
 - (1) if the applicant agrees with the proposed action, and no other affected person requests a contested case hearing, and the matter will be taken directly to the Board for final action as an uncontested matter;
 - (2) if the applicant disagrees with the proposed action, and no other affected person requests a contested case hearing, the applicant may offer to settle the matter. If the matter is settled, the application may be taken directly to the Board for final action. If the matter is unable to be settled, the application may be taken directly to the Board for final action as a contested matter, although one not referred to contested case hearing. The applicant, General Manager, and other affected persons may present their respective positions to the Board and allow the Board to take final action at the Board meeting without a contested case hearing; or
 - (3) file a notice of request for contested case hearing.
- (b) The Board will process the third-party request by first determining if the person has a personal justiciable interest in the application. In the event a third-party request is filed and approved, any settlement under one of the alternatives in Subsection (a) requires the consent of the third-party protestant.
- (c) Applicants choosing not to file a request for a contested case hearing and instead pursue one of the alternatives in Subsection (a), waive any right to a contested case hearing upon the expiration of the filing deadline.

- (d) The Board is not bound by a settlement agreed to by the parties.

§3.27 PERSONS ENTITLED TO A CONTESTED CASE HEARING.

The following persons or entities have a personal justiciable interest in, and are entitled to a contested case hearing on, applicable applications:

- (a) the applicant for the permit being contested;
- (b) a landowner that may be adversely impacted if the protested application is granted.

§3.28 REQUESTS FOR CONTESTED CASE HEARING.

- (a) A request for a contested case hearing must be in writing and be filed on the date noticed for the public hearing before the end of the hearing, regardless of any continuance of the public hearing.
- (b) A contested case hearing request must substantially comply with the following:
 - (1) give the name, address, daytime telephone number, and fax number, of the person filing the request. If the request is made by a corporation, partnership, or other business entity, the request must identify the entity and one person by name, address, daytime telephone number, and fax number, who shall be responsible for receiving all official communications and documents for the entity;
 - (2) state the basis upon which the person believes that a contested case hearing is appropriate;
 - (3) state whether the person requesting the contested case hearing is the applicant for that permit, holder of another groundwater withdrawal permit, or owner of a registered well.
 - (4) request a contested case hearing;
 - (5) provide any other information requested in the notice of proposed action and technical summary; and
 - (6) be verified by an affidavit.
- (c) Where a request for a contested case hearing is filed by a person other than the applicant, a copy of that request must be served on the applicant at or before the time that the request is filed. The request shall include a certificate indicating the date and manner of service and the name and address of all persons served.

- (d) If a person is requesting a contested case hearing on more than one application, a separate request must be filed in connection with each application.

§3.29 PROCESSING OF HEARING REQUESTS.

- (a) If a complete hearing request is timely filed, District staff will schedule the hearing request for consideration by the Board.
- (b) At least 20 days prior to a meeting at which the Board will consider the request, District staff will provide notice to the applicant, General Manager and any persons who filed a timely hearing request.
- (c) Affected persons may submit a written response to the hearing request no later than 10 days before a Board meeting at which the Board will evaluate that request. Responses must be filed with the District and served on the General Manager, the applicant and any other persons who timely filed a hearing request in connection with that matter.
- (d) The person requesting a hearing may submit a written reply to a response no later than 5 days before the scheduled Board meeting at which the Board will evaluate the hearing request. All replies shall be filed with the District and served on the same day on the General Manager, the applicant, and any other person who timely filed a hearing request.
- (e) The Board may refer the hearing request to SOAH instead of scheduling the hearing before the Board. Following the hearing, SOAH will provide a proposal for decision to the Board of Directors for action by the Board.

§3.30 ACTION BY BOARD.

- (a) The determination of whether a hearing request should be granted is not a contested case hearing.
- (b) The Board will evaluate the hearing request at a scheduled Board meeting and may determine that the person requesting the hearing:
 - (1) does not have a personal justiciable interest not common to the general public affected by the application and deny the hearing request; or
 - (2) has a personal justiciable interest relating not common to the general public affected by the application and schedule the application for a contested case hearing.
- (c) If the Board grants the request for a contested case hearing, the Board shall assign a Hearings examiner or delegate the matter to SOAH. The Hearings examiner shall:

- (1) schedule a preliminary hearing;
 - (2) at least 21 days after the preliminary hearing, schedule an evidentiary hearing; and
 - (3) following the evidentiary hearing, prepare a proposal for decision including proposed findings of fact and conclusions of law, and transmit that proposal to the Board.
- (d) The Board shall schedule a final hearing where it will consider the evidence and testimony presented during the evidentiary hearing and the hearings examiner's proposal for decision.
- (e) Following the final hearing, the Board may:
- (1) grant the application;
 - (2) grant the application with conditions; or
 - (3) deny the application.

§3.31 DELEGATION TO SOAH.

- (a) By order, the Board may delegate to SOAH the authority to conduct hearings designated by the Board.
- (b) If the Board refers a contested case hearing to SOAH, then the applicable rules of practice and procedure of SOAH (1 TEX. ADMIN. CODE Ch. 155) govern any contested case hearing of the District, as supplemented by this subchapter.
- (c) If the Board refers a contested case hearing to SOAH, the administrative law judge who conducts the contested case hearing shall serve as the hearings examiner and consider applicable District rules and policies in conducting the hearing. However, the District may not supervise the administrative law judge.
- (d) If the Board refers a contested case hearing to SOAH, the District may not attempt to influence the findings of facts or the administrative law judge's application of the law in a contested case hearing except by proper evidence and legal argument.
- (e) If requested by the applicant or other party to a contested case, a district shall contract with the State Office of Administrative Hearings to conduct the hearing. The party must file such a request not later than the 14th day before the date the evidentiary hearing is scheduled to begin. The Board order granting the contested case hearing may designate a location for the hearing inside the boundaries of the District or in Travis County at a location designated by SOAH. The party requesting the hearing before the SOAH shall pay all costs

associated with the contract for the hearing and shall, before the hearing begins, deposit with the district an amount sufficient to pay the contract amount. At the conclusion of the hearing, the district shall refund any excess money to the paying party.

§3.32 SERVICE OF DOCUMENTS.

- (a) For any document filed with the hearings examiner in a contested case, the person filing that document must serve a copy on all parties.
- (b) A document presented for filing must contain a certificate of service indicating the date and manner of service and the name and address of each person served. The District may authorize a document to be filed without a certificate of service but will require the certificate be served within three days thereafter.

§3.33 CONTINUANCES.

- (a) The hearings examiner may continue a contested case from time to time and from place to place.
- (b) When continuing a contested case hearing, the hearings examiner shall provide notice to all parties of the times and places at which the hearing will be continued.
- (c) If a contested case hearing is not concluded on the day it begins, the hearings examiner shall, to the extent possible, proceed with the hearing on each subsequent working day until the hearing is concluded.
- (d) Parties to a contested case hearing, with the approval of the hearings examiner, may agree to modify any time limit prescribed by these rules related to conducting contested case hearings.

§3.34 DESIGNATION OF PARTIES.

The following are parties in all contested cases:

- (1) the General Manager;
- (2) the applicant; and
- (3) a person who is granted a contested case hearing by Board action.

§3.35 DISCOVERY.

Discovery in contested case proceedings will be governed by Chapter 2001, Subchapter D, TEX. GOV'T CODE and Title 1, Section 155.31, TEX. ADMIN. CODE, as

supplemented by this subchapter. Depositions in a contested case shall be governed by TEX. GOV'T CODE §§ 2001.096-2001.102.

§3.36 EXPENSES OF WITNESS OR DEPONENT.

- (a) A witness or deponent in a contested case who is not a party and who is subpoenaed or otherwise compelled to attend a hearing or a proceeding to give a deposition or to produce books, records, papers, or other objects that may be necessary or proper for the purposes of the contested case, is entitled to receive:
 - (1) 10 cents for each mile for going to and returning from the place of the hearing or deposition if the place is more than 25 miles from the person's place of residence and the person uses the person's personally owned or leased motor vehicle for the travel;
 - (2) reimbursement of the transportation expenses of the witness or deponent for going to and returning from the place where the hearing is held or the deposition is taken, if the place is more than 25 miles from the person's place of residence and the person does not use the person's personally owned or leased motor vehicle for the travel;
 - (3) reimbursement of the meal and lodging expenses of the witness or deponent while going to and returning from the place where the hearing is held or deposition is taken, if the place is more than 25 miles from the person's place of residence; and
 - (4) \$10 for each day or part of a day that the person is necessarily present.
- (b) Amounts required to be reimbursed or paid shall be reimbursed or paid by the party at whose request the witness appears or the deposition is taken.
- (c) The District may directly pay a commercial transportation company for the transportation expenses or a commercial lodging establishment for the lodging expenses of a witness or deponent if this section otherwise requires the District to reimburse the witness or deponent for those expenses.
- (d) The District may not pay a commercial transportation company or commercial lodging establishment or reimburse a witness or deponent for transportation, meal, or lodging expenses at a rate that exceeds the maximum rates provided by law for state employees. The District may not adopt rules that provide for payment or reimbursement rates that exceed those maximum rates.
- (e) In this section:
 - (1) **“Commercial lodging establishment”** means a motel, hotel, inn, apartment, or similar entity that offers lodging to the public in exchange for compensation.

- (2) “Commercial transportation company” means an entity that offers transportation of people or goods to the public in exchange for compensation.

§3.37 EVIDENTIARY MATTERS.

- (a) Evidence that is irrelevant, immaterial, or unduly repetitious shall be excluded.
- (b) The rules of privilege recognized by law shall be given effect.
- (c) An objection to an evidentiary offer may be made and shall be noted in the record.
- (d) Evidence may be received in writing if:
 - (1) it will expedite the hearing; and
 - (2) the interests of the parties will not be substantially prejudiced.
- (e) A copy or excerpt of documentary evidence may be received if an original document is not readily available. On request, a party shall be given an opportunity to compare the copy or excerpt with the original document.
- (f) A party may conduct cross-examination required for a full and true disclosure of the facts.
- (g) Witnesses shall be sworn and their testimony taken under oath.
- (h) Official notice may be taken of:
 - (1) all facts that are judicially cognizable; and
 - (2) generally recognized facts within the area of the District’s specialized knowledge. Each party shall be notified either before or during the hearing, or by reference in a preliminary report or otherwise, of the material officially noticed, including staff memoranda or information. Each party is entitled to an opportunity to contest material that is officially noticed. The special skills or knowledge of District staff may be used in evaluating the evidence.

§3.38 DEPOSITIONS AND SUBPOENAS.

- (a) On the written request of a party, and on deposit of an amount that will reasonably ensure payment of the estimated total amount, the Board will issue a commission, addressed to the officers authorized by statute to take a deposition, requiring that the deposition of a witness be taken for a contested matter

pending before it. Requests for issuance of commissions requiring deposition or subpoenas in a contested case will be in writing and directed to the Board.

- (b) A party requesting the issuance of a commission requiring deposition or a subpoena will file an original of the request with the District. District staff will arrange for the request to be presented to the Board at its next meeting.
- (c) In the case of a deposition, the Board will issue a commission addressed to the officer authorized by statute to take a deposition, requiring that the deposition of a witness be taken. The commission shall authorize the issuance of any subpoena necessary to require that the witness appear and produce, at the time the deposition is taken, books, records, papers or other objects that may be necessary and proper for the purpose of the proceeding. Additionally, the commission will require the officer to whom it is addressed to examine the witness before the officer on the date and at the place named in the commission; and take answers under oath to questions asked the witness by a party to the proceeding, the District, or an attorney for a party or the District. The commission will require the witness to remain in attendance from day to day until the deposition is begun and completed.
- (d) In the case of a hearing, if good cause is shown for the issuance of a subpoena, and if an amount is deposited that will reasonably ensure payment of the amounts estimated to accrue, the District will issue a subpoena addressed to the sheriff or to a constable to require the attendance of a witness or the production of books, records, papers or other objects that may be necessary or proper for the purpose of the proceeding.

§3.39 EX PARTE COMMUNICATIONS.

- (a) For applications for which there is a right to a contested case hearing, a member of the Board may not, at any time after a contested case hearing request regarding the application has been filed and before the Board has taken final action, communicate, directly or indirectly, about any issue of fact or law with any representative of the District or other designated party to the application, except on notice and opportunity for all parties to participate.
- (b) Subsection (a) does not apply if:
 - (1) the Board member abstains from voting on a matter in which he or she engaged in ex parte communications;
 - (2) the communications are by and between members of the Board consistent with the Texas Open Meetings Act;
 - (3) the communications are with District staff who have not participated in any hearing in the contested case for the purpose of using the special skills or knowledge of the staff in evaluating the evidence; or

- (4) the communications are with legal counsel representing the Board of Directors.

§3.40 REMAND TO BOARD.

- (a) A hearings examiner may remand an application to the Board as follows:
 - (1) all timely hearing requests have been withdrawn;
 - (2) all parties to a contested case reach a settlement so that no facts or issues remain controverted; or
 - (3) the party or parties requesting the hearing defaults.
- (b) After remand, the application will be uncontested, and the applicant will either be deemed to have agreed to the action proposed by the General Manager or, if the parties have reached a settlement agreement, the agreement will be presented to the Board for its consideration. District staff will set the application for consideration at a Board meeting.

§3.41 INFORMAL DISPOSITIONS AND ALTERNATIVE DISPUTE RESOLUTION.

- (a) An informal disposition of a contested case may be made by:
 - (1) stipulation;
 - (2) agreed settlement;
 - (3) consent order; or
 - (4) default.
- (b) The hearings examiner may require the parties enter into mediation or other alternative dispute resolution process. The hearings examiner may also determine how the costs of the alternative dispute procedure shall be apportioned among the parties, and appoint an impartial third party as provided by Section 2009.053, Government Code, to facilitate that procedure.

§3.42 CERTIFIED QUESTIONS.

- (a) At any time during a contested case proceeding, on a motion by a party or on the hearings examiner's own motion, the hearings examiner may certify a question to the Board.
- (b) Issues regarding District policy, jurisdiction, or the imposition of any sanction by the hearings examiner that would substantially impair a party's ability to

present its case are appropriate for certification. Policy questions for certification purposes include, but are not limited to:

- (1) the District's interpretation of its rules and applicable statutes;
 - (2) the portion of the Act, the District rules, or other statutes that are applicable to a proceeding; and
 - (3) whether District policy should be established or clarified as to a substantive or procedural issue of significance to the proceeding.
- (c) If a question is certified, the hearings examiner shall submit the certified issue to the District. District staff will place the certified issue on the agenda of a meeting of the Board. The District will give the hearings examiner and parties 30 day notice of the meeting at which the certified question will be considered. Within ten days after the certified question is filed with the District, parties to the proceeding may file briefs. Within ten days of the filing of such briefs, parties may file responses. Briefs and responses shall be filed with the District with copies served on the hearings examiner. The District will provide copies of the certified questions and any briefs and responses to the Board. The hearings examiner may abate the hearing until the District answers the certified question, or continue with the hearing if the hearings examiner determines that no party will be substantially harmed.
- (d) The Board will take action and issue a written decision on the certified issue and provide copies to the parties and the hearings examiner. A decision on a certified issue is not subject to a motion for rehearing, appeal or judicial review prior to the issuance of the District's final decision in the proceeding.

§3.43 SCHEDULING OF A MEETING OF THE BOARD.

- (a) After receiving the proposal for decision or other disposition from the hearings examiner, District staff shall schedule the presentation of the proposal to the Board. The District shall provide 10 day notice to the parties of the date of the final hearing before the Board at which the proposal will be presented and considered. The Board may reschedule the presentation of the proposal. The District will send notice of the rescheduled meeting date to the parties no later than 10 days before the rescheduled meeting.
- (b) Any party to the contested case hearing may make an oral presentation at the Board meeting in which the proposal for decision in that case is presented to the Board.
- (c) On the written request of a party to a contested case, the oral proceedings before the Board at which the proposal for decision is presented and oral presentations are made, may be transcribed by a court reporter. The costs will be equally

divided between all parties requesting a transcript. If the District desires a transcript it will bear the costs.

§3.44 REOPENING THE RECORD.

The Board, on the motion of any party to a contested case or on its own motion, may order the hearings examiner to reopen the record for further proceedings on specific issues in dispute if the Board determines there is additional evidence that is highly significant and that there is sufficient reason for the failure to present it during the contested case hearing. The order shall include instructions as to the subject matter of further proceedings and the hearings examiner's duties in preparing supplemental materials or revised proposals based upon those proceedings for the Board's adoption.

§3.45 DECISION IN A CONTESTED CASE.

- (a) The decision, if adverse to any party, must be in writing or stated in the record and will include findings of fact and conclusions of law separately stated.
- (b) Findings of fact may be based only on the evidence and on matters that are officially noticed. If set forth in statutory language, findings of fact must be accompanied by a concise and explicit statement of the underlying facts supporting the findings.
- (c) If a contested case is presided over by a majority of the Board, then the Board's decision shall be rendered not later than the 60th day after the date on which the hearing is finally closed. If the Board refers a contested case to SOAH, then the Board's decision will be rendered no more than 60 days after the date that the proposal for decision is presented at a final hearing, unless the Board determines that there is good cause for extending the deadline.
- (d) District staff will notify all parties in a contested case of any decision or order.
- (e) District staff will send a copy of the decision in a contested case to attorneys of record, or the parties.
- (f) A party or attorney of record notified by mail is presumed to have been notified on the third day after the date on which the notice is mailed.

SUBCHAPTER C: REQUIREMENTS OF WELL OWNERS AND WELL OPERATORS

§3.50 REPORTS.

(a) Pumpage and Export Reports.

- (1) Each permit holder shall maintain records of monthly production from each permitted well, including all information required by Section 3.17(4).
- (2) Any entity holding a permit issued by the Railroad Commission of Texas under Texas Natural Resources Code Chapter 134 that authorizes the drilling of a water well shall report annually to the District:
 - (A) the total amount of water withdrawn each month;
 - (B) the quantity of water necessary for mining activities;
 - (C) the quantity of water withdrawn for other purposes; and
 - (D) The Report shall include, if it has not already been provided to the District, the driller's log, a description of the casing and pumping equipment, and the capacity of the well.

(b) Water Quality Reports.

If a public water system is required by the TCEQ to notify its customers that water fails to meet TCEQ standards, the permittee shall immediately notify the District by submitting a copy of the TCEQ's report.

§3.51 FEES AND PAYMENT OF FEES.

- (a) Application, Registration, and other Administrative Fees. The Board shall establish a schedule of administrative fees by resolution. The Board will attempt to set fees at an amount that does not unreasonably exceed the cost to the District of performing the function for which the fees are charged. Such costs may include maintenance of a fund balance for contingencies. Wells used by the District solely for monitoring purposes are exempt from application fees, registration fees, and well log deposits.
- (b) Export fees. The District may establish an export fee in accordance with the District Act. The export fee rate will be established by Board resolution and the fee rate will be included in the District's fee schedule. Export fees only apply to the amount of groundwater exported as authorized by an Export Permit.

- (c) Production Fees. The District may establish a production fee in accordance with the District Act. The Production Fee Rate will be established by Board resolution and the fee rate will be included in the District's fee schedule. The production fee shall be charged on the authorized amount of withdrawal on a permit.
- (1) The validity of any permit issued by the District is contingent upon payment by the permittee of the applicable production fee. Payment shall be made upon receipt of a production fee statement.
 - (2) If the production fee is not received by the District within 30 calendar days of the date of the production fee statement, the permit shall be null and void, and the District may proceed with enforcement action as provided in these Rules.
 - (3) For permittees subject to payment of production fees in excess of \$10,000, the Board may allow the permittee to pay the production fees through a promissory note or other legally binding agreement. The permittee must execute a promissory note or other agreement and pay 25 percent of the full amount within 30 calendar days of the date of the production fee statement. The promissory note or other agreement must provide for the remaining 75 percent of the production fee to be paid in three equal installments as follows: 25 percent due and payable within 90 days of the beginning date of the permit, 25 percent due and payable within 150 days of the beginning date of the permit, and the final 25 percent due and payable within 210 days of the beginning date of the permit. If a permittee fails to abide by the terms of the promissory note or other payment agreement the permit shall be null and void, and the District may proceed with enforcement action as provided in these Rules. Furthermore, failure to abide by the terms of the promissory note or other payment agreement shall be grounds for denial of future permits and shall be grounds for denial of this payment arrangement on future permits.
- (d) Payment of Fees. All administrative fees are due at the time of application or registration unless otherwise specified by the Board. Export fees and production fees shall be paid in accordance with the District's fee schedule. The validity of any permit is contingent upon payment of any applicable export or production fee, and if the fee is not paid within 45 days of the date the fee is due the permit may be cancelled by the Board. The Board by resolution may establish procedures for the payment of export or production fees in installments.
- (e) Minimum Fees. For fees that are based on amount of withdrawal, the Board may, by resolution, establish a minimum fee for small amounts of withdrawal.

- (f) Inspection and Plan Review Fees. The Board may, by resolution, establish fees for: the inspection of wells, meters, or other inspection activities; development plans, or other plan reviews; special inspection services requested by other entities; or other similar services that require significant involvement of District personnel or its agents. Fees may be based on the amount of the District's time and involvement, number of wells, well production, wellbore casing size, size of transporting facilities, or amounts of water exported.
- (g) Exceptions. In unusual instances of hardship, the Board may establish a payment schedule.
- (h) Returned Check Fee. The Board may, by resolution, establish a fee for checks returned to the District for insufficient funds, account closed, signature missing, or any other problem causing a check to be returned by the District's depository.
- (i) Well Log Deposit. The Board may, by resolution, establish a Well Log Deposit to be held by the District for return to the depositor if well logs are submitted to the District within sixty (60) days following surface completion of the well.
- (j) Payment of Fees. All fees must be paid by check or money order made payable to the "Brazoria County Groundwater Conservation District." No cash will be accepted by the District. Production fees and export fees shall be calculated on the District reporting form. The reporting form shall be delivered to the District along with payment of the production or export fees.

§3.52 PRODUCTION FEE REBATES.

- (a) Submission of Application: An application for a production fee rebate must be filed within 90 calendar days after the permit expires. Any application filed later than 90 calendar days after permit expires will not be considered or granted. Rebate application forms will be provided by the District upon request. The appropriate application fee, the amount of which will be included in the District's fee schedule, must be paid by the applicant at the time the application is submitted to the District.
- (b) Basis for Rebate: An applicant for a production fee rebate must present sufficient evidence that: (1) a water meter was installed and operating during the entire permit term; (2) the amount of actual withdrawal during the permit term was less than the amount of authorized withdrawal; (3) if the well is a public supply well, the ratio of water sold or otherwise accounted for to the total water produced is at least 85 percent.
- (c) Action on Application: The General Manager may rule on applications for production fee rebates without notice, hearing, or further action by the Board. Once a ruling is made by the General Manager, notice of the ruling shall be served upon the applicant. An applicant may appeal the General Manager's

ruling by filing, within ten business days of the date of service of the General Manager's ruling, a written request for a hearing before the Board.

CHAPTER 4. MEASURING METHODS

§4.1 MEASUREMENT OF WATER USE BY PERMITTED WELLS.

- (a) Except as otherwise provided by the District Rules, each permitted well shall be equipped with a functioning water meter, meeting AWWA standards for line size, pressures, and flows.
- (b) Except as otherwise provided by the District Rules, each well owner or well operator of each permitted well shall record on a District form and report the amount of groundwater withdrawn each month to the District. In addition, each well owner or operator of each permitted well shall record on a District form and report the following information annually to the District:
 - (1) the total amount of water withdrawn during a month;
 - (2) the quantity of water necessary for mining activities; and
 - (3) the quantity of water withdrawn for other purposes.
- (c) Reasonable periods of downtime for repair or replacement of meters is permitted, and the permittee may estimate the amount of water used during these periods. Water meters may be removed for repairs and the well kept operational provided that the District is notified prior to removal, and the repairs are completed within 90 days. The readings on the meter must be recorded prior to removal and again upon reinstallation. The annual or monthly pumpage report must include an estimate of groundwater withdrawal during the period the meter was not installed and operating.
- (d) **Approved Meters:** A mechanically driven, digital, totalizing water meter is the only meter acceptable. The digital totalizer must not be resettable and must be capable of a maximum reading greater than the maximum expected pumpage during the permit term. Battery operated registers must have a minimum five-year life expectancy and must be permanently hermetically sealed. Battery operated registers must visibly display the expiration date of the battery. All meters must meet the requirements for registration accuracy set forth in the American Water Works Association standards for cold-water meters.
- (e) **Installation:** The water meter must be installed according to the manufacturer's published specifications in effect at the time of the meter installation, or its accuracy must be verified by the well owner in accordance with Rule 8.5. If no specifications are published, there must be a minimum length of seven pipe diameters of straight pipe upstream of the water meter and three pipe diameters

of straight pipe downstream of the water meter. These lengths of straight pipe must contain no check valves, tees, gate valves, back flow preventers, blow-off valves, or any other fixture other than those flanges or welds necessary to connect the straight pipe to the meter. In addition, the pipe must be completely full of water throughout the region.

- (f) Bypasses: Bypasses must be separately metered. A permittee, whose groundwater use would qualify for the exemptions under Rule 3.4 but for a single non-exempt use, may separately meter and pay fees on only the nonexempt uses from any exempt use from the same well.

§4.2 MEASURING AGGREGATE WITHDRAWAL.

Where wells are permitted in the aggregate, one or more water meters or approved alternate measuring methods may be used for the aggregate well system if the water meters or alternate measuring methods are installed so as to measure the groundwater production from all wells included in the aggregate system and approval of the aggregate measuring installation is obtained from the District.

§4.3 VERIFICATION OF WATER MEASUREMENT.

- (a) Once every three (3) years the General Manager may require the well owner or well operator to test and calibrate, at the well owner's or well operator's expense, the water meter or alternative measuring method or device for each permitted well and provide the District with a certification in affidavit form of the test results and accuracy calibrations on a form provided by, or in a format approved by, the General Manager.
- (b) At the District's expense and at any time, the District may also undertake random investigations for the purposes of verifying water measurement methods or devices and readings, acquiring data for alternate calculations of groundwater withdrawal, estimating the capability of a well, determining water levels, and acquiring such other information as may be helpful to the District in carrying out its goals under the Act.
- (c) If the District's verification reveals that a water measuring method is not within an accuracy of plus or minus five percent ($\pm 5\%$), the District may require a permittee to reimburse the District for its cost of verification and undertake immediate repair, replacement, or correction of the water measurement method or device.

§4.4 VIOLATION OF METERING AND REPORTING REQUIREMENTS.

False reporting or logging of water measurements or meter readings, intentionally tampering with or disabling a meter, or similar actions to avoid accurate reporting of groundwater use and pumpage shall constitute a violation of these Rules and shall subject the person performing the action, as well as the well owner, or the well operator

who authorizes or allows that action, to penalties as provided in the Act and these Rules.

§4.5 WATER METER SEALS.

If the General Manager finds it necessary, the District may, at its expense, seal by physical means those water meters required to be installed by these Rules and may red tag such water meters to indicate they have been sealed. The well owner or well operator shall report any alteration, damage, or removal of the water meter seal at once to the District and request repair of the seal. Tampering with, altering, damaging, or removing the water meter seal or red tag, or in any way violating the integrity of the seal or red tag shall constitute a violation of these Rules and shall subject the person performing the action, as well as any well owner or well operator who authorizes or allows that action, to penalties as provided in the Act and these Rules.

CHAPTER 5. GENERAL PROVISIONS AND PROHIBITIONS

§5.1 GENERAL PROHIBITION.

Groundwater produced from within the District may not be used in such a manner or under such conditions as to constitute waste. No person may intentionally or negligently commit waste.

§5.2 SUBSURFACE POLLUTION.

No person may pollute or harmfully alter the character of the groundwater reservoirs of the District by operating or constructing a well in a manner that causes or allows the introduction of salt water pollutants or other deleterious matter from another stratum or from the surface of the ground.

§5.3 SURFACE POLLUTION.

No person may pollute or harmfully alter the character of the groundwater reservoirs of the District by activities on the surface of the ground that cause or allow pollutants to enter the groundwater reservoirs through the well head or well bore.

§5.4 ORDERS TO PREVENT WASTE/POLLUTION.

After providing notice to affected parties and opportunity for a hearing, the Board may adopt orders to prohibit or prevent waste or pollution. If the factual basis for the order is disputed, the Board shall direct that an evidentiary hearing be conducted prior to entry of the order. If the Board determines that an emergency exists, requiring the immediate entry of an order to prohibit waste or pollution and protect the public health, safety, and welfare, it may enter a temporary order without notice and hearing

provided, however, the temporary order shall continue in effect for the lesser of fifteen (15) days or until a hearing can be conducted.

CHAPTER 6. REGULATION OF PRODUCTION

SUBCHAPTER A: GENERAL PROVISIONS

§6.1 PURPOSE.

The purpose of this chapter is to achieve the District's statutory goals of conserving, preserving, protecting, and recharging the groundwater resources within the District by establishing aquifer management requirements consistent with Texas Water Code Chapter 36, and appropriate to the aquifer system.

§6.2 APPLICABILITY.

All permitted wells are required to meet the well production regulations set forth in this chapter.

§6.3 BASIS FOR LIMITATION OF WELL PRODUCTION.

The requirements of this chapter are based on the District's statutory authority to regulate the spacing of water wells and the production of groundwater in order to minimize the drawdown of the water table or the reduction of artesian pressure, to control subsidence, to prevent interference between wells, to prevent degradation of water quality, or to prevent waste.

SUBCHAPTER B: PRODUCTION LIMITS

§6.10 PERMIT ALLOCATION.

The maximum annual quantity of water that may be withdrawn from a permitted well within the District shall be the amount authorized in the permit. The permit allocation shall be based on the amount of groundwater the Board determines can be reasonably put to a beneficial, non-wasteful use by the permittee and is subject to any production limits or other requirements imposed by the Board.

§6.11 MODELED AVAILABLE GROUNDWATER PRODUCTION LIMITS.

Pending collection of additional hydrogeologic and other scientific data, aggregate production within the district is not limited, except to the extent necessary to ensure that the groundwater is put to a beneficial, non-wasteful use. However, in order to accomplish the purposes of Texas Water Code Chapter 36, and achieve the stated purposes and goals of the District, including managing the sustainability of the aquifers

and preventing significant, sustained water-level declines within the aquifers, the Board reserves the right to amend this section in the future to establish any production limits necessary on new or existing permits. All permits are issued subject to any future production limits adopted by the District.

If necessary, existing permits may be amended to ensure the District achieves the desired future condition established during the joint planning process in accordance with Section 36.108, Water Code.

CHAPTER 7. DRILLING, EQUIPPING, CONSTRUCTION AND SPACING REQUIREMENTS

§7.1 APPLICABILITY.

The requirements of this chapter are applicable to all wells drilled in the District, including exempt use wells.

§7.2 RECORDS.

Complete records shall be kept and reports thereof made to the District concerning the drilling, equipping, and completion of all wells drilled in the District. Such records shall include an accurate driller's log, depth to water, any electric log that shall have been made, and such additional data concerning the description of the well, its discharge, and its equipment as may be required by the Board. Such records shall be filed with the District within sixty (60) days after drilling of the well.

§7.3 DRILLING AND COMPLETION OF WELLS.

Drilling and completion of wells must satisfy all applicable requirements of the Texas Department of Licensing and Regulation set forth under Title 16, Texas Administrative Code Chapter 76, Water Well Drillers and Pump Installers Rules, and any additional well construction standards adopted by the District.

§7.4 SUSPENSION

The General Manager or Board of Directors may suspend an authorization for a well registration or permit for failure to comply with these rules. A suspension may be appealed by requesting a hearing before the Board.

§7.5 DRILLING WELLS AT UNAPPROVED LOCATIONS PROHIBITED.

It is a violation of these Rules for a well owner or well operator, or water well driller to drill a new well that does not comply with the spacing and location requirements of this subchapter.

§7.6 MINIMUM SPACING APPLICABLE TO ALL NEW WELLS.

All new wells must comply with the spacing and location requirements promulgated by the Texas Department of Licensing and Regulation and set forth under Title 16, Texas Administrative Code Chapter 76, Water Well Drillers and Pump Installers Rules. Any variance granted by the Texas Department of Licensing and Regulation shall be submitted with the Well Log.

§7.7 ADDITIONAL STANDARDS AND WAIVERS.

The Board may adopt additional spacing standards for wells drilled in the District. Approved well spacing standards will be made available to the public. The spacing requirements of Rule 7.6 may be waived by the Board if the applicant obtains a waiver from the Texas Department of Licensing and Regulation.

CHAPTER 8. ABANDONED, OPEN AND UNCOVERED WELLS

§8.1 REGISTRATION AND SEALING.

- (a) Any owner or lessee of land on which an open or uncovered well or an abandoned well is located must register the well with the District.
- (b) Any well not registered with the District shall be classified as abandoned.

§8.2 MINIMUM STANDARDS.

- (a) Capping of Open or Uncovered Wells.
 - (1) At a minimum, open or uncovered wells must be capped in accordance with these Rules and in accordance with the standards set forth in the Texas Water Well Drillers and Pump Installers Administrative Rules, Title 16, Chapter 76, Texas Administrative Code.
 - (2) The Board may adopt additional well capping standards for open or uncovered wells within the District. Approved well capping standards will be made available to the public.
- (b) Plugging of Abandoned Wells.
 - (1) All abandoned wells must be plugged in accordance with standards set forth in the Texas Water Well Drillers and Pump Installers Administrative Rules, Title 16, Chapter 76, Texas Administrative Code.
 - (2) A copy of any plugging report required by Texas Department of Licensing and Regulation shall be submitted to the District.

§8.3 ENFORCEMENT.

If the owner or lessee or operator of a well fails or refuses to cap or plug the well in compliance with this rule and District standards after being requested to do so in writing by an officer, agent, or employee of the District, then, upon Board approval, any person, firm or corporation employed by the District may go onto the land (pursuant to Texas Water Code Section 36.118) and plug or cap the well safely and securely.

§8.4 LIEN FOR RECOVERY OF EXPENSES INCURRED BY DISTRICT.

- (a) Reasonable expenses incurred by the District in plugging or capping a well will be assessed to the landowner and shall constitute a lien on the land on which the well is located.
- (b) The District shall perfect the lien by filing in the deed records of the county where the well is located an affidavit, executed by any person conversant with the facts, stating the following:
 - (1) the existence of the well;
 - (2) the legal description of the property on which the well is located;
 - (3) the approximate location of the well on the property;
 - (4) the failure or refusal of the owner or lessee, after notification, to close the well after the notification;
 - (5) the closing of the well by the District, or by an authorized agent, representative, or employee of the District; and
 - (6) the expense incurred by the District in closing the well.

§8.5 PENALTIES.

Pursuant to Chapter 11 of these Rules, penalties shall be applicable in cases of failure or refusal to plug abandoned wells or cap wells not currently in use.

CHAPTER 9. WATER CONSERVATION

§9.1 CONSERVATION POLICY.

The District may implement conservation policies through various programs initiatives and incentives including public education, technical assistance, special programs,

through grants and loans, from support by various local, state, and federal programs, industries, foundations, nonprofits, public and private individuals, corporations, partnerships, and other interest groups that will further the District's goals of cost-effective water conservation, pollution prevention, and waste prevention of the District's water resources.

§9.2 WATER CONSERVATION PLANS.

Each permittee who is required to prepare, adopt, and implement a water conservation plan by another agency of the State of Texas or by any water wholesale provider shall submit a copy of that plan to the District for the District's files in order to assist the District in monitoring the success of water conservation efforts within the District.

CHAPTER 10. DROUGHT

§10.1 PURPOSE.

The purpose of this chapter is to provide guidelines to well owners and well operators and water users within the District regarding groundwater availability and use in response to drought or other uncontrollable circumstances that have disrupted the normal availability of groundwater supplies, causing localized or regional water availability and water quality emergencies. This chapter establishes procedures intended to preserve the availability and quality of water during such conditions.

§10.2 APPLICABILITY.

This chapter applies to all well owners and well operators and all other water users located within the District's jurisdictional area.

This chapter is directly applicable to water users of the Gulf Coast Aquifer. The District may apply these Rules to all groundwater aquifers and water-bearing formations located within its jurisdictional boundaries.

§10.3 DROUGHT CONDITION.

The District shall define and declare drought and its specific stages according to the Palmer Drought Severity Index as published by the Texas Water Development Board or similar agency. The index ranges from 4 (Extremely Wet) to -4 (Extreme Drought) --- see Table 10.1 -- and takes into account hydrologic factors such as recent precipitation, evaporation, and soil moisture. Upon declaration of a drought stage of "Moderate drought" or worse, water well owners or well operators or users are encouraged to implement the corresponding drought measures stipulated in any drought plan of the owner, operator, or user.

4.0 or more	extremely wet
3.0 to 3.99	very wet
2.0 to 2.99	moderately wet
1.0 to 1.99	slightly wet
0.5 to 0.99	incipient wet spell
0.49 to -0.49	near normal
-0.5 to -0.99	incipient dry spell
-1.0 to -1.99	Mild drought
-2.0 to -2.99	moderate drought
-3.0 to -3.99	severe drought
-4.0 or less	extreme drought

§10.4 WATER QUALITY.

The District may monitor groundwater quality of water supply wells along or near the saline water line or elsewhere in the District as it determines necessary.

§10.5 AQUIFER EMERGENCY WARNINGS.

- (a) When the concentration of Total Dissolved Solids (TDS) increases above Safe Drinking Water Standards in any groundwater well(s) within the District or other contamination or hazardous conditions affecting groundwater quality or groundwater quantity exist, an Aquifer Emergency Warning may be declared by the Board of Directors.
- (b) During an Aquifer Emergency Warning the District may:
 - (1) initiate further detailed analysis to determine whether significant changes have occurred in the water quality;
 - (2) encourage permittees and other water users within the District to identify and implement measures to conserve water and reduce groundwater pumpage; and
 - (3) encourage the interconnection of public and private water systems to prevent health hazards and localized water shortages or depletions.

§10.6 DROUGHT MANAGEMENT PLANS

Each permittee who is required by another agency or political subdivision of the state to maintain a drought management plan shall submit a copy of the plan to the District

for the District's files in order to assist the District in monitoring the success of drought management efforts within the District.

CHAPTER 11. ENFORCEMENT

§11.1 NOTICE AND ACCESS.

Pursuant to Texas Water Code Section 36.123, any authorized officer, agent, employee, or representative of the District, when carrying out technical and other investigations necessary to the implementation of the Rules or the Act, and may enter upon private property for the purpose of inspecting and investigating conditions relating to the withdrawal, waste, water quality, pollution, or contamination of groundwater or other acts covered by the these Rules or the Texas Water Code.

§11.2 SHOW CAUSE ORDERS AND COMPLAINTS.

The Board, either on its own motion or upon receipt of sufficient written protest or complaint, may at any time, after due notice to all interested parties, cite any person owning or operating a well within the District, or any person in the District violating the Act, these Rules, or an Order of the Board. Under the citation, that person is ordered to appear before the Board in a public hearing and require him to show cause why an enforcement action should not be initiated or why his operating authority or permit should not be suspended, cancelled, or otherwise restricted and limited, for failure to abide by the terms and provisions of the permit, these Rules, or the Act.

§11.3 CONDUCT OF INVESTIGATION.

When investigations or inspections require entrance upon private property, such investigations and such inspections shall be conducted at reasonable times, and shall be consistent with all applicable rules and regulations concerning safety, internal security, and fire protection. The persons conducting such investigations shall identify themselves and present District identification upon request by the owner, operator, lessee, management in residence, or person in charge.

§11.4 SEALING OF WELLS.

- (a) The District may seal wells that are prohibited by the Act, Rules, or Board orders from withdrawing groundwater within the District when the General Manager, or his designated District employee, determines that such action is reasonably necessary to assure that a well is not operated in violation of the Act, Rules, or Board orders. This authorization to seal a well or to take other appropriate action to prohibit the withdrawal of groundwater extends to, but is not limited to, the following circumstances in which: (i) a permit has been granted, but the applicable fees have not been paid within the time period provided for payment; (ii) representations have been made by the well owner or well operator that no groundwater is to be withdrawn from a well during a particular period; (iii) no application has been made for a permit to withdraw

groundwater from an existing well that is not excluded or exempted from the requirement that a permit be obtained in order to lawfully withdraw groundwater; (iv) the Board has denied, cancelled, or revoked a permit; (v) permit conditions have not been met; or (vi) a threat of, or potential for, contamination to the aquifer exists.

- (b) The well may be physically sealed by the District, and if sealed by the District, the well shall then be red-tagged to indicate that the well has been sealed. Other appropriate action may be taken as necessary to preclude operation of the well or to identify unauthorized operation of the well.
- (c) Tampering with, altering, damaging, or removing the seal or red tag of a sealed or red tagged well, or in any other way violating the integrity of the seal or red tag, or the pumping of groundwater from a well that has been sealed or red tagged shall constitute a violation of these Rules and shall subject the person performing that action, as well as any well owner or well operator who authorizes or allows that action, to such penalties as provided by the Act and these Rules.

§11.5 REQUEST FOR INJUNCTIVE RELIEF.

If it appears that a person has violated, is violating, or is threatening to violate any provision of the Act or any Rule, permit, Board order, or other order of the District, the Board may institute and conduct a suit in the name of the District for injunctive relief, for recovery of a civil penalty, or for both injunctive relief and penalty.

§11.6 PENALTIES FOR LATE PAYMENT OF FEES.

- (a) Failure to Make Production or Export Fee Payment. Failure to make the production or export fee payment within the time period specified shall constitute grounds for the District to declare the permit void.
- (b) Late Payment Penalties. Failure to make complete and timely payments of a fee may result in a late payment penalty in accordance with the District's fee schedule. The payment plus the late payment fee must be made within thirty (30) days following the date the payment is due, otherwise the permit may be declared void by the Board.
- (c) Loss of Installment Payment Option. The option of making payment of a production or export fee in installments may be made available by the District in order to avoid causing cash flow problems for permittees.
- (d) After a permit is declared void for failure to make payment of production or export fees, all enforcement mechanisms provided by this Rule and the Act shall be available to prevent unauthorized use of the well, and may be initiated by the General Manager without further authorization from the Board.

§11.7 FAILURE TO REPORT PUMPAGE OR EXPORTED VOLUMES.

The accurate reporting and timely submission of pumpage or exported volumes is necessary for the proper management of water resources. Failure of the permittee to submit complete, accurate, and timely pumpage, export and water quality reports, as required by Section 3.40 of these Rules, may result in forfeiture of the permit, civil penalties, or payment of increased meter reading and inspection fees as a result of District inspections to obtain current and accurate pumpage or exported volumes and water quality reports. Each day the violation continues is a separate violation.

§11.8 EMERGENCY ORDERS.

The District will develop Emergency Contingency Plans to deal with water quality or water quantity emergencies. Public hearings on Emergency Contingency Plans shall be conducted by the Board prior to adoption. To implement Emergency Contingency Plans, the Board, or the General Manager if specifically authorized by an Emergency Contingency Plan, may adopt emergency orders of either a mandatory or prohibitory nature, requiring remedial action by a permittee or other party responsible for the emergency condition.

§11.9 CIVIL PENALTIES.

- (a) The District may enforce these Rules by injunction or other appropriate remedy in a court of competent jurisdiction in the District.
- (b) Any person who violates any District Rule is subject to a civil penalty of up to \$10,000 for each violation and for each day of continuing violation. Each day a violation continues may be considered a separate violation.
- (c) All civil penalties recovered by the District shall be paid to the Brazoria County Groundwater Conservation District.
- (d) A penalty under this section may be enforced by complaints filed in the appropriate court of jurisdiction in Brazoria County.

VIOLATIONS OF DISTRICT RULES

Registration

All new wells must be registered by the well owner, the well driller, or other authorized agent of the well owner prior to the well being drilled, equipped or completed.

Permit

A permit from the District is required prior to drilling, equipping, completing, operating, or producing groundwater from any non-exempt well within the District. It is a violation of the District Rules for a well owner, well operator, well driller, or any other person acting on behalf of the well owner to drill, equip, complete, operate, or produce groundwater from a non-exempt well within the District without first obtaining the proper permit

Payment of Fees/Penalty

All administrative fees, Export fees, and Production fees shall be paid in accordance with the District's fee schedule. The validity of any permit is contingent upon payment of any applicable administrative fees, export fees, or production fees in accordance with the District's Fee Schedule. The Board, by resolution in accordance with the District's Fee Schedule, may establish procedures for the payment of production fees or export fees in installments and/or quarterly payments.

POTENTIAL VIOLATIONS OF DISTRICT RULES

Water Meter

Each permitted well shall be equipped with a functioning water meter, meeting AWWA standards for line size, pressures, and flows.

Records

Complete records shall be kept and reports thereof made to the District concerning the drilling, equipping, and completion of all wells drilled in the District. Such records shall include an accurate driller's log, depth to water, any electric log that shall have been made, and such additional data concerning the description of the well, its discharge, and its equipment as may be required by the Board. Such records shall be filed with the District within sixty (60) days after drilling of the well.

State Well Report

A State Well Report must be submitted to the District within sixty (60) days of the drilling of a well. If the State Well Report is not submitted to the District within sixty (60) days of the drilling of a well, the continued operation of the well is a violation of District Rules and is subject to fines and fees

Construction of Well

Drilling and completion of wells must satisfy all applicable requirements of the Commission and the Texas Department of Licensing and Regulation, and any additional well construction standards adopted by the District.

All wells must be completed in accordance with the well completion standards set forth under the requirements promulgated by the Texas Department of Licensing and Regulation and set forth under Title 16, Texas Administrative Code Chapter 76, Water Well Drillers and Pump Installers Rules.

DISTRICT RULES ENFORCEMENT OPTIONS

Citation to appear before the Board

The Board, either on its own motion or upon receipt of sufficient written protest or complaint, may at any time, after due notice to all interested parties, cite any person owning or operating a well within the District, or any person in the District violating the Act, the District Rules, or an Order of the Board. Under the citation, that person is ordered to appear before the Board in a public hearing and require him to show cause why an enforcement action should not be initiated and/or why his procedure and/or operating authority and/or permit should not be suspended, cancelled, and/or otherwise restricted and limited, for failure to abide by the terms and provisions of the permit, and/or the District Rules, and/or the Act.

Suit – Injunctive Relief and/or Civil Penalty

If it appears that a person has violated, is violating, or is threatening to violate any provision of the Act or any Rule, permit, Board order, or other order of the District, the Board may institute and conduct a suit (generic term for any filing of complaint) in the name of the District for injunctive relief (a court-ordered act or prohibition against an act or condition), for recovery of a civil penalty (See 10.9 Civil Penalties), or for both injunctive relief and penalty.

Seal Well

The District may seal wells that are prohibited by the Act, Rules, or Board orders from withdrawing groundwater within the District when the Board, or its designated District employee, determines that such action is reasonably necessary to assure that a well is not operated in violation of the Act, Rules, or Board orders. This authorization to seal a well or to take other appropriate action to prohibit the withdrawal of groundwater extends to, but is not limited to, the following circumstances in which: (i) a permit has been granted, but the applicable fees have not been paid within the time period provided for payment; (ii) representations have been made by the well owner or operator that no groundwater is to be withdrawn from a well during a particular period; (iii) no application has been made for a permit to withdraw groundwater from an existing well that is not excluded or exempted from the requirement that a permit be obtained in order to lawfully withdraw groundwater; (iv) the Board has denied, cancelled, or revoked a permit; (v) permit conditions have not been met; or (vi) a threat of, or potential for, contamination to the aquifer exists.

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Appendix C

Estimated Historical Water Use and 2017 State Water Plan
Datasets

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Estimated Historical Water Use And 2017 State Water Plan Datasets: Brazoria County Groundwater Conservation District

by Stephen Allen
Texas Water Development Board
Groundwater Division
Groundwater Technical Assistance Section
stephen.allen@twdb.texas.gov
(512) 463-7317
May 3, 2017

GROUNDWATER MANAGEMENT PLAN DATA:

This package of water data reports (part 1 of a 2-part package of information) is being provided to groundwater conservation districts to help them meet the requirements for approval of their five-year groundwater management plan. Each report in the package addresses a specific numbered requirement in the Texas Water Development Board's groundwater management plan checklist. The checklist can be viewed and downloaded from this web address:

<http://www.twdb.texas.gov/groundwater/docs/GCD/GMPChecklist0113.pdf>

The five reports included in this part are:

1. Estimated Historical Water Use (checklist item 2)
from the TWDB Historical Water Use Survey (WUS)
2. Projected Surface Water Supplies (checklist item 6)
3. Projected Water Demands (checklist item 7)
4. Projected Water Supply Needs (checklist item 8)
5. Projected Water Management Strategies (checklist item 9)
from the 2017 Texas State Water Plan (SWP)

Part 2 of the 2-part package is the groundwater availability model (GAM) report for the District (checklist items 3 through 5). The District should have received, or will receive, this report from the Groundwater Availability Modeling Section. Questions about the GAM can be directed to Dr. Shirley Wade, shirley.wade@twdb.texas.gov, (512) 936-0883.

DISCLAIMER:

The data presented in this report represents the most up-to-date WUS and 2017 SWP data available as of 5/3/2017. Although it does not happen frequently, either of these datasets are subject to change pending the availability of more accurate WUS data or an amendment to the 2017 SWP. District personnel must review these datasets and correct any discrepancies in order to ensure approval of their groundwater management plan.

The WUS dataset can be verified at this web address:

<http://www.twdb.texas.gov/waterplanning/waterusesurvey/estimates/>

The 2017 SWP dataset can be verified by contacting Sabrina Anderson (sabrina.anderson@twdb.texas.gov or 512-936-0886).

For additional questions regarding this data, please contact Stephen Allen (stephen.allen@twdb.texas.gov or 512-463-7317) or Rima Petrossian (rima.petrossian@twdb.texas.gov or 512-936-2420).

Estimated Historical Water Use

TWDB Historical Water Use Survey (WUS) Data

Groundwater and surface water historical use estimates are currently unavailable for calendar year 2016. TWDB staff anticipates the calculation and posting of these estimates at a later date.

BRAZORIA COUNTY

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2015	GW	25,126	1,780	0	0	3,647	1,204	31,757
	SW	13,269	70,466	0	0	49,117	402	133,254
2014	GW	27,800	1,741	0	0	3,726	1,169	34,436
	SW	12,157	79,436	0	0	18,150	390	110,133
2013	GW	31,022	2,607	0	0	4,337	1,189	39,155
	SW	12,496	78,805	0	0	74,706	395	166,402
2012	GW	36,098	2,144	0	0	1,575	1,001	40,818
	SW	10,905	181,919	0	0	89,000	333	282,157
2011	GW	45,127	2,969	147	0	3,108	1,117	52,468
	SW	10,071	178,384	439	0	107,492	373	296,759
2010	GW	34,193	1,523	190	0	14,889	1,126	51,921
	SW	10,464	182,211	570	0	63,000	375	256,620
2009	GW	29,997	1,521	168	0	14,508	1,231	47,425
	SW	12,333	205,487	674	0	56,572	410	275,476
2008	GW	30,435	10,197	144	0	20,827	1,210	62,813
	SW	10,265	211,078	591	0	63,200	404	285,538
2007	GW	25,664	2,183	1	0	8,994	1,241	38,083
	SW	10,229	207,971	159	0	64,210	413	282,982
2006	GW	28,256	3,449	1	0	2,820	1,165	35,691
	SW	9,467	218,178	178	0	82,000	388	310,211
2005	GW	26,932	3,111	1	0	2,504	1,340	33,888
	SW	10,660	222,434	166	0	107,300	447	341,007
2004	GW	26,091	2,224	1	0	3,676	446	32,438
	SW	7,931	198,458	216	0	101,913	1,234	309,752
2003	GW	25,936	1,242	1	0	2,706	444	30,329
	SW	9,853	174,694	260	0	73,900	1,225	259,932
2002	GW	24,684	1,337	1	0	3,625	388	30,035
	SW	9,603	179,129	458	0	46,718	1,071	236,979
2001	GW	24,626	1,035	64	0	3,915	429	30,069
	SW	9,796	219,928	578	0	58,743	1,184	290,229
2000	GW	25,185	1,464	3	0	7,022	968	34,642
	SW	10,131	133,315	660	0	91,732	645	236,483

Estimated Historical Water Use and 2017 State Water Plan Dataset:

Brazoria County Groundwater Conservation District

May 3, 2017

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Projected Surface Water Supplies

TWDB 2017 State Water Plan Data

BRAZORIA COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
H	ANGLETON	SAN JACINTO-BRAZOS	BRAZOS RUN-OF-RIVER	2,016	2,016	2,016	2,016	2,016	2,016
H	BRAZORIA	BRAZOS	BRAZOS RUN-OF-RIVER	73	72	71	70	69	69
H	BRAZORIA	BRAZOS-COLORADO	BRAZOS RUN-OF-RIVER	263	264	265	266	267	267
H	CLUTE	SAN JACINTO-BRAZOS	BRAZOS RUN-OF-RIVER	1,120	1,120	1,120	1,120	1,120	1,120
H	COUNTY-OTHER, BRAZORIA	BRAZOS-COLORADO	BRAZOS RUN-OF-RIVER	420	420	420	420	420	420
H	COUNTY-OTHER, BRAZORIA	SAN JACINTO-BRAZOS	BRAZOS RUN-OF-RIVER	420	420	420	420	420	420
H	FREEPORT	BRAZOS	BRAZOS RUN-OF-RIVER	227	244	260	274	287	295
H	FREEPORT	BRAZOS-COLORADO	BRAZOS RUN-OF-RIVER	2	2	3	3	3	3
H	FREEPORT	SAN JACINTO-BRAZOS	BRAZOS RUN-OF-RIVER	2,011	1,994	1,977	1,963	1,950	1,942
H	IRRIGATION, BRAZORIA	BRAZOS	BRAZOS RUN-OF-RIVER	2,712	2,712	2,712	2,712	2,712	2,712
H	IRRIGATION, BRAZORIA	SAN JACINTO-BRAZOS	BRAZOS RIVER AUTHORITY MAIN STEM LAKE/RESERVOIR SYSTEM	4,390	4,412	4,434	4,457	4,480	4,502
H	IRRIGATION, BRAZORIA	SAN JACINTO-BRAZOS	SAN JACINTO-BRAZOS RUN-OF-RIVER	16,669	16,669	16,669	16,669	16,669	16,669
H	LAKE JACKSON	BRAZOS	BRAZOS RUN-OF-RIVER	15	18	25	29	35	42
H	LAKE JACKSON	SAN JACINTO-BRAZOS	BRAZOS RUN-OF-RIVER	2,225	2,222	2,215	2,211	2,205	2,198
H	MANUFACTURING, BRAZORIA	BRAZOS	BRAZOS RIVER AUTHORITY MAIN STEM LAKE/RESERVOIR SYSTEM	16,000	15,744	15,488	15,232	14,976	14,720
H	MANUFACTURING, BRAZORIA	BRAZOS	BRAZOS RUN-OF-RIVER	6,536	6,644	6,753	6,862	6,971	7,079
H	MANUFACTURING, BRAZORIA	BRAZOS-COLORADO	BRAZOS-COLORADO RUN-OF-RIVER	3,211	3,211	3,211	3,211	3,211	3,211
H	MANUFACTURING, BRAZORIA	SAN JACINTO-BRAZOS	BRAZOS RUN-OF-RIVER	139,607	141,910	144,212	146,514	148,816	151,121

Projected Surface Water Supplies

TWDB 2017 State Water Plan Data

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
H	MANUFACTURING, BRAZORIA	SAN JACINTO-BRAZOS	BRAZOS RUN-OF-RIVER	17,238	17,257	17,274	17,291	17,309	17,327
H	MANUFACTURING, BRAZORIA	SAN JACINTO-BRAZOS	SAN JACINTO-BRAZOS RUN-OF-RIVER	12,964	13,033	13,102	13,172	13,241	13,310
H	OYSTER CREEK	SAN JACINTO-BRAZOS	BRAZOS RUN-OF-RIVER	106	106	106	106	106	106
H	PEARLAND	SAN JACINTO-BRAZOS	LIVINGSTON-WALLISVILLE LAKE/RESERVOIR SYSTEM	15,177	14,885	14,541	14,332	14,055	14,137
H	RICHWOOD	SAN JACINTO-BRAZOS	BRAZOS RUN-OF-RIVER	263	263	263	263	263	263
Sum of Projected Surface Water Supplies (acre-feet)				243,665	245,638	247,557	249,613	251,601	253,949

Projected Water Demands

TWDB 2017 State Water Plan Data

Please note that the demand numbers presented here include the plumbing code savings found in the Regional and State Water Plans.

BRAZORIA COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
H	ALVIN	SAN JACINTO-BRAZOS	4,644	4,866	5,161	5,587	6,186	6,983
H	ANGLETON	SAN JACINTO-BRAZOS	1,964	1,893	1,835	1,810	1,816	1,830
H	BAILEY'S PRAIRIE	BRAZOS	26	26	26	27	28	29
H	BAILEY'S PRAIRIE	SAN JACINTO-BRAZOS	63	64	63	63	64	65
H	BRAZORIA	BRAZOS	69	67	65	64	64	65
H	BRAZORIA	BRAZOS-COLORADO	249	246	244	244	248	251
H	BRAZORIA COUNTY MUD #2	SAN JACINTO-BRAZOS	2,199	2,190	2,185	2,183	2,183	2,184
H	BRAZORIA COUNTY MUD #21	SAN JACINTO-BRAZOS	549	568	610	653	695	724
H	BRAZORIA COUNTY MUD #3	SAN JACINTO-BRAZOS	566	558	560	565	572	584
H	BRAZORIA COUNTY MUD #6	SAN JACINTO-BRAZOS	681	676	676	676	677	680
H	BROOKSIDE VILLAGE	SAN JACINTO-BRAZOS	198	207	258	325	406	504
H	CLUTE	SAN JACINTO-BRAZOS	1,476	1,475	1,486	1,518	1,570	1,631
H	COUNTY-OTHER, BRAZORIA	BRAZOS	942	1,067	1,273	1,484	1,706	1,942
H	COUNTY-OTHER, BRAZORIA	BRAZOS-COLORADO	3,448	4,112	4,743	5,372	6,023	6,700
H	COUNTY-OTHER, BRAZORIA	SAN JACINTO-BRAZOS	12,344	15,885	19,303	22,985	27,137	31,664
H	DANBURY	SAN JACINTO-BRAZOS	176	169	163	160	159	159
H	FREEPORT	BRAZOS	145	158	171	185	201	215
H	FREEPORT	BRAZOS-COLORADO	1	1	2	2	2	2
H	FREEPORT	SAN JACINTO-BRAZOS	1,283	1,290	1,299	1,325	1,368	1,417
H	HILLCREST	SAN JACINTO-BRAZOS	118	115	112	111	111	111
H	HOLIDAY LAKES	SAN JACINTO-BRAZOS	75	75	75	75	76	76
H	IOWA COLONY	SAN JACINTO-BRAZOS	292	326	381	431	479	508
H	IRRIGATION, BRAZORIA	BRAZOS	4,855	4,855	4,855	4,855	4,855	4,855
H	IRRIGATION, BRAZORIA	BRAZOS-COLORADO	5,071	5,071	5,071	5,071	5,071	5,071
H	IRRIGATION, BRAZORIA	SAN JACINTO-BRAZOS	99,877	99,877	99,877	99,877	99,877	99,877
H	JONES CREEK	BRAZOS-COLORADO	207	200	193	192	192	193
H	LAKE JACKSON	BRAZOS	36	43	56	71	89	109
H	LAKE JACKSON	SAN JACINTO-BRAZOS	5,284	5,303	5,345	5,443	5,596	5,774
H	LIVESTOCK, BRAZORIA	BRAZOS	118	118	118	118	118	118
H	LIVESTOCK, BRAZORIA	BRAZOS-COLORADO	443	443	443	443	443	443
H	LIVESTOCK, BRAZORIA	SAN JACINTO-BRAZOS	1,089	1,089	1,089	1,089	1,089	1,089
H	MANUFACTURING, BRAZORIA	BRAZOS	9,174	9,900	10,626	11,353	12,079	12,805

Estimated Historical Water Use and 2017 State Water Plan Dataset:

Brazoria County Groundwater Conservation District

May 3, 2017

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Projected Water Demands

TWDB 2017 State Water Plan Data

Please note that the demand numbers presented here include the plumbing code savings found in the Regional and State Water Plans.

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
H	MANUFACTURING, BRAZORIA	BRAZOS-COLORADO	44,381	47,894	51,408	54,921	58,435	61,948
H	MANUFACTURING, BRAZORIA	SAN JACINTO-BRAZOS	194,383	209,773	225,161	240,550	255,938	271,328
H	MANVEL	SAN JACINTO-BRAZOS	1,658	2,645	3,548	4,575	5,786	7,286
H	MINING, BRAZORIA	BRAZOS	135	167	195	226	258	297
H	MINING, BRAZORIA	BRAZOS-COLORADO	252	309	361	418	479	553
H	MINING, BRAZORIA	SAN JACINTO-BRAZOS	581	713	833	965	1,105	1,276
H	OYSTER CREEK	SAN JACINTO-BRAZOS	250	250	251	256	265	275
H	PEARLAND	SAN JACINTO-BRAZOS	14,000	14,710	15,750	16,925	18,254	19,539
H	RICHWOOD	SAN JACINTO-BRAZOS	377	377	380	388	403	420
H	SWEENEY	BRAZOS-COLORADO	540	525	513	508	509	511
H	VARNER CREEK UD	BRAZOS	213	207	201	201	201	201
H	WEST COLUMBIA	BRAZOS	369	354	340	341	341	343
H	WEST COLUMBIA	BRAZOS-COLORADO	68	65	64	64	65	66
Sum of Projected Water Demands (acre-feet)			414,869	440,922	467,369	494,695	523,219	552,701

Projected Water Supply Needs

TWDB 2017 State Water Plan Data

Negative values (in red) reflect a projected water supply need, positive values a surplus.

BRAZORIA COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
H	ALVIN	SAN JACINTO-BRAZOS	77	77	77	77	77	77
H	ANGLETON	SAN JACINTO-BRAZOS	156	227	285	310	304	225
H	BAILEY'S PRAIRIE	BRAZOS	0	0	0	0	0	-1
H	BAILEY'S PRAIRIE	SAN JACINTO-BRAZOS	0	0	0	0	0	0
H	BRAZORIA	BRAZOS	4	5	6	6	5	4
H	BRAZORIA	BRAZOS-COLORADO	14	18	21	22	19	16
H	BRAZORIA COUNTY MUD #2	SAN JACINTO-BRAZOS	0	0	0	0	0	0
H	BRAZORIA COUNTY MUD #21	SAN JACINTO-BRAZOS	0	0	0	0	0	0
H	BRAZORIA COUNTY MUD #3	SAN JACINTO-BRAZOS	0	0	0	0	0	0
H	BRAZORIA COUNTY MUD #6	SAN JACINTO-BRAZOS	0	0	0	0	0	0
H	BROOKSIDE VILLAGE	SAN JACINTO-BRAZOS	0	0	0	0	0	0
H	CLUTE	SAN JACINTO-BRAZOS	-28	-52	-71	-97	-135	-180
H	COUNTY-OTHER, BRAZORIA	BRAZOS	0	0	0	0	0	-114
H	COUNTY-OTHER, BRAZORIA	BRAZOS-COLORADO	1,743	1,198	738	201	-431	-1,096
H	COUNTY-OTHER, BRAZORIA	SAN JACINTO-BRAZOS	-4,825	-8,767	-12,491	-16,526	-21,070	-25,970
H	DANBURY	SAN JACINTO-BRAZOS	0	0	0	0	0	0
H	FREEPORT	BRAZOS	83	87	90	90	87	80
H	FREEPORT	BRAZOS-COLORADO	1	1	1	1	1	1
H	FREEPORT	SAN JACINTO-BRAZOS	737	713	687	647	591	529
H	HILLCREST	SAN JACINTO-BRAZOS	0	0	0	0	0	0
H	HOLIDAY LAKES	SAN JACINTO-BRAZOS	0	0	0	0	0	0
H	IOWA COLONY	SAN JACINTO-BRAZOS	0	0	0	0	0	0
H	IRRIGATION, BRAZORIA	BRAZOS	-170	-311	-413	-524	-644	-755
H	IRRIGATION, BRAZORIA	BRAZOS-COLORADO	-402	-736	-977	-1,240	-1,524	-1,786
H	IRRIGATION, BRAZORIA	SAN JACINTO-BRAZOS	-71,280	-71,797	-72,164	-72,566	-73,001	-73,401
H	JONES CREEK	BRAZOS-COLORADO	0	0	0	0	0	0
H	LAKE JACKSON	BRAZOS	3	1	0	-5	-11	-18
H	LAKE JACKSON	SAN JACINTO-BRAZOS	500	295	138	-49	-277	-518
H	LIVESTOCK, BRAZORIA	BRAZOS	-9	-17	-23	-29	-35	-42
H	LIVESTOCK, BRAZORIA	BRAZOS-COLORADO	-137	-159	-175	-192	-211	-228
H	LIVESTOCK, BRAZORIA	SAN JACINTO-BRAZOS	-93	-164	-216	-272	-332	-388
H	MANUFACTURING, BRAZORIA	BRAZOS	13,872	12,998	12,125	11,251	10,378	9,504

Projected Water Supply Needs

TWDB 2017 State Water Plan Data

Negative values (in red) reflect a projected water supply need, positive values a surplus.

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
H	MANUFACTURING, BRAZORIA	BRAZOS-COLORADO	-39,316	-42,961	-46,571	-50,189	-53,815	-57,432
H	MANUFACTURING, BRAZORIA	SAN JACINTO-BRAZOS	-24,574	-36,848	-49,888	-62,932	-75,979	-89,021
H	MANVEL	SAN JACINTO-BRAZOS	46	-566	-1,469	-2,496	-3,707	-5,207
H	MINING, BRAZORIA	BRAZOS	-111	-145	-174	-206	-240	-280
H	MINING, BRAZORIA	BRAZOS-COLORADO	-206	-266	-321	-380	-444	-521
H	MINING, BRAZORIA	SAN JACINTO-BRAZOS	-417	-561	-689	-831	-980	-1,161
H	OYSTER CREEK	SAN JACINTO-BRAZOS	-11	-21	-28	-37	-48	-60
H	PEARLAND	SAN JACINTO-BRAZOS	3,755	3,175	2,464	1,732	735	0
H	RICHWOOD	SAN JACINTO-BRAZOS	-9	-17	-23	-31	-42	-55
H	SWEENEY	BRAZOS-COLORADO	0	0	0	0	0	0
H	VARNER CREEK UD	BRAZOS	0	0	0	0	0	0
H	WEST COLUMBIA	BRAZOS	0	0	0	0	0	0
H	WEST COLUMBIA	BRAZOS-COLORADO	0	0	0	0	0	0
Sum of Projected Water Supply Needs (acre-feet)			-141,588	-163,388	-185,693	-208,602	-232,926	-258,234

Projected Water Management Strategies

TWDB 2017 State Water Plan Data

BRAZORIA COUNTY

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
ALVIN, SAN JACINTO-BRAZOS (H)							
MUNICIPAL CONSERVATION, ALVIN	DEMAND REDUCTION [BRAZORIA]	49	137	218	297	378	468
WATER LOSS REDUCTION, ALVIN	DEMAND REDUCTION [BRAZORIA]	63	125	190	231	255	288
		112	262	408	528	633	756
ANGLETON, SAN JACINTO-BRAZOS (H)							
DOW RESERVOIR AND PUMP STATION EXPANSION	BRAZOS RUN-OF-RIVER [BRAZORIA]	994	997	1,001	1,026	1,063	1,063
MUNICIPAL CONSERVATION, ANGLETON	DEMAND REDUCTION [BRAZORIA]	21	53	77	96	111	123
WATER LOSS REDUCTION, ANGLETON	DEMAND REDUCTION [BRAZORIA]	27	49	67	75	75	76
		1,042	1,099	1,145	1,197	1,249	1,262
BAILEY'S PRAIRIE, BRAZOS (H)							
MUNICIPAL CONSERVATION, BAILEY'S PRAIRIE	DEMAND REDUCTION [BRAZORIA]	0	1	1	1	2	2
WATER LOSS REDUCTION, BAILEY'S PRAIRIE	DEMAND REDUCTION [BRAZORIA]	0	1	1	1	1	1
		0	2	2	2	3	3
BAILEY'S PRAIRIE, SAN JACINTO-BRAZOS (H)							
MUNICIPAL CONSERVATION, BAILEY'S PRAIRIE	DEMAND REDUCTION [BRAZORIA]	1	2	3	4	4	4
WATER LOSS REDUCTION, BAILEY'S PRAIRIE	DEMAND REDUCTION [BRAZORIA]	1	1	2	3	3	3
		2	3	5	7	7	7
BRAZORIA, BRAZOS (H)							
DOW RESERVOIR AND PUMP STATION EXPANSION	BRAZOS RUN-OF-RIVER [BRAZORIA]	175	175	175	175	175	175
MUNICIPAL CONSERVATION, BRAZORIA	DEMAND REDUCTION [BRAZORIA]	1	2	3	3	4	4
WATER LOSS REDUCTION, BRAZORIA	DEMAND REDUCTION [BRAZORIA]	1	2	3	3	3	3
		177	179	181	181	182	182
BRAZORIA, BRAZOS-COLORADO (H)							
MUNICIPAL CONSERVATION, BRAZORIA	DEMAND REDUCTION [BRAZORIA]	2	7	10	13	15	17
WATER LOSS REDUCTION, BRAZORIA	DEMAND REDUCTION [BRAZORIA]	4	7	9	13	14	14

Estimated Historical Water Use and 2017 State Water Plan Dataset:

Brazoria County Groundwater Conservation District

May 3, 2017

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Projected Water Management Strategies

TWDB 2017 State Water Plan Data

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
		6	14	19	26	29	31
BRAZORIA COUNTY MUD #2, SAN JACINTO-BRAZOS (H)							
MUNICIPAL CONSERVATION, BRAZORIA COUNTY MUD #2	DEMAND REDUCTION [BRAZORIA]	23	61	92	116	134	146
WATER LOSS REDUCTION, BRAZORIA COUNTY MUD #2	DEMAND REDUCTION [BRAZORIA]	61	116	165	210	250	287
		84	177	257	326	384	433
BRAZORIA COUNTY MUD #21, SAN JACINTO-BRAZOS (H)							
MUNICIPAL CONSERVATION, BRAZORIA COUNTY MUD #21	DEMAND REDUCTION [BRAZORIA]	6	16	26	35	43	49
		6	16	26	35	43	49
BRAZORIA COUNTY MUD #3, SAN JACINTO-BRAZOS (H)							
MUNICIPAL CONSERVATION, BRAZORIA COUNTY MUD #3	DEMAND REDUCTION [BRAZORIA]	6	16	24	30	35	39
WATER LOSS REDUCTION, BRAZORIA COUNTY MUD #3	DEMAND REDUCTION [BRAZORIA]	8	14	21	23	24	24
		14	30	45	53	59	63
BRAZORIA COUNTY MUD #6, SAN JACINTO-BRAZOS (H)							
MUNICIPAL CONSERVATION, BRAZORIA COUNTY MUD #6	DEMAND REDUCTION [BRAZORIA]	7	19	28	36	41	46
WATER LOSS REDUCTION, BRAZORIA COUNTY MUD #6	DEMAND REDUCTION [BRAZORIA]	9	17	25	28	28	28
		16	36	53	64	69	74
BROOKSIDE VILLAGE, SAN JACINTO-BRAZOS (H)							
MUNICIPAL CONSERVATION, BROOKSIDE VILLAGE	DEMAND REDUCTION [BRAZORIA]	2	6	11	17	25	34
WATER LOSS REDUCTION, BROOKSIDE VILLAGE	DEMAND REDUCTION [BRAZORIA]	3	5	9	13	17	21
		5	11	20	30	42	55
CLUTE, SAN JACINTO-BRAZOS (H)							
DOW RESERVOIR AND PUMP STATION EXPANSION	BRAZOS RUN-OF-RIVER [BRAZORIA]	582	594	604	626	657	657
MUNICIPAL CONSERVATION, CLUTE	DEMAND REDUCTION [BRAZORIA]	15	41	63	81	96	109
WATER LOSS REDUCTION, CLUTE	DEMAND REDUCTION [BRAZORIA]	20	38	55	63	65	67
		617	673	722	770	818	833
COUNTY-OTHER, BRAZORIA, BRAZOS (H)							
MUNICIPAL CONSERVATION, COUNTY-OTHER - BRAZORIA COUNTY	DEMAND REDUCTION [BRAZORIA]	10	30	53	78	104	130
WASTEWATER RECLAMATION FOR MUNICIPAL IRRIGATION	DIRECT REUSE [BRAZORIA]	0	85	209	329	461	601

Estimated Historical Water Use and 2017 State Water Plan Dataset:

Brazoria County Groundwater Conservation District

May 3, 2017

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Projected Water Management Strategies

TWDB 2017 State Water Plan Data

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
WATER LOSS REDUCTION, COUNTY-OTHER - BRAZORIA COUNTY	DEMAND REDUCTION [BRAZORIA]	10	10	13	15	16	20
		20	125	275	422	581	751

COUNTY-OTHER, BRAZORIA, BRAZOS-COLORADO (H)

MUNICIPAL CONSERVATION, COUNTY-OTHER - BRAZORIA COUNTY	DEMAND REDUCTION [BRAZORIA]	36	115	200	285	368	450
NEW / EXPANDED CONTRACT WITH BRA	ALLENS CREEK LAKE/RESERVOIR [RESERVOIR]	0	0	0	0	0	10
WASTEWATER RECLAMATION FOR MUNICIPAL IRRIGATION	DIRECT REUSE [BRAZORIA]	0	114	217	326	440	570
WATER LOSS REDUCTION, COUNTY-OTHER - BRAZORIA COUNTY	DEMAND REDUCTION [BRAZORIA]	34	41	47	53	60	66
		70	270	464	664	868	1,096

COUNTY-OTHER, BRAZORIA, SAN JACINTO-BRAZOS (H)

DOW RESERVOIR AND PUMP STATION EXPANSION	BRAZOS RUN-OF-RIVER [BRAZORIA]	3,173	3,501	3,273	2,999	2,579	2,579
MUNICIPAL CONSERVATION, COUNTY-OTHER - BRAZORIA COUNTY	DEMAND REDUCTION [BRAZORIA]	128	444	812	1,219	1,659	2,125
NEW / EXPANDED CONTRACT WITH BWA	BRAZOS RUN-OF-RIVER [BRAZORIA]	9,743	10,341	10,939	11,537	12,135	12,735
NEW / EXPANDED CONTRACT WITH BWA - BRACKISH GROUNDWATER	GULF COAST AQUIFER [BRAZORIA]	1,147	1,063	1,003	937	865	800
NEW / EXPANDED CONTRACT WITH GCWA	INDIRECT REUSE [HARRIS]	701	2,258	3,969	5,837	8,008	10,125
WASTEWATER RECLAMATION FOR MUNICIPAL IRRIGATION	DIRECT REUSE [BRAZORIA]	0	150	277	408	548	703
WATER LOSS REDUCTION, COUNTY-OTHER - BRAZORIA COUNTY	DEMAND REDUCTION [BRAZORIA]	122	157	191	227	269	313
		15,014	17,914	20,464	23,164	26,063	29,380

DANBURY, SAN JACINTO-BRAZOS (H)

MUNICIPAL CONSERVATION, DANBURY	DEMAND REDUCTION [BRAZORIA]	2	5	7	8	10	11
WATER LOSS REDUCTION, DANBURY	DEMAND REDUCTION [BRAZORIA]	2	4	6	7	7	7
		4	9	13	15	17	18

FREEPORT, BRAZOS (H)

MUNICIPAL CONSERVATION, FREEPORT	DEMAND REDUCTION [BRAZORIA]	2	4	7	10	12	15
WATER LOSS REDUCTION, FREEPORT	DEMAND REDUCTION [BRAZORIA]	2	4	6	8	8	9
		4	8	13	18	20	24

Estimated Historical Water Use and 2017 State Water Plan Dataset:

Brazoria County Groundwater Conservation District

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Projected Water Management Strategies

TWDB 2017 State Water Plan Data

WUG, Basin (RWPG)		All values are in acre-feet						
Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070	
FREEPORT, SAN JACINTO-BRAZOS (H)								
DOW RESERVOIR AND PUMP STATION EXPANSION	BRAZOS RUN-OF-RIVER [BRAZORIA]	1,039	1,126	1,217	1,337	1,483	1,483	
MUNICIPAL CONSERVATION, FREEPORT	DEMAND REDUCTION [BRAZORIA]	13	37	55	70	84	95	
WATER LOSS REDUCTION, FREEPORT	DEMAND REDUCTION [BRAZORIA]	17	33	48	54	57	58	
		1,069	1,196	1,320	1,461	1,624	1,636	
HILLCREST, SAN JACINTO-BRAZOS (H)								
MUNICIPAL CONSERVATION, HILLCREST	DEMAND REDUCTION [BRAZORIA]	1	3	5	6	7	7	
WATER LOSS REDUCTION, HILLCREST	DEMAND REDUCTION [BRAZORIA]	4	7	10	13	15	18	
		5	10	15	19	22	25	
HOLIDAY LAKES, SAN JACINTO-BRAZOS (H)								
MUNICIPAL CONSERVATION, HOLIDAY LAKES	DEMAND REDUCTION [BRAZORIA]	1	2	3	4	5	5	
		1	2	3	4	5	5	
IOWA COLONY, SAN JACINTO-BRAZOS (H)								
MUNICIPAL CONSERVATION, IOWA COLONY	DEMAND REDUCTION [BRAZORIA]	3	9	16	23	29	34	
WATER LOSS REDUCTION, IOWA COLONY	DEMAND REDUCTION [BRAZORIA]	4	8	14	18	20	21	
		7	17	30	41	49	55	
IRRIGATION, BRAZORIA, BRAZOS (H)								
IRRIGATION CONSERVATION, BRAZORIA COUNTY	DEMAND REDUCTION [BRAZORIA]	1,251	1,251	1,251	1,251	1,251	1,251	
		1,251	1,251	1,251	1,251	1,251	1,251	
IRRIGATION, BRAZORIA, BRAZOS-COLORADO (H)								
IRRIGATION CONSERVATION, BRAZORIA COUNTY	DEMAND REDUCTION [BRAZORIA]	1,307	1,307	1,307	1,307	1,307	1,307	
		1,307	1,307	1,307	1,307	1,307	1,307	
IRRIGATION, BRAZORIA, SAN JACINTO-BRAZOS (H)								
IRRIGATION CONSERVATION, BRAZORIA COUNTY	DEMAND REDUCTION [BRAZORIA]	22,258	22,258	22,258	22,258	22,258	22,258	
		22,258	22,258	22,258	22,258	22,258	22,258	
JONES CREEK, BRAZOS-COLORADO (H)								
MUNICIPAL CONSERVATION, JONES CREEK	DEMAND REDUCTION [BRAZORIA]	2	6	8	10	12	13	
		2	6	8	10	12	13	

Projected Water Management Strategies

TWDB 2017 State Water Plan Data

WUG, Basin (RWPG)		All values are in acre-feet						
Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070	
LAKE JACKSON, BRAZOS (H)								
DOW RESERVOIR AND PUMP STATION EXPANSION	BRAZOS RUN-OF-RIVER [BRAZORIA]	1,532	1,595	1,709	1,865	2,049	2,049	
MUNICIPAL CONSERVATION, LAKE JACKSON	DEMAND REDUCTION [BRAZORIA]	0	1	2	4	5	7	
WATER LOSS REDUCTION, LAKE JACKSON	DEMAND REDUCTION [BRAZORIA]	1	1	2	4	6	7	
		1,533	1,597	1,713	1,873	2,060	2,063	
LAKE JACKSON, SAN JACINTO-BRAZOS (H)								
MUNICIPAL CONSERVATION, LAKE JACKSON	DEMAND REDUCTION [BRAZORIA]	56	149	226	289	343	388	
WATER LOSS REDUCTION, LAKE JACKSON	DEMAND REDUCTION [BRAZORIA]	85	163	235	303	372	395	
		141	312	461	592	715	783	
MANUFACTURING, BRAZORIA, BRAZOS (H)								
INDUSTRIAL CONSERVATION, BRAZORIA COUNTY	DEMAND REDUCTION [BRAZORIA]	113	242	388	549	726	918	
		113	242	388	549	726	918	
MANUFACTURING, BRAZORIA, BRAZOS-COLORADO (H)								
INDUSTRIAL CONSERVATION, BRAZORIA COUNTY	DEMAND REDUCTION [BRAZORIA]	547	1,173	1,877	2,657	3,513	4,441	
NEW / EXPANDED CONTRACT WITH BRA	ALLENS CREEK LAKE/RESERVOIR [RESERVOIR]	13,736	16,849	19,839	22,768	25,636	28,442	
NEW / EXPANDED CONTRACT WITH BRA	BRAZOS RIVER AUTHORITY MAIN STEM LAKE/RESERVOIR SYSTEM [RESERVOIR]	25,033	24,939	24,855	24,764	24,666	24,549	
		39,316	42,961	46,571	50,189	53,815	57,432	
MANUFACTURING, BRAZORIA, SAN JACINTO-BRAZOS (H)								
BRAZOS SALTWATER BARRIER	BRAZOS RUN-OF-RIVER [BRAZORIA]	72,396	72,396	72,396	72,396	70,989	68,576	
DOW RESERVOIR AND PUMP STATION EXPANSION	BRAZOS RUN-OF-RIVER [BRAZORIA]	72,280	71,780	71,778	71,711	71,711	71,711	
FREPORT SEAWATER DESALINATION	GULF OF MEXICO [GULF OF MEXICO]	0	0	11,200	11,200	11,200	11,200	
INDUSTRIAL CONSERVATION, BRAZORIA COUNTY	DEMAND REDUCTION [BRAZORIA]	2,395	5,138	8,221	11,639	15,384	19,452	
		147,071	149,314	163,595	166,946	169,284	170,939	

Projected Water Management Strategies

TWDB 2017 State Water Plan Data

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
MANVEL, SAN JACINTO-BRAZOS (H)							
MUNICIPAL CONSERVATION, MANVEL	DEMAND REDUCTION [BRAZORIA]	17	74	150	243	354	489
NEW / EXPANDED CONTRACT WITH GCWA	INDIRECT REUSE [HARRIS]	0	492	1,319	2,253	3,353	4,718
		17	566	1,469	2,496	3,707	5,207
MINING, BRAZORIA, BRAZOS (H)							
NEW / EXPANDED CONTRACT WITH BRA	BRAZOS RIVER AUTHORITY MAIN STEM LAKE/RESERVOIR SYSTEM [RESERVOIR]	111	145	174	206	240	280
		111	145	174	206	240	280
MINING, BRAZORIA, BRAZOS-COLORADO (H)							
NEW / EXPANDED CONTRACT WITH BRA	BRAZOS RIVER AUTHORITY MAIN STEM LAKE/RESERVOIR SYSTEM [RESERVOIR]	206	266	321	380	444	521
		206	266	321	380	444	521
MINING, BRAZORIA, SAN JACINTO-BRAZOS (H)							
NEW / EXPANDED CONTRACT WITH GCWA	INDIRECT REUSE [HARRIS]	417	561	689	831	980	1,161
		417	561	689	831	980	1,161
OYSTER CREEK, SAN JACINTO-BRAZOS (H)							
DOW RESERVOIR AND PUMP STATION EXPANSION	BRAZOS RUN-OF-RIVER [BRAZORIA]	71	77	85	95	107	107
MUNICIPAL CONSERVATION, OYSTER CREEK	DEMAND REDUCTION [BRAZORIA]	3	7	11	14	16	18
WATER LOSS REDUCTION, OYSTER CREEK	DEMAND REDUCTION [BRAZORIA]	3	6	9	11	11	11
		77	90	105	120	134	136
PEARLAND, SAN JACINTO-BRAZOS (H)							
CITY OF PEARLAND REUSE	DIRECT REUSE [BRAZORIA]	314	1,154	1,154	1,154	1,154	1,154
MUNICIPAL CONSERVATION, PEARLAND	DEMAND REDUCTION [BRAZORIA]	146	413	664	899	1,117	1,310
PEARLAND SWTP - ADDITIONAL SUPPLIES	INDIRECT REUSE [HARRIS]	3,064	0	0	0	0	0
PEARLAND SWTP - ADDITIONAL SUPPLIES	ALLENS CREEK LAKE/RESERVOIR [RESERVOIR]	72	3,136	3,136	3,136	3,136	3,136
WATER LOSS REDUCTION, PEARLAND	DEMAND REDUCTION [BRAZORIA]	172	344	445	479	516	553

Estimated Historical Water Use and 2017 State Water Plan Dataset:

Brazoria County Groundwater Conservation District

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Projected Water Management Strategies

TWDB 2017 State Water Plan Data

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
		3,768	5,047	5,399	5,668	5,923	6,153
RICHWOOD, SAN JACINTO-BRAZOS (H)							
DOW RESERVOIR AND PUMP STATION EXPANSION	BRAZOS RUN-OF-RIVER [BRAZORIA]	154	155	158	166	176	176
MUNICIPAL CONSERVATION, RICHWOOD	DEMAND REDUCTION [BRAZORIA]	4	11	16	21	25	28
WATER LOSS REDUCTION, RICHWOOD	DEMAND REDUCTION [BRAZORIA]	5	10	14	16	17	17
		163	176	188	203	218	221
SWEENEY, BRAZOS-COLORADO (H)							
MUNICIPAL CONSERVATION, SWEENEY	DEMAND REDUCTION [BRAZORIA]	6	15	22	27	31	34
WATER LOSS REDUCTION, SWEENEY	DEMAND REDUCTION [BRAZORIA]	7	14	19	21	21	21
		13	29	41	48	52	55
VARNER CREEK UD, BRAZOS (H)							
MUNICIPAL CONSERVATION, VARNER CREEK UD	DEMAND REDUCTION [BRAZORIA]	2	6	8	11	12	13
WATER LOSS REDUCTION, VARNER CREEK UD	DEMAND REDUCTION [BRAZORIA]	3	5	6	6	6	6
		5	11	14	17	18	19
WEST COLUMBIA, BRAZOS (H)							
MUNICIPAL CONSERVATION, WEST COLUMBIA	DEMAND REDUCTION [BRAZORIA]	4	10	14	19	21	23
WATER LOSS REDUCTION, WEST COLUMBIA	DEMAND REDUCTION [BRAZORIA]	3	3	3	3	3	3
		7	13	17	22	24	26
WEST COLUMBIA, BRAZOS-COLORADO (H)							
MUNICIPAL CONSERVATION, WEST COLUMBIA	DEMAND REDUCTION [BRAZORIA]	1	2	3	3	4	4
WATER LOSS REDUCTION, WEST COLUMBIA	DEMAND REDUCTION [BRAZORIA]	1	1	1	1	1	1
		2	3	4	4	5	5
Sum of Projected Water Management Strategies (acre-feet)		236,053	248,208	271,453	283,997	295,940	307,486

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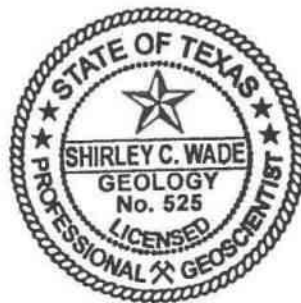
Appendix D

TWDB GAM Run 16-021 Report

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GAM RUN 16-021: BRAZORIA COUNTY GROUNDWATER CONSERVATION DISTRICT GROUNDWATER MANAGEMENT PLAN

Shirley C. Wade, Ph.D., P.G.
Texas Water Development Board
Groundwater Division
Groundwater Availability Modeling Section
(512) 936-0883
December 5, 2016



Shirley C. Wade
12/5/2016

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GAM RUN 16-021: BRAZORIA COUNTY GROUNDWATER CONSERVATION DISTRICT GROUNDWATER MANAGEMENT PLAN

Shirley C. Wade, Ph.D., P.G.
Texas Water Development Board
Groundwater Division
Groundwater Availability Modeling Section
(512) 936-0883
December 5, 2016

EXECUTIVE SUMMARY:

Texas State Water Code, Section 36.1071, Subsection (h) (Texas Water Code, 2015), states that, in developing its groundwater management plan, a groundwater conservation district shall use groundwater availability modeling information provided by the Executive Administrator of the Texas Water Development Board (TWDB) in conjunction with any available site-specific information provided by the district for review and comment to the Executive Administrator.

The TWDB provides data and information to the Brazoria County Groundwater Conservation District in two parts. Part 1 is the Estimated Historical Water Use/State Water Plan dataset report, which will be provided to you separately by the TWDB Groundwater Technical Assistance Section. Please direct questions about the water data report to Mr. Stephen Allen at (512) 463-7317 or stephen.allen@twdb.texas.gov. Part 2 is the required groundwater availability modeling information and this information includes

1. the annual amount of recharge from precipitation, if any, to the groundwater resources within the district;
2. for each aquifer within the district, the annual volume of water that discharges from the aquifer to springs and any surface-water bodies, including lakes, streams, and rivers; and
3. the annual volume of flow into and out of the district within each aquifer and between aquifers in the district.

The groundwater management plan for the Brazoria County Groundwater Conservation District should be adopted by the district on or before November 22, 2017, and submitted to the Executive Administrator of the TWDB on or before

December 22, 2017. The current management plan for the Brazoria County Groundwater Conservation District expires on February 20, 2018.

We used version 3.01 of the groundwater availability model for the northern portion of Gulf Coast Aquifer System (Kasmarek, 2013) to estimate the management plan information for the aquifers within Brazoria County Groundwater Conservation District. This report replaces the results of GAM Run 08-031 (Chowdhury, 2008). GAM Run 16-021 meets current standards set after the release of GAM Run 08-031 and includes results from the recently released groundwater availability model for the northern portion of the Gulf Coast Aquifer System (Kasmarek, 2013). Table 1 summarizes the groundwater availability model data required by statute and Figure 1 shows the area of the model from which the values in the table were extracted. If after review of the figure, the Brazoria County Groundwater Conservation District determines that the district boundaries used in the assessment do not reflect current conditions, please notify the TWDB at your earliest convenience.

METHODS:

In accordance with the provisions of the Texas State Water Code, Section 36.1071, Subsection (h), the groundwater availability model for the northern portion of the Gulf Coast Aquifer System was used to estimate information for the Brazoria County Groundwater Conservation District management plan. Water budgets were extracted for the historical model period (1980 through 2009) using ZONEBUDGET Version 3.01 (Harbaugh, 2009). The average annual water budget values for recharge, surface-water outflow, inflow to the district, and outflow from the district for the aquifers within the district are summarized in this report.

PARAMETERS AND ASSUMPTIONS:

Gulf Coast Aquifer System

- We used version 3.01 of the groundwater availability model for the northern portion of the Gulf Coast Aquifer System for this analysis. See Kasmarek (2013) for assumptions and limitations of the model.
- The model has four layers which represent the Chicot Aquifer (Layer 1), the Evangeline Aquifer (Layer 2), the Burkeville Confining Unit (Layer 3), and the Jasper Aquifer and parts of the Catahoula Formation in direct hydrologic communication with the Jasper Aquifer (Layer 4).
- Water budgets for the district were determined for the Gulf Coast Aquifer System (Layers 1 through 4 collectively).

- We used only land-based areas of the groundwater conservation district for extracting the flow budgets; therefore, interactions for portions of the aquifer underneath the bays were not considered.
- The model was run with MODFLOW-2000 (Harbaugh and others, 2000).

RESULTS:

A groundwater budget summarizes the amount of water entering and leaving the aquifer according to the groundwater availability model. Selected groundwater budget components listed below were extracted from the groundwater availability model for the northern portion of the Gulf Coast Aquifer System within Brazoria County Groundwater Conservation District and averaged over the historical calibration periods, as shown in Table 1.

1. Precipitation recharge—the areally distributed recharge sourced from precipitation falling on the outcrop areas of the aquifers (where the aquifer is exposed at land surface) within the district.
2. Surface-water outflow—the total water discharging from the aquifer (outflow) to surface-water features such as streams, reservoirs, and springs.
3. Flow into and out of district—the lateral flow within the aquifer between the district and adjacent counties.
4. Flow between aquifers—the net vertical flow between the aquifer and adjacent aquifers or confining units. This flow is controlled by the relative water levels in each aquifer and aquifer properties of each aquifer or confining unit that define the amount of leakage that occurs.

The information needed for the district's management plan is summarized in Table 1. It is important to note that sub-regional water budgets are not exact. This is due to the size of the model cells and the approach used to extract data from the model. To avoid double accounting, a model cell that straddles a political boundary, such as a district or county boundary, is assigned to one side of the boundary based on the location of the centroid of the model cell. For example, if a cell contains two counties, the cell is assigned to the county where the centroid of the cell is located.

TABLE 1: SUMMARIZED INFORMATION FOR THE GULF COAST AQUIFER SYSTEM FOR THE BRAZORIA COUNTY GROUNDWATER CONSERVATION DISTRICT'S GROUNDWATER MANAGEMENT PLAN. ALL VALUES ARE REPORTED IN ACRE-FEET PER YEAR AND ROUNDED TO THE NEAREST 1 ACRE-FOOT.

Management Plan requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Gulf Coast Aquifer System	33,129
Estimated annual volume of water that discharges from the aquifer to springs and any surface-water body including lakes, streams, and rivers	Gulf Coast Aquifer System	0
Estimated annual volume of flow into the district within each aquifer in the district	Gulf Coast Aquifer System	23,619
Estimated annual volume of flow out of the district within each aquifer in the district	Gulf Coast Aquifer System	41,107
Estimated net annual volume of flow between each aquifer in the district	Flow to underlying formations	NA ¹
	Flow to Gulf Coast Aquifer System from non-aquifer part of Gulf Coast Formations	430

¹ Not available because the model assumes a no-flow boundary condition at the base.

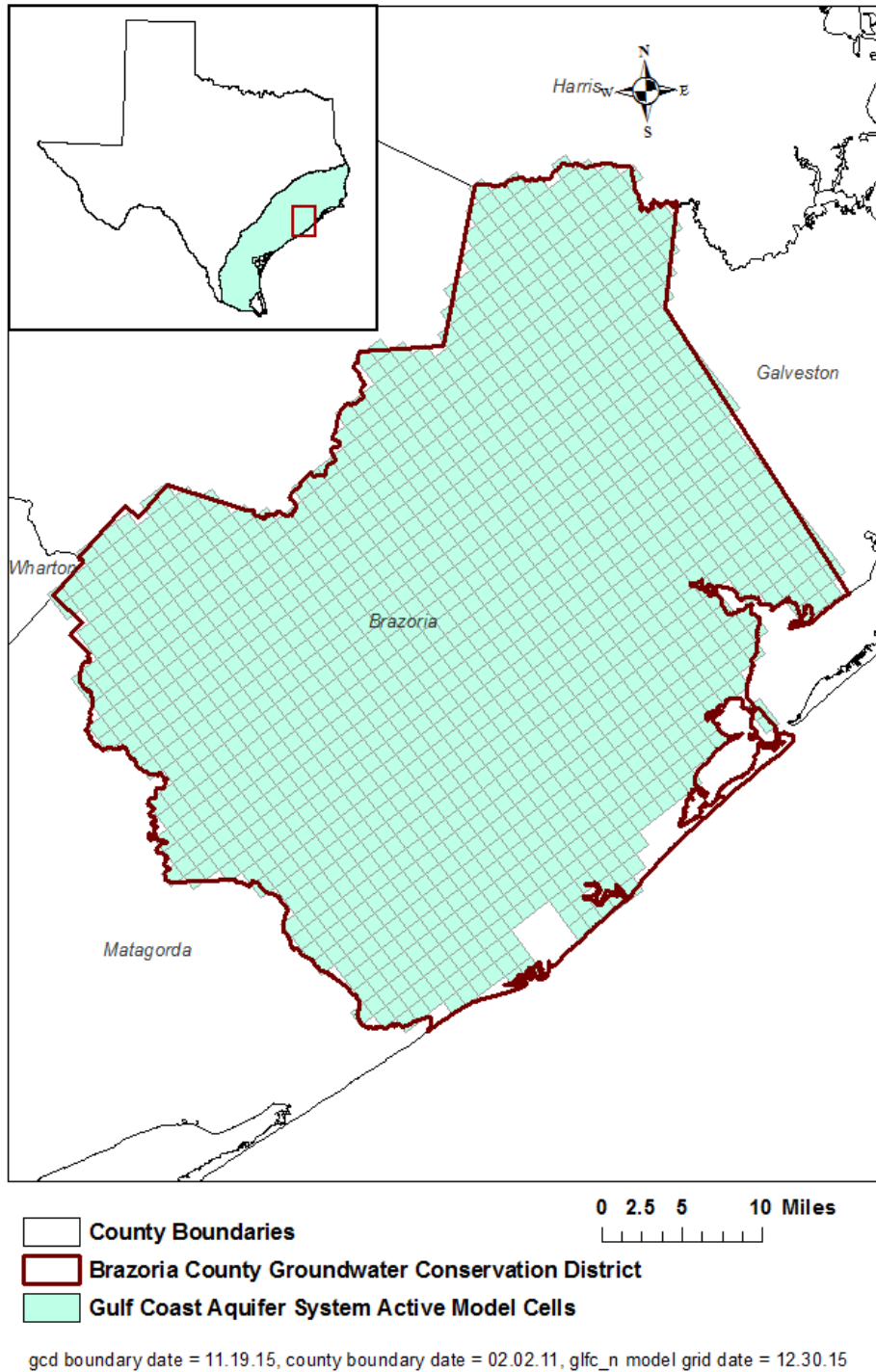


FIGURE 1: AREA OF THE GROUNDWATER AVAILABILITY MODEL FOR THE GULF COAST AQUIFER SYSTEM FROM WHICH THE INFORMATION IN TABLE 1 WAS EXTRACTED (THE AQUIFER SYSTEM EXTENT WITHIN THE DISTRICT BOUNDARY).

LIMITATIONS:

The groundwater models used in completing this analysis are the best available scientific tools that can be used to meet the stated objectives. To the extent that this analysis will be used for planning purposes and/or regulatory purposes related to pumping in the past and into the future, it is important to recognize the assumptions and limitations associated with the use of the results. In reviewing the use of models in environmental regulatory decision making, the National Research Council (2007) noted:

“Models will always be constrained by computational limitations, assumptions, and knowledge gaps. They can best be viewed as tools to help inform decisions rather than as machines to generate truth or make decisions. Scientific advances will never make it possible to build a perfect model that accounts for every aspect of reality or to prove that a given model is correct in all respects for a particular regulatory application. These characteristics make evaluation of a regulatory model more complex than solely a comparison of measurement data with model results.”

A key aspect of using the groundwater model to evaluate historic groundwater flow conditions includes the assumptions about the location in the aquifer where historic pumping was placed. Understanding the amount and location of historic pumping is as important as evaluating the volume of groundwater flow into and out of the district, between aquifers within the district (as applicable), interactions with surface water (as applicable), recharge to the Aquifer System (as applicable), and other metrics that describe the impacts of that pumping. In addition, assumptions regarding precipitation, recharge, and interaction with streams are specific to particular historic time periods.

Because the application of the groundwater models was designed to address regional-scale questions, the results are most effective on a regional scale. The TWDB makes no warranties or representations related to the actual conditions of any aquifer at a particular location or at a particular time.

It is important for groundwater conservation districts to monitor groundwater pumping and overall conditions of the aquifer. Because of the limitations of the groundwater model and the assumptions in this analysis, it is important that the groundwater conservation districts work with the TWDB to refine this analysis in the future given the reality of how the aquifer responds to the actual amount and location of pumping now and in the future. Historic precipitation patterns also need to be placed in context as future climatic conditions, such as dry and wet year precipitation patterns, may differ and affect groundwater flow conditions.

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