Victoria County Groundwater Conservation District

Management Plan

Victoria County Groundwater Conservation District Board of Directors Management Plan Adoption:	**October 24, 2008**
Texas Water Development Board Administrative Management Plan Approval:	**December 22, 2008**
Victoria County Groundwater Conservation District Board of Directors Management Plan Revision Adoption:	**August 16, 2013**
Texas Water Development Board Administrative Management Plan Revision Approval:	**October 15, 2013**
Victoria County Groundwater Conservation District Board of Directors Management Plan - Adoption with Revision:	**April 20, 2018**
Texas Water Development Board Administrative Management Plan Revision Approval:	

Table of Contents

DISTRICT MISSION

The mission of the Victoria County Groundwater Conservation District (**District**) is to develop sound water conservation and management strategies designed to conserve, preserve, protect, and prevent waste of groundwater resources within Victoria County for the benefit of Victoria County's landowners, citizens, economy, and environment.

The District will implement these strategies through the acquisition and dissemination of hydrogeological information, the development of programs and incentives to conserve and protect groundwater resources, and the adoption and enforcement of fair and appropriate District rules governing the production and use of the groundwater resources within the District.

PURPOSE OF THE MANAGEMENT PLAN

Senate Bill 1, enacted by the 75th Texas Legislature in 1997, and Senate Bill 2, enacted by the 77th Texas Legislature in 2001, established a comprehensive statewide water resource planning process and the actions necessary for groundwater conservation districts to manage and conserve the groundwater resources of the state of Texas. These bills required all groundwater conservation districts to develop a management plan which defines the groundwater needs and groundwater supplies within each district and the goals each district has set to achieve its mission.

In addition, the 79th Texas Legislature enacted House Bill 1763 in 2005 that requires joint planning among districts that are in the same groundwater management area. These districts must jointly agree upon and establish the desired future conditions of the aquifers within their respective groundwater management areas. Through this process, the groundwater conservation districts will submit the desired future conditions to the Executive Administrator of the Texas Water Development Board who, in turn, will provide each district within the groundwater management area with the amount of modeled available groundwater within each district. The modeled available groundwater will be based on the desired future conditions jointly established for each aquifer within the groundwater management area.

Technical information, such as the desired future conditions within the jurisdiction of the District and the amount of modeled available groundwater from such aquifers is required by statute to be included in the Management Plan of the District and will guide the development of regulatory and management policies of the District. This management plan is intended to satisfy the requirements of Senate Bill 1, Senate Bill 2, House Bill 1763, the statutory requirements of Chapter 36 of the Texas Water Code, and the rules and requirements of the Texas Water Development Board.

DISTRICT INFORMATION

Creation

The 79th Texas Legislature created the District in 2005 by the passage of House Bill 3423. The citizens of Victoria County confirmed the creation of the District by an election held on November 8, 2005. The District was formed to protect, conserve, and prevent waste of the groundwater resources beneath the area of Victoria County. To manage the groundwater resources under its jurisdiction, the District is charged with the rights and responsibilities specified in its enabling legislation; the provisions of Chapter 36 of the Texas Water Code; this Management Plan, and the Rules of the District.

Directors

The Board of Directors of the District consists of five members. These five directors are elected by the voters of Victoria County and serve a four-year term. The District observes the same four precincts as the Victoria County Commissioners' with one at-large position. Director terms are staggered on a two-year election interval in even-numbered years.

Authority

The District has the rights and responsibilities provided in Chapter 36 of the Texas Water Code and Chapter 356 of Title 31 of the Texas Administrative Code. The District has the authority to undertake hydrogeological studies, adopt a management plan, provide for the permitting of certain water wells, and implement programs to achieve statutory requirements. The District has rule-making authority to implement its policies and procedures to manage the groundwater resources of Victoria County.

Location and Extent

The boundaries of the District are the same as Victoria County. This area encompasses approximately 888 square miles. The District is bounded by DeWitt County, Lavaca County, Jackson County, Calhoun County, Refugio County, and Goliad County.

GROUNDWATER RESOURCES OF VICTORIA COUNTY

The Gulf Coast Aquifer System underlies Victoria County. Figure 1 and subsequent discussion of groundwater resources is derived Texas Water Development Report 365 - Aquifers of the Gulf Coast (TWDB Report 365) and Texas Water Development Report – Groundwater Availability Model of the Central Gulf Coast Aquifer System: Numerical Simulations through 1999 (TWDB CGC-GAM Report).

Figure 1: Stratigraphic Units of the Gulf Coast Aquifer and Central Gulf Coast

Groundwater Availability Layers

<table>
<tr><th colspan="2">Stratigraphic Units</th><th>Hydrostratigraphic Units</th><th>CGC-GAM Layer</th></tr>
<tr><td colspan="2">Alluvium</td><td rowspan="4">Chicot Aquifer</td><td rowspan="4">Layer 1</td></tr>
<tr><td colspan="2">Beaumont Clay</td></tr>
<tr><td rowspan="2">Lissie Formation</td><td>Montgomery Formation</td></tr>
<tr><td>Bentley Formation</td></tr>
<tr><td colspan="2">Willis Sand</td><td rowspan="2">Evangeline Aquifer</td><td rowspan="2">Layer 2</td></tr>
<tr><td colspan="2">Goliad Sand</td></tr>
<tr><td colspan="2" rowspan="2">Fleming Formation / Lagarto Clay</td><td rowspan="2">Burkeville Confining System</td><td rowspan="2">Layer 3</td></tr>
<tr><td rowspan="2">Oakville Sandstone</td></tr>
<tr><td colspan="2">Jasper Aquifer</td><td>Layer 4</td></tr>
<tr><td colspan="2">Catahoula Tuff / Anahuac Formation / Frio Formation</td><td>Catahoula Confining System</td><td></td></tr>
</table>

The Gulf Coast Aquifer System consists of five distinct hydrostratigraphic units: Chicot Aquifer, Evangeline Aquifer, Burkeville Confining System, Jasper Aquifer, and Catahoula Confining System. These units, except for the Catahoula Confining System, are included within the Central Gulf Coast Groundwater Availability Model developed by the Texas Water Development Board.

The Chicot and the Evangeline Aquifers consist of interbedded sand, silts, and clays. The Chicot Aquifer outcrops for most of the area within the boundary of the District except for a small portion along the western boundary of the Victoria County. The thickness of the

Chicot Aquifer ranges from less than 50 feet in the western portion of Victoria County to nearly 1,000 feet in the eastern portion of Victoria County. The thickness of the Evangeline Aquifer varies from approximately 1,000 feet in the outcrop in the western portion of Victoria County to approximately 1,200 feet in the eastern portion of Victoria County. The majority of water wells drilled and operated in Victoria County have been completed and screened in the Chicot Aquifer or Evangeline Aquifer.

STATEMENT OF GUIDING PRINCIPLES

The District recognizes that the groundwater resources of Victoria County and the region are of vital importance to the many users who are dependent on these valuable resources. In addition, the District recognizes that the landowners have an ownership right in the groundwater resources associated with their properties and are the primary stewards of the groundwater resources associated with their properties. The District will work with interested parties, especially landowners, in Victoria County to conserve, preserve, protect, and prevent waste of this most valuable resource, for the benefit of the landowners, the public, the local economy, and the environment.

The Management Plan of the District is intended to serve as a tool to focus the thoughts and actions of those given the responsibility for the execution of the activities of the District as well as to provide information to the staff of the District, landowners, and others responsible for the execution of, or compliance with, the policies and regulations of the District. The District will carry out its programs and responsibilities in implementing this management plan in a prudent and cost-effective manner. The District, with public input, will adopt and enforce rules necessary to implement this management plan.

CRITERIA FOR PLAN APPROVAL

Planning Horizon

This plan will be reviewed within five years as required by §36.1072(e) of the Texas Water Code. The District will consider the necessity to amend the plan and re-adopt this management plan with or without amendments as required by §36.1072(e) of the Texas Water Code.

This management plan will remain in effect until replaced by a revised management plan approved by the Texas Water Development Board.

Notice and Hearing Related to Plan Adoption - TWC §36.1071(a)

Public notices documenting that this plan was considered and adopted following appropriate public hearings are included in Appendix D.

Coordination with Regional Surface Water Management Entities - TWC §36.1071(a)

Letters transmitting this plan to the surface water management entities of the Victoria County region for coordination purposes are included in Appendix E.

Victoria County Groundwater Conservation District Board of Director Resolution Adopting Management Plan

A copy of the resolution adopting this plan is included in Appendix F.

ESTIMATES OF TECHNICAL INFORMATION REQUIRED BY §36.1071 OF THE TEXAS WATER CODE AND RULE 356.52 OF TITLE 31 OF THE TEXAS ADMINISTRATIVE CODE

Estimate of Modeled Available Groundwater in the District based on Desired Future Conditions – TWC §36.1071(e)(3)(A) and 31 TAC 356.52(a)(5)(A)

Modeled available groundwater is defined in §36.001 of the Texas Water Code 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." Desired future condition is defined in §36.001 of the Texas Water Code as "a quantitative description, adopted in accordance with §36.108 of the Texas Water Code, of the desired condition of the groundwater resources in a management area at one or more specified future times." The desired future condition of an aquifer may only be determined through joint planning with other groundwater conservation districts in the same groundwater management area as required by the 79th Legislature with the passage of House Bill 1763 into law.

The District is located in Groundwater Management Area 15. The groundwater conservation districts of Groundwater Management Area 15 completed the second-round of the joint planning process to determine the desired future condition of the aquifers within the groundwater management area.

District representatives of Groundwater Management Area 15 adopted, by resolution, the desired future condition for Gulf Coast Aquifer within Groundwater Management Area 15 on April 29, 2016. The administrator of Groundwater Management Area 15 submitted the adopted desired future conditions and explanatory report for Groundwater Management Area 15 on June 23, 2016, to Texas Water Development Board. The Texas Water Development Board designated the Groundwater Management Area 15 Explanatory Report administratively complete on October 20, 2016. The Texas Water Development Board provided the Modeled Available Groundwater estimates for Groundwater Management Area 15 to district representatives on March 22, 2017.

The desired future condition for the entire area is stated as follows:
"Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 13 feet in December 2069 from estimated year 2000 conditions."

The desired future condition for Victoria County is stated as follows:

"Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 5 feet in December 2069 from estimated year 2000 conditions."

The Texas Water Development Board reported the modeled available groundwater for Groundwater Management Area 15 based on the desired future condition in GAM Run 16-025 MAG which is incorporated into this management plan as Appendix C. The modeled available groundwater, in acre-feet per year (AFY), of the Gulf Coast Aquifer

within the District per Table 1 of the GAM Run 16-025 MAG report is as follows:

Year					
2020	2030	2040	2050	2060	2069
44,974 AFY	49,970 AFY	54,966 AFY	54,966 AFY	59,963 AFY	59,963 AFY

Estimate of amount of groundwater being used within the district on an annual basis – TWC §36.1071(e)(3)(B) and 31 TAC 356.52(a)(5)(B)

Please refer to Appendix A.

Estimate of annual amount of recharge from precipitation to the groundwater resources within the district – TWC §36.1071(e)(3)(C) and 31 TAC 356.52(a)(5)(C)

Please refer to Appendix B.

Estimate for each aquifer, annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers – TWC §36.1071(e)(3)(D) and 31 TAC 356.52(a)(5)(D)

Please refer to Appendix B.

Estimate of annual volume of flow into and out of the district within each aquifer and between aquifers in the district – TWC §36.1071(e)(3)(E) and 31 TAC 356.52(a)(5)(E)

Please refer to Appendix B.

Estimate of projected surface water supply in the district according to the most recently adopted state water plan – TWC §36.1071(e)(3)(F) and 31 TAC 356.52(a)(5)(F)

Please refer to Appendix A.

Estimate of projected total demand for water in the district according to the most recently adopted state water plan – TWC §36.1071(e)(3)(G) and 31 TAC 356.52(a)(5)(G)

Please refer to Appendix A.

CONSIDER THE WATER SUPPLY NEEDS AND WATER MANAGEMENT STRATEGIES INCLUDED IN THE ADOPTED STATE WATER PLAN – TWC §36.1071(e)(4)

The 2017 State Water Plan identifies water supply needs, within Victoria County, for the irrigation, manufacturing, steam electric power, and City of Victoria water user groups. The sum of projected water supply needs is 21,846 acre-feet in year 2020 and increases to 105,471 acre-feet in year 2070.

The 2017 State Water Plan identifies water management strategies with source water from the Gulf Coast Aquifer within Victoria County. The volume of groundwater planned to be produced with these strategies equals 8,574 acre-feet in years 2020 and 2070.

The District has established regulations regarding historic use protection, groundwater production limitation, and well spacing to be used to evaluate permitting requests. The District will evaluate permitting requests associated with the implementation of the water management strategies with source water from the Gulf Coast Aquifer within Victoria County relative to the Rules of the District.

Please refer to Appendix A.

DETAILS ON THE DISTRICT MANAGEMENT OF GROUNDWATER

The Texas Legislature established that groundwater conservation districts are the preferred method of groundwater management in TWC §36.0015. The District will manage the use of groundwater within Victoria County in order to protect, preserve, conserve, and prevent waste of the resource while seeking to maintain the economic viability of all resource user groups, public and private. The District seeks to manage the groundwater resources of Victoria County as practicably as possible as established in the plan. In consideration of the economic and cultural activities occurring within Victoria County, the District will identify and engage in such activities and practices, that if implemented may result in the reasonable and effective protection, preservation, conservation, waste prevention of groundwater in Victoria County. The District will manage groundwater resources through rules developed and implemented in accordance with Chapter 36 of the Texas Water Code and the provisions of the enabling legislation of the District.

For the purposes of this management plan, the following definitions are used:

- Protection of groundwater is the activity and practice of seeking to prevent harm or injury to a groundwater resource.
- Preservation of groundwater is the activity and practice of seeking to extend the useful longevity or life of a groundwater resource.
- Conservation of groundwater is the activity and practice of seeking to use a groundwater resource in a manner that appropriately balances the impacts associated with consuming the resource and preserving the resource for the future.

- Waste prevention of groundwater is the activity and practices seeking to prevent the use of groundwater in any manner defined as waste in Section 36.001 of the Texas Water Code.

An observation well network has been established and will be maintained by the District in order to monitor changing water levels and water quality of groundwater supplies within Victoria County. When a monitoring well network has been established, the District will make a regular assessment of water supply and groundwater storage conditions, water quality conditions and will report those conditions to the Victoria County Groundwater Conservation Board of Directors and to the public. The District may undertake, as necessary, investigations of the groundwater resources within Victoria County and will make the results of investigations available to the public. The District will co-operate with investigations of the groundwater resources of Victoria County undertaken by other local political subdivisions or agencies of the State of Texas.

In order to better manage groundwater resources, the District may establish management zones for; and adopt different rules for:

1. Each aquifer, subdivision of an aquifer, or geologic strata located in whole or in part within Victoria County; or
2. Each geographic area overlying an aquifer or subdivision of an aquifer located in whole or in part within Victoria County.

For the purpose of managing the use of groundwater within Victoria County, the District may define sustainable use as the use of an amount of groundwater in Victoria County as a whole or any management zone established by the District that does not exceed any of the following conditions:

1. The long-term average historical groundwater production from aquifers in Victoria County established by the District prior to the establishment of the desired future condition of aquifers in a groundwater management area in which the District is located; or
2. The desired future conditions of aquifers in Victoria County established by a groundwater management area in which the District is located; or
3. The amount of modeled available groundwater resulting from the establishment of a desired future aquifer condition by the District or a groundwater management area in which the District is located; or
4. The estimated long-term average historical amount of annual recharge of the aquifer or aquifer subdivision in which the use occurs as recognized by the District; or
5. Any other criteria established by the District as being a threshold of use beyond which further use of the aquifer or aquifer subdivision may result in a specified undesirable or injurious condition.

The District adopted rules that protect historic use of groundwater in Victoria County to the maximum extent practical and consistent with this plan and the goals and objectives set forth herein. The District may impose more restrictive conditions on non-historic-use

permits and non-historic-use permit amendments to increase use by historic users if the limitations:

1. Apply to all non-historic-use permits and non-historic-use permit amendments to increase use by historic users, regardless of the type or location of use;
2. Bear a reasonable relationship to the Management Plan of the District; and
3. Are reasonably necessary to protect historic use.

The District adopted rules to regulate groundwater withdrawals by means of spacing and/or production limits. The relevant factors to be considered in making a determination to grant or deny a permit or limit groundwater withdrawals shall include those set forth in the District enabling Legislation, Chapter 36 of the Texas Water Code, and the Rules of the District. The District may employ technical resources at its disposal, as needed, to evaluate the groundwater resources available within Victoria County and to determine the effectiveness of regulatory or conservation measures. In consideration of particular individual, localized or District-wide conditions, including without limitation climatic conditions, the District may, by rule, allow an increase or impose a decrease in the total production in a management zone above or below the sustainable amount for a period of time considered necessary by the District in order to accomplish the purposes set forth in Chapter 36 of the Texas Water Code, or the enabling legislation of the District. The exercise of said discretion by the Victoria County Groundwater Conservation District Board of Directors shall not be construed as limiting the power of the Victoria County Groundwater Conservation District Board of Directors.

ACTIONS, PROCEDURES, PERFORMANCE AND AVOIDANCE FOR PLAN IMPLEMENTATION – TWC §36.1071(e)(2)

The District will implement the provisions of this plan and will utilize the provisions of this plan as a guidepost for determining the direction or priority for all District activities. All operations of the District, all agreements entered into by the District, and any additional planning efforts in which the District may participate will be consistent with the provisions of this plan.

Rules adopted by the District for the permitting of wells and the use of groundwater shall comply with Chapter 36 of the Texas Water Code, including §36.113 of the Texas Water Code, and the provisions of this management plan. All rules will be adhered to and enforced. The promulgation and enforcement of the rules will be based on the best technical evidence available to the District.

The Rules of the District are available at the following website address: www.vcgcd.org

METHODOLOGY FOR TRACKING DISTRICT PROGRESS IN ACHIEVING MANAGEMENT GOALS – 31TAC 356.52(a)(4)

The staff of the District will prepare and present an annual report to the Victoria County Groundwater Conservation Board of Directors regarding the performance of the District in achieving management goals and objectives for the fiscal year of the District. The report will be presented within 120 days following the completion of the fiscal year. The District will maintain the report on file for public inspection at the office of the District upon adoption at a meeting of the Victoria County Groundwater Conservation Board of Directors.

GOALS, MANAGEMENT OBJECTIVES and PERFORMANCE STANDARDS

Providing the most efficient use of groundwater – TWC §36.1071(a)(1) and 31 TAC 356.52(a)(1)(A)

Objective: Develop and maintain a water well registration program for tracking well information for wells within Victoria County.

Performance Standard: Each year, the District will summarize within the annual report the changes related to water well registration including the number of non-grandfathered and grandfathered wells registered.

Objective: Develop and maintain a water well permitting program for processing and tracking all permits authorizing groundwater production.

Performance Standard: Each year, the District will summarize within the annual report the changes related to water well permitting including the number of new applications and the disposition of the applications.

Controlling and preventing waste of groundwater – TWC §36.1071(a)(2) and 31 TAC 356.52(a)(1)(B)

Objective: Develop and maintain a water well inspection program for non-exempt wells.

Performance Standard: Each year, the District will summarize within the annual report the findings of the inspection activities including information regarding the number of wells that require improvement to control or prevent waste of groundwater.

Controlling and preventing subsidence – TWC §36.1071(a)(3) and 31 TAC 356.52(a)(1)(C)

This category of management goal is not applicable to the District at this time because no significant subsidence has occurred in Victoria County. The District will monitor geological conditions for evidence of subsidence, particularly in high groundwater production areas near the coast and take appropriate action should subsidence develop.

Addressing conjunctive surface water management issues – TWC §36.1071(a)(4) and 31 TAC 356.52(a)(1)(D)

Objective: Participate in the regional water planning process by attending at least

one South Central Texas Regional Water Planning Group (Region L) meeting per year.

Performance Standard: Each year, the District will summarize within the annual report the representatives of the District, dates, and the number of meetings of the South Central Texas Regional Water Planning Group attended.

Addressing natural resource issues which impact the use and availability of groundwater, and which are impacted by the use of groundwater – TWC §36.1071(a)(5) and 31 TAC §356.52(a)(1)(E)

Objective: Develop and maintain a water quality monitoring program.

Performance Standard: Each year, the District will summarize within the annual report the monitoring activities including the number of wells monitored and the year-to-year change of water quality.

Addressing drought conditions – TWC §36.1071(a)(6) and 31 TAC 356.52(a)(1)(F)

Objective: Collect and review drought condition information related to Victoria County and the surrounding region of Texas.

Performance Standard: Each year, the District will summarize within the annual report the drought condition information collected and reviewed.

Addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective – TWC §36.1071(a)(7) and 31 TAC 356.52(a)(1)(G)

Objective: Promote conservation, rainwater harvesting and brush control within Victoria County.

Performance Standard: Each year, the District will summarize within the annual report the activities directly related to conservation, rainwater harvesting and brush control including educational materials developed and delivered to local schools, cooperative educational contributions and grants, public speaking events and presentations, community event participation, and educational publications.

Recharge enhancement and precipitation enhancement are deemed to be not appropriate or cost-effective programs for the District at this time because there are no existing recharge enhancement or precipitation

enhancement programs operating in nearby counties in which the District could participate and share costs. The costs of operating a single-county recharge enhancement or precipitation enhancement program are prohibitive and would require the District to increase taxes. Therefore, these goals are not applicable to the District at this time.

Addressing the desired future conditions adopted by the district under Section 36.108 – TWC §36.1071(a)(8) and 31 TAC 356.52(a)(1)(H)

Objective: Develop and maintain a water level monitoring program.

Performance Standard: Each year, the District will summarize within the annual report the water level monitoring activities including the number of wells monitored and the year-to-year change of water level.

Objective: Analyze water level monitoring information to evaluate water level trends and determine the degree to which the District is complying with the desired future conditions of Gulf Coast Aquifer in Victoria County.

Performance Standard: Each year, the District will summarize within the annual report the water level trends and the conclusions regarding the compliance of the District with the desired future condition of the Gulf Coast Aquifer in Victoria County.

List of Appendices

Appendix A. Estimated Historical Water Use and 2017 State Water Plan Datasets provided by Texas Water Development Board

Appendix B. Groundwater Availability Model Run 12-022 provided by Texas Water Development Board

Appendix C. Groundwater Availability Model Run 16-025 MAG

Appendix D. Public Notices Regarding Hearings Related to Plan Adoption

Appendix E. Letters Coordinating with Regional Surface Water Management Entities

Appendix F. Victoria County Groundwater Conservation District Board of Director Resolution Adopting Management Plan

Appendix G. Minutes of Victoria County Groundwater Conservation District Board of Director Meeting related to the public hearings for and adoption of the Management Plan

Appendix H. Victoria County Groundwater Conservation District Contact Information

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Estimated Historical Water Use And 2017 State Water Plan Datasets:

Victoria 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
January 12, 2018

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 1/12/2018. 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).

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.

VICTORIA COUNTY

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2015	GW	3,565	529	3	1,298	7,942	546	13,883
	SW	11,084	6,971	0	0	0	364	18,419
2014	GW	4,410	465	3	1,043	12,169	699	18,789
	SW	9,628	7,069	0	0	0	467	17,164
2013	GW	3,342	612	4	1,410	11,013	666	17,047
	SW	11,884	6,880	0	0	558	444	19,766
2012	GW	5,153	484	1	1,324	13,134	516	20,612
	SW	11,937	7,288	0	15,051	651	344	35,271
2011	GW	9,168	575	32	1,887	21,013	651	33,326
	SW	10,634	7,538	3	15,051	0	435	33,661
2010	GW	2,841	591	45	1,896	8,451	659	14,483
	SW	10,824	6,808	5	29,579	0	439	47,655
2009	GW	1,721	535	43	2,192	5,990	659	11,140
	SW	14,583	24,146	5	197	0	439	39,370
2008	GW	1,652	515	41	733	3,775	656	7,372
	SW	11,226	20,995	5	15,279	0	436	47,941
2007	GW	3,297	501	0	788	1,165	690	6,441
	SW	8,953	17,549	0	77	0	460	27,039
2006	GW	3,312	488	0	687	2,306	771	7,564
	SW	10,852	20,911	0	196	0	514	32,473
2005	GW	4,130	500	0	717	5,619	721	11,687
	SW	9,265	20,329	0	198	0	480	30,272
2004	GW	5,503	472	0	651	2,966	303	9,895
	SW	6,483	19,859	0	47	0	834	27,223
2003	GW	3,762	460	0	348	3,900	308	8,778
	SW	9,834	19,859	0	175	66	847	30,781
2002	GW	4,430	410	0	1,079	7,301	292	13,512
	SW	9,578	19,859	0	0	0	803	30,240
2001	GW	9,142	616	0	2,243	7,339	286	19,626
	SW	0	23,702	0	0	0	788	24,490
2000	GW	14,067	619	0	2,533	6,708	649	24,576
	SW	0	23,702	0	45,624	0	435	69,761

Projected Surface Water Supplies
TWDB 2017 State Water Plan Data

VICTORIA COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
L	IRRIGATION, VICTORIA	GUADALUPE	GUADALUPE RUN-OF-RIVER	137	137	137	137	137	137
L	LIVESTOCK, VICTORIA	GUADALUPE	GUADALUPE LIVESTOCK LOCAL SUPPLY	339	339	339	339	339	339
L	LIVESTOCK, VICTORIA	LAVACA	LAVACA LIVESTOCK LOCAL SUPPLY	2	2	2	2	2	2
L	LIVESTOCK, VICTORIA	LAVACA-GUADALUPE	LAVACA-GUADALUPE LIVESTOCK LOCAL SUPPLY	218	218	218	218	218	218
L	LIVESTOCK, VICTORIA	SAN ANTONIO	SAN ANTONIO LIVESTOCK LOCAL SUPPLY	24	24	24	24	24	24
L	MANUFACTURING, VICTORIA	GUADALUPE	GUADALUPE RUN-OF-RIVER	28,027	28,027	28,027	28,027	28,027	28,027
L	VICTORIA	GUADALUPE	CANYON LAKE/RESERVOIR	836	836	836	836	836	836
L	VICTORIA	GUADALUPE	GUADALUPE RUN-OF-RIVER	410	410	410	410	410	410
L	VICTORIA	LAVACA-GUADALUPE	CANYON LAKE/RESERVOIR	404	404	404	404	404	404
L	VICTORIA	LAVACA-GUADALUPE	GUADALUPE RUN-OF-RIVER	198	198	198	198	198	198
	Sum of Projected Surface Water Supplies (acre-feet)			**30,595**	**30,595**	**30,595**	**30,595**	**30,595**	**30,595**

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.

VICTORIA COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
L	COUNTY-OTHER, VICTORIA	GUADALUPE	1,802	1,845	1,875	1,921	1,976	2,026
L	COUNTY-OTHER, VICTORIA	LAVACA	5	5	5	5	5	5
L	COUNTY-OTHER, VICTORIA	LAVACA-GUADALUPE	1,234	1,264	1,287	1,318	1,357	1,392
L	COUNTY-OTHER, VICTORIA	SAN ANTONIO	9	9	9	9	10	10
L	IRRIGATION, VICTORIA	GUADALUPE	2,546	2,546	2,546	2,546	2,546	2,546
L	IRRIGATION, VICTORIA	LAVACA-GUADALUPE	18,669	18,669	18,669	18,669	18,669	18,669
L	LIVESTOCK, VICTORIA	GUADALUPE	535	535	535	535	535	535
L	LIVESTOCK, VICTORIA	LAVACA	5	5	5	5	5	5
L	LIVESTOCK, VICTORIA	LAVACA-GUADALUPE	576	576	576	576	576	576
L	LIVESTOCK, VICTORIA	SAN ANTONIO	49	49	49	49	49	49
L	MANUFACTURING, VICTORIA	GUADALUPE	30,977	33,815	36,640	39,165	42,005	45,051
L	MINING, VICTORIA	GUADALUPE	36	38	28	21	14	9
L	MINING, VICTORIA	LAVACA-GUADALUPE	33	34	26	19	12	8
L	MINING, VICTORIA	SAN ANTONIO	3	3	2	1	1	1
L	STEAM ELECTRIC POWER, VICTORIA	GUADALUPE	5,530	30,802	38,202	54,623	71,720	71,720
L	VICTORIA	GUADALUPE	11,532	12,109	12,555	13,007	13,432	13,797
L	VICTORIA	LAVACA-GUADALUPE	5,578	5,857	6,074	6,292	6,498	6,674
	Sum of Projected Water Demands (acre-feet)		**79,119**	**108,161**	**119,083**	**138,761**	**159,410**	**163,073**

Projected Water Supply Needs
TWDB 2017 State Water Plan Data

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

VICTORIA COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
L	COUNTY-OTHER, VICTORIA	GUADALUPE	230	187	157	111	56	6
L	COUNTY-OTHER, VICTORIA	LAVACA	2	2	2	2	2	2
L	COUNTY-OTHER, VICTORIA	LAVACA-GUADALUPE	191	161	138	107	68	33
L	COUNTY-OTHER, VICTORIA	SAN ANTONIO	1	1	1	1	0	0
L	IRRIGATION, VICTORIA	GUADALUPE	-1,589	-1,589	-1,589	-1,589	-1,589	-1,589
L	IRRIGATION, VICTORIA	LAVACA-GUADALUPE	-3,676	-3,676	-3,676	-3,676	-3,676	-3,676
L	LIVESTOCK, VICTORIA	GUADALUPE	0	0	0	0	0	0
L	LIVESTOCK, VICTORIA	LAVACA	0	0	0	0	0	0
L	LIVESTOCK, VICTORIA	LAVACA-GUADALUPE	0	0	0	0	0	0
L	LIVESTOCK, VICTORIA	SAN ANTONIO	0	0	0	0	0	0
L	MANUFACTURING, VICTORIA	GUADALUPE	-2,178	-5,016	-7,841	-10,366	-13,206	-16,252
L	MINING, VICTORIA	GUADALUPE	0	0	0	0	0	0
L	MINING, VICTORIA	LAVACA-GUADALUPE	0	0	0	0	0	0
L	MINING, VICTORIA	SAN ANTONIO	0	0	0	0	0	0
L	STEAM ELECTRIC POWER, VICTORIA	GUADALUPE	-4,506	-29,778	-37,178	-53,599	-70,696	-70,696
L	VICTORIA	GUADALUPE	-6,670	-7,247	-7,694	-8,145	-8,571	-8,935
L	VICTORIA	LAVACA-GUADALUPE	-3,227	-3,506	-3,722	-3,941	-4,146	-4,323
	Sum of Projected Water Supply Needs (acre-feet)		**-21,846**	**-50,812**	**-61,700**	**-81,316**	**-101,884**	**-105,471**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

VICTORIA COUNTY

WUG, Basin (RWPG)

All values are in acre-feet

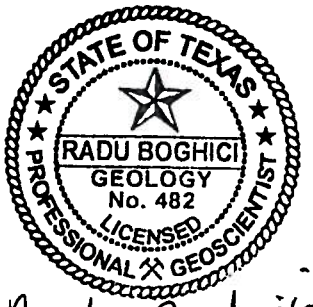
Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
IRRIGATION, VICTORIA, GUADALUPE (L)							
IRRIGATION WATER CONSERVATION	DEMAND REDUCTION [VICTORIA]	0	0	0	0	0	0
		0	**0**	**0**	**0**	**0**	**0**
IRRIGATION, VICTORIA, LAVACA-GUADALUPE (L)							
IRRIGATION WATER CONSERVATION	DEMAND REDUCTION [VICTORIA]	0	0	0	0	0	0
		0	**0**	**0**	**0**	**0**	**0**
MANUFACTURING, VICTORIA, GUADALUPE (L)							
GBRA LOWER BASIN OFF-CHANNEL RESERVOIR	GBRA LOWER BASIN OFF-CHANNEL LAKE/ RESERVOIR [RESERVOIR]	2,178	5,016	7,841	10,366	13,206	16,252
		2,178	**5,016**	**7,841**	**10,366**	**13,206**	**16,252**
STEAM ELECTRIC POWER, VICTORIA, GUADALUPE (L)							
GBRA - MBWSP - CONJUNCTIVE USE (OPTION 3A) - CARRIZO DEVELOPMENT	CARRIZO-WILCOX AQUIFER [GONZALES]	0	2,994	1,320	0	0	0
GBRA - MBWSP - CONJUNCTIVE USE W/ASR (OPTION 3A)	CARRIZO-WILCOX AQUIFER ASR [GONZALES]	0	0	11,899	0	0	0
GBRA LOWER BASIN OFF-CHANNEL RESERVOIR	GBRA LOWER BASIN OFF-CHANNEL LAKE/ RESERVOIR [RESERVOIR]	4,506	26,784	23,959	21,434	18,594	15,548
GBRA NEW APPROPRIATION (LOWER BASIN)	GUADALUPE RUN-OF-RIVER [CALHOUN]	0	0	0	3,065	23,002	26,048
VICTORIA COUNTY STEAM ELECTRIC PROJECT	GUADALUPE RUN-OF-RIVER [CALHOUN]	0	0	0	29,100	29,100	29,100
		4,506	**29,778**	**37,178**	**53,599**	**70,696**	**70,696**
VICTORIA, GUADALUPE (L)							
DROUGHT MANAGEMENT - VICTORIA	DEMAND REDUCTION [VICTORIA]	577	0	0	0	0	0
MUNICIPAL WATER CONSERVATION (URBAN)	DEMAND REDUCTION [VICTORIA]	545	1,483	2,455	3,476	4,519	5,066
VICTORIA ASR	GUADALUPE RUN-OF-RIVER [VICTORIA]	0	5,325	5,324	5,324	5,324	5,324
VICTORIA GROUNDWATER - SURFACE WATER EXCHANGE	GULF COAST AQUIFER [VICTORIA]	5,779	5,779	5,779	5,779	5,779	5,779
		6,901	**12,587**	**13,558**	**14,579**	**15,622**	**16,169**
VICTORIA, LAVACA-GUADALUPE (L)							
DROUGHT MANAGEMENT - VICTORIA	DEMAND REDUCTION [VICTORIA]	279	0	0	0	0	0

MUNICIPAL WATER CONSERVATION (URBAN)	DEMAND REDUCTION [VICTORIA]	264	717	1,187	1,682	2,186	2,451
VICTORIA ASR	GUADALUPE RUN-OF-RIVER [VICTORIA]	0	2,575	2,576	2,576	2,576	2,576
VICTORIA GROUNDWATER - SURFACE WATER EXCHANGE	GULF COAST AQUIFER [VICTORIA]	2,795	2,795	2,795	2,795	2,795	2,795
		3,338	**6,087**	**6,558**	**7,053**	**7,557**	**7,822**
Sum of Projected Water Management Strategies (acre-feet)		**16,923**	**53,468**	**65,135**	**85,597**	**107,081**	**110,939**

Appendix B. Groundwater Availability Model Run 12-022 provided by Texas Water Development Board

GAM RUN 12-022: VICTORIA COUNTY GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN

by Radu Boghici
Texas Water Development Board
Groundwater Resources Division
Groundwater Availability Modeling Section
(512) 463-5808
November 29, 2012



Radu Boghici
11/29/2012

The seal appearing on this document was authorized by Radu Boghici, P.G. 482 on November 29, 2012.

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GAM RUN 12-022: VICTORIA COUNTY GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN

by Radu Boghici
Texas Water Development Board
Groundwater Resources Division
Groundwater Availability Modeling Section
(512) 463-5808
November 29, 2012

EXECUTIVE SUMMARY:

Texas State Water Code, Section 36.1071, Subsection (h), 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. Information derived from groundwater availability models that shall be included in the groundwater management plan includes:

- the annual amount of recharge from precipitation to the groundwater resources within the district, if any;
- 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
- the annual volume of flow into and out of the district within each aquifer and between aquifers in the district.

The purpose of this report is to provide Part 2 of a two-part package of information from the TWDB to Victoria County Groundwater Conservation District management plan to fulfill the requirements noted above. The groundwater management plan for the Victoria County Groundwater Conservation District is due for approval by the executive administrator of the TWDB before December 4 , 2013.

This report discusses the method, assumptions, and results from model runs using the groundwater availability model for the central portion of the Gulf Coast. Table 1 summarizes the groundwater availability model data required by the statute, and Figure 1 shows the area of the model from which the values in the table was extracted. This model run replaces the results of GAM Run 08-32. GAM Run 12-022 meets current standards set after the release of GAM Run 08-32. If after review of the figure, Victoria County Groundwater Conservation District determines that the district boundaries used in the assessment do not reflect current conditions, please notify the Texas Water Development Board immediately. The TWDB has also approved, for planning purposes, alternative models that can have water budget information extracted for the district. These alternative models include the Groundwater Management Area 16 alternative model and the fully penetrating alternative model for the central portion of the Gulf Coast. Please contact the author of this report if a comparison report using these models is desired.

METHODS:

In accordance with the provisions of the Texas State Water Code, Section 36.1071, Subsection (h), the groundwater availability model for the central portion of the Gulf Coast Aquifer was run for this analysis. Victoria County Groundwater Conservation District Water budgets for 1981 through 1999 were extracted using ZONEBUDGET Version 3.01 (Harbaugh, 2009) The average annual water budget values for recharge, surface water outflow, inflow to the district, outflow from the district, net inter-aquifer flow (upper), and net inter-aquifer flow (lower) for the portions of the aquifers located within the district are summarized in this report.

PARAMETERS AND ASSUMPTIONS:

Gulf Coast Aquifer

- Version 1.01 of the groundwater availability model for the central portion of the Gulf Coast Aquifer was used for this analysis. See Chowdhury and others (2004) and Waterstone and others (2003) for assumptions and limitations of the groundwater availability model.
- The model for the central section of the Gulf Coast Aquifer assumes partially penetrating wells in the Evangeline Aquifer due to a lack of data for aquifer properties in the lower section of the aquifer.
- This groundwater availability model includes four layers, which generally correspond to (from top to bottom):

1. the Chicot Aquifer,
2. the Evangeline Aquifer,
3. the Burkeville Confining Unit, and
4. the Jasper Aquifer including parts of the Catahoula Formation.

- The mean absolute error (a measure of the difference between simulated and measured water levels) in the entire model for 1999 is 26 feet, which is 4.6 percent of the hydraulic head drop across the model area (Chowdhury and others, 2004).

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 model results for the aquifers located within the district and averaged over the duration of the calibration and verification portion of the model runs in the district, as shown in Table 1. The components of the modified budget shown in Table 1 include:

- 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.
- Surface water outflow—The total water discharging from the aquifer (outflow) to surface water features such as streams, reservoirs, and drains (springs).
- Flow into and out of district—The lateral flow within the aquifer between the district and adjacent counties.
- Flow between aquifers—The net vertical flow between aquifers or confining units. This flow is controlled by the relative water levels in each aquifer or confining unit and aquifer properties of each aquifer or confining unit that define the amount of leakage that occurs. “Inflow” to an aquifer from an overlying or underlying aquifer will always equal the “Outflow” from the other aquifer.

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 (Figure 1).

TABLE 1: SUMMARIZED INFORMATION FOR THE GULF COAST AQUIFER THAT IS NEEDED FOR VICTORIA 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. THESE FLOWS MAY INCLUDE BRACKISH WATERS.

Management Plan requirement		
Estimated annual amount of recharge from precipitation to the district	Gulf Coast Aquifer	23,441
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	21,924[1)]
Estimated annual volume of flow into the district within each aquifer in the district	Gulf Coast Aquifer	18,555
Estimated annual volume of flow out of the district within each aquifer in the district	Gulf Coast Aquifer	15,283
Estimated net annual volume of flow between each aquifer in the district	Not Applicable	Not Applicable

[1)] discharge amount includes 54 acre-feet per year of water leaving the district to the Gulf of Mexico.

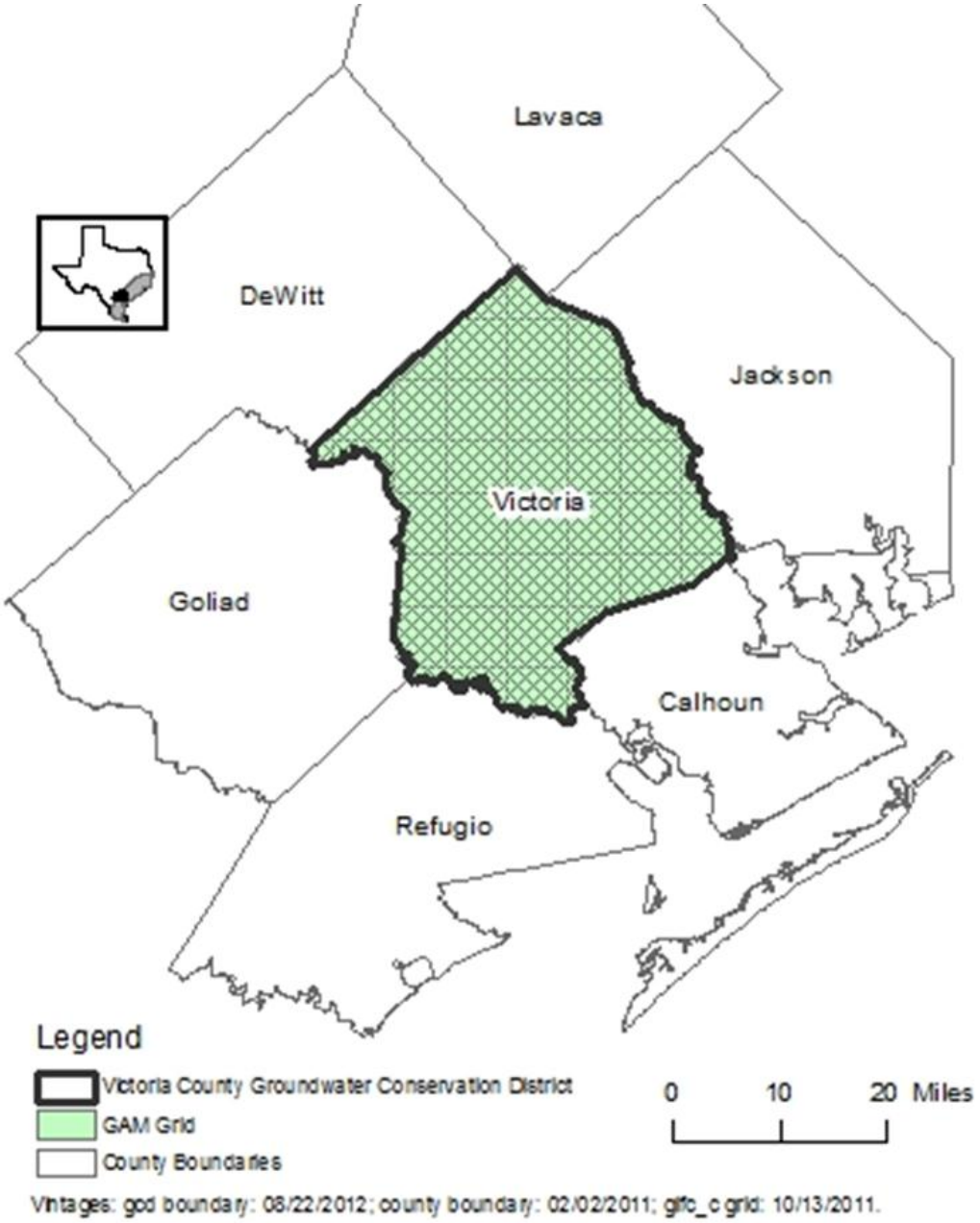

FIGURE 1: AREA OF THE GROUNDWATER AVAILABILITY MODEL FOR THE CENTRAL PORTION OF THE GULF COAST AQUIFER FROM WHICH THE INFORMATION IN TABLE 1 WAS EXTRACTED (THE GULF COAST AQUIFER EXTENT WITHIN THE DISTRICT BOUNDARY).

LIMITATIONS

The groundwater model(s) used in completing this analysis is the best available scientific tool that can be used to meet the stated objective(s). 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 model 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.

REFERENCES:

Chowdhury, Ali. H., Wade, S., Mace, R.E., and Ridgeway, C., 2004, Groundwater Availability Model of the Central Gulf Coast Aquifer System: Numerical Simulations through 1999- Model Report, 114 p., http://www.twdb.texas.gov/groundwater/models/gam/glfc_c/TWDB_Recalibration_Report.pdf.

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National Research Council, 2007, Models in Environmental Regulatory Decision Making Committee on Models in the Regulatory Decision Process, National Academies Press, Washington D.C., 287 p.

Ridgeway, Cynthia K., 2008, GAM Run 08-32: Texas Water Development Board, GAM Run 08-32 Report, 7 p., http://www.twdb.texas.gov/groundwater/docs/GAMruns/GR08-32.pdf.

Waterstone Environmental Hydrology and Engineering Inc. and Parsons, 2003, Groundwater availability of the Central Gulf Coast Aquifer: Numerical Simulations to 2050, Central Gulf Coast, Texas Contract report to the Texas Water Development Board, 157 p.

Appendix C. Groundwater Availability Model Run 16-025 MAG

GAM RUN 16-025 MAG:
MODELED AVAILABLE GROUNDWATER FOR THE GULF COAST AQUIFER SYSTEM IN GROUNDWATER MANAGEMENT AREA 15

Rohit Raj Goswami, Ph.D., P.E.
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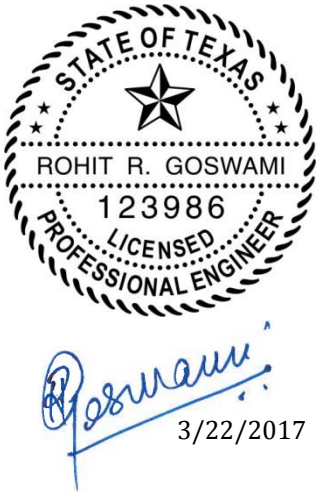
March 22, 2017



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GAM RUN 16-025 MAG: MODELED AVAILABLE GROUNDWATER FOR THE GULF COAST AQUIFER SYSTEM IN GROUNDWATER MANAGEMENT AREA 15

Rohit Raj Goswami, Ph.D., P.E.
Texas Water Development Board
Groundwater Division
Groundwater Availability Modeling Section
(512) 463-0495
March 22, 2017

EXECUTIVE SUMMARY:

The modeled available groundwater for Groundwater Management Area 15 for the Gulf Coast Aquifer System is summarized by decade for the groundwater conservation districts (Table 1) and for use in the regional water planning process (Table 2). The modeled available groundwater estimates range from approximately 515,000 acre-feet per year in 2020 to approximately 518,000 acre-feet per year in 2069(Table 1). The estimates were extracted from results of a model run using the groundwater availability model for the central part of the Gulf Coast Aquifer System (version 1.01). The model run files, which meet the desired future conditions adopted by district representatives of Groundwater Management Area 15, were submitted to the Texas Water Development Board (TWDB) on June 28, 2016, as part of the Desired Future Conditions Explanatory Report for Groundwater Management Area 15. The explanatory report and other materials submitted to the Texas Water Development Board (TWDB) were determined to be administratively complete on October 20, 2016.

REQUESTOR:

Mr. Tim Andruss, chair of Groundwater Management Area 15.

DESCRIPTION OF REQUEST:

In a letter dated June 23, 2016, Mr. Tim Andruss provided the TWDB with the desired future conditions of the Gulf Coast Aquifer System adopted by the groundwater conservation districts in Groundwater Management Area 15. The Gulf Coast Aquifer System includes the Chicot Aquifer, Evangeline Aquifer, Burkeville Confining Unit and the Jasper Aquifer (including parts of the Catahoula Formation). TWDB staff worked with INTERA Incorporated, the consultant for Groundwater Management Area 15, in reviewing

model files associated with the desired future conditions. We received clarification from INTERA Incorporated, on behalf of Groundwater Management Area 15, on September 18, 2016, concerning assumptions on variances of average drawdown values per county to model results, which was ±3.5 feet for nearly all areas within the Groundwater Management Area 15. The exception is Goliad County which has a variance in drawdown of ±5 feet. The desired future conditions for the Gulf Coast Aquifer System, as described in Resolution No. 2016-01 and adopted April 29, 2016, by the groundwater conservation districts within Groundwater Management Area 15, are described below:

Groundwater Management Area 15 [all counties]

Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 13 feet in December 2069 from estimated year 2000 conditions.

Aransas County

Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 0 feet in December 2069 from estimated year 2000 conditions.

Bee County

Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 7 feet in December 2069 from estimated year 2000 conditions.

Calhoun County

Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 5 feet in December 2069 from estimated year 2000 conditions.

Colorado County

Drawdown shall not exceed an average of 17 feet in Chicot and Evangeline Aquifers and 23 feet in in the Jasper Aquifer in December 2069 from estimated year 2000 conditions.

DeWitt County

Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 17 feet in December 2069 from estimated year 2000 conditions.

Fayette County

Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 16 feet in December 2069 from estimated year 2000 conditions.

Goliad County

Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 10 feet in December 2069 from estimated year 2000 conditions.

Jackson County

Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 15 feet in December 2069 from estimated year 2000 conditions.

Karnes County

Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 22 feet in December 2069 from estimated year 2000 conditions.

Lavaca County

Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 18 feet in December 2069 from estimated year 2000 conditions.

Matagorda County

Drawdown shall not exceed an average of 11 feet in Chicot and Evangeline Aquifers in December 2069 from estimated year 2000 conditions.

Refugio County

Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 5 feet in December 2069 from estimated year 2000 conditions.

Victoria County

Drawdown of the Gulf Coast Aquifer System shall not exceed an average of 5 feet in December 2069 from estimated year 2000 conditions.

Wharton County

Drawdown shall not exceed an average of 15 feet in Chicot and Evangeline Aquifers in December 2069 from estimated year 2000 conditions.

Based on the adopted desired future conditions, TWDB has estimated the modeled available groundwater for the Gulf Coast Aquifer System in Groundwater Management Area 15.

METHODS:

The groundwater availability model for the central part of the Gulf Coast Aquifer System (Figure 1) was run using the model files submitted with the explanatory report (GMA 15 and others, 2016). Model-calculated water levels were extracted for the year 2000 and the end of the year 2069, and drawdown was calculated as the difference between water levels at the beginning of 2000 and water levels at the end of 2069. Drawdown averages were calculated for each county by aquifer and for the entire Groundwater Management Area 15 by aquifer. As specified in the explanatory report (GMA 15 and others, 2016), drawdown for cells which became dry during the simulation (water level dropped below the base of the cell) were excluded from the averaging. The calculated drawdown averages were compared with the desired future conditions to verify that the pumping scenario achieved the desired future conditions within one foot.

The modeled available groundwater values were determined by extracting pumping rates by decade from the model results using ZONEBUDGET Version 3.01 (Harbaugh, 2009). Annual pumping rates are presented by county and groundwater conservation district, subtotaled by groundwater conservation district, and then summed by Groundwater Management Area 15 (Figure 2 and Table 1). Annual pumping rates are also presented by county, river basin, and regional water planning area within Groundwater Management Area 15 (Figure 2 and Table 2).

Modeled Available Groundwater and Permitting

As defined in Chapter 36 of the Texas Water Code, “modeled available groundwater” is the estimated average amount of water that may be produced annually to achieve a desired future condition. Groundwater conservation districts are required to consider modeled available groundwater, along with several other factors, when issuing permits in order to manage groundwater production to achieve the desired future condition(s). The other factors districts must consider include annual precipitation and production patterns, the estimated amount of pumping exempt from permitting, existing permits, and a reasonable estimate of actual groundwater production under existing permits.

PARAMETERS AND ASSUMPTIONS:

The parameters and assumptions for the groundwater availability are described below:

- Version 1.01 of the groundwater availability model for the central portion of the Gulf Coast Aquifer System was used for this analysis. See Chowdhury and others (2004) and Waterstone and others (2003) 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).

- The model was run with MODFLOW-96 (Harbaugh and others, 1996).

- Drawdown averages and modeled available groundwater values are based on the extent of the model area rather than official aquifer boundaries (Figures 1 and 2).

- Drawdown for cells with water levels below the base elevation of the cell ("dry" cells) were excluded from the averaging per emails exchanged with INTERA, Inc. dated October 21, 2015.

- Estimates of modeled available groundwater from the model simulation were rounded to whole numbers.

- A model drawdown tolerance of up to 5 feet was assumed for Goliad County and up to 3.5 feet for the rest of Groundwater Management Area 15 when comparing desired future conditions (average drawdown values per county) to model drawdown results.

- Average drawdown by county may include some model cells that represent portions of surface water such as bays, reservoirs, and the Gulf of Mexico.

RESULTS:

The modeled available groundwater for the Gulf Coast Aquifer System that achieves the desired future conditions adopted by Groundwater Management Area 15 increases from approximately 515,000 acre-feet per year in 2020 to approximately 518,000 acre-feet per year in 2069 (Table 1). The modeled available groundwater is summarized by groundwater conservation district and county (Table 1). The modeled available groundwater has also been summarized by county, river basin, and regional water planning area for use in the regional water planning process (Table 2). Small differences of values between table summaries are due to rounding.

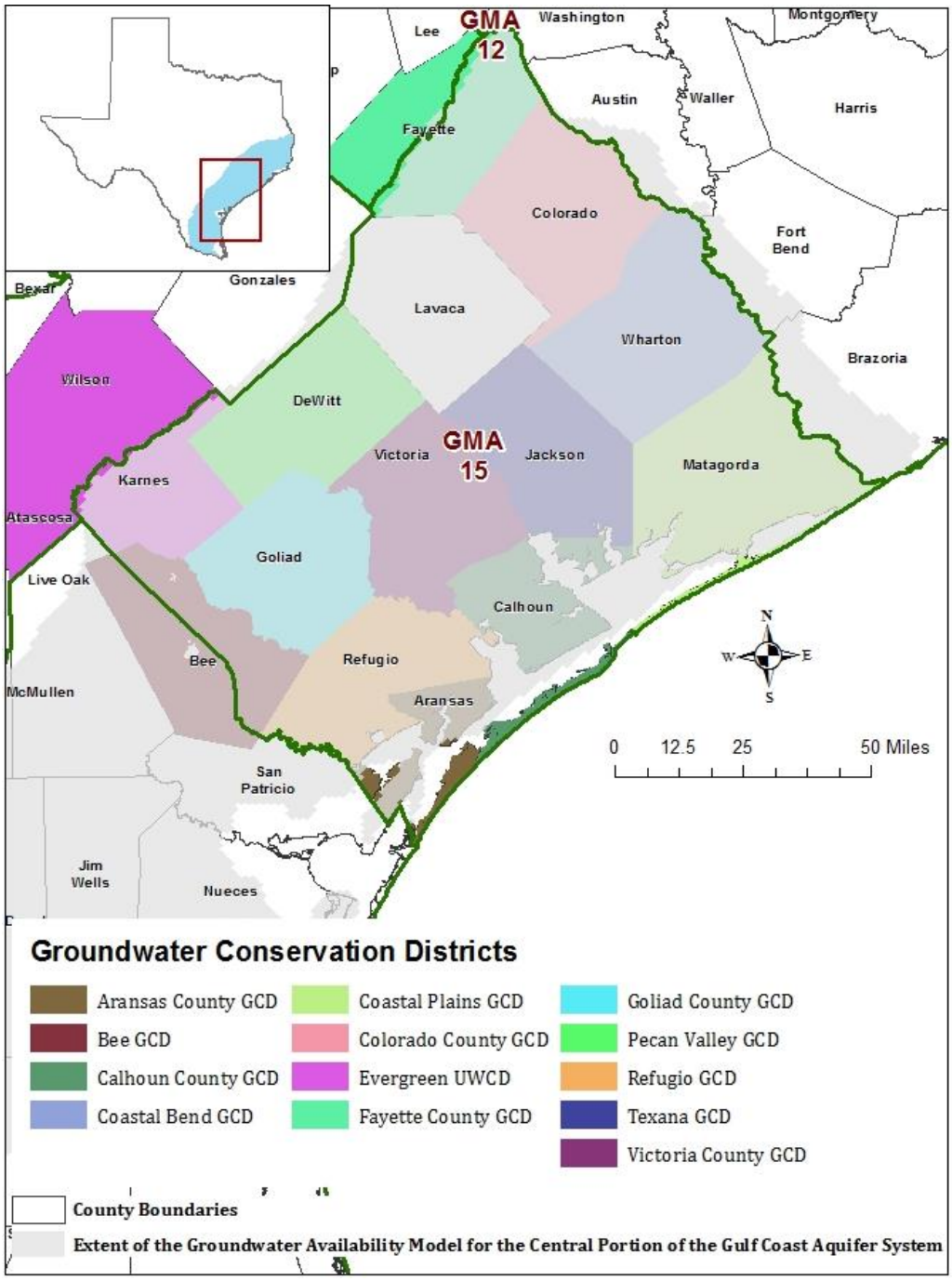

FIGURE 1. MAP SHOWING GROUNDWATER CONSERVATION DISTRICTS (GCDS) AND COUNTIES IN GROUNDWATER MANAGEMENT AREA 15 OVERLAIN ON THE EXTENT OF THE GROUNDWATER AVAILABILITY MODEL FOR THE CENTRAL PORTION OF THE GULF COAST AQUIFER SYSTEM.

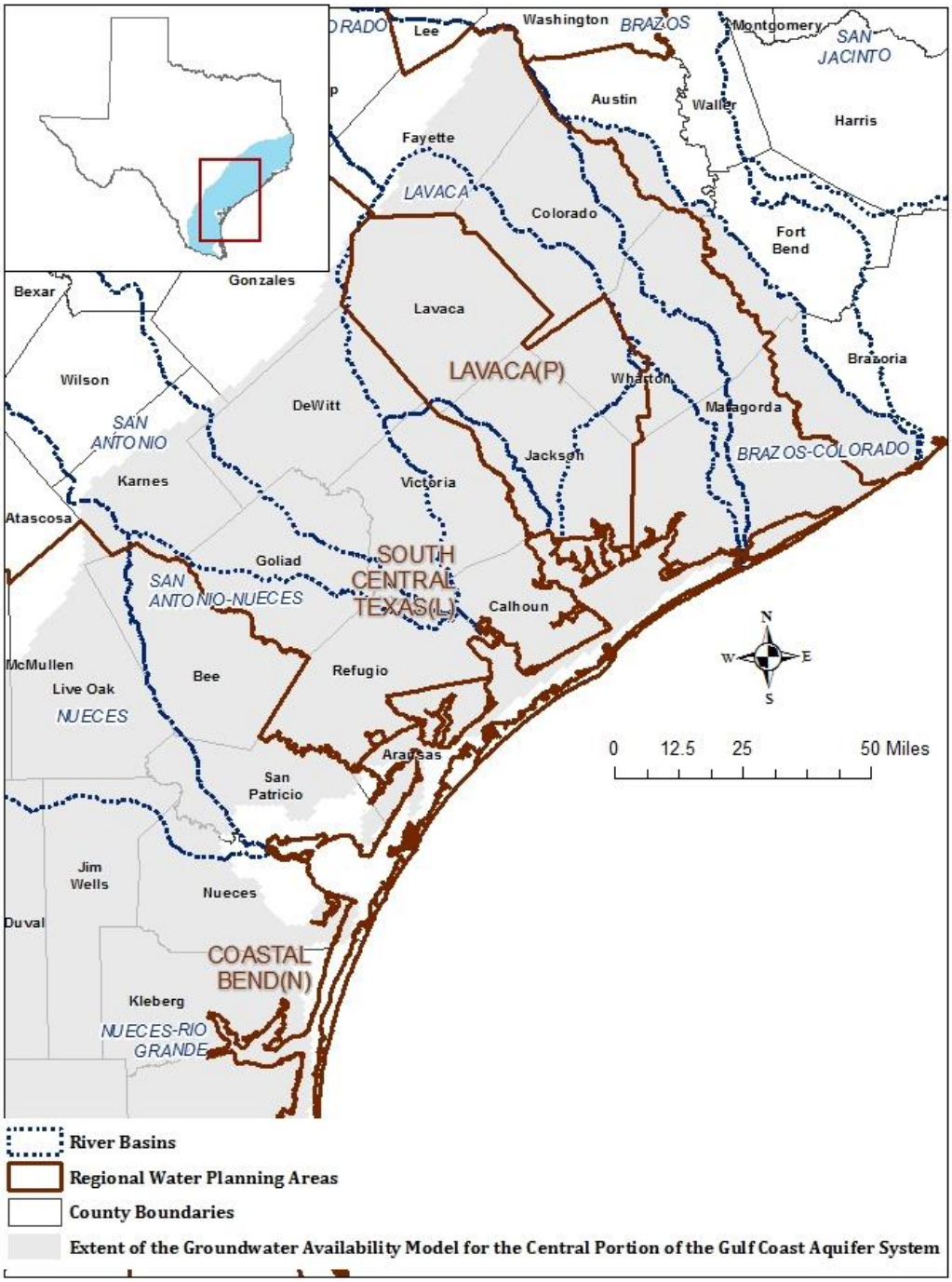

FIGURE 2. MAP SHOWING REGIONAL WATER PLANNING AREAS, GROUNDWATER CONSERVATION DISTRICTS (GCDS), COUNTIES, AND RIVER BASINS IN GROUNDWATER MANAGEMENT AREA 15 OVERLAIN ON THE EXTENT OF THE GROUNDWATER AVAILABILITY MODEL FOR THE CENTRAL PORTION OF THE GULF COAST AQUIFER SYSTEM.

TABLE 1. MODELED AVAILABLE GROUNDWATER FOR THE GULF COAST AQUIFER SYSTEM IN GROUNDWATER MANAGEMENT AREA 15 SUMMARIZED BY GROUNDWATER CONSERVATION DISTRICT (GCD) AND COUNTY FOR EACH DECADE BETWEEN 2010 AND 2069. VALUES ARE IN ACRE-FEET PER YEAR.

Groundwater Conservation District	County	Aquifer	2010	2020	2030	2040	2050	2060	2069
Aransas County GCD Total	**Aransas**	**Gulf Coast Aquifer System**	**1,542**	**1,542**	**1,542**	**1,542**	**1,542**	**1,542**	**1,542**
Bee County GCD Total	**Bee**	**Gulf Coast Aquifer System**	**9,456**	**9,456**	**9,431**	**9,431**	**9,379**	**9,379**	**9,361**
Calhoun County GCD Total	**Calhoun**	**Gulf Coast Aquifer System**	**2,569**	**7,565**	**7,565**	**7,565**	**7,565**	**7,565**	**7,565**
Coastal Bend GCD Total	**Wharton**	**Gulf Coast Aquifer System (Chicot and Evangeline)**	**181,168**	**181,168**	**181,168**	**181,168**	**181,168**	**181,168**	**181,168**
Coastal Plains GCD Total	**Matagorda**	**Gulf Coast Aquifer System (Chicot and Evangeline)**	**38,828**	**38,828**	**38,828**	**38,828**	**38,828**	**38,828**	**38,828**
Colorado County GCD	Colorado	Gulf Coast Aquifer System (Chicot and Evangeline)	79,780	74,964	74,964	72,765	72,765	71,618	71,618
Colorado County GCD	Colorado	Gulf Coast Aquifer System (Jasper)	918	918	918	918	918	918	918
Colorado County GCD Total	**Colorado**	**Gulf Coast Aquifer System**	**80,698**	**75,882**	**75,882**	**73,683**	**73,683**	**72,536**	**72,536**
Evergreen UWCD Total	**Karnes**	**Gulf Coast Aquifer System**	**10,196**	**10,196**	**10,196**	**3,015**	**2,917**	**2,751**	**2,751**
Fayette County GCD Total	**Fayette**	**Gulf Coast Aquifer System**	**1,977**	**1,853**	**1,853**	**1,853**	**1,853**	**1,853**	**1,703**
Goliad County GCD Total	**Goliad**	**Gulf Coast Aquifer System**	**11,420**	**11,539**	**11,539**	**11,539**	**11,539**	**11,552**	**11,539**

Groundwater Conservation District	County	Aquifer	2010	2020	2030	2040	2050	2060	2069
Pecan Valley GCD Total	**DeWitt**	**Gulf Coast Aquifer System**	**15,471**	**15,476**	**15,476**	**14,485**	**14,485**	**14,485**	**14,485**
Refugio GCD Total	**Refugio**	**Gulf Coast Aquifer System**	**5,847**	**5,847**	**5,847**	**5,847**	**5,847**	**5,847**	**5,847**
Texana GCD Total	**Jackson**	**Gulf Coast Aquifer System**	**76,787**	**90,482**	**90,482**	**90,482**	**90,482**	**90,482**	**90,482**
Victoria County GCD Total	**Victoria**	**Gulf Coast Aquifer System**	**35,640**	**44,974**	**49,970**	**54,966**	**54,966**	**59,963**	**59,963**
Total (GCDs)		**Gulf Coast Aquifer System**	**471,599**	**494,808**	**499,779**	**494,404**	**494,254**	**497,951**	**497,770**
No District-County	Bee	Gulf Coast Aquifer System	10	10	10	10	10	10	10
No District-County	Lavaca	Gulf Coast Aquifer System	20,253	20,253	20,253	20,253	20,253	20,253	20,239
No district-County Total		**Gulf Coast Aquifer System**	**20,263**	**20,263**	**20,263**	**20,263**	**20,263**	**20,263**	**20,249**
Total for GMA 15		**Gulf Coast Aquifer System**	**491,862**	**515,071**	**520,042**	**514,667**	**514,517**	**518,214**	**518,019**

TABLE 2 MODELED AVAILABLE GROUNDWATER BY DECADE FOR THE GULF COAST AQUIFER SYSTEM IN GROUNDWATER MANAGEMENT AREA 15. RESULTS ARE IN ACRE-FEET PER YEAR AND ARE SUMMARIZED BY COUNTY, REGIONAL WATER PLANNING AREA (RWPA), RIVER BASIN, AND AQUIFER.

County	RWPA	River Basin	Aquifer	2020	2030	2040	2050	2060
Aransas	N	San Antonio- Nueces	Gulf Coast Aquifer System	1,542	1,542	1,542	1,542	1,542
Bee	N	San Antonio- Nueces	Gulf Coast Aquifer System	9,439	9,414	9,414	9,362	9,362
Bee	N	Nueces	Gulf Coast Aquifer System	27	27	27	27	27
Calhoun	L	Colorado- Lavaca	Gulf Coast Aquifer System	5,210	5,210	5,210	5,210	5,210
Calhoun	L	Guadalupe	Gulf Coast Aquifer System	18	18	18	18	18
Calhoun	L	Lavaca-Guadalupe	Gulf Coast Aquifer System	2,330	2,330	2,330	2,330	2,330
Calhoun	L	San Antonio- Nueces	Gulf Coast Aquifer System	7	7	7	7	7
Colorado	K	Brazos-Colorado	Gulf Coast Aquifer System (Chicot and Evangeline)	15,342	15,342	15,342	15,342	15,342
Colorado	K	Brazos-Colorado	Gulf Coast Aquifer System (Jasper Aquifer)	49	49	49	49	49
Colorado	K	Colorado	Gulf Coast Aquifer System (Chicot and Evangeline)	20,506	20,506	20,066	20,066	20,066
Colorado	K	Colorado	Gulf Coast Aquifer System (Jasper Aquifer)	273	273	273	273	273
Colorado	K	Lavaca	Gulf Coast Aquifer System (Chicot and Evangeline)	39,116	39,116	37,357	37,357	36,210
Colorado	K	Lavaca	Gulf Coast Aquifer System (Jasper Aquifer)	596	596	596	596	596
Dewitt	L	Guadalupe	Gulf Coast Aquifer System	11,358	11,358	10,470	10,470	10,470
Dewitt	L	Lavaca-Guadalupe	Gulf Coast Aquifer System	417	417	417	417	417
Dewitt	L	Lavaca	Gulf Coast Aquifer System	2,935	2,935	2,935	2,874	2,874
Dewitt	L	San Antonio	Gulf Coast Aquifer System	766	766	724	724	724

County	RWPA	River Basin	Aquifer	2020	2030	2040	2050	2060
Fayette	K	Brazos	Gulf Coast Aquifer System	2	2	2	2	2
Fayette	K	Colorado	Gulf Coast Aquifer System	989	989	989	989	989
Fayette	K	Lavaca	Gulf Coast Aquifer System	862	862	862	862	862
Goliad	L	Guadalupe	Gulf Coast Aquifer System	4,377	4,377	4,377	4,377	4,380
Goliad	L	San Antonio- Nueces	Gulf Coast Aquifer System	1,190	1,190	1,190	1,190	1,195
Goliad	L	San Antonio	Gulf Coast Aquifer System	5,972	5,972	5,972	5,972	5,977
Jackson	P	Colorado-Lavaca	Gulf Coast Aquifer System	28,025	28,025	28,025	28,025	28,025
Jackson	P	Lavaca-Guadalupe	Gulf Coast Aquifer System	12,875	12,875	12,875	12,875	12,875
Jackson	P	Lavaca	Gulf Coast Aquifer System	49,582	49,582	49,582	49,582	49,582
Karnes	L	Guadalupe	Gulf Coast Aquifer System	11	11	11	11	11
Karnes	L	Nueces	Gulf Coast Aquifer System	1,057	1,057	78	78	78
Karnes	L	San Antonio	Gulf Coast Aquifer System	9,082	9,082	2,880	2,782	2,616
Karnes	L	San Antonio-Nueces	Gulf Coast Aquifer System	46	46	46	46	46
Lavaca	P	Guadalupe	Gulf Coast Aquifer System	41	41	41	41	41
Lavaca	P	Lavaca-Guadalupe	Gulf Coast Aquifer System	401	401	401	401	401
Lavaca	P	Lavaca	Gulf Coast Aquifer System	19,811	19,811	19,811	19,811	19,811
Matagorda	K	Brazos-Colorado	Gulf Coast Aquifer System (Chicot and Evangeline)	15,282	15,282	15,282	15,282	15,282
Matagorda	K	Colorado-Lavaca	Gulf Coast Aquifer System (Chicot and Evangeline)	20,329	20,329	20,329	20,329	20,329
Matagorda	K	Colorado	Gulf Coast Aquifer System (Chicot and Evangeline)	3,217	3,217	3,217	3,217	3,217
Refugio	L	San Antonio- Nueces	Jasper Aquifer	5,526	5,526	5,526	5,526	5,526
Refugio	L	San Antonio	Gulf Coast Aquifer System	321	321	321	321	321
Victoria	L	Guadalupe	Gulf Coast Aquifer System	17,600	22,596	27,592	27,592	27,592
Victoria	L	Lavaca-Guadalupe	Gulf Coast Aquifer System	25,451	25,451	25,451	25,451	30,448
Victoria	L	Lavaca	Gulf Coast Aquifer System	234	234	234	234	234
Victoria	L	San Antonio	Gulf Coast Aquifer System	1,689	1,689	1,689	1,689	1,689

County	RWPA	River Basin	Aquifer	2020	2030	2040	2050	2060
Wharton	K	Brazos-Colorado	Gulf Coast Aquifer System (Chicot and Evangeline)	50,527	50,527	50,527	50,527	50,527
Wharton	K	Colorado-Lavaca	Gulf Coast Aquifer System (Chicot and Evangeline)	16,196	16,196	16,196	16,196	16,196
Wharton	P	Colorado-Lavaca	Gulf Coast Aquifer System (Chicot and Evangeline)	14,091	14,091	14,091	14,091	14,091
Wharton	K	Colorado	Gulf Coast Aquifer System (Chicot and Evangeline)	35,910	35,910	35,910	35,910	35,910
Wharton	P	Colorado	Gulf Coast Aquifer System (Chicot and Evangeline)	873	873	873	873	873
Wharton	K	Lavaca	Gulf Coast Aquifer System (Chicot and Evangeline)	579	579	579	579	579
Wharton	P	Lavaca	Gulf Coast Aquifer System (Chicot and Evangeline)	62,992	62,992	62,992	62,992	62,992
GMA 15 Total			**Gulf Coast Aquifer System**	**515,071**	**520,042**	**514,667**	**514,517**	**518,214**

LIMITATIONS:

The groundwater model used in completing this analysis is the best available scientific tool 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 streamflow are specific to a particular historic time period.

Because the application of the groundwater model was designed to address regional scale questions, the results are most effective on a regional scale. The TWDB makes no warranties or representations relating 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 groundwater levels in 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.

REFERENCES:

Chowdhury, A., Wade, S., Mace, R.E., and Ridgeway, C. 2004. Groundwater Availability of the Central Gulf Coast Aquifer System: Numerical Simulations through 1999: Texas Water Development Board, unpublished report.

Harbaugh, A. W., 2009, Zonebudget Version 3.01, A computer program for computing subregional water budgets for MODFLOW ground-water flow models, U.S. Geological Survey Groundwater Software.

Harbaugh, A.W. and McDonald, M.G., 1996, User's documentation for MODFLOW-96, an update to the U.S. Geological Survey Modular Finite-Difference Ground-Water Flow Model: U.S. Geological Survey, Open-File Report 96-485.

National Research Council, 2007, Models in Environmental Regulatory Decision Making Committee on Models in the Regulatory Decision Process, National Academies Press, Washington D.C., 287 p., http://www.nap.edu/catalog.php?record_id=11972.

Texas Water Code, 2011, http://www.statutes.legis.state.tx.us/docs/WA/pdf/WA.36.pdf.

Waterstone Engineering, Inc., and Parsons, Inc., 2003, Groundwater Availability of the Central Gulf Coast Aquifer: Numerical Simulations to 2050, Central Gulf Coast, Texas: Contract draft report submitted to Texas Water Development Board

Appendix D. Public Notices Regarding Hearings Related to Plan Adoption

Public Hearing Notice

Pursuant to Chapter 36, Texas Water Code, the Victoria County Groundwater Conservation District will conduct a public hearing on the Management Plan of the District with proposed revisions at 9:00 A.M. on April 20, 2018, at the Dr. Pattie Dodson Health Center, 2805 N. Navarro St., Victoria, Texas 77901. The hearing will be conducted to receive comments and suggestions from the public concerning the proposed management plan.

The Management Plan of the District with proposed revisions was developed using the best available data and addresses the following management goals, as applicable: (1) providing the most efficient use of groundwater; (2) controlling and preventing waste of groundwater; (3) controlling and preventing subsidence; (4) addressing conjunctive surface water management issues; (5) addressing natural resource issues; (6) addressing drought conditions; (7) addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective; and (8) addressing the desired future conditions adopted by the district under Section 36.108.

The Management Plan of the District with proposed revisions (1) identifies the performance standards and management objectives under which the district will operate to achieve the management goals ; (2) specifies the actions, procedures, performance, and avoidance that are or may be necessary to effect the plan; (3) includes estimates of (A) modeled available groundwater in the district based on the desired future condition established under Section 36.108; (B) the amount of groundwater being used within the district on an annual basis; (C) the annual amount of recharge from precipitation, if any, to the groundwater resources within the district; (D) for each aquifer, the annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers; (E) the annual volume of flow into and out of the district within each aquifer and between aquifers in the district, if a groundwater availability model is available; (F) the projected surface water supply in the district according to the most recently adopted state water plan; and (G) the projected total demand for water in the district according to the most recently adopted state water plan; and (4) considers the water supply needs and water management strategies included in the adopted state water plan.

A copy of the Management Plan of the District with proposed revisions may be reviewed or copied at the District's office located at the Dr. Pattie Dodson Health Center, 2805 N. Navarro St., Suite 210, Victoria, Texas 77901. The Management Plan of the District with proposed revisions is available on the District's website at www.vcgcd.org. Questions or comments should be directed to Tim Andruss, General Manager at Victoria County Groundwater Conservation District, 2805 N. Navarro St., Suite 210, Victoria, Texas, 77901 or admin@vcgcd.org or (361) 579 - 6863.

FILED

2018 APR 11 P 12:38

Heidi Cooley

COUNTY CLERK
VICTORIA COUNTY, TEXAS

STATE OF TEXAS
COUNTY OF VICTORIA

Before me, a Notary Public in and for said County and State, this day personally appeared PAMELA WILLIAMS, Multi Media Sales Assistant for the VICTORIA ADVOCATE published by the VICTORIA ADVOCATE in VICTORIA County, Texas and distributed in other surrounding Counties (Calhoun, Dewitt, Goliad, Gonzales, Jackson, Karnes, Lavaca, Matagorda, Refugio and Wharton); and who, after being duly sworn, did dispose and say that the following clipping of an advertisement was published in the above named paper on the following dates:

Tuesday, April 10, 2018

Signed _____

Subscribed and sworn to before me, this 13th day of April 2018.

Notary Public _____
VICTORIA County, TX

[place notary seal here]

SANDRA J. TURNER
Notary Public, State of Texas
Comm. Expires 11-07-2020
Notary ID 124600921

[attach actual copy of Newspaper ad clipping]

Received
4-17-18 DY
in the office of

Public Hearing Notice

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(222)

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(222)

Appendix E. Letters Coordinating with Regional Surface Water Management Entities

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Aransas County Groundwater Conservation District
301 N. Live Oak
Rockport, Texas 78362

Via: Certified Mail RRR No: 7014 1200 0001 0183 4549

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Aransas County GCD,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Bee Groundwater Conservation District
Attn: Mr. Lonnie Stewart, General Manager
P.O. Box 682
Beeville, Texas 78104-0682

Via: Certified Mail RRR No: 7014 1200 0001 0183 4556

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Mr. Stewart,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Calhoun County GCD
Attn: Mrs. Tammy Amaimo, General Manager
P.O. Box 1395
Port Lavaca, Texas 77979

Via: Certified Mail RRR No: 7014 1200 0001 0183 4563

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Mrs. Amaimo,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Coastal Bend Groundwater Conservation District
Attn: Mr. Neil Hudgins, General Manager
P.O. Box 341
Wharton, Texas 77488

Via: Certified Mail RRR No: 7014 1200 0001 0183 4570

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Mr. Hudgins,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Coastal Plains Groundwater Conservation District
Attn: Mr. Neil Hudgins, General Manager
2200 7th St., Ste 401
Bay City, Texas 77414

Via: Certified Mail RRR No: 7017 2620 0001 1726 0961

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Mr. Hudgins,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Colorado County Groundwater Conservation District
Attn: Mr. Jim Brasher, General Manager
P.O. Box 667
Columbus, Texas 78934

Via: Certified Mail RRR No: 7014 1200 0001 0183 4594

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Mr. Brasher,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Corpus Christi Aquifer Storage & Recovery Conservation District
City of Corpus Christi
1201 Leopard Street
Corpus Christi, Texas 78401-2825

Via: Certified Mail RRR No: 7014 1200 0001 0183 4600

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Corpus Christi ASR Conservation District,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Evergreen Underground Water Conservation District
110 Wyoming Blvd.
Pleasanton, Texas 78064

Via: Certified Mail RRR No: 7014 1200 0001 0183 4617

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Evergreen Underground Water Conservation District

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Fayette County Groundwater Conservation District
Attn: Mr. David A. Van Dresar, General Manager
255 Swoboda Lane, Room 115
LaGrange, Texas 78945

Via: Certified Mail RRR No: 7014 1200 0001 0183 4624

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Mr. Van Dresar,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Goliad County Groundwater Conservation District
Attn: Ms. Barbara Smith, General Manager
P.O. Box 562
Goliad, Texas 77963

Via: Certified Mail RRR No: 7014 1200 0001 0183 4631

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Ms. Smith,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Guadalupe Blanco River Authority
Attn: Mr. Kevin Patterson, General Manager
933 East Court Street
Seguin, Texas 78155

Via: Certified Mail RRR No: 7014 1200 0001 0183 4648

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Mr. Patterson,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Pecan Valley Groundwater Conservation District
Attn: Ms. Charlotte Krause, General Manager
107 N. Gonzales St.
Cuero, Texas 77954

Via: Certified Mail RRR No: 7014 1200 0001 0183 4655

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Ms. Krause,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Refugio Groundwater Conservation District
Attn: Ms. Billie Sue Dunnivan, General Manager
P.O. Box 116
Refugio, Texas 78377

Via: Certified Mail RRR No: 7014 1200 0001 0183 4662

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Ms. Dunnivan,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

San Antonio River Authority
Attn: Ms. Suzanne B. Scott, General Manager
100 E. Guenther St.
San Antonio, Texas 78204

Via: Certified Mail RRR No: 7014 1200 0001 0183 4679

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Ms. Scott,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

South Central Texas Regional Water Planning Group
Attn: Mr. Cole Ruiz
c/o San Antonio River Authority
P.O. Box 839980
San Antonio, Texas 78283

Via: Certified Mail RRR No: 7014 1200 0001 0183 4686

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Mr. Ruiz,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Texana Groundwater Conservation District
Attn: Ms. Candace Whittley, General Manager
P.O. Box 1098
Edna, Texas 77957

Via: Certified Mail RRR No: 7014 1200 0001 0183 4693

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Ms. Whittley,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District. Pursuant to Chapter 36, Water Code, the District has sent a copy to the Texas Water Development Board for review and approval.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Victoria County Groundwater Conservation District

2805 N. Navarro St. Suite 210, Victoria, TX 77901
Phone (361) 579-6863 | Fax (361) 579-0041 | WWW.VCGCD.ORG

May 29, 2018

Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711-3231

Via: Certified Mail RRR No: 7014 1200 0001 0183 4709

RE: Victoria County Groundwater Conservation District
Management Plan

Dear Texas Water Development Board,

Please find enclosed a copy of the approved District Management Plan for the Victoria County Groundwater Conservation District.

If you have any questions, please contact the District.

Sincerely,

Tim Andruss
General Manager

Appendix F. Victoria County Groundwater Conservation District Board of Director Resolution Adopting Management Plan

RESOLUTION

Resolution Number: 20180420-A

Resolution Adopting the Victoria County Groundwater Conservation District Management Plan

WHEREAS on April 10, 2018, a Notice of Hearing was published in the Victoria Advocate newspaper regarding a public hearing on the adoption of the Management Plan of the District with proposed revisions; and

WHEREAS on April 20, 2018, the Victoria County Groundwater Conservation District Board of Directors with a quorum being present, conducted a public hearing regarding the adoption of the proposed Management Plan of the District;

NOW THEREFORE BE IT RESOLVED that the Management Plan of the District with proposed revisions is ADOPTED as described in the Management Plan of the District attached hereto and made part hereof for all purposes and that said management plan shall be submitted to the Executive Administrator of the Texas Water Development Board for review and approval with all necessary documentation.

Adopted by a vote of 5 ayes and 0 nays on this 20th day of April 2018.

President, Victoria County Groundwater Conservation District

I, the undersigned, do hereby certify that the above resolution was adopted by the Board of Directors of the Victoria County Groundwater Conservation District on the 20th day of April 2018.

Director, Victoria County Groundwater Conservation District

Appendix G. Minutes of Victoria County Groundwater Conservation District Board of Director Meeting related to the public hearings for and adoption of the Management Plan

Victoria County Groundwater Conservation District

THE STATE OF TEXAS
VICTORIA COUNTY

The Board of Directors of the Victoria County Groundwater Conservation District convened a meeting at the Dr. Pattie Dodson Health Center, 2805 N. Navarro St., Room 108, Victoria, Victoria County, Texas, 77901 on April 20, 2018, at 9:00 AM.

Meeting Attendance:

Precinct 1:	Mr. Jerry Hroch, Vice President	Present
Precinct 2:	Mr. Thurman Clements, Jr., Director	Present
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Present
Precinct 4:	Mr. Mark Meek, President	Present
At Large:	Mr. Kenneth Eller, Director	Present
General Manager:	Mr. Timothy Andruss	Present
Legal Counsel:	Mr. James Allison	Absent

Agenda Items -

1. Call the meeting to order and welcome guests.

Meeting Discussion: Mr. Meek called the meeting to order at 9:00 AM. The following guests were present: Howard Book, Keith Cox, and Anna Daniels.

Board Action: None.

2. Receive public comments.

Meeting Discussion: None.

Board Action: None.

3. Consideration of and possible action on matters related to Groundwater Management including the permitting efforts and activities of the District.

3.1. Possible Groundwater Transport

Meeting Discussion: Mr. Andruss explained that on February 2, 2018, the Board approved a waiver and permitting request authorizing Mr. Book and Mr. Moreno to operate GW-000732 to produce groundwater for pipeline hydrotesting purposes in

an amount not to exceed 24 acre-feet. The special conditions of the production permit OPW-20180202-01 include the following:

1. The production of groundwater from the subject well under this permit is subject to and conditioned by waiver WV-20180202-01.
2. The well owner shall provide 24-hour advance notice to the District of intent to initiate groundwater production from the subject well under this permit.
3. The well owner shall notify the District of termination of groundwater production under this permit within 2 hours.
4. The well owner shall provide to the District documentation of the volume of groundwater water produced under this permit within 1 week of termination of groundwater production under this permit.
5. The well owner shall ensure that not more than 10 acre-feet of groundwater produced under this permit is transported out of Victoria County.
6. The well owner shall provide 2-hour advance notice to the District of intent to receive or discharge groundwater production from the subject well under this permit.

Mr. Book explained to the Board that groundwater would not be transported out of the District. However, several days after the hearing, Mr. Book informed the District that a portion of the water produced for hydrotesting purposes being less than 10 acre-feet may be transported outside the District. Mr. Book wants to ensure that the Board was aware of this possibility given his comments during the hearing. While counter to the comments provided during the hearing, a violation of the Rules of the District or the conditions of permit OPW-20180202-01 would not occur so long as the volume of groundwater transported does not exceed 10 acre-feet.

Board Action: no action taken.

3.2. Review of 2017 Groundwater Production Reporting

Meeting Discussion: Mr. Andruss explained that the District had received production reports for 167 wells as of April 16, 2018. The District continues its efforts to solicit groundwater production reports for all non-exempt-use wells that are not registered as being dormant. The District has not received production reports from 37 wells. The District has reviewed tax appraisal data in an effort to identify valid mailing addresses for the owners of these wells. The District anticipates initiating an enforcement case for each well for which a report is not received by May 1, 2018, with presentation to the Board on May 18, 2018.

Board Action: no action taken.

4. Consideration of and possible action on matters related to Groundwater Protection including complaints, investigations, violations and enforcement related to disposal and injection wells, contamination and waste, and permitting.

4.1. E-Log Cost Sharing Request

Meeting Discussion: Mr. Andruss explained that Mr. Dan Laza has informed the District that he attempted to drill a replacement well on his property located at 1045 Old Bloomington Rd due to the water quality diminishing to an unusable degree in his grandfathered well, GW-000979. The replacement well, drilled to a depth of 78', was plugged due to the water quality being of poor quality. In addition, Mr. Laza explained to the District that there is no opportunity to obtain water supply from WCID 1.

The District has confirmed the poor water quality of well GW-000979 with a TDS level of approximately 5,000 mg/L on January 21, 2018. The District measured the TDS level of well GW-000595 (approximately 1 mile away) located near Edna Ln and Black Bayou Rd No. 1 on August 22, 2013, and January 30, 2018. The TDS levels has risen from 1,340 mg/L to 1,690 mg/L.

Mr. Laza would like to drill another replacement well with the benefit of "e-logging" the well prior to setting casing and has been informed of the District's 50/50 cost-share program. Mr. Laza has requested that the Board authorize a greater cost-share percentage.

Given the location of the subject property, the elevated TDS levels at the site in shallow formations, and the apparent lack of usable e-logs in the vicinity to aid in the development wells that do not commingle water-bearing zones of differing qualities, an agreement through which an e-log was captured and on-going monitoring of water quality was arranged would improve the District's efforts to monitoring water quality and protect the shallow groundwater resource in the vicinity of Old Bloomington Rd and Black Bayou Road No 1.

Board Action: Mr. Eller moved to authorize the general manager and legal counsel to negotiate an agreement with Mr. Laza to increase the e-logging cost-share percentage and long-term access to existing and future wells located at the well site for water quality monitoring purposes. Mr. Clements seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye
Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye
At-Large:	Mr. Kenneth Eller, Director	Aye

With five (5) ayes and zero (0) nays, the motion passed.

4.2. DuPont Hazardous Waste Permit Amendment

Meeting Discussion: Mr. Andruss explained that the District had been informed that TCEQ's Executive Director had decided to renew Dupont's hazardous waste

permit (Permit No. 50056) with the plume management zone (PMZ) provision for the area of the West Landfill. The permit will require the applicant to "perform long-term groundwater monitoring" and demonstrate no exceedance of established attenuation action levels, no migration of the COCs outside the PMZ, and a statistical analysis of the effectiveness.

Board Action: no action taken.

4.3. BLM Sludge Disposal Permit

Meeting Discussion: Mr. Andruss explained that the District last considered the BLM Sludge Disposal operation on J-2 Ranch Road on June 20, 2016. At the meeting, the Board was presented with cost-estimates to implement PBW's recommended monitoring program ($168,000). The Board took no action but expressed an interest deferring any action on monitoring efforts until the TCEQ permitting matter was resolved. On April 16, 2018, the District was notified that TCEQ's Executive Director had issued final approval of the associated application for the sludge disposal operations. The District understands that existing disposal operations have permitted without amendment to authorize disposal of grease and grit waste.

The Board President instructed General Manager to contact BLM regarding cooperative monitoring effort.

Board Action: no action taken.

5. Consideration of and possible action on matters related to Groundwater Monitoring.

5.1. Drought Monitoring

Meeting Discussion: Mr. Andruss explained that as of April 17, 2018, based on the U.S. Drought Monitor produced jointly by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the National Drought Mitigation Center, all portions of Victoria County are categorized as being in a dry or drought condition.

Board Action: no action taken.

6. Consideration of and possible action on matters related to Groundwater Conservation.

Meeting Discussion: no discussion.

Board Action: no action taken.

7. Consideration of and possible action on matters related to Groundwater Resource Planning including Groundwater Management Area 15 Joint Planning and regional water planning.

Meeting Discussion: no discussion.

Board Action: no action taken.

8. Consideration of and possible action on matters related to Groundwater Policy including a hearing regarding the Proposed Management Plan of the District.

8.1. Proposed Management Plan

Mr. Meek opened the public hearing at 9:39 AM.

Meeting Discussion: Mr. Andruss explained that on March 13, 2018, the District submitted a copy of the Management Plan of the District with draft revisions to Texas Water Development Board (TWDB) requesting a review of the plan. On March 29, 2018, TWDB responded to the District's request and identified several required and suggested changes. The plan was revised to address the required changes identified by TWDB and several of the recommended changes. As compared to the current Management Plan of the District, which was adopted by the Board of Directors on August 16, 2013, and approved by TWDB on October 15, 2013, the Management Plan with proposed revisions contains revisions to address the following: 1) reflect the adoption of a revised Desired Future Condition; 2) reflect the revision of the Modeled Available Groundwater values estimated by TWDB for Victoria County; 3) clarify the description of groundwater resources within Victoria County; 4) clarify the consideration of water supply needs and water management strategies planned for Victoria County in the 2017 State Water Plan; and 5) correct grammatical inconsistencies and outdated references. A copy of the Management Plan with proposed revisions is available for review and copy at the District's office and on the District's website.

Board Action: Mr. Eller moved to close the public hearing at 9:41 AM. Mr. Clements seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye
Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye
At-Large:	Mr. Kenneth Eller, Director	Aye

With five (5) ayes and zero (0) nays, the motion passed.

Board Action: Mr. Eller moved to approve and adopt, by resolution, the Management Plan with proposed revisions. Mr. Hroch seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye

Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye
At-Large:	Mr. Kenneth Eller, Director	Aye

With five (5) ayes and zero (0) nays, the motion passed.

9. Consideration of and possible action on matters related to Groundwater Research.

9.1. Groundwater Science Proposals by Intera Inc.

Meeting Discussion: Mr. Andruss explained that on May 26, 2017, the Board approved a motion related to technical work and investigations regarding brackish groundwater resources, subsidence data collection, aquifer formation assignment, and deep-formation monitoring. The proposals were developed with Dr. Steve Young of Intera Inc who was directly involved in developing the Victoria ASR demonstration project and brackish groundwater reports for Texas Water Development Board. Due to delays in finalizing the related proposals and permit request support being provided by Intera to Castleman Power System, the proposed work was not initiated.

Castleman Power Systems has notified the District that it will not pursue waivers and permits related to brackish groundwater development in the immediate future. Therefore, the District renewed its efforts to develop final proposals with Dr. Young regarding brackish groundwater resources, subsidence data collection, aquifer formation assignment as well as a new proposal related to estimating the amount of stored water that can be recovered from aquifer storage and recovery systems. A new agreement for obtaining services from Intera was drafted reviewed by legal counsel of the District, and accepted by Intera Inc. In addition, the proposal related to investigating brackish groundwater resources was finalized and a proposal for investigating stored water recover from ASR systems was developed. The cost of the revised brackish project is estimated to be $52,000 (an increase of $10,000) and the ASR-related proposal is estimated to be $50,000.

Board Action: Mr. Eller moved to 1) find Dr. Young of Intera Inc. to be the most qualified consultant to provide the services described in the proposals for brackish groundwater resources, subsidence data collection, aquifer formation assignment, and recovery of stored water in ASR systems; and 2) authorize the presiding officer to execute the technical services agreement and proposals in an amount not to exceed $115,300.00 (Brackish: $52,000, ASR: $47,500, Subsidence: $14,000, Aquifer Assignment: $1,800). Mr. Clements seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye
Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye

Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye
At-Large:	Mr. Kenneth Eller, Director	Aye

With five (5) ayes and zero (0) nays, the motion passed.

9.2. Victoria ASR Demonstration Project Agreement Amendment

Meeting Discussion: Mr. Andruss explained that on November 17, 2017, the Board approved an amendment to the contract between the District and Texas Water Development Board for the Victoria ASR Demonstration Project to extend the performance period until August 26, 2019. The District received a companion amendment request for the agreement between the District and the City of Victoria to extend the service period to correspond with the VCGCD/TWDB agreement. The agreement has been reviewed by legal counsel and the proposed revisions accepted by COV legal counsel.

Board Action: Mr. Eller moved to authorize the presiding officer to execute the amendment to the interlocal agreement between the District and the City of Victoria related to the Victoria ASR Demonstration Project as drafted. Mr. Hroch seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye
Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye
At-Large:	Mr. Kenneth Eller, Director	Aye

With five (5) ayes and zero (0) nays, the motion passed.

10. Consideration of and possible action on matters related to Program and Project Management.

Meeting Discussion: no discussion.

Board Action: no action taken.

11. Consideration of and possible action on matters related to Performance Management including management goals and objectives of the District.

11.1. Annual Report for FY2017

Meeting Discussion: Mr. Andruss explained that following the review of water level measurements in February 2018, the District's annual report was developed. Based on a review of the activities of the District between October 1, 2016, and September 30, 2017, the District has fully achieved each goal and objective established within the Management Plan of the District.

Board Action: Mr. Eller moved to accept and approve the Annual Report of the District for Fiscal Year 2016-2017 as drafted. Mr. Hroch seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye
Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye
At-Large:	Mr. Kenneth Eller, Director	Aye

With five (5) ayes and zero (0) nays, the motion passed.

12. Consideration of and possible action on matters related to Meeting Management including minutes of previous meetings.

12.1. Minutes of 20180223 Meeting

Meeting Discussion: Mr. Andruss explained that the meeting minutes for the previous meeting were sent to the Directors prior to the meeting.

Board Action: Mr. Eller moved to accept and approve the meeting minutes for February 23, 2018, as drafted. Mr. Clements seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye
Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye
At-Large:	Mr. Kenneth Eller, Director	Aye

With five (5) ayes and zero (0) nays, the motion passed.

13. Consideration of and possible action on matters related to Financial Management including the annual budget of the district, financial reports of the district, bills and invoices of the district.

13.1. Audit Report for FY2017

Meeting Discussion: Mr. Keith Cox with Goldman, Hunt, and Notz reviewed the draft documentation of the audit for FYE20170930 and informed the District that the firm would present the audit finds for the fiscal year ending September 30, 2017, at the meeting of the Board of Directors scheduled for April 20, 2018.

Board Action: Mr. Clements moved to accept and approve the financial audit for the fiscal year ending September 30, 2017, as presented. Mr. Eller seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye
Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye

At-Large: Mr. Kenneth Eller, Director Aye
With five (5) ayes and zero (0) nays, the motion passed.

13.2. Financial Reports for February 2018

Meeting Discussion: Mr. Andruss explained that the financial reports for February 2018 were sent to the directors prior to the meeting. All accounts reconcile with internal records and the internal controls of the District were adhered to during the reporting period.

Board Action: Mr. Hroch moved to accept and approve the financial records for February 2018. Mr. Eller seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye
Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye
At-Large:	Mr. Kenneth Eller, Director	Aye

With five (5) ayes and zero (0) nays, the motion passed.

13.3. Financial Compilations

Meeting Discussion: Mr. Andruss explained that the District has received financial compilation reports from Catherine Ozment's CPA firm for several years. The District became concerned with the quality of the compilations while working with Mr. Cox of Goldman, Hunt, and Notz for the audit for FYE20170930. The District raised this concern with Ms. Ozment in January 2018 and deferred presentation of received and unaccepted compilations until the receiving a response from Ms. Ozment and completing the work on the audit for FYE20170930. This action has resulted in three invoices associated with developing the compilations to remain unpaid. Based on the review of Ms. Ozment's response and discussions with Mr. Cox and Mr. Goldman, the compilations appear to be satisfactory for the intended purpose of presenting financial information suitable for aiding management make financial decisions.

Board Action: Mr. Eller moved to accept the financial compilations for August 2017, September 2017, October 2017, November 2017, December 2017, and January 2018. Mr. Clements seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye
Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye
At-Large:	Mr. Kenneth Eller, Director	Aye

With five (5) ayes and zero (0) nays, the motion passed.

13.4. Consideration of Accounts Payable and Receivable

Meeting Discussion: Mr. Andruss presented a summary of paid and unpaid accounts receivable and accounts payable developed since the previous meeting.

Board Action: Mr. Eller moved to authorize the general manager to pay the unpaid and undisputed invoices and bills. Mr. Hroch seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye
Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye
At-Large:	Mr. Kenneth Eller, Director	Aye

With five (5) ayes and zero (0) nays, the motion passed.

14. Consideration of and possible action on matters related to Office Management including personnel and staffing.

14.1. Bulletin Board Cost-Share

Meeting Discussion: Mr. Andruss explained that the increasing demands for posting public notices at the office building by the District and other tenants have, from time to time, created an issue when placing notices in the doorway windows. The purchase and installation of an outdoor bulletin board would resolve the issue. The District has investigated the cost to purchase a large, lockable bulletin board (72"x48") with an approximate cost of $1,200.00. The cost estimate to install the board is approximately $300. The Victoria Health Department has expressed a willingness to cost-share on the purchase and installation of a bulletin board with priority given to placing public notices by both entities. Notices, other than official public notices would be allowed if space is available.

Board Action: Mr. Eller moved to authorize the general manager to cost-share on the purchase and installation of a bulletin board in an amount not to exceed $750.00. Mr. Hroch seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye
Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye
At-Large:	Mr. Kenneth Eller, Director	Aye

With five (5) ayes and zero (0) nays, the motion passed.

14.2. Employee Review - Mike Benavides

Meeting Discussion: Mr. Andruss explained that the District's newest employee, Mike Benavides, Aquifer Monitoring Tech, has completed the initial 6-month probationary period. Mr. Benavides' performance has been outstanding and

exceeded all expectations. He will receive a 5% pay increase in accordance with the original employment offer.

Board Action: no action taken.

15. Consideration of and possible action on matters related to legal counsel report.

Meeting Discussion: no discussion.

Board Action: no action taken.

16. Adjourn.

Meeting Discussion: no discussion.

Board Action: Mr. Eller moved to adjourn the meeting at 10:40 AM. Mr. Hroch seconded the motion. The following vote was made:

Precinct 1:	Mr. Jerry Hroch, Vice President	Aye
Precinct 2:	Mr. Thurman Clements, Jr., Director	Aye
Precinct 3:	Mrs. Barbara Dietzel, Secretary	Aye
Precinct 4:	Mr. Mark Meek, President	Aye
At-Large:	Mr. Kenneth Eller, Director	Aye

With five (5) ayes and zero (0) nays, the motion passed.

Prepared by: Tim Andruss, General Manager
Victoria County Groundwater Conservation District Official

THE ABOVE AND FOREGOING MINUTES WERE READ AND APPROVED ON THIS

THE 18th DAY OF May A.D. 2018.

Mark Meek

Director of the Victoria County Groundwater Conservation District

ATTEST:

Director of the Victoria County Groundwater Conservation District

Appendix H. Victoria County Groundwater Conservation District Contact Information

District Contact Information

Mailing Address:

2805 N. Navarro St., Suite 210
Victoria, Texas 77901

Email Address:

admin@vcgcd.org

Phone Number:

(361) 579 – 6863

FAX Number:

(361) 579 - 0041

Board of Directors:

Mr. Mark Meek, President
Mr. Jerry Hroch, Vice-President
Mrs. Barbara Dietzel, Secretary
Mr. Thurman Clements, Jr., Director
Mr. Kenneth Eller, Director

Staff:

Mr. Tim Andruss, General Manager
Mrs. Donna Yanta, Administrative Assistant
Mr. Tim Faltysek, Aquifer Monitoring Technician