



# Groundwater Management Plan 2020 – 2025

Amended July 20, 2023

Rolling Plains Groundwater Conservation District

135 N Munday AVE, Munday, TX 76371

940-420-1095 - [www.rpgcd.org](http://www.rpgcd.org)

## **DISTRICT MISSION**

The Rolling Plains Groundwater Conservation District will strive to develop, promote, and implement water conservation, augmentation, and management strategies to protect water resources for the benefit of the citizens, economy, and environment of the district.

## **TIME PERIOD FOR THIS PLAN**

This management document is intended as a tool to focus the thoughts and actions of those given the responsibility for the execution of district activities throughout the five-year period that is the focus of this plan, (i.e. 2020-2025). After five years, the plan will be reviewed, but may be revised at any time in order to maintain consistency or to address any new or revised data, groundwater availability models, desired future conditions, state or regional water plans, or district management strategies.

The issuance of GAM Run 21-011 MAG: Modeled Available Groundwater For The Aquifers In Groundwater Management Area 6 on November 3, 2022, necessitated just such a revision or amendment to this plan. This amendment will be in effect until this plan expires in 2025.

## **STATEMENT OF GUIDING PRINCIPLES**

The District recognizes that the groundwater resources of the region are of vital importance. The preservation of this most valuable resource can be managed in a prudent and cost-effective manner through education and cooperation. The greatest threat to prevent the district from achieving the stated mission is inappropriate management, based on a lack of understanding of local conditions. A basic understanding of the aquifers and their hydrogeologic properties, as well as a quantification of resources, is the foundation from which to build prudent planning measures.

## **GENERAL DESCRIPTION**

The District was created by the citizens of Haskell and Knox Counties through election, January 27, 1999. Baylor County was added to the District after an annexation petition and subsequent referendum on August 12, 2000. Senate Bill 611 of the Seventy-seventh Legislature was signed by the Governor on May 5, 2001. This changed the name of the District and provided for the Board of Directors to include members from Baylor County. The current officers are David Albus-President, Loy Studer-Vice-President, and, Chris Orsak-Secretary-Treasurer. The other members are Jerry Bob Daniel, Jimmy Burson, Jim Cowsert, Freddie Livingston, Michael Adams, and Ross Short. Senate Bill 1925 in the Seventy-eighth Legislature further defined the District's properties. The District General Manager is Lynn Smith, PG, who represents GMA 6 on RWPG Brazos G. Rolling Plains Groundwater Conservation District (RPGCD) has the same areal extent as that of Baylor, Haskell and Knox Counties, Texas. The Counties have an economy dominated by the agricultural community. The agricultural income is derived primarily from cotton, peanuts, wheat, and beef cattle production. Production of petroleum also contributes to the income of the counties. Wind farms are a new sight for the counties.

## **LOCATION AND EXTENT**

Baylor, Haskell, and Knox Counties, having an areal extent of 2,667 square miles, are located in northwest central Texas. The counties are bounded on the east by Archer and Throckmorton Counties, on the north by Foard and Wilbarger Counties, on the west by King and Stonewall Counties, and on the south by Jones and Shackelford Counties. Seymour, which is centrally located in the county, is the county seat of Baylor

County. Haskell, which is centrally located in the county, is the county seat of Haskell County. Benjamin, which is centrally located in the county, is the county seat of Knox County.

### **TOPOGRAPHY AND DRAINAGE**

Topographically, the District consists of rolling plains heavily dissected by Brazos and Wichita River drainage. The altitude of the land surface ranges from 1,053 to 1,681 feet above mean sea level.

Baylor County lies within the drainage system of the Brazos and Wichita River basins. The Brazos River enters the county from the west and traverses through the middle of the county and exits through the southeast corner. The Wichita River enters the county from the west and traverses across the upper half of the county and exits through the northeast corner.

Knox County lies within the drainage system of the Brazos and Wichita River basins. The Brazos River enters the county in the southwest and traverses through the middle of the county and exits through the east side. The Wichita River enters the county from the west and traverses through the middle of the county and exits through the northeast corner.

Haskell County lies within the drainage system of the Brazos River. The Brazos River parallels the western boundary of the county and shows up again in the southeastern corner of the county.

### **GROUNDWATER RESOURCES OF BAYLOR, HASKELL AND KNOX COUNTIES**

The Seymour Aquifer is the only source of moderate to large supplies of fresh groundwater in Baylor, Haskell, and Knox Counties. No alternative fresh supplies exist from deeper formations. The aquifer underlies 321,220 acres and furnishes water to over 3,000 irrigation wells. Municipal, domestic, and stock supplies are also dependent on the Seymour.

The geologic and hydrologic character of the Seymour is quite variable. Typically, wells are 40 to 60 feet deep and are completed in the lower part of the formation, which normally consists of sand and gravel. Well yields average 125 gallons per minute and are as high as 400 gallons per minute.

Specific capacities of wells average over 50 gallons per minute per foot of drawdown. Saturated thickness is typically between 20 and 40 feet. Transmissivities range from 20,000 to over 300,000 gallons per day per foot and average 100,000 gallons per day per foot. Ground-water movement rates, unaffected by pumping, average between 800 and 1,200 feet per year.

Nearly all recharge to the Seymour is by direct infiltration of precipitation on the land surface. Analysis of pumping, water levels, and precipitation over the past 20 years indicates that nearly 55,000 acre-feet per year is available for pumping by wells. Annual pumping in recent years has ranged from about 30,000 acre-feet to about 70,000 acre-feet, averaging 45,600 acre-feet.

Water quality in the Seymour is variable. The dissolved solids content of natural water from individual wells ranges from about 300 milligrams per liter to 3,500 milligrams per liter. Most values are between 400 and 1,500 milligrams per liter. The best quality water is found in and adjacent to the more important recharge areas. Generally, water quality is satisfactory for irrigation purposes. Most water quality meets state standards for public supplies, except for nitrate content that commonly exceeds the limit of 45 milligrams per liter. Nitrate contents of Seymour water are typically from 30 to 90 milligrams per liter.

Available chemical analyses and nitrogen isotope analyses indicate most of the nitrate in the Seymour results from leaching of natural soil nitrate due to cultivation.

The Seymour Aquifer is susceptible to pollution from both surface and near surface sources. Over 3,200 past and present, actual and potential, pollution sources exist on the Seymour Aquifer. Most are only potential sources; the actual count is believed to number a few hundred. Existing pollution is due mainly to past pollution sources and activities, and not to current practices. Most existing pollution has been due to oil field brines and septic tank discharge.

It is estimated that about 2 percent of the water in the Seymour Aquifer is affected by pollution. About 75 percent of the existing pollution is estimated to be due to the past disposal of oil field brine into unlined surface pits. An estimated 20 percent has been caused by leaky injection wells and unplugged abandoned holes. About 4 percent of existing pollution results from septic tanks, while miscellaneous sources are responsible for 1 percent. Little effect on water quality results from return flow of irrigation water, evapotranspiration, or agricultural application of fertilizer and pesticides.

The portions of the aquifer affected currently by pollution are relatively localized. The portions of the aquifer affected by pollution will increase in the future due to the natural movement of ground water and to the spreading effects caused by pumping wells. However, portions of the aquifer affected by significant pollution will not become extremely large in the future. Significant future pollution problems will be confined mostly to individual properties as opposed to large areas of the aquifer.

Correcting existing pollution can take years, or even decades, and can be very costly. Thus, prevention rather than correction is most important in dealing with ground-water pollution. For past pollution sources, it is possible only to control the resulting pollution plumes either by removal or avoidance measures. Pollution removal measures involve pumping by wells to remove the pollutants from the aquifer. Typically, this is impractical because of the large volumes of water that must be pumped, the relatively long period of time required, and problems regarding disposal of pumped water. Avoidance methods include relocating wells affected by pollution or selective pumping and blending to obtain a quality of water that can be used. These can be effective methods if the pollution is not severe or if the property involved is large, and sufficient quantities of unpolluted water can be obtained.

#### **ESTIMATE OF MODELED AVAILABLE GROUNDWATER**

The current estimate of Modeled Available Groundwater is detailed in GAM Run 21-011 MAG, attached as Appendix A.

#### **ESTIMATED ANNUAL GROUNDWATER USE**

Water resources, needs, demands and management strategies are detailed in the TWDB report, Estimated Historical Water Use and 2017 State Water Plan Datasets, April 3, 2020, which is attached as Appendix B.

#### **ESTIMATES OF ANNUAL GROUNDWATER RECHARGE FROM PRECIPITATION**

Refer to GAM Run 19-020 found in Appendix C.

#### **ESTIMATES OF ANNUAL GROUNDWATER DISCHARGE TO SPRINGS/SURFACE WATER BODIES**

Refer to GAM Run 19-020 found in Appendix C.

## **ESTIMATES OF ANNUAL GROUNDWATER FLOW INTO/OUT OF THE DISTRICT; ESTIMATES OF ANNUAL GROUNDWATER FLOW BETWEEN DISTRICT AQUIFERS**

Refer to GAM Run 19-020 found in Appendix C.

## **ESTIMATES OF PROJECTED SURFACE WATER SUPPLY**

Refer to Estimated Historical Water Use and 2017 State Water Plan Datasets, April 3, 2020, which is attached as Appendix B.

## **ESTIMATES OF PROJECTED TOTAL DEMAND FOR WATER IN THE DISTRICT**

Refer to Estimated Historical Water Use and 2017 State Water Plan Datasets, April 3, 2020, which is attached as Appendix B.

## **ESTIMATES OF PROJECTED WATER SUPPLY NEEDS**

As a member of Regional Water Planning Groups B & Brazos G, the District provides input, in developing the water supply needs for these groups. Unmet irrigation water supply needs in the adopted state water plan were considered by the District in the development of this management plan and will be considered in those to come. The numbers, presented, discussed, and adopted, are presented in the Estimated Historical Water Use/2017 Texas State Water Plan report in Appendix B. Unmet irrigation water needs will be a recurring part of state water plans in the future.

Refer to Estimated Historical Water Use and 2017 State Water Plan Datasets, April 3, 2020, which is attached as Appendix B.

## **WATER MANAGEMENT STRATEGIES**

Water management strategies were considered in an effort to mitigate the projected unmet irrigation needs highlighted in the Estimated Historical Water Use/2017 Texas State Water Plan report in Appendix B. Demand reduction was adopted as the preferred strategy, lacking any other feasible strategy at this time. As technology advances in application techniques, crop mixes, plant breeding and agronomic methods take place, demand reduction may become more feasible over time. These technologies, however, will require time, effort, and money to implement, especially without causing major reductions in yield and profitability. The District will monitor research into Managed Aquifer Recharge (MAR) and the technologies being developed to facilitate this process.

Refer to Estimated Historical Water Use and 2017 State Water Plan Datasets, April 3, 2020, which is attached as Appendix B.

## **DISTRICT RULES**

The District Rules are attached as Appendix D. They are also available online at:  
<http://www.rpgcd.org/rulesandmanagement.html>

## **MANAGEMENT OF GROUNDWATER SUPPLIES**

The District will manage the supply of groundwater within the District, in order to conserve the resource while seeking to maintain the economic viability of all resource user groups, public and private. In consideration of the economic and cultural activities occurring within the District, the District will

continue to identify and engage in such activities and practices, which if implemented, would result in preservation and protection of the groundwater. The observation network will continue to be reviewed and maintained in order to monitor changing conditions of groundwater within the District. The District will undertake investigations of the groundwater resources within the District and will make the results of investigations available to the public.

The District has adopted rules and has started the process of updating these rules to regulate groundwater withdrawals by means of spacing and/or production limits. The relevant factors to be considered in making the determination to grant a permit or limit groundwater withdrawal, will include:

1. The purpose of the District and its rules;
2. The equitable conservation and preservation of the resource; and
3. The economic hardship resulting from granting or denying a permit or the terms prescribed by the rules.

In pursuit of the District's mission of preserving and protecting the resource, the District will enforce the terms and conditions of permits and the rules of the District by enjoining the permit holder in a court of competent jurisdiction, as provided for in TWC Chapter 36.102, if necessary.

#### **DROUGHT CONTINGENCY PLAN**

Drought is a normal, recurrent feature of climate, although many erroneously consider it a rare and random event. Drought is also a temporary aberration, and differs from aridity, which is restricted to low rainfall regions and is a permanent feature of climate (“What is Drought?”, National Drought Mitigation Center). The Rolling Plains Groundwater Conservation District is in an arid region that also experiences drought. However, even in the midst of a drought, rainfall at crucial times of the growing season may significantly reduce irrigation water demand.

Drought response conservation measures typically used in other regions of Texas (i.e. rationing) cannot and are not used in this region due to extreme economic impact potential. In the District, groundwater conservation is stressed at all times. The Board recognizes that irrigated agriculture provides economic stability to the communities within the District. Therefore, through the notice and hearing provisions required in the development and adoption of this management plan, the Board adopts the official position that, in times of precipitation shortage, irrigated agricultural producers will not be limited to any less usage of groundwater than is provided by District rules.

In order to treat all other groundwater user groups fairly and equally, the District will encourage more stringent conservation measures, where practical, but likewise, will not limit groundwater use in any way not already provided for by District rules.

#### **ACTIONS, PROCEDURES, PERFORMANCE AND AVOIDANCE FOR PLAN IMPLEMENTATION**

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.

The District has adopted rules and has started the process of updating these rules relating to the implementation of this plan. The rules adopted by the District shall be pursuant to TWC Chapter 36 and

the provisions of this 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. The rules of the District are available at: <http://www.rpgcd.org/rulesandmanagement.html>

The District shall treat all citizens with equality. Citizens may apply to the District for discretion in enforcement of the rules on grounds of adverse economic effect or unique local characteristics. In granting discretion to any rule, the Board shall consider the potential for adverse effect on adjacent owners and aquifer conditions. The exercise of said discretion by the Board shall not be construed as limiting the power of the Board.

## **METHODOLOGY FOR TRACKING PROGRESS TOWARD MEETING GROUNDWATER MANAGEMENT GOALS**

The methodology that the District will use to track its progress on an annual basis in achieving all of its management goals will be as follows:

The District manager will prepare and present an annual report to the Board of Directors on District performance in regard to achieving management goals and objectives (during the first quarterly Board of Directors meeting each fiscal year). The report will include the number of instances each activity was engaged in during the year.

The annual report will be maintained on file at the District office.

## **GOALS, MANAGEMENT OBJECTIVES And PERFORMANCE STANDARDS**

### **Goal 1.0 Providing the most efficient use of groundwater**

#### **1.1. Management Objective**

Each year, on four (4) or more occasions, the District will disseminate educational information relating to conservation practices for the efficient use of water resources at meetings, by email, by a posting to the District website, publication in media or by other means. These will include but are not limited to publications from the Texas Water Development Board, Texas Commission on Environmental Quality, Texas Agricultural Extension Service, and other resources.

##### **1.1a Performance Standard**

Number, annually, on four (4) or more occasions, the District disseminated educational information relating to conservation practices for the efficient use of water resources.

### **Goal 2.0 Controlling and preventing waste of groundwater**

#### **2.1. Management Objective**

Each year, on four (4) or more occasions, the District will disseminate educational/informational materials directed toward preventing the waste of

groundwater at meetings, by email, by a posting to the District website, publication in media or by other means.

2.1a Performance Standard

Number, annually, of four (4) or more occasions the District disseminated educational/informational materials directed toward preventing waste of water each year.

**Goal 3.0**      **Addressing conjunctive surface water management issues**

**3.1. Management Objective**

Each year, on three (3) or more occasions, the District manager will attend meetings of Region B, Region O or Brazos G RWPG to remain current with surface water issues and to consider the water supply needs and water management strategies included in the adopted state water plan.

3.1a Performance Standard

Number, annually, on three (3) or more occasions, the District manager attends RWPG meetings.

**Goal 4.0**      **Addressing natural resource issues**

**4.1. Management Objective**

Each year the District will monitor five (5) or more selected wells within the District for possible contamination problems, which would jeopardize the integrity of the groundwater, by collecting samples for analysis.

4.1a Performance Standard

Number of samples collected and analyzed each year on five (5) or more wells.

4.1b Performance Standard

Number of contamination problems each year.

**Goal 5.0**      **Addressing drought conditions**

**5.1. Management Objective**

Each year the District will cooperate with the Natural Resource Conservation Service and the West Texas Mesonet in providing weather data on a daily basis for residents of the District. This data will be disseminated by the West Texas Mesonet website <http://www.mesonet.ttu.edu>, and the Agricultural Drought Task Force website <http://agrillife.tamu.edu/drought>. The web sites will provide assistance in calculation of the evapotranspiration rate (ET) of crops and lawns, to provide for efficient watering of these plants and awareness of drought conditions.

The TWDB website ( <http://www.waterdatafortexas.org/drought/>) provides information and data relative to Texas Drought Conditions.

5.1a Performance Standard

Number, annually, of one (1) or more weather stations that the District maintains to provide data collection to these cooperating agencies.

**5.2. Management Objective**

Each year, the District will cooperate with the Texas Water Development Board in monitoring wells that may be used to implement drought planning and providing for this information to be available on the Internet.

5.2a Performance Standard

Number, annually, of one (1) or more on-line wells the District assists in the collection and dissemination of well levels.

5.2b Performance Standard

Prepare a report reflecting the results of the water level monitor to the Board at the first quarterly meeting each fiscal year for a yearly comparison.

**Goal 6.0 Addressing conservation**

**6.1. Management Objective**

Each year, on four (4) or more occasions, the District will disseminate educational information relating to conservation of water resources at meetings, by email, by a posting to the District website, publication in media or by other means.. These will include but are not limited to publications from the Texas Water Development Board, Texas Commission on Environmental Quality, Texas Agricultural Extension Service, and other resources.

6.1a Performance Standard

Number, annually, on four (4) or more occasions, the District disseminated educational information relating to conservation of water resources.

**6.2. Management Objective**

Each year the District will monitor water levels in five (5) or more selected wells within the District.

6.2a Performance Standard

Number of water levels taken each year on five (5) or more selected wells.

6.2b Performance Standard

Prepare a report reflecting the results of the annual water level program to the Board at the first quarterly meeting each fiscal year for a yearly comparison of water level averages.

**Goal 7.0 Addressing the desired future conditions**

**7.1. Management Objective**

Annually, The District will review its permit and well registration in light of the Desired Future Conditions of the groundwater resources within the boundaries of the District to assess whether the District is on target to meet the Desired Future Conditions estimates submitted to the TWDB.

7.1a Performance Standard

The District's Annual Report will include a discussion of the District's permit and well registration and will evaluate the District's progress in achieving the Desired Future Conditions of the groundwater resources within the boundaries of the District and whether the District is on track to maintain the Desired Future Conditions estimates over the 50-year planning period.

**7.2. Management Objective**

Each year the District will monitor water levels in five (5) or more selected wells within the District.

7.2a Performance Standard

The District will annually measure the water levels in at least five monitoring wells within the District and will determine the five-year water level averages based on the measurements taken. The District will compare the five-year water level averages to the corresponding five-year increment of its Desired Future Conditions in order to track its progress in achieving the Desired Future Conditions.

7.2b Performance Standard

The District's Annual Report will include the water level measurements taken each year to assess the District's progress towards achieving its Desired Future Conditions. Once the District has obtained water level measurements for five consecutive years and is able to calculate water level averages over five-year periods thereafter, the District will include a discussion of its comparison of water level averages to the corresponding five-year increment of its Desired Future Conditions in order to track its progress in achieving its Desired Future Conditions.

## **SB-1 MANAGEMENT GOALS DETERMINED NOT-APPLICABLE**

### **Controlling and preventing subsidence**

Subsidence in GMA 6 only occurs in the form of dissolved gypsum, salt and limestone formations that can cause localized sinkholes, depressions and subsurface cavities. The only way to control these sinkholes is to dewater that portion of the aquifer where the minerals are being dissolved.

The TWDB subsidence risk report: Identification of the Vulnerability of the Major and Minor Aquifers of Texas to Subsidence with Regard to Groundwater Pumping – TWDB Contract Number 1648302062, by LRE Water: <http://www.twdb.texas.gov/groundwater/models/research/subsidence/subsidence.asp> states that “Results of the assessment suggest that the aquifer has generally low risk for future subsidence due to pumping.” Therefore, the management goal for controlling subsidence within the District is not applicable to the operations of the District.

### **Addressing recharge enhancement.**

The District has determined that this goal is not presently appropriate or cost-effective. The District continues to monitor research into Managed Aquifer Recharge (MAR) and the technology being developed. Therefore, the management goal of Recharge Enhancement within the District is not applicable to the operations of the District.

### **Addressing rainwater harvesting.**

The District has determined that this goal is not presently appropriate or cost-effective. Therefore, the management goal of Rainwater Harvesting within the District is not applicable to the operations of the District.

### **Addressing precipitation enhancement.**

The District has determined that this goal is not presently appropriate or cost-effective. Therefore, the management goal of Precipitation Enhancement within the District is not applicable to the operations of the District.

### **Addressing brush control.**

Existing programs administered by the USDA-NRCS are addressing this issue. The District has determined that this goal for the District is not presently appropriate or cost-effective. Therefore, the management goal of Brush Control within the District is not applicable to the operations of the District.

\* Summary definitions.

Optimal- Shall be derived from the minimum number of observations determined by spatial, temporal, and District resource constraints to adequately describe the aquifer system and responses to external influences.

Waste - as defined by Chapter 36 of Texas Water Code means any one or more of the following:

1. Withdrawal of groundwater from a groundwater reservoir at a rate and in an amount that causes or threatens to cause intrusion into the reservoir of water unsuitable for agricultural, gardening, domestic, or stock-raising purposes;
2. The flowing or producing of wells from a groundwater reservoir if the water produced is not used for a beneficial purpose;
3. Escape of groundwater from a groundwater reservoir to any other reservoir or geologic strata that does not contain groundwater;
4. Pollution or harmful alteration of groundwater in a groundwater reservoir by salt water or by other deleterious matter admitted from another stratum or from the surface of the ground;
5. Willfully or negligently causing, suffering, or allowing groundwater to escape into any river, creek, natural watercourse, depression, lake, reservoir, drain, sewer, street, highway, road, or road ditch, or onto any land other than that of the owner of the well unless such discharge is authorized by permit, rule, or order issued by the Commission under Chapter 26 of the Texas Water Code;
6. Groundwater pumped for irrigation that escapes as irrigation tailwater onto land other than that of the owner of the well unless permission has been granted by the occupant of the land receiving the discharge; or
7. For water produced from an artesian well, waste has the meaning assigned by Section 11.205 of the Texas Water Code.

Abandoned Well - shall mean a well or borehole the condition of which is causing, or is likely to cause, pollution of groundwater in the District and includes a well which is or is not in use or which contains no pumping equipment (open or uncovered well). A well or borehole which is not in compliance with applicable law, including the Rules and Regulations of the District, the Texas Water Well Driller's Act, Texas Natural Resource Conservation Commission, or any other state or federal agency or political subdivision having jurisdiction, is presumed to be an abandoned or deteriorated well.

District- the Rolling Plains Groundwater Conservation District.

Board- the Board of Directors of the Rolling Plains Groundwater Conservation District.

# **APPENDIX A**

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**GAM RUN 21-011 MAG:  
MODELED AVAILABLE GROUNDWATER  
FOR THE AQUIFERS IN  
GROUNDWATER MANAGEMENT AREA 6**

Jevon Harding, P.G.  
Texas Water Development Board  
Groundwater Division  
Groundwater Modeling Department  
512-463-7979  
November 14, 2022



*Jevon Harding*  
11/3/2022  
Date

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# **GAM RUN 21-011 MAG: MODELED AVAILABLE GROUNDWATER FOR THE AQUIFERS IN GROUNDWATER MANAGEMENT AREA 6**

Jevon Harding, P.G.  
Texas Water Development Board  
Groundwater Division  
Groundwater Modeling Department  
512-463-7979  
November 14, 2022

## ***EXECUTIVE SUMMARY:***

The Texas Water Development Board (TWDB) estimated the modeled available groundwater values for the following relevant aquifers in Groundwater Management Area 6:

- Seymour Aquifer – The modeled available groundwater ranges from 157,895 to 181,289 acre-feet per year during the period from 2020 to 2080. Values are summarized by groundwater conservation district, county, and Seymour Aquifer pod in Table 1, and by county, regional water planning area, river basin, and Seymour Aquifer pod in Table 2.
- Blaine Aquifer – The modeled available groundwater ranges from 70,924 to 74,029 acre-feet per year during the period from 2020 to 2080. Values are summarized by groundwater conservation district and county in Table 3, and by county, regional water planning area, and river basin in Table 4.
- Ogallala Aquifer – The modeled available groundwater remains at 409 acre-feet per year throughout the period from 2020 to 2080. Values are summarized by groundwater conservation district and county in Table 5, and by county, regional water planning area, and river basin in Table 6.
- Dockum Aquifer – The modeled available groundwater ranges from 171 to 172 acre-feet per year during the period from 2020 to 2080. Values are summarized by groundwater conservation district and county in Table 7, and by county, regional water planning area, and river basin in Table 8.

Figure 1 shows the county and groundwater conservation district boundaries represented by the divisions in Tables 1, 3, 5, and 7. Figure 2 shows the regional water planning area, river basin, and county boundaries represented by the divisions in Tables 2, 4, 6, and 8.

The modeled available groundwater estimates are based on the revised desired future conditions for the Seymour, Blaine, Ogallala, and Dockum aquifers adopted by groundwater conservation district (or district) representatives in Groundwater Management Area 6 on September 29, 2022.

The district representatives declared the following aquifers to be non-relevant for purposes of joint planning: the entire Cross Timbers Aquifer; the Blaine Aquifer in Motley, Knox, Dickens, Kent, Jones, Stonewall, and Wilbarger counties; the Ogallala Aquifer in Collingsworth and Dickens counties; the Dockum Aquifer in Dickens and Kent counties. Additionally, the following portions of the Seymour Aquifer were also declared non-relevant for the purposes of joint planning: the entirety of Pods 5, 9, 10, 12, 13, 14, 15; the portion of Pod 3 in Briscoe County; the portion of Pod 4 in Wichita and Wilbarger counties; the portion of Pod 7 in Stonewall County; the portion of Pod 8 in Throckmorton and Young counties; the portion of Pod 11 in Jones and Stonewall counties.

The TWDB determined that the explanatory report and other materials submitted by the district representatives were administratively complete on November 10, 2022.

***REQUESTOR:***

Mr. Mike McGuire, General Manager of Rolling Plains Groundwater Conservation District and Groundwater Management Area 6 Coordinator.

***DESCRIPTION OF REQUEST:***

In a letter dated January 17, 2022, Mr. Mike McGuire provided the TWDB with the desired future conditions of the Seymour, Blaine, Ogallala, and Dockum aquifers. The desired future conditions were first adopted on November 18, 2021 by district representatives in Groundwater Management Area 6 as part of the joint planning process. After review of the submittal, the TWDB sent an email to Mr. McGuire on June 7, 2022 requesting missing model files, confirmation of the methodology and assumptions used, and clarifications on minor inconsistencies in the wording of the desired future conditions and non-relevant statements. On June 16, 2022, Mr. McGuire and the Groundwater Management Area 6 consultants provided the missing model files and responses to clarifications (Appendix A). They provided confirmation that the assumptions used by the TWDB were consistent with those used by Groundwater Management Area 6. To address the TWDB clarifications, they also provided a new version of the desired future conditions resolution that corrected clerical errors and included additional non-relevant aquifer statements. District representatives in Groundwater Management Area 6 signed and adopted revised desired future conditions resolutions September 29, 2022. The final desired future conditions are:

**Seymour Aquifer (as stated in Resolution 21-005)**

- a. *The Desired Future Condition for Pod 1 in Childress & Collingsworth Counties, located in the Mesquite and Gateway Groundwater Conservation Districts, is that condition whereby the total decline in water levels will be no more than 33 feet during the period from 2010 - 2080*
- b. *The Desired Future Condition for Pod 2 in Hall County, located in Mesquite Groundwater Conservation District is that condition whereby the total decline in water levels will be no more than 15 feet during the period from 2010 - 2080*
- c. *The Desired Future Condition for Pod 3 in Briscoe, Hall & Motley Counties, located in the Mesquite and Gateway Groundwater Conservation Districts, is that condition whereby the total decline in water levels will be no more than 15 feet during the period from 2010 - 2080*
- d. *The Desired Future Condition for Pod 4 in Childress, Foard, and Hardeman counties, located in the Mesquite and Gateway Groundwater Conservation Districts, is that condition whereby the total decline in water levels will be no more than 1 foot during the period from 2010 - 2080*
- e. *The Desired Future Condition for Pod 6 in Knox County, located in Rolling Plains Groundwater Conservation District is that condition whereby the total decline in water levels will be no more than 18 feet during the period from 2010 - 2080*
- f. *The Desired Future Condition for that part of Pod 7 Baylor, Haskell, and Knox Counties, located in Rolling Plains Groundwater Conservation District is that condition whereby the total decline in water levels will be no more than 18 feet during the period from 2010 - 2080*
- g. *The Desired Future Condition for that part of Pod 8 in Baylor County, located in Rolling Plains Groundwater Conservation District is that condition whereby the total water level decline will be no more than 18 feet during the period from 2010 - 2080*
- h. *The Desired Future Condition for that part of Pod 11 in Fisher County, located in Clear Fork Groundwater Conservation District is that condition whereby the total water level decline will be no more than 1 foot during the period from 2010 - 2080*
- i. *The Seymour Aquifer Pods 5, 9, 10, 12, 13, 14, 15, that part of 3 in Briscoe County, that part of 4 in Wichita and Wilbarger counties, that part of 7 in Stonewall County, that part of 8 in Throckmorton and Young counties, and that part of 11 in Jones and Stonewall counties have been determined to be non-relevant for joint planning purposes.*

**Blaine Aquifer (as stated in Resolution 21-004)**

- a. *The Desired Future Condition for that part of Childress County North of the Red River, located in the Mesquite Groundwater Conservation District, all of Collingsworth and Hall Counties, also located within the Mesquite Groundwater Conservation District; and that part of Childress County North of the Red River located in the Gateway Groundwater Conservation District is that condition whereby the total decline in water levels will be no more than 9 feet during the period from 2010-2080*
- b. *The Desired Future Condition for that part of Childress County south of the Red River located in the Mesquite & Gateway Groundwater Conservation Districts; and all of Cottle and Hardeman Counties, also located within the Gateway Groundwater Conservation District, is that condition whereby the total decline in water levels will be no more than 2 feet during the period from 2010-2080*
- c. *The Desired Future Condition for Fisher County, located within the Clear Fork Groundwater Conservation District, is that condition whereby the total decline in water levels will be no more than 4 feet during the period from 2010-2080*
- d. *The Desired Future Condition for King County, located within the Gateway Groundwater Conservation District, is that condition whereby the total decline in water levels will be no more than 7 feet during the period from 2010-2080*
- e. *The Desired Future Condition for Foard County, located within the Gateway Groundwater Conservation District, is that condition whereby the total decline in water levels will be no more than 10 feet during the period from 2010-2080*
- f. *The Blaine Aquifer in Motley County, located within the Gateway Groundwater Conservation District, and in Knox County, located within the Rolling Plains Groundwater Conservation District, has been determined to be non-relevant for joint planning purposes*
- g. *The Blaine Aquifer in Dickens, Kent, Jones, Stonewall and Wilbarger Counties, not located within a Groundwater Conservation District, has been determined to be non-relevant for joint planning purposes.*

**Ogallala Aquifer (as stated in Resolution 21-003)**

- a. *The Desired Future Condition for Motley County. located in the Gateway Groundwater Conservation District. is that condition with average drawdown of up to 28 feet between 2013 and 2080.*
- b. *The Ogallala Aquifer in Collingsworth County. located in the Mesquite Groundwater Conservation District. is insignificant or nonexistent, and is determined to be non-relevant for joint planning purposes*
- c. *The Ogallala Aquifer in Dickens County. not located within a Groundwater Conservation District, is determined to be non-relevant for joint planning purposes.*

### **Dockum Aquifer (as stated in Resolution 21-001)**

- a. *The Desired Future Condition for Fisher County, located in the Clear Fork Groundwater Conservation District is that condition whereby the total decline in water levels will be no more than 28 feet during the period from 2013 - 2080*
- b. *The Desired Future Condition for Motley County, located in the Gateway Groundwater Conservation District is that condition whereby the total decline in water levels will be no more than 28 feet during the period from 2013 - 2080*
- c. *The Dockum Aquifer in Dickens & Kent Counties, not located within a Groundwater Conservation District, has been determined to be non-relevant for joint planning purposes.*

### **Cross Timbers Aquifer (as stated in Resolution 21-002)**

*The Cross Timbers Aquifers within Groundwater Management Area 6 have been determined to be non-relevant for joint planning purposes.*

### ***METHODS:***

The desired future conditions for Groundwater Management Area 6 are based on water-level declines, or drawdowns, defined as the difference in water levels between a baseline year and 2080. Depending on the aquifer, one of three groundwater availability models were used to estimate drawdowns over the specified time interval and to calculate modeled available groundwater.

The groundwater availability model for the Seymour Aquifer in Baylor, Haskell, and Knox counties (Jigmond and others, 2014) was used for Pod 7 of the Seymour Aquifer and the groundwater availability model for the Seymour and Blaine aquifers (Version 1.01; Ewing and others, 2004) was used for the remainder of the Seymour Aquifer and the Blaine Aquifer. Both models were run using predictive model files submitted with the explanatory report (Brady, 2022).

Modeled water levels for these two models were extracted for the years 2010 and 2080 and drawdown was calculated as the difference in water level between those two years. Drawdown averages were calculated by aquifer for each area specified in the desired future conditions. The calculated drawdown averages were compared with the desired future conditions and TWDB staff verified that the pumping scenario in the submitted model files achieved the desired future conditions.

The groundwater availability model for the High Plains Aquifer System (Version 1.01; Deeds and Jigmond, 2015) was used for calculations in the Ogallala and Dockum aquifers. This model was run using the predictive model files for “Scenario 19” submitted with the explanatory report for Groundwater Management Area 2 (Hutchison 2021a, 2021b). Modeled water levels for this model were extracted for the years 2013 and 2080 and drawdown calculated as the difference in water level between those two years. Drawdown averages were calculated by aquifer for each area specified in the desired future conditions. The calculated drawdown averages were compared with the desired future conditions and TWDB staff verified that the pumping scenario in the submitted model files achieved the desired future conditions.

The modeled available groundwater values for all three models were determined by extracting pumping rates by decade from the model results using ZONEBUDGET Version 3.01 (Harbaugh, 2009). Tables 1, 3, 5, and 7 present modeled available groundwater by county and groundwater conservation district for the Seymour, Blaine, Ogallala, and Dockum aquifers, respectively. Tables 2, 4, 6, and 8 present modeled available groundwater for regional planning purposes by county, river basin, and regional water planning area for the Seymour, Blaine, Ogallala, and Dockum aquifers, respectively.

### **Modeled Available Groundwater and Permitting**

As defined in Chapter 36 of the Texas Water Code (2011), “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 modeled available groundwater estimates are described below:

#### **Seymour Aquifer (Pod 7)**

- The groundwater availability model for the Seymour Aquifer in Haskell, Knox, and Baylor Counties was the base model for this analysis. See Jigmond and others (2014) for the assumptions and limitations of the historical calibrated model. Groundwater

Management Area 6 constructed a predictive model simulation to extend the base model to 2080 for planning purposes. See Brady (2022) for the assumptions of this predictive model simulation.

- This groundwater availability model includes one layer, which represents the Seymour Aquifer.
- The model was run with MODFLOW-2000 (Harbaugh and others, 2000).
- Drawdown was calculated as the difference in modeled head (water level) between the baseline year 2010 (stress period 347) and the final year 2080 (stress period 418). Average drawdowns were calculated as the sum of drawdowns for all model cells within a specified area divided by the number of cells in that specified area.
- Although the original groundwater availability model was only calibrated to 2005, an analysis during the previous round of joint planning (Shi, 2017; Appendix A) verified that the measured water levels did not change significantly for the period from 2005 to 2010. For this reason, the TWDB considers it acceptable to use 2010 as the reference year for drawdown calculations.
- Cells in which the modeled head (water level) was below the bottom of the cell are considered “dry.” Cells that were already dry during the baseline year were not included in the drawdown calculation. In cells that became dry during the simulation, the drawdown calculation used the elevation of the bottom of the cell, rather than the modeled head. In this model, transmissivity of “dry” cells remains constant and pumping from those cells continues, so the modeled available groundwater calculation can include pumping in cells where the modeled head is below the bottom of the cell.
- The most recent TWDB model grid file dated January 6, 2020 (symr\_hkb\_grid\_poly010620.csv) was used to assign model cells to counties, groundwater management areas, groundwater conservation districts, river basins, and regional water planning areas.
- The drawdown averages and modeled available groundwater values were calculated using the active model extent of Layer 1 for Pod 7 of the Seymour Aquifer. The modeled extent of Pod 7 of the Seymour Aquifer is coincident with the official TWDB Seymour Aquifer boundary of Pod 7, shown in Figure 3.
- The modeled available groundwater was calculated based on the pumping scenario provided with the Groundwater Management Area 6 Explanatory Report (Brady, 2022).

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

### **Seymour Aquifer (except Pod 7) and Blaine Aquifer**

- Version 1.01 of the groundwater availability model for the Seymour and Blaine aquifers was the base model for this analysis. See Ewing and others (2004) for the assumptions and limitations of the historical calibrated model. Groundwater Management Area 6 constructed a predictive model simulation to extend the base model to 2080 for planning purposes. See Brady (2022) for the assumptions of this predictive model simulation.
- The model has two layers that represent the Seymour Aquifer (Layer 1) and the Blaine Aquifer as well as other geologic units that underlie the Seymour Aquifer (Layer 2).
- The model was run with MODFLOW-2000 (Harbaugh and others, 2000).
- Drawdown was calculated as the difference in modeled head (water level) between the baseline year 2010 (initial heads) and the final year 2080 (stress period 70). Average drawdowns were calculated as the sum of drawdowns for all model cells within a specified area divided by the number of cells in that specified area.
- Although the original groundwater availability model was only calibrated to 1999, an analysis during the previous round of joint planning (Shi, 2017; Appendix A) verified that the measured water levels did not change significantly for the period from 1999 to 2010. For this reason, the TWDB considers it acceptable to use 2010 as the reference year for drawdown calculations.
- Cells in which the head (water level) was below the bottom of the cell were considered “dry.” Cells that were already dry during the baseline year were not included in the drawdown calculation. In cells that became dry during the simulation, the drawdown calculation used the elevation of the bottom of the cell, rather than the modeled head. Pumping in dry cells was excluded from the modeled available groundwater calculations for the decades after the cell went dry.
- The most recent TWDB model grid file dated January 6, 2020 (symr\_grid\_poly010620.csv) was used to assign model cells to counties, groundwater management areas, groundwater conservation districts, river basins, and regional water planning areas. Cells that intersected a particular Seymour Aquifer pod were assigned to that pod.

- To be consistent with the desired future conditions defined by district representatives in Groundwater Management Area 6, the drawdown averages and modeled available groundwater values were calculated using the active model extent of Layers 1 and 2 for the Seymour and Blaine aquifers, respectively. The modeled extent of the Seymour Aquifer is coincident with the official TWDB Seymour Aquifer boundary, shown in Figure 3. The modeled extent of Layer 2 extends significantly beyond the official TWDB Blaine Aquifer boundary (Figure 4) and includes formations that are not equivalent to the Blaine Aquifer. However, since the modeled pumping was only implemented in areas roughly coincident with the official TWDB Blaine Aquifer boundary, the TWDB considers this an acceptable simplification.
- The modeled available groundwater was calculated based on the pumping scenario provided with the Groundwater Management Area 6 Explanatory Report (Brady, 2022).
- Estimates of modeled available groundwater from the model simulation were rounded to whole numbers.

### **Ogallala and Dockum aquifers**

- Version 1.01 of the groundwater availability model for the High Plains Aquifer System was the base model for this analysis. See Deeds and Jigmond (2015) for the assumptions and limitations of the historical calibrated model. Groundwater Management Area 6 used the predictive model simulation “Scenario 19” constructed by Groundwater Management Area 2 to extend the base model to 2080 for planning purposes. See Hutchison (2021a, 2021b) for the assumptions of this predictive model simulation.
- The model has four layers which represent the Ogallala and Pecos Valley Alluvium aquifers (Layer 1); the Edwards-Trinity (High Plains), Rita Blanca, and Edwards-Trinity (Plateau) aquifers (Layer 2); the Upper Dockum Aquifer (Layer 3); and the Lower Dockum Aquifer (Layer 4).
- The model was run with MODFLOW-NWT (Niswonger and others, 2011).
- Drawdown was calculated as the difference in modeled head between the baseline year 2013 (initial heads) and the final year 2080 (stress period 68). Average drawdowns were calculated as the sum of drawdowns for all model cells within a specified area divided by the number of cells in that specified area.
- To be consistent with the desired future conditions defined by district representatives in Groundwater Management Area 6, the drawdown averages and

modeled available groundwater values were calculated using the active model extent of Layer 1 and the combination of Layers 3 and 4 for the Ogallala and Dockum aquifers, respectively. Within Groundwater Management Area 6, the modeled extent of the Ogallala and Dockum aquifers are coincident with the official TWDB aquifer boundaries, shown in Figures 5 and 6, respectively.

- MODFLOW-NWT can be used to simulate the declining production of a well as saturated thickness decreases because it will automatically reduce pumping when heads (water levels) drop to a level defined by the user. Typically, the user-specified level at which the model reduces pumping is defined as a fraction of cell thickness. Deeds and Jigmond (2015) slightly modified the MODFLOW-NWT code to use a particular saturated thickness value (30 feet), rather than a fraction, as the threshold for reducing pumping. The modeled available groundwater calculation thus includes reduced pumping values in cells where modeled head drops below the 30-foot saturated thickness threshold and zero pumping in cells when modeled head drops below the bottom of the cell. The average drawdown calculation includes cells where the modeled head drops below the bottom of the cell.
- Pass-through cells exist in layers 2 and 3 where the Upper Dockum Aquifer was absent, but the cells provided a pathway for flow between the Lower Dockum and the Ogallala or Edwards-Trinity (High Plains) aquifers vertically. These pass-through cells were excluded from the calculations for average drawdown and modeled available groundwater.
- The most recent TWDB model grid file dated January 6, 2020 (hpas\_grid\_poly010620.csv) was used to assign model cells to counties, groundwater management areas, groundwater conservation districts, river basins, and regional water planning areas.
- The modeled available groundwater was calculated based on the pumping scenario ("Scenario 19") provided with the Groundwater Management Area 2 Explanatory Report (Hutchison, 2021a, 2021b).
- Estimates of modeled drawdown and available groundwater from the model simulation were rounded to whole numbers.

### ***RESULTS:***

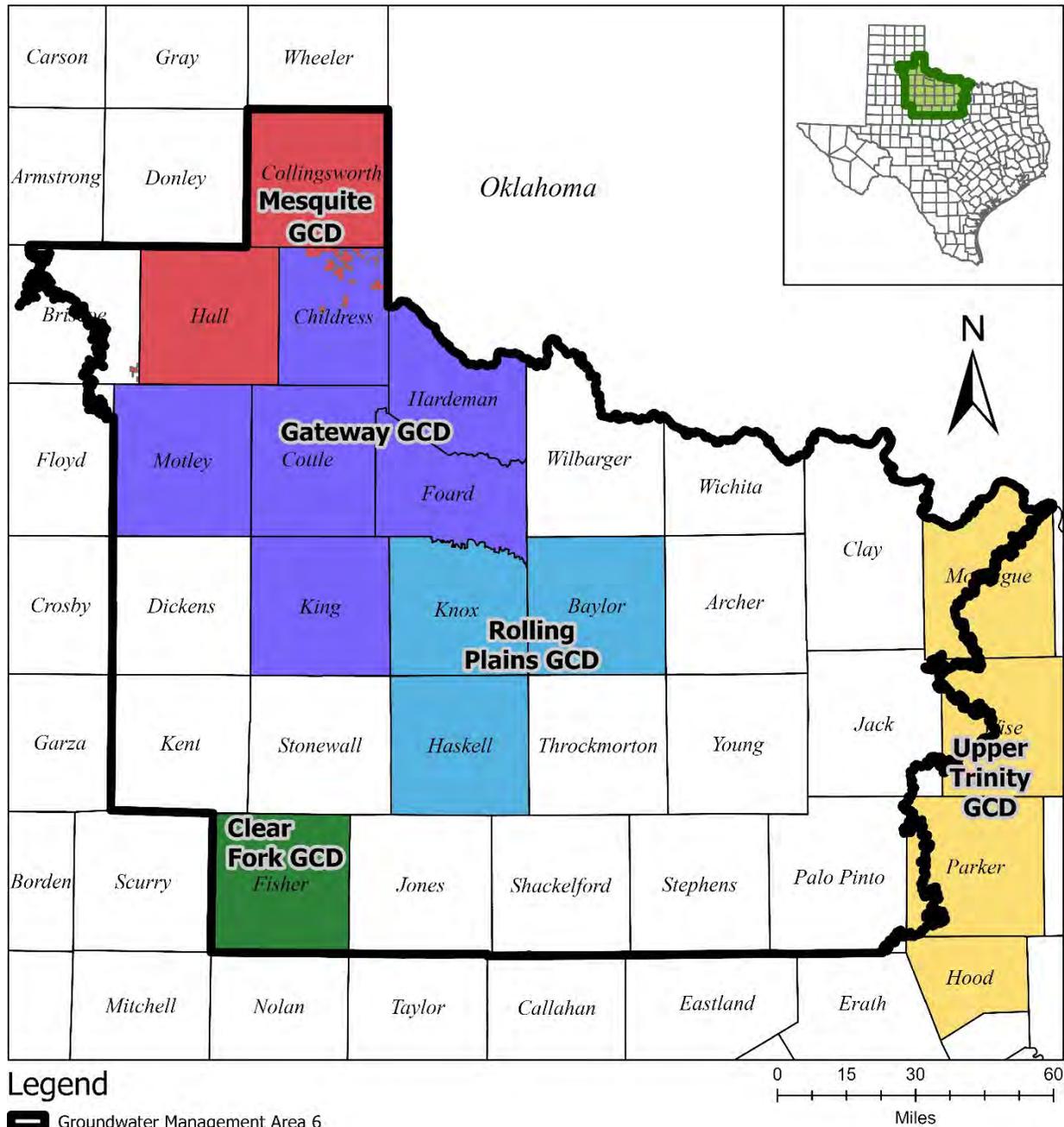
The modeled available groundwater values for the relevant aquifers in Groundwater Management Area 6 are as follows:

- Seymour Aquifer – The modeled available groundwater ranges from 157,895 to 181,289 acre-feet per year during the period from 2020 to 2080. Values are

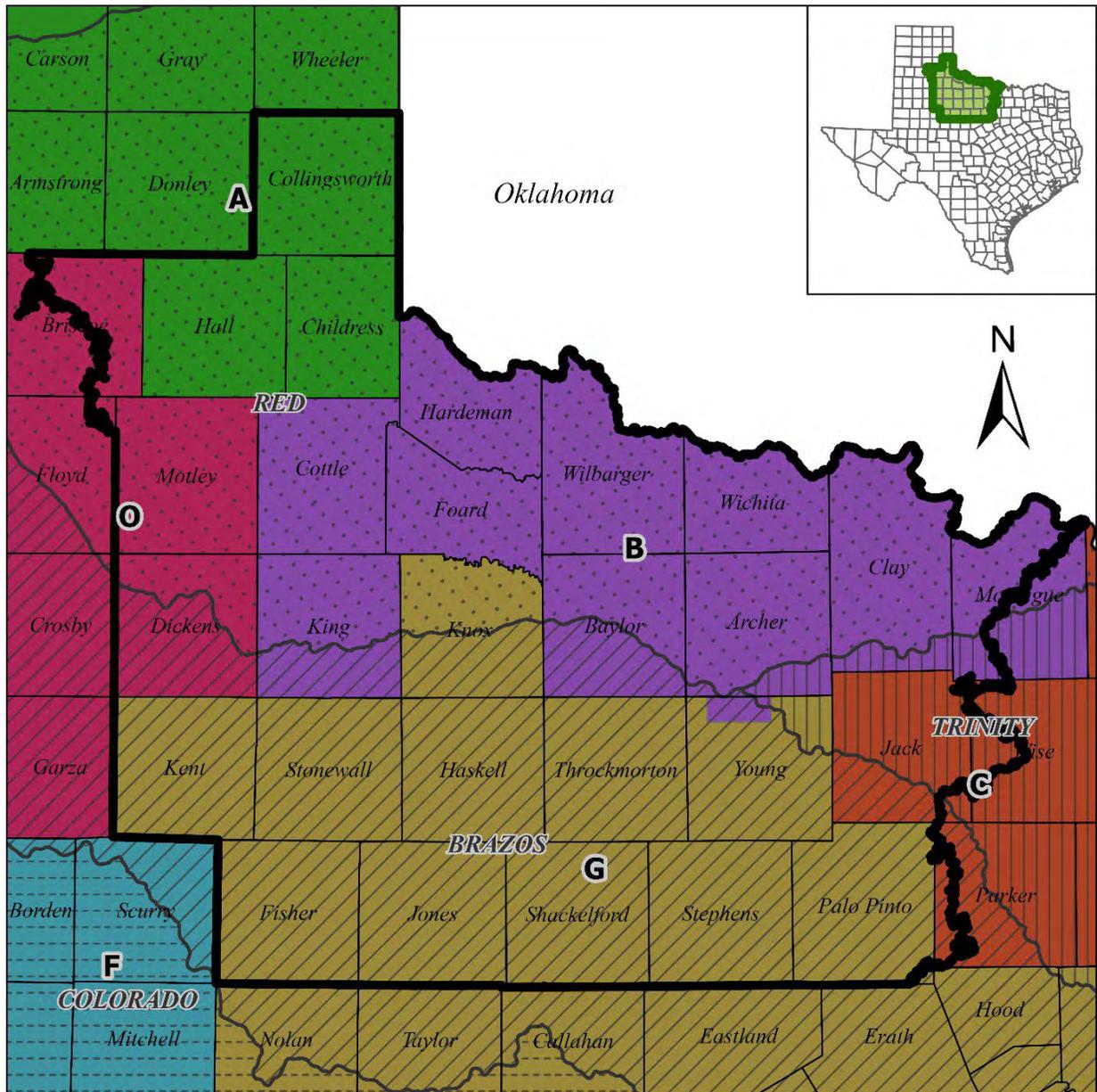
summarized by groundwater conservation district, county, and Seymour Aquifer pod in Table 1, and by county, regional planning area, river basin, and Seymour Aquifer pod in Table 2.

- Blaine Aquifer – The modeled available groundwater ranges from 70,924 to 74,029 acre-feet per year during the period from 2020 to 2080. Values are summarized by groundwater conservation district and county in Table 3, and by county, regional planning area, and river basin in Table 4.
- Ogallala Aquifer – The modeled available groundwater remains at 409 acre-feet per year throughout the period from 2020 to 2080. Values are summarized by groundwater conservation district and county in Table 5, and by county, regional planning area, and river basin in Table 6.
- Dockum Aquifer – The modeled available groundwater ranges from 171 to 172 acre-feet per year during the period from 2020 to 2080. Values are summarized by groundwater conservation district and county in Table 7, and by county, regional planning area, and river basin in Table 8.

District representatives in Groundwater Management Area 6 determined the Cross Timbers Aquifer was non-relevant for the purposes of joint planning; therefore, modeled available groundwater values were not calculated for that aquifer. Additionally, the modeled available groundwater values provided in this report do not include those portions of the Seymour, Blaine, Ogallala, and Dockum aquifers that district representatives in Groundwater Management Area 6 declared non-relevant for the purposes of joint planning.

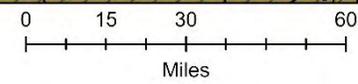


**FIGURE 1. COUNTIES AND GROUNDWATER CONSERVATION DISTRICTS WITHIN GROUNDWATER MANAGEMENT AREA 6.**

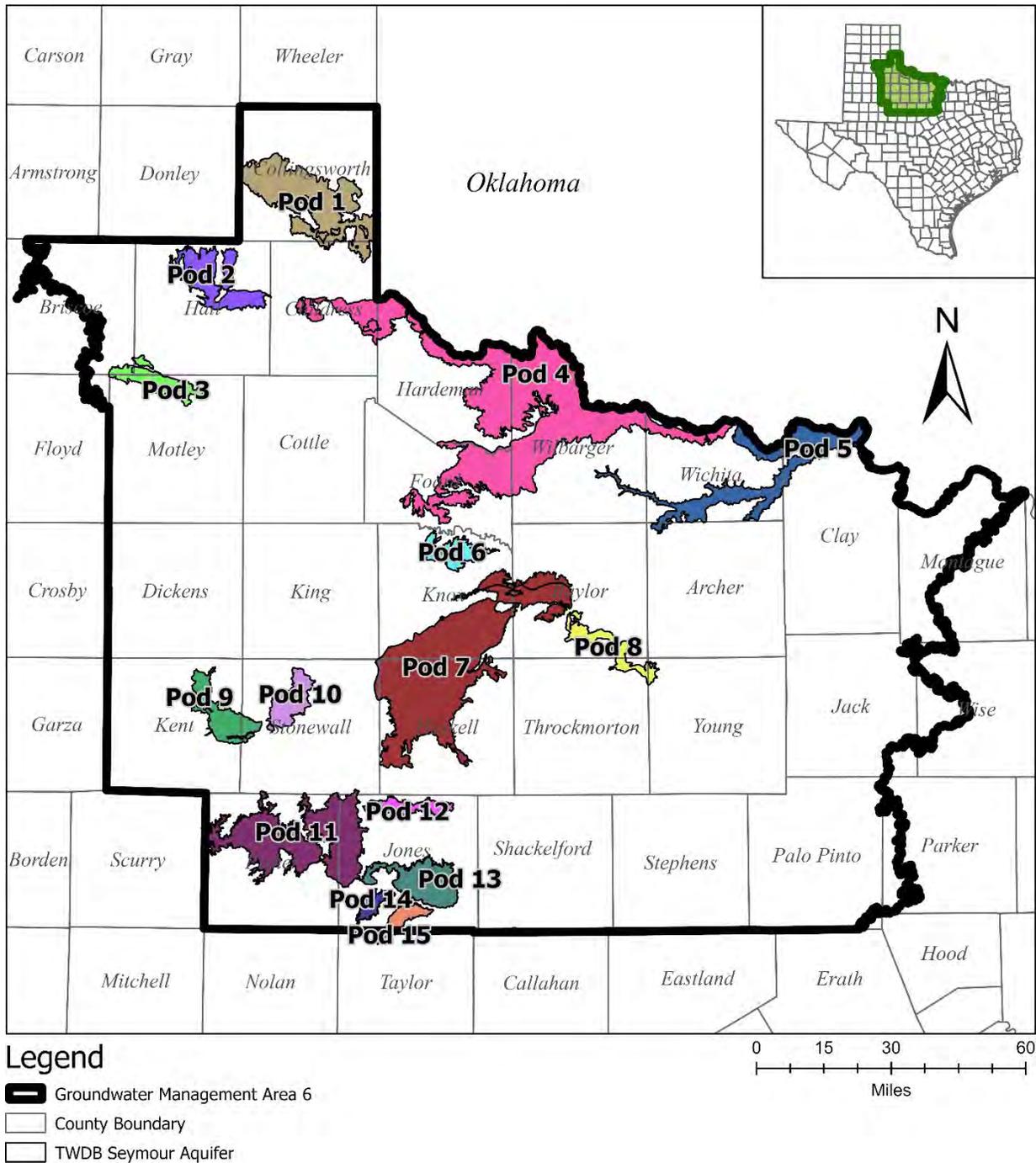


**Legend**

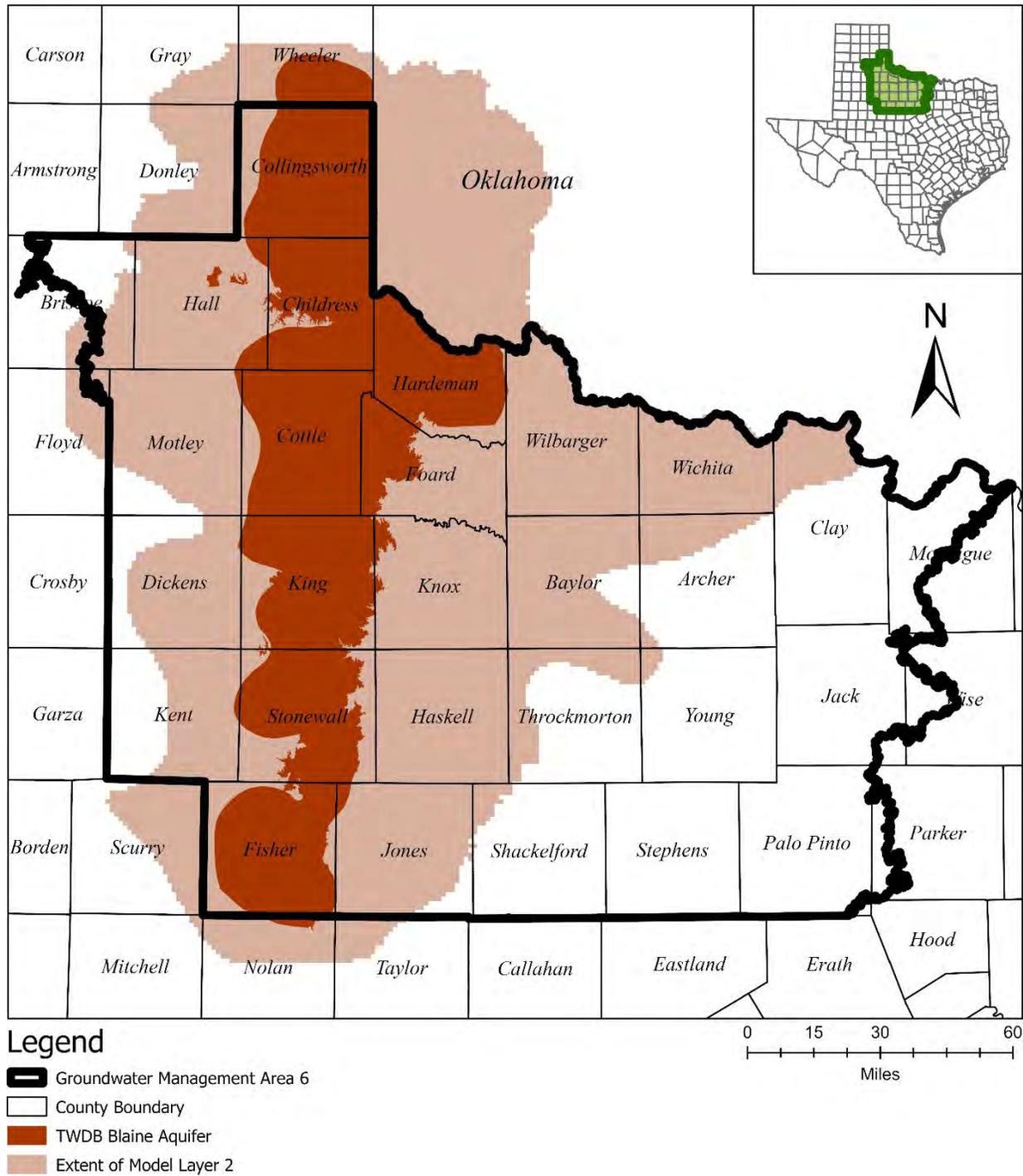
- Groundwater Management Area 6
- County Boundary
- River Basin**
- BRAZOS
- COLORADO
- RED
- TRINITY
- Regional Water Planning Area**
- A, PANHANDLE
- B, REGION B
- C, REGION C
- F, REGION F
- G, REGION G
- O, LLANO ESTACADO



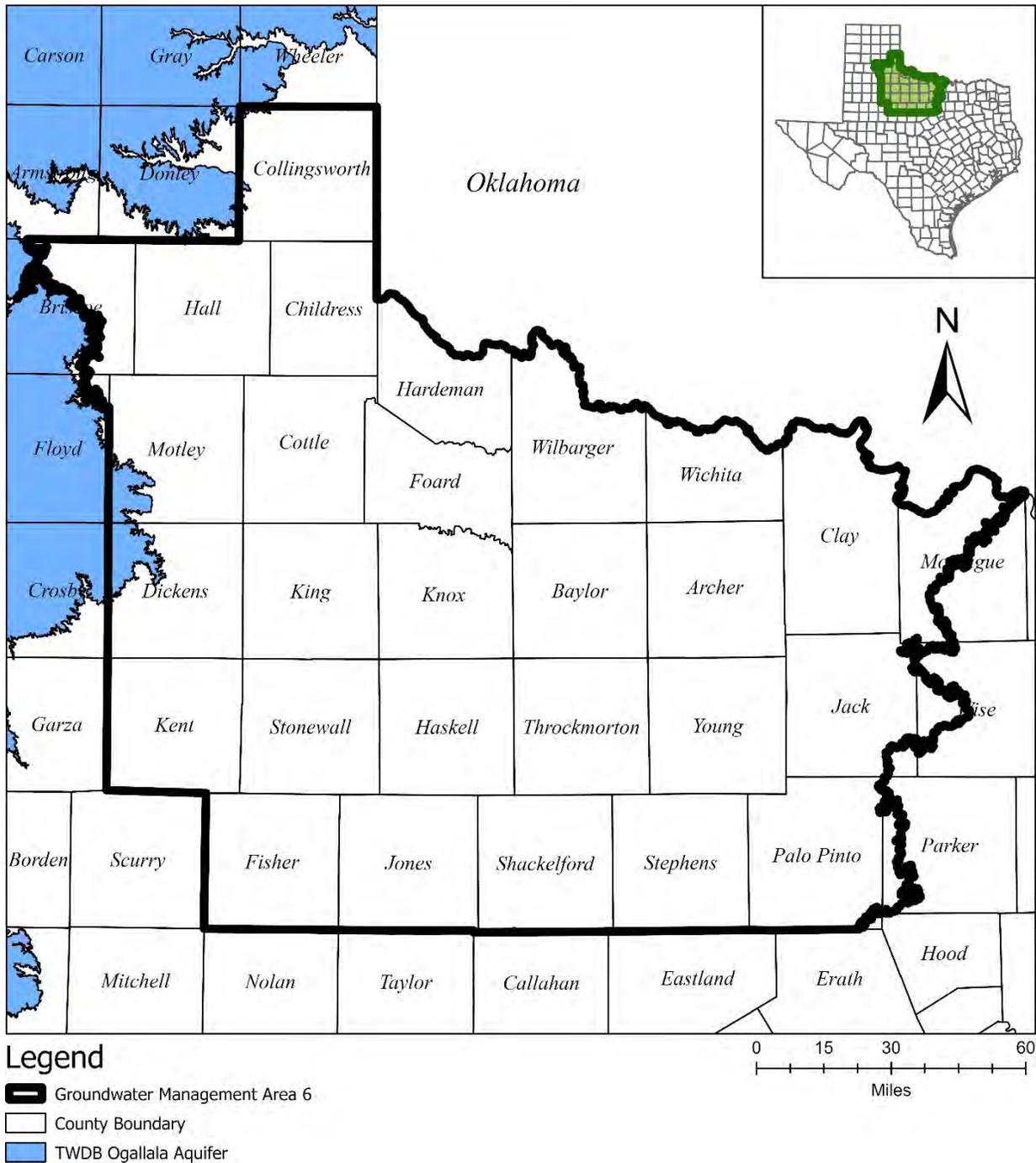
**FIGURE 2. REGIONAL WATER PLANNING AREAS, RIVER BASINS, AND COUNTIES WITHIN GROUNDWATER MANAGEMENT AREA 6.**



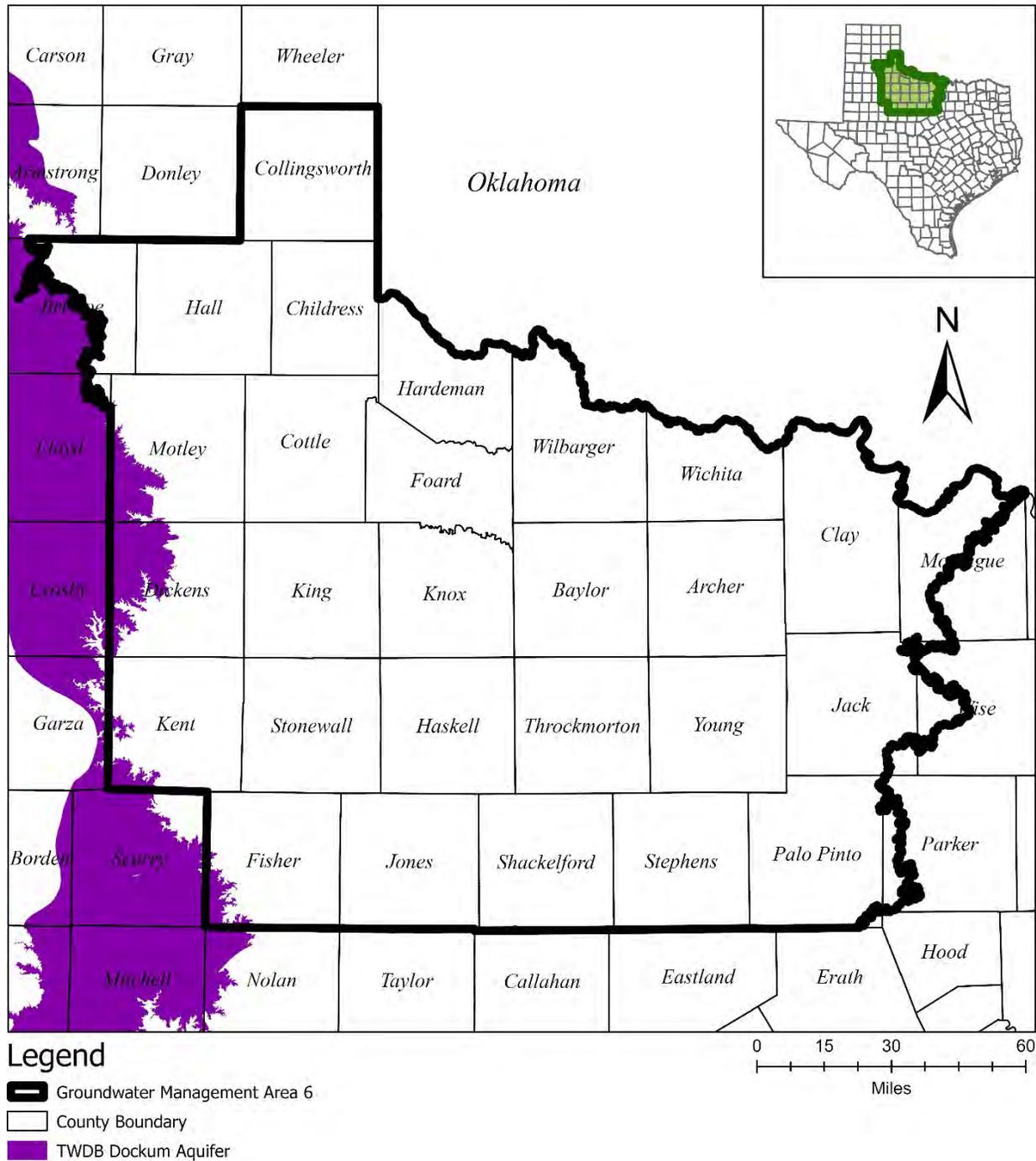
**FIGURE 3. EXTENT OF THE SEYMOUR AQUIFER IN GROUNDWATER MANAGEMENT AREA 6.**



**FIGURE 4. EXTENT OF THE BLAINE AQUIFER IN GROUNDWATER MANAGEMENT AREA 6 OVERLAIN ON THE MODELED EXTENT OF LAYER 2 IN THE GROUNDWATER AVAILABILITY MODEL FOR THE SEYMOUR AND BLAINE AQUIFERS.**



**FIGURE 5. EXTENT OF OGALLALA AQUIFER IN GROUNDWATER MANAGEMENT AREA 6.**



**FIGURE 6. EXTENT OF DOCKUM AQUIFER IN GROUNDWATER MANAGEMENT AREA 6**

**TABLE 1. MODELED AVAILABLE GROUNDWATER FOR THE SEYMOUR AQUIFER IN GROUNDWATER MANAGEMENT AREA 6 SUMMARIZED BY GROUNDWATER CONSERVATION DISTRICT (GCD) AND COUNTY FOR EACH DECADE BETWEEN 2020 AND 2080. VALUES ARE IN ACRE-FEET PER YEAR.**

Groundwater Conservation District	County	Aquifer	Pod Number	2020	2030	2040	2050	2060	2070	2080
Clear Fork GCD	Fisher	Seymour	11	6,700	6,132	6,132	6,472	6,473	6,131	5,900
<b>Clear Fork GCD Total</b>		Seymour		<b>6,700</b>	<b>6,132</b>	<b>6,132</b>	<b>6,472</b>	<b>6,473</b>	<b>6,131</b>	<b>5,900</b>
Gateway GCD	Childress	Seymour	1	50	61	61	61	61	50	50
Gateway GCD	Childress	Seymour	4	2,818	3,169	3,231	3,231	3,231	3,231	3,231
Gateway GCD	Foard	Seymour	4	10,699	3,779	4,209	6,900	6,628	2,777	4,049
Gateway GCD	Hardeman	Seymour	4	21,492	14,209	20,002	18,689	21,116	34,037	26,577
Gateway GCD	Motley	Seymour	3	4,830	6,679	4,830	4,830	3,961	3,961	4,830
<b>Gateway GCD Total</b>		Seymour		<b>39,889</b>	<b>27,897</b>	<b>32,333</b>	<b>33,711</b>	<b>34,997</b>	<b>44,056</b>	<b>38,737</b>
Mesquite GCD	Childress	Seymour	1	81	11	11	11	11	11	11
Mesquite GCD	Childress	Seymour	4	4	4	4	4	4	4	4
Mesquite GCD	Collingsworth	Seymour	1	41,232	31,492	28,579	27,165	22,334	22,769	29,639
Mesquite GCD	Hall	Seymour	2	10,961	12,307	14,886	18,417	20,437	18,417	15,391
Mesquite GCD	Hall	Seymour	3	4,444	4,444	4,726	4,444	5,353	6,178	4,726
<b>Mesquite GCD Total</b>		Seymour		<b>56,722</b>	<b>48,258</b>	<b>48,206</b>	<b>50,041</b>	<b>48,139</b>	<b>47,379</b>	<b>49,771</b>
Rolling Plains GCD	Baylor	Seymour	7*	1,430	1,427	1,430	1,427	1,430	1,427	1,430
Rolling Plains GCD	Baylor	Seymour	8	5,769	5,903	5,532	5,304	5,163	5,503	4,292
Rolling Plains GCD	Haskell	Seymour	7*	41,752	41,638	41,752	41,638	41,752	41,638	41,752
Rolling Plains GCD	Knox	Seymour	6	3,315	998	510	888	3,445	1,331	1,095
Rolling Plains GCD	Knox	Seymour	7*	25,712	25,642	25,712	25,642	25,712	25,642	25,712
<b>Rolling Plains GCD Total</b>		Seymour		<b>77,978</b>	<b>75,608</b>	<b>74,936</b>	<b>74,899</b>	<b>77,502</b>	<b>75,541</b>	<b>74,281</b>
<b>Groundwater Management Area 6 Total</b>				<b>181,289</b>	<b>157,895</b>	<b>161,607</b>	<b>165,123</b>	<b>167,111</b>	<b>173,107</b>	<b>168,689</b>

\* Pod 7 values are calculated from the groundwater availability model for the Seymour Aquifer in Haskell, Knox, and Baylor (Jigmond and others, 2014). All other values are calculated from the groundwater availability model for the Seymour and Blaine aquifers (Ewing and others, 2004).

**TABLE 2. MODELED AVAILABLE GROUNDWATER FOR THE SEYMOUR AQUIFER IN GROUNDWATER MANAGEMENT AREA 6 SUMMARIZED BY COUNTY, REGIONAL WATER PLANNING AREA (RWPA), RIVER BASIN, AND POD FOR EACH DECADE BETWEEN 2030 AND 2080. VALUES ARE IN ACRE-FEET PER YEAR.**

County	RWPA	River Basin	Aquifer	Pod Number	2030	2040	2050	2060	2070	2080
Baylor	B	Brazos	Seymour	7*	1,133	1,136	1,133	1,136	1,133	1,136
Baylor	B	Brazos	Seymour	8	5,903	5,532	5,304	5,163	5,503	4,292
Baylor	B	Red	Seymour	7*	294	294	294	294	294	294
Childress	A	Red	Seymour	1	72	72	72	72	61	61
Childress	A	Red	Seymour	4	3,173	3,235	3,235	3,235	3,235	3,235
Collingsworth	A	Red	Seymour	1	31,492	28,579	27,165	22,334	22,769	29,639
Fisher	G	Brazos	Seymour	11	6,132	6,132	6,472	6,473	6,131	5,900
Foard	B	Red	Seymour	4	3,779	4,209	6,900	6,628	2,777	4,049
Hall	A	Red	Seymour	2	12,307	14,886	18,417	20,437	18,417	15,391
Hall	A	Red	Seymour	3	4,444	4,726	4,444	5,353	6,178	4,726
Hardeman	B	Red	Seymour	4	14,209	20,002	18,689	21,116	34,037	26,577
Haskell	G	Brazos	Seymour	7*	41,638	41,752	41,638	41,752	41,638	41,752
Knox	G	Brazos	Seymour	7*	25,629	25,699	25,629	25,699	25,629	25,699
Knox	G	Red	Seymour	6	998	510	888	3,445	1,331	1,095
Knox	G	Red	Seymour	7*	13	13	13	13	13	13
Motley	O	Red	Seymour	3	6,679	4,830	4,830	3,961	3,961	4,830
<b>Groundwater Management Area 6 Total</b>					<b>157,895</b>	<b>161,607</b>	<b>165,123</b>	<b>167,111</b>	<b>173,107</b>	<b>168,689</b>

\* Pod 7 values are calculated from the groundwater availability model for the Seymour Aquifer in Haskell, Knox, and Baylor (Jigmond and others, 2014). All other values are calculated from the groundwater availability model for the Seymour and Blaine aquifers (Ewing and others, 2004).







**TABLE 7. MODELED AVAILABLE GROUNDWATER FOR THE DOCKUM AQUIFER IN GROUNDWATER MANAGEMENT AREA 6 SUMMARIZED BY GROUNDWATER CONSERVATION DISTRICT (GCD) AND COUNTY FOR EACH DECADE BETWEEN 2020 AND 2080. VALUES ARE IN ACRE-FEET PER YEAR.**

Groundwater Conservation District	County	Aquifer	2020	2030	2040	2050	2060	2070	2080
Clear Fork GCD	Fisher	Dockum	79	79	79	79	79	79	79
Gateway GCD	Motley	Dockum	93	93	92	92	92	92	92
<b>Groundwater Management Area 6 Total</b>			<b>172</b>	<b>172</b>	<b>171</b>	<b>171</b>	<b>171</b>	<b>171</b>	<b>171</b>

**TABLE 8. MODELED AVAILABLE GROUNDWATER FOR THE DOCKUM AQUIFER IN GROUNDWATER MANAGEMENT AREA 6 SUMMARIZED BY COUNTY, REGIONAL WATER PLANNING AREA (RWPA), AND RIVER BASIN FOR EACH DECADE BETWEEN 2030 AND 2080. VALUES ARE IN ACRE-FEET PER YEAR.**

County	RWPA	River Basin	Aquifer	2030	2040	2050	2060	2070	2080
Fisher	G	Brazos	Dockum	79	79	79	79	79	79
Motley	O	Red	Dockum	93	92	92	92	92	92
<b>Groundwater Management Area 6 Total</b>				<b>172</b>	<b>171</b>	<b>171</b>	<b>171</b>	<b>171</b>	<b>171</b>

### ***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:**

- Brady, R.M., 2022, Explanatory Report and supporting documents submitted to TWDB for Groundwater Management Area 6 Desired Future Conditions, January 17, 2022.
- Deeds, N. E. and Jigmond, M., 2015, Numerical Model Report for the High Plains Aquifer System Groundwater Availability Model: Prepared for Texas Water Development Board, 640 p.,  
[https://www.twdb.texas.gov/groundwater/models/gam/hpas/HPAS\\_GAM\\_Numerical\\_Report.pdf](https://www.twdb.texas.gov/groundwater/models/gam/hpas/HPAS_GAM_Numerical_Report.pdf)
- Ewing, J., Jones, T. L., Pickens, J. F., Chastain-Howley, A., Dean, K. E., and Spear, A. A., 2004, Final Report: Groundwater Availability Model for the Seymour Aquifer, 533 p.  
[https://www.twdb.texas.gov/groundwater/models/gam/symr/SYMR\\_Model\\_Report.pdf](https://www.twdb.texas.gov/groundwater/models/gam/symr/SYMR_Model_Report.pdf)
- Harbaugh, A.W., Banta, E.R., Hill, M.C., and McDonald, M.G., 2000, MODFLOW-2000, The U.S. Geological Survey modular ground-water model-user guide to modularization concepts and the ground-water flow process: U.S. Geological Survey Open-File Report 00-92, 121 p.
- 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.
- Hutchison, W., 2021a, GMA 2 Technical Memorandum 20-01 (Final): Joint Planning Simulations with High Plains Aquifer System Groundwater Availability Model: Updated Dockum Aquifer Pumping (Scenarios 16 to 21)
- Hutchison, W., 2021b, Explanatory Report for Desired Future Conditions, Ogallala, Edwards-Trinity (High Plains), and Dockum Aquifers, Groundwater Management Area 2 (Final)
- Jigmond, M., Hutchison, M., and Shi, J., 2014, Final Report: Groundwater Availability Model of the Seymour Aquifer in Haskell, Knox, and Baylor Counties, 185 p.  
[https://www.twdb.texas.gov/groundwater/models/gam/symr\\_hkb/Seymour\\_HKB\\_GAM\\_Report\\_Sealed\\_021414.pdf](https://www.twdb.texas.gov/groundwater/models/gam/symr_hkb/Seymour_HKB_GAM_Report_Sealed_021414.pdf)
- 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](http://www.nap.edu/catalog.php?record_id=11972).
- Niswonger, R.G., Panday, S., and Ibaraki, M., 2011, MODFLOW-NWT, a Newton formulation for MODFLOW-2005: United States Geological Survey, Techniques and Methods 6-A37, 44 p.

GAM Run 21-011 MAG: Modeled Available Groundwater for the Aquifers in Groundwater Management Area 6

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Shi, J., 2017, GAM Run 16-031 MAG: Modeled Available Groundwater for the Seymour, Blaine, Ogallala, and Dockum Aquifers in Groundwater Management Area 6, 37p.  
[https://www.twdb.texas.gov/groundwater/docs/GAMruns/GR16-031\\_MAG.pdf](https://www.twdb.texas.gov/groundwater/docs/GAMruns/GR16-031_MAG.pdf)

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

## **Appendix A**

### **TWDB Clarifications sent to Mike McGuire on June 7, 2022 with Responses from Groundwater Management Area 6**

***Critical Clarifications (need action):***

We recommend re-wording to the Ogallala Aquifer DFC from “28 feet” to “no more than 28 feet.” Otherwise, the Ogallala DFC is unattainable. Note that this alternate wording will make it consistent with the GMA 6 DFCs in other aquifers.

*GMA 6 response [6/16/22]: Ogallala Aquifer DFC Resolution has been reworded.*

In the model files provided for the Seymour Pod 7 model, both the pumping file (titled “symr\_hkb\_ext2080.wel”) and the recharge file (“symr\_hkb\_ext2080.rch”) are blank. Please provide the correct versions of these files.

*GMA 6 response [6/16/22]: These files have been resubmitted to TWDB via the OneDrive folder.*

Please either provide a non-relevant statement or a DFC for the areas listed in the table below. This can be done by either adding additional sections to the DFC Resolutions or by making the changes listed in the “Recommendations” column.

<b>Aquifer</b>	<b>Pod</b>	<b>County</b>	<b>GCD</b>	<b>Recommendations</b>
Seymour	Pod 3	Briscoe	No District	
	Pod 4	Childress	Mesquite GCD	We recommend adding “and in Mesquite GCD” to the Pod 4 DFC definition [section d on pg 3 of Seymour DFC Resolution]- this definition produces drawdown values consistent with the Tech Memo.
Blaine		Wilbarger	No District	We recommend fixing the typo in the non-relevant definition [last paragraph on pg 2 of Blaine DFC Resolution] by replacing “Wheeler” County (not in GMA 6) with “Wilbarger” County

*GMA 6 response [6/16/22]:*

*Pod 3 Briscoe No district has been added to the non-relevant portion of the resolution.*

*Pod 4 Mesquite GCD was added to the resolution*

*The Wheeler County reference is correct, we considered the DFC of GMA 1 in the Blaine Aquifer.*

***Other Clarifications (need acknowledgement):***

**Seymour & Blaine Aquifers:**

We will provide MAG values calculated directly from the model files provided in the GMA 6 DFC Submittal packet. These MAG values will be lower than the maximum pumping theoretically available under the higher drawdown conditions allowable under GMA 6-defined DFCs. Please confirm that this methodology is acceptable to the GMA. Otherwise, please contact TWDB to request additional MAG value calculations.

*GMA 6 response [6/16/22]: Please provide MAG values calculated directly from the model files provided in the GMA 6 DFC Submittal packet.*

Please confirm that the Seymour/Blaine model input files for initial heads (“hed1999\_lay1.dat” & “hed1999\_lay2.dat”) and for recharge (“AVG\_RECH\_sp241\_sp300.dat”) used during the current planning cycle are the same as the one submitted during the last planning cycle. The current GMA 6 submittal packet did not include these files but using the previous versions of the input files provides drawdown values consistent with the current values provided in the Technical Memo Appendix of the 2021 Explanatory Report.

*GMA 6 response [6/16/22]: Confirm*

Please confirm that the phrase “total decline in water levels during the period from 2010 - 2080” in the DFC Resolution means “the average water level decline in 2080, as compared to 2010 water levels.” This method produces values consistent with those provided in the Technical Memo Appendix of the Explanatory Report.

*GMA 6 response [6/16/22]: Confirm*

Please confirm that the GMA accepts the following assumptions for calculating modeled drawdown: 1) exclude cells that start dry and 2) replace the head value in dry cells with the bottom elevation value of the cell. This method produces values consistent with those provided in the Technical Memo Appendix of the Explanatory Report.

*GMA 6 response [6/16/22]: Confirm GMA accepts the assumptions.*

**Ogallala & Dockum Aquifers:**

We will provide MAG values calculated directly from the model files provided in the GMA 2 DFC Submittal packet (consistent with Scenario 19, Technical Memorandum 20-01 (Hutchison)). These MAG values will be lower than the maximum pumping theoretically

available under the higher drawdown conditions allowable by GMA 6-defined DFCs. Please confirm that this methodology is acceptable to the GMA. Otherwise, please contact TWDB to request additional MAG value calculations.

*GMA 6 response [6/16/22]: Confirm that this methodology is acceptable.*

Please confirm that the phrase “average drawdown between 2013 and 2080” in the Ogallala DFC Resolution means “the average water level decline in 2080, as compared to 2013 water levels” (as opposed to an average annual drawdown for every year between 2013 and 2080).

*GMA 6 response [6/16/22]: Confirm that the phrase means “the average water level decline in 2080, as compared to 2013 water levels”.*

Please confirm that the phrase “total decline in water levels during the period from 2013 - 2080” in the Dockum DFC Resolution means “the average water level decline in 2080, as compared to 2013 water levels.”

*GMA 6 response [6/16/22]: Conform [sic] that the phrase means “the average water level decline in 2080... ..”*

***Optional Clarifications\*:***

Typos in Adopted DFC table in Explanatory Report (does not match DFC Resolutions):

**Blaine Aquifer**

DFC in Foard County incorrectly listed as “2 ft” instead of “10 ft”

*GMA 6 response [6/16/22]: Foard County Blaine DFC corrected in Explanatory Report*

DFC in King County incorrectly listed as “7 ft” instead of “4 ft”

*GMA 6 response [6/16/22]: King County Blaine DFC was corrected in the Resolution, it is supposed to be 7’*

Missing entries for non-relevant counties: Dickens, Jones, Kent, Knox, Motley

*GMA 6 response [6/16/22]: Non-relevant Counties were added to the Blaine DFC chart in the Explanatory Report.*

*\*Note: Since TWDB considers the DFC Resolution documents, rather than the Explanatory Report, as the official definition of DFCs, TWDB does not officially require corrections to the Explanatory Report. However, because the Explanatory Report is often used as a simplified, more-readable summary of the legal DFC Resolution documents, we recommend correcting the Explanatory Report to match the DFC Resolutions in order to avoid confusion.*

**Informational:**

Please note that the following slivers of aquifer exist within GMA 6 but are so small that TWDB does not require a DFC or non-relevant statement.

<b>Aquifer</b>	<b>Pod</b>	<b>County</b>	<b>GCD</b>	<b>Area</b>
Seymour	Pod 2	Childress	Gateway GCD	0.02 mi <sup>2</sup>
	Pod 3	Floyd	No District	0.06 mi <sup>2</sup>
	Pod 7	King	Gateway GCD	0.03 mi <sup>2</sup>
Ogallala		Hall	Mesquite GCD	0.12 mi <sup>2</sup>

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## **APPENDIX B**

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# Estimated Historical Water Use And 2017 State Water Plan Datasets: Rolling Plains Groundwater Conservation District

by Stephen Allen  
Texas Water Development Board  
Groundwater Division  
Groundwater Technical Assistance Section  
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April 3, 2020

## ***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 4/3/2020. 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 2018. TWDB staff anticipates the calculation and posting of these estimates at a later date.

### **BAYLOR COUNTY**

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2017	GW	928	0	0	0	3,727	188	4,843
	SW	22	0	0	0	360	749	1,131
2016	GW	934	0	0	0	2,828	147	3,909
	SW	16	0	0	0	782	587	1,385
2015	GW	963	0	0	0	1,754	143	2,860
	SW	10	0	0	0	1,119	569	1,698
2014	GW	903	0	6	0	4,024	142	5,075
	SW	6	0	1	0	694	565	1,266
2013	GW	830	0	0	0	3,157	138	4,125
	SW	15	0	0	0	360	556	931
2012	GW	634	0	0	0	3,464	139	4,237
	SW	11	0	0	0	360	559	930
2011	GW	793	0	0	0	5,970	156	6,919
	SW	0	0	0	0	1,266	625	1,891
2010	GW	637	0	11	0	2,469	148	3,265
	SW	15	0	4	0	1,061	596	1,676
2009	GW	699	0	6	0	2,296	171	3,172
	SW	4	0	2	0	1,114	683	1,803
2008	GW	681	0	0	0	2,165	171	3,017
	SW	2	0	0	0	1,164	685	1,851
2007	GW	646	0	0	0	634	237	1,517
	SW	22	0	0	0	1,124	947	2,093
2006	GW	806	0	0	0	2,094	227	3,127
	SW	0	0	0	0	1,180	910	2,090
2005	GW	713	0	0	0	1,255	217	2,185
	SW	2	0	0	0	1,080	866	1,948
2004	GW	681	0	0	0	1,071	58	1,810
	SW	3	0	0	0	1,040	1,034	2,077
2003	GW	684	0	0	0	1,217	60	1,961
	SW	1	0	0	0	1,078	1,081	2,160
2002	GW	651	0	0	0	1,014	51	1,716
	SW	1	0	0	0	10	913	924

**HASKELL COUNTY**

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2017	GW	110	0	0	0	45,057	138	45,305
	SW	737	2	0	0	0	322	1,061
2016	GW	105	0	0	0	40,872	92	41,069
	SW	764	2	0	0	0	216	982
2015	GW	90	0	0	0	39,268	91	39,449
	SW	749	0	0	0	7	213	969
2014	GW	129	0	0	0	62,988	89	63,206
	SW	673	0	0	0	0	207	880
2013	GW	103	0	3	0	45,859	88	46,053
	SW	747	0	1	0	0	204	952
2012	GW	179	0	0	0	62,485	129	62,793
	SW	813	0	0	0	0	302	1,115
2011	GW	219	0	0	0	83,811	187	84,217
	SW	934	0	0	0	93	436	1,463
2010	GW	192	0	27	0	35,865	174	36,258
	SW	858	0	6	0	93	406	1,363
2009	GW	213	0	26	0	41,943	169	42,351
	SW	767	0	6	0	93	393	1,259
2008	GW	183	0	25	0	43,797	159	44,164
	SW	744	0	6	0	96	371	1,217
2007	GW	200	0	0	0	39,890	163	40,253
	SW	637	0	0	0	105	380	1,122
2006	GW	181	0	0	0	39,484	291	39,956
	SW	815	0	0	0	90	678	1,583
2005	GW	208	0	0	0	38,001	233	38,442
	SW	758	0	0	0	71	545	1,374
2004	GW	171	0	0	0	36,278	145	36,594
	SW	709	0	0	0	71	582	1,362
2003	GW	242	0	0	0	35,154	139	35,535
	SW	743	0	0	0	79	555	1,377
2002	GW	235	0	0	0	36,492	108	36,835
	SW	751	0	0	4	0	431	1,186

**KNOX COUNTY**

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2017	GW	211	0	0	0	34,970	91	35,272
	SW	479	0	0	0	0	368	847
2016	GW	185	0	2	0	28,460	128	28,775
	SW	451	0	1	0	0	509	961
2015	GW	205	0	0	0	28,967	124	29,296
	SW	400	0	0	0	0	498	898
2014	GW	223	0	0	0	44,545	122	44,890
	SW	382	0	0	0	15	487	884
2013	GW	229	0	0	0	29,553	120	29,902
	SW	472	4	0	0	0	482	958
2012	GW	391	0	0	0	50,314	75	50,780
	SW	552	1	0	0	2	303	858
2011	GW	213	0	0	0	66,335	99	66,647
	SW	573	0	0	0	0	398	971
2010	GW	189	0	10	0	29,131	91	29,421
	SW	625	0	4	0	15	366	1,010
2009	GW	183	0	6	0	37,814	118	38,121
	SW	551	0	2	0	0	474	1,027
2008	GW	175	0	1	0	36,275	111	36,562
	SW	559	0	0	0	0	444	1,003
2007	GW	174	0	0	0	28,336	307	28,817
	SW	673	0	0	0	0	1,229	1,902
2006	GW	187	0	0	0	41,043	227	41,457
	SW	588	0	0	0	0	908	1,496
2005	GW	188	0	0	0	40,269	223	40,680
	SW	574	0	0	0	0	890	1,464
2004	GW	198	0	0	0	40,120	55	40,373
	SW	590	0	0	0	0	1,039	1,629
2003	GW	149	0	0	0	40,112	59	40,320
	SW	561	0	0	0	0	1,103	1,664
2002	GW	156	0	0	0	30,358	53	30,567
	SW	576	0	0	0	0	998	1,574

# Projected Surface Water Supplies

## TWDB 2017 State Water Plan Data

### BAYLOR COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
B	COUNTY-OTHER, BAYLOR	BRAZOS	MILLERS CREEK LAKE/RESERVOIR	147	147	119	89	60	28
B	IRRIGATION, BAYLOR	BRAZOS	BRAZOS RUN-OF-RIVER	17	17	17	17	17	17
B	LIVESTOCK, BAYLOR	BRAZOS	BRAZOS LIVESTOCK LOCAL SUPPLY	800	799	799	799	799	799
B	LIVESTOCK, BAYLOR	RED	RED LIVESTOCK LOCAL SUPPLY	99	100	100	100	100	100
<b>Sum of Projected Surface Water Supplies (acre-feet)</b>				<b>1,063</b>	<b>1,063</b>	<b>1,035</b>	<b>1,005</b>	<b>976</b>	<b>944</b>

### HASKELL COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
G	COUNTY-OTHER, HASKELL	BRAZOS	MILLERS CREEK LAKE/RESERVOIR	245	203	162	120	79	38
G	COUNTY-OTHER, HASKELL	BRAZOS	STAMFORD LAKE/RESERVOIR	160	160	160	160	160	160
G	HASKELL	BRAZOS	MILLERS CREEK LAKE/RESERVOIR	461	383	305	227	149	71
G	LIVESTOCK, HASKELL	BRAZOS	BRAZOS LIVESTOCK LOCAL SUPPLY	676	676	676	676	676	676
G	RULE	BRAZOS	MILLERS CREEK LAKE/RESERVOIR	33	27	22	16	11	5
G	STAMFORD	BRAZOS	STAMFORD LAKE/RESERVOIR	13	12	12	12	12	11
G	STEAM ELECTRIC POWER, HASKELL	BRAZOS	STAMFORD LAKE/RESERVOIR	2,200	2,200	2,200	2,200	2,200	2,200
<b>Sum of Projected Surface Water Supplies (acre-feet)</b>				<b>3,788</b>	<b>3,661</b>	<b>3,537</b>	<b>3,411</b>	<b>3,287</b>	<b>3,161</b>

### KNOX COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
G	COUNTY-OTHER, KNOX	BRAZOS	BRAZOS RUN-OF-RIVER	34	34	34	34	34	34
G	COUNTY-OTHER, KNOX	BRAZOS	MILLERS CREEK LAKE/RESERVOIR	85	71	56	42	28	13
G	COUNTY-OTHER, KNOX	RED	MILLERS CREEK LAKE/RESERVOIR	10	8	7	5	3	2
G	IRRIGATION, KNOX	BRAZOS	LAKE DAVIS LAKE/RESERVOIR	160	142	124	106	88	70
G	KNOX CITY	BRAZOS	MILLERS CREEK LAKE/RESERVOIR	188	156	124	93	61	29
G	LIVESTOCK, KNOX	BRAZOS	BRAZOS LIVESTOCK LOCAL SUPPLY	790	790	790	790	790	790

*Estimated Historical Water Use and 2017 State Water Plan Dataset:*

*Rolling Plains Groundwater Conservation District*

*April 3, 2020*

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G	LIVESTOCK, KNOX	RED	RED LIVESTOCK LOCAL SUPPLY	197	197	197	197	197	197
G	MINING, KNOX	BRAZOS	BRAZOS RUN-OF- RIVER	0	0	0	0	0	0
G	MINING, KNOX	RED	BRAZOS RUN-OF- RIVER	0	0	0	0	0	0
G	MUNDAY	BRAZOS	MILLERS CREEK LAKE/RESERVOIR	194	161	128	95	63	30
<b>Sum of Projected Surface Water Supplies (acre-feet)</b>				<b>1,658</b>	<b>1,559</b>	<b>1,460</b>	<b>1,362</b>	<b>1,264</b>	<b>1,165</b>

# 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.

### BAYLOR COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
B	COUNTY-OTHER, BAYLOR	BRAZOS	93	90	87	87	86	86
B	COUNTY-OTHER, BAYLOR	RED	38	36	35	35	35	35
B	IRRIGATION, BAYLOR	BRAZOS	2,421	2,349	2,276	2,208	2,208	2,208
B	IRRIGATION, BAYLOR	RED	889	862	836	810	810	810
B	LIVESTOCK, BAYLOR	BRAZOS	1,054	1,054	1,054	1,054	1,054	1,054
B	LIVESTOCK, BAYLOR	RED	130	130	130	130	130	130
B	MINING, BAYLOR	BRAZOS	6	6	6	6	6	6
B	MINING, BAYLOR	RED	8	8	7	7	7	7
B	SEYMOUR	BRAZOS	496	481	471	470	469	469
<b>Sum of Projected Water Demands (acre-feet)</b>			<b>5,135</b>	<b>5,016</b>	<b>4,902</b>	<b>4,807</b>	<b>4,805</b>	<b>4,805</b>

### HASKELL COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
G	COUNTY-OTHER, HASKELL	BRAZOS	255	247	243	245	248	253
G	HASKELL	BRAZOS	519	509	498	496	502	513
G	IRRIGATION, HASKELL	BRAZOS	47,844	46,422	45,040	43,072	42,405	41,207
G	LIVESTOCK, HASKELL	BRAZOS	676	676	676	676	676	676
G	MINING, HASKELL	BRAZOS	93	92	83	74	66	59
G	RULE	BRAZOS	89	86	84	85	86	88
G	STAMFORD	BRAZOS	9	9	9	9	9	9
G	STEAM ELECTRIC POWER, HASKELL	BRAZOS	336	393	462	547	650	720
<b>Sum of Projected Water Demands (acre-feet)</b>			<b>49,821</b>	<b>48,434</b>	<b>47,095</b>	<b>45,204</b>	<b>44,642</b>	<b>43,525</b>

### KNOX COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
G	COUNTY-OTHER, KNOX	BRAZOS	124	121	120	123	124	126
G	COUNTY-OTHER, KNOX	RED	14	14	14	14	15	15
G	IRRIGATION, KNOX	BRAZOS	32,826	32,020	31,233	30,466	29,718	29,022
G	IRRIGATION, KNOX	RED	8,207	8,005	7,808	7,616	7,429	7,256
G	KNOX CITY	BRAZOS	242	245	248	253	257	261
G	LIVESTOCK, KNOX	BRAZOS	790	790	790	790	790	790

G	LIVESTOCK, KNOX	RED	197	197	197	197	197	197
G	MINING, KNOX	BRAZOS	12	12	11	11	11	11
G	MINING, KNOX	RED	3	3	3	3	3	3
G	MUNDAY	BRAZOS	256	259	260	266	270	274
<b>Sum of Projected Water Demands (acre-feet)</b>			<b>42,671</b>	<b>41,666</b>	<b>40,684</b>	<b>39,739</b>	<b>38,814</b>	<b>37,955</b>

# Projected Water Supply Needs

## TWDB 2017 State Water Plan Data

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

### BAYLOR COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
B	COUNTY-OTHER, BAYLOR	BRAZOS	179	183	158	128	100	68
B	COUNTY-OTHER, BAYLOR	RED	32	33	34	34	34	34
B	IRRIGATION, BAYLOR	BRAZOS	0	0	0	0	0	0
B	IRRIGATION, BAYLOR	RED	-388	-312	-213	-119	-119	-119
B	LIVESTOCK, BAYLOR	BRAZOS	-130	-130	-130	-130	-130	-130
B	LIVESTOCK, BAYLOR	RED	0	0	0	0	0	0
B	MINING, BAYLOR	BRAZOS	1	1	2	2	2	2
B	MINING, BAYLOR	RED	0	0	0	0	0	0
B	SEYMOUR	BRAZOS	104	119	129	130	131	131
<b>Sum of Projected Water Supply Needs (acre-feet)</b>			<b>-518</b>	<b>-442</b>	<b>-343</b>	<b>-249</b>	<b>-249</b>	<b>-249</b>

### HASKELL COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
G	COUNTY-OTHER, HASKELL	BRAZOS	280	241	198	155	114	68
G	HASKELL	BRAZOS	-58	-126	-193	-269	-353	-442
G	IRRIGATION, HASKELL	BRAZOS	-2,225	-2,388	-3,197	-1,065	682	1,880
G	LIVESTOCK, HASKELL	BRAZOS	0	0	0	0	0	0
G	MINING, HASKELL	BRAZOS	-93	-92	-83	-74	-66	-59
G	RULE	BRAZOS	72	64	56	49	46	38
G	STAMFORD	BRAZOS	4	3	3	3	3	2
G	STEAM ELECTRIC POWER, HASKELL	BRAZOS	1,864	1,807	1,738	1,653	1,550	1,480
<b>Sum of Projected Water Supply Needs (acre-feet)</b>			<b>-2,376</b>	<b>-2,606</b>	<b>-3,473</b>	<b>-1,408</b>	<b>-419</b>	<b>-501</b>

### KNOX COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
G	COUNTY-OTHER, KNOX	BRAZOS	90	79	65	48	33	16
G	COUNTY-OTHER, KNOX	RED	9	7	6	4	1	0
G	IRRIGATION, KNOX	BRAZOS	-92	-92	-789	-1,768	-92	-92
G	IRRIGATION, KNOX	RED	-3,029	-5,423	-7,716	-7,515	-5,864	-5,013
G	KNOX CITY	BRAZOS	-48	-83	-118	-154	-190	-226
G	LIVESTOCK, KNOX	BRAZOS	0	0	0	0	0	0
G	LIVESTOCK, KNOX	RED	0	0	0	0	0	0

*Estimated Historical Water Use and 2017 State Water Plan Dataset:*

*Rolling Plains Groundwater Conservation District*

*April 3, 2020*

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G	MINING, KNOX	BRAZOS	-12	-12	-11	-11	-11	-11
G	MINING, KNOX	RED	-3	-3	-3	-3	-3	-3
G	MUNDAY	BRAZOS	-55	-91	-125	-164	-200	-237
<b>Sum of Projected Water Supply Needs (acre-feet)</b>			<b>-3,239</b>	<b>-5,704</b>	<b>-8,762</b>	<b>-9,615</b>	<b>-6,360</b>	<b>-5,582</b>

# Projected Water Management Strategies

## TWDB 2017 State Water Plan Data

### BAYLOR COUNTY

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
<b>COUNTY-OTHER, BAYLOR, BRAZOS (B)</b>							
MUNICIPAL CONSERVATION - BAYLOR COUNTY OTHER	DEMAND REDUCTION [BAYLOR]	0	0	0	4	7	10
		<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>7</b>	<b>10</b>
<b>COUNTY-OTHER, BAYLOR, RED (B)</b>							
MUNICIPAL CONSERVATION - BAYLOR COUNTY OTHER	DEMAND REDUCTION [BAYLOR]	0	0	0	2	3	4
		<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>IRRIGATION, BAYLOR, RED (B)</b>							
IRRIGATION CONSERVATION - BAYLOR	DEMAND REDUCTION [BAYLOR]	331	321	311	302	302	302
		<b>331</b>	<b>321</b>	<b>311</b>	<b>302</b>	<b>302</b>	<b>302</b>
<b>MINING, BAYLOR, BRAZOS (B)</b>							
MINING CONSERVATION - BAYLOR	DEMAND REDUCTION [BAYLOR]	2	2	1	1	1	1
		<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>MINING, BAYLOR, RED (B)</b>							
MINING CONSERVATION - BAYLOR	DEMAND REDUCTION [BAYLOR]	2	2	2	2	2	2
		<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Sum of Projected Water Management Strategies (acre-feet)</b>		<b>335</b>	<b>325</b>	<b>314</b>	<b>311</b>	<b>315</b>	<b>319</b>

### HASKELL COUNTY

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
<b>COUNTY-OTHER, HASKELL, BRAZOS (G)</b>							
MILLERS CREEK AUGMENTATION	MILLERS CREEK LAKE/RESERVOIR [RESERVOIR]	33	47	62	76	90	105
		<b>33</b>	<b>47</b>	<b>62</b>	<b>76</b>	<b>90</b>	<b>105</b>
<b>HASKELL, BRAZOS (G)</b>							
MILLERS CREEK AUGMENTATION	MILLERS CREEK LAKE/RESERVOIR [RESERVOIR]	176	254	332	410	488	566
		<b>176</b>	<b>254</b>	<b>332</b>	<b>410</b>	<b>488</b>	<b>566</b>
<b>IRRIGATION, HASKELL, BRAZOS (G)</b>							

Estimated Historical Water Use and 2017 State Water Plan Dataset:

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IRRIGATION WATER CONSERVATION	DEMAND REDUCTION [HASKELL]	1,435	2,321	3,153	3,015	0	0
REALLOCATION OF HASKELL CO. SE TO MINING AND IRRIGATION	STAMFORD LAKE/RESERVOIR [RESERVOIR]	790	67	44	0	0	0
		<b>2,225</b>	<b>2,388</b>	<b>3,197</b>	<b>3,015</b>	<b>0</b>	<b>0</b>
<b>MINING, HASKELL, BRAZOS (G)</b>							
INDUSTRIAL WATER CONSERVATION	DEMAND REDUCTION [HASKELL]	3	5	6	5	5	4
REALLOCATION OF HASKELL CO. SE TO MINING AND IRRIGATION	STAMFORD LAKE/RESERVOIR [RESERVOIR]	90	87	77	69	61	55
		<b>93</b>	<b>92</b>	<b>83</b>	<b>74</b>	<b>66</b>	<b>59</b>
<b>RULE, BRAZOS (G)</b>							
MILLERS CREEK AUGMENTATION	MILLERS CREEK LAKE/RESERVOIR [RESERVOIR]	12	18	23	29	34	40
		<b>12</b>	<b>18</b>	<b>23</b>	<b>29</b>	<b>34</b>	<b>40</b>
<b>STAMFORD, BRAZOS (G)</b>							
MUNICIPAL WATER CONSERVATION (SUBURBAN) - STAMFORD	DEMAND REDUCTION [HASKELL]	0	1	2	2	3	3
		<b>0</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>
<b>Sum of Projected Water Management Strategies (acre-feet)</b>		<b>2,539</b>	<b>2,800</b>	<b>3,699</b>	<b>3,606</b>	<b>681</b>	<b>773</b>

## KNOX COUNTY

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
<b>IRRIGATION, KNOX, BRAZOS (G)</b>							
BLAINE AQUIFER DEVELOPMENT	BLAINE AQUIFER [KNOX]	0	0	0	0	0	0
BLAINE AQUIFER DEVELOPMENT	BLAINE AQUIFER [STONEWALL]	0	0	0	0	0	0
IRRIGATION WATER CONSERVATION	DEMAND REDUCTION [KNOX]	233	92	790	1,769	92	92
SEYMOUR AQUIFER DEVELOPMENT	SEYMOUR AQUIFER [KNOX]	0	0	0	0	0	0
		<b>233</b>	<b>92</b>	<b>790</b>	<b>1,769</b>	<b>92</b>	<b>92</b>
<b>IRRIGATION, KNOX, RED (G)</b>							
BLAINE AQUIFER DEVELOPMENT	BLAINE AQUIFER [KNOX]	460	460	460	460	460	460
BLAINE AQUIFER DEVELOPMENT	BLAINE AQUIFER [STONEWALL]	0	1,709	4,120	5,042	1,855	1,065
IRRIGATION WATER CONSERVATION	DEMAND REDUCTION [KNOX]	998	1,909	1,943	897	2,508	2,447
SEYMOUR AQUIFER DEVELOPMENT	SEYMOUR AQUIFER [KNOX]	1,571	1,345	1,193	1,116	1,041	1,041
		<b>3,029</b>	<b>5,423</b>	<b>7,716</b>	<b>7,515</b>	<b>5,864</b>	<b>5,013</b>
<b>KNOX CITY, BRAZOS (G)</b>							
MILLERS CREEK AUGMENTATION	MILLERS CREEK LAKE/RESERVOIR [RESERVOIR]	72	104	136	167	199	231

MUNICIPAL WATER CONSERVATION (RURAL) - KNOX CITY	DEMAND REDUCTION [KNOX]	9	25	45	54	54	55
		<b>81</b>	<b>129</b>	<b>181</b>	<b>221</b>	<b>253</b>	<b>286</b>
<b>MINING, KNOX, BRAZOS (G)</b>							
BLAINE AQUIFER DEVELOPMENT	BLAINE AQUIFER [KNOX]	12	12	12	12	12	12
INDUSTRIAL WATER CONSERVATION	DEMAND REDUCTION [KNOX]	0	1	1	1	1	1
		<b>12</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>
<b>MINING, KNOX, RED (G)</b>							
BLAINE AQUIFER DEVELOPMENT	BLAINE AQUIFER [KNOX]	3	3	3	3	3	3
INDUSTRIAL WATER CONSERVATION	DEMAND REDUCTION [KNOX]	0	0	0	0	0	0
		<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>MUNDAY, BRAZOS (G)</b>							
MILLERS CREEK AUGMENTATION	MILLERS CREEK LAKE/RESERVOIR [RESERVOIR]	74	107	140	173	205	238
MUNICIPAL WATER CONSERVATION (RURAL) - MUNDAY	DEMAND REDUCTION [KNOX]	8	26	36	37	36	37
		<b>82</b>	<b>133</b>	<b>176</b>	<b>210</b>	<b>241</b>	<b>275</b>
<b>Sum of Projected Water Management Strategies (acre-feet)</b>		<b>3,440</b>	<b>5,793</b>	<b>8,879</b>	<b>9,731</b>	<b>6,466</b>	<b>5,682</b>

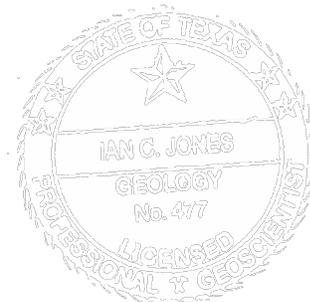
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## **APPENDIX C**

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# **GAM RUN 19-020: ROLLING PLAINS GROUNDWATER CONSERVATION DISTRICT GROUNDWATER MANAGEMENT PLAN**

Ian C. Jones, Ph.D., P.G.  
Texas Water Development Board  
Groundwater Division  
Groundwater Availability Modeling Department  
512-463-6641  
July 30, 2019



*I. C. Jones*  
7/25/2019

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# GAM RUN 19-020: ROLLING PLAINS GROUNDWATER CONSERVATION DISTRICT GROUNDWATER MANAGEMENT PLAN

Ian C. Jones, Ph.D., P.G.  
Texas Water Development Board  
Groundwater Division  
Groundwater Availability Modeling Department  
512-463-6641  
July 30, 2019

## ***EXECUTIVE SUMMARY:***

Texas State Water Code, Section 36.1071, Subsection (h) (Texas Water Code, 2011), states that, in developing its groundwater management plan, a groundwater conservation district shall use groundwater availability modeling information provided by the Executive Administrator of the Texas Water Development Board (TWDB) in conjunction with any available site-specific information provided by the district for review and comment to the Executive Administrator.

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

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

The groundwater management plan for the Rolling Plains Groundwater Conservation District should be adopted by the district on or before June 17, 2020 and submitted to the Executive Administrator of the TWDB on or before July 17, 2020. The current management plan for the Rolling Plains Groundwater Conservation District expires on September 15, 2020.

We used two groundwater availability models to estimate the management plan information for the aquifers within the Rolling Plains Groundwater Conservation District. Information for the Seymour and Blaine aquifers is from the groundwater availability model for the Seymour and Blaine aquifers (Ewing and others, 2004) and from the groundwater availability model for the Seymour Aquifer in Haskell, Knox, and Baylor counties (Jigmond and others, 2014).

This report replaces GAM Run 14-009 (Wade and Boghici, 2015), as the approach used for analyzing model results has been since refined. Tables 1 and 2 summarize the groundwater availability model data required by statute and Figures 1 and 2 show the area of the models from which the values in the tables were extracted. If, after review of the figures, the Rolling Plains Groundwater Conservation District determines that the district boundaries used in the assessment do not reflect current conditions, please notify the TWDB at your earliest convenience. We do not have a model for the Cross Timbers Aquifer. Please contact Mr. Stephen Allen at 512-463-7317 or [stephen.allen@twdb.texas.gov](mailto:stephen.allen@twdb.texas.gov) for any information you may need about this aquifer for your groundwater conservation district management plan.

### ***METHODS:***

In accordance with the provisions of the Texas State Water Code, Section 36.1071, Subsection (h), we used the two groundwater availability models mentioned above to estimate the information for the Rolling Plains Groundwater Conservation District management plan. Using ZONEBUDGET Version 3.01 (Harbaugh, 2009), we extracted water budgets from the models' results for the (post-1980) historical model periods for the Seymour and Blaine aquifers (January 1980 through December 1999), and for the Seymour Aquifer in Haskell, Knox, and Baylor counties (January 1980 through December 2005). In this report we summarize the average annual water budget values for recharge, surface-water outflow, inflow to the district, and outflow from the district for the aquifers within the district.

## ***PARAMETERS AND ASSUMPTIONS:***

### ***Seymour and Blaine Aquifers***

- We used version 1.01 of the groundwater availability model for the Seymour and Blaine Aquifers this analysis. See Ewing and others (2004) for assumptions and limitations of the groundwater availability model.
- This groundwater availability model includes two layers, representing the Seymour Aquifer (Layer 1), and the Blaine Aquifer (Layer 2). In areas where the Blaine Aquifer does not exist the model roughly replicates various Permian units located in the area.
- We ran the model with MODFLOW-2000 (Harbaugh and others, 2000).

### ***Seymour Aquifer in Haskell, Knox, and Baylor Counties***

- We used version 1.01 of the refined groundwater availability model for the Seymour Aquifer in Haskell, Knox, and Baylor counties for this analysis. See Jigmond and others (2014) for assumptions and limitations of the groundwater availability model.
- This groundwater availability model includes one layer representing the Seymour Aquifer in Haskell, southern Knox, western Baylor, and a small portion of eastern Stonewall counties.
- We ran the model with MODFLOW-2000 (Harbaugh and others, 2000).

## ***RESULTS:***

A groundwater budget summarizes the amount of water entering and leaving the aquifers according to the groundwater availability model. Selected groundwater budget components listed below were extracted from the groundwater availability model results for the Seymour and Blaine aquifers located within Rolling Plains Groundwater Conservation District and averaged over the historical calibration periods, as shown in Tables 1 and 2.

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

The information needed for the district's management plan is summarized in Tables 1 and 2. It is important to note that sub-regional water budgets are not exact. This is due to the size of the model cells and the approach used to extract data from the model. To avoid double accounting, a model cell that straddles a political boundary, such as a district or county boundary, is assigned to one side of the boundary based on the location of the centroid of the model cell. For example, if a cell contains two counties, the cell is assigned to the county where the centroid of the cell is located.

**TABLE 1. SUMMARIZED INFORMATION FOR THE SEYMOUR AQUIFER FOR ROLLING PLAINS GROUNDWATER CONSERVATION DISTRICT'S GROUNDWATER MANAGEMENT PLAN. ALL VALUES ARE REPORTED IN ACRE-FEET PER YEAR AND ROUNDED TO THE NEAREST 1 ACRE-FOOT.**

Management Plan requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Seymour Aquifer	112,253
Estimated annual volume of water that discharges from the aquifer to springs and any surface-water body including lakes, streams, and rivers	Seymour Aquifer	61,661
Estimated annual volume of flow into the district within each aquifer in the district	Seymour Aquifer	62
Estimated annual volume of flow out of the district within each aquifer in the district	Seymour Aquifer	2,945
Estimated net annual volume of flow between each aquifer in the district	Flow from Seymour Aquifer into Permian units	7,134*

\* Based on model results from Ewing and others (2004)

**FIGURE 1 AREA OF THE GROUNDWATER AVAILABILITY MODELS FOR THE SEYMOUR AQUIFER FROM WHICH THE INFORMATION IN TABLE 1 WAS EXTRACTED (THE AQUIFER SYSTEM EXTENT WITHIN THE DISTRICT BOUNDARY).**

**TABLE 2. SUMMARIZED INFORMATION FOR THE BLAINE AQUIFER FOR ROLLING PLAINS  
 GROUNDWATER CONSERVATION DISTRICT'S GROUNDWATER MANAGEMENT PLAN. ALL  
 VALUES ARE REPORTED IN ACRE-FEET PER YEAR AND ROUNDED TO THE NEAREST 1 ACRE-  
 FOOT.**

Management Plan requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Blaine Aquifer	702
Estimated annual volume of water that discharges from the aquifer to springs and any surface-water body including lakes, streams, and rivers	Blaine Aquifer	0
Estimated annual volume of flow into the district within each aquifer in the district	Blaine Aquifer	1,823
Estimated annual volume of flow out of the district within each aquifer in the district	Blaine Aquifer	3
Estimated net annual volume of flow between each aquifer in the district	Flow from the Blaine Aquifer into adjacent Permian units	4,922

**FIGURE 2 AREA OF THE GROUNDWATER AVAILABILITY MODEL FOR THE BLAINE AQUIFER FROM WHICH THE INFORMATION IN TABLE 2 WAS EXTRACTED (THE AQUIFER SYSTEM EXTENT WITHIN THE DISTRICT BOUNDARY).**

## ***LIMITATIONS:***

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

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

A key aspect of using the groundwater model to evaluate historical groundwater flow conditions includes the assumptions about the location in the aquifer where historical pumping was placed. Understanding the amount and location of historical 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 historical time periods.

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

It is important for groundwater conservation districts to monitor groundwater pumping and overall conditions of the aquifer. Because of the limitations of the groundwater model and the assumptions in this analysis, it is important that the groundwater conservation districts work with the TWDB to refine this analysis in the future given the reality of how the aquifer responds to the actual amount and location of pumping now and in the future. Historical 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:**

- Ewing, J. E., Jones, T. L., Pickens, J. F., Chastain-Howley, A., Dean, K. E., Spear, A. A., 2004, Groundwater availability model for the Seymour Aquifer: Final report prepared for the Texas Water Development Board by INTERA, Inc., 533 p., [http://www.twdb.texas.gov/groundwater/models/gam/symr/SYMR\\_Model\\_Report.pdf](http://www.twdb.texas.gov/groundwater/models/gam/symr/SYMR_Model_Report.pdf).
- 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., Banta, E. R., Hill, M. C., and McDonald, M. G., 2000, MODFLOW-2000, the U.S. Geological Survey modular ground-water model -- User guide to modularization concepts and the Ground-Water Flow Process: U.S. Geological Survey Open-File Report 00-92, 121 p.
- Jigmond, M., Hutchison, W. R., and Shi, J., 2014, Final Report: Groundwater Availability Model of the Seymour Aquifer in Haskell, Knox, and Baylor Counties, 185 p., [http://www.twdb.texas.gov/groundwater/models/gam/symr\\_hkb/Seymour\\_HKB\\_GAM\\_Report\\_Sealed\\_021414.pdf](http://www.twdb.texas.gov/groundwater/models/gam/symr_hkb/Seymour_HKB_GAM_Report_Sealed_021414.pdf).
- 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](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>.
- Wade, S. C., and Boghici, R., 2015, GAM Run 14-009: Texas Water Development Board, GAM Run 14-009 Report, 12 p., <http://www.twdb.texas.gov/groundwater/docs/GAMruns/GR14-009.pdf>.

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## **APPENDIX D**

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# **Rules of the Rolling Plains Groundwater Conservation District**

ORIGINALLY ADOPTED: January 18, 2001

REVISED: July 19, 2001

REVISED: December 19, 2002

REVISED: April 17, 2003

REVISED: September 18, 2003

**The rules of the Rolling Plains Groundwater Conservation District, as amended, are hereby published, as of September 18, 2003:**

In accordance with Section 59 of Article XVI of the Texas Constitution; Chapter 36 of the Texas Water Code; Haskell/Knox Underground Water Conservation District Enabling Act, 73<sup>rd</sup> Leg., R.S., ch. 1028, 1993 Tex. Gen. Laws 4435; Act of April 24, 2001, 77<sup>th</sup> Leg., R.S., ch. 38, 2001 Tex. Gen. Laws 68; and Act of May 30, 2003, 78<sup>th</sup> Leg., R.S., ch. 992, 2003 Tex. Gen. Laws 2896, the following rules are hereby ratified and adopted as the rules of this District by its Board. Each rule as worded herein has been in effect since the date of passage and as may be hereafter amended. All rules or parts of rules, in conflict with these rules, are hereby repealed. Rolling Plains Groundwater Conservation District first adopted rules on January 18, 2001, and adopted amendments to its rules on July 19, 2001, December 19, 2002, April 17, 2003, and September 18, 2003.

The rules, regulations, and modes of procedure herein contained are and have been adopted to simplify procedures, avoid delays, and facilitate the administration of the water laws of the State and the rules of this District. To the end that these objectives are attained, these rules will be so construed.

These rules may be used as guides in the exercise of discretion, where discretion is vested. However, under no circumstances and in no particular case may these rules be construed as a limitation or restriction upon the exercise of powers, duties, and jurisdiction conferred by law. These rules will not limit or restrict the amount and accuracy of data or information that may be required for the proper administration of the law.

**ROLLING PLAINS**  
**GROUNDWATER CONSERVATION DISTRICT**  
**DISTRICT RULES**

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## SECTION 1. DEFINITIONS AND CONCEPTS

### Rule 1.1 Definitions of Terms

In the administration of its duties, the Rolling Plains Groundwater Conservation District follows the definitions of terms set forth in the District Act, Chapter 36 of the Texas Water Code, and other definitions as follows:

- 1) “Acre-foot” means the amount of water necessary to cover one acre of land one foot deep, or about 325,000 gallons of water.
- 2) “Agriculture” has the meaning assigned by Chapter 36, Texas Water Code.
- 3) “Board” means the Board of Directors of the District.
- 4) “Commission” means the Texas Commission on Environmental Quality and its successor agencies.
- 5) “Deteriorated well” means a well, the condition of which will cause, or is potentially likely to cause, pollution of any water in the District.
- 6) “De-watering well” means a well used to remove water from a construction site or excavation, or to relieve hydrostatic uplift on permanent structures.
- 7) “District” means the Rolling Plains Groundwater Conservation District.
- 8) “District Act” means the Haskell/Knox Underground Water Conservation District Enabling Act, 73<sup>rd</sup> Leg. R.S., ch. 1028, 1993 Tex. Gen. Laws 4435 as amended by Act of April 24, 2001, 77<sup>th</sup> Leg., R.S., ch. 38, 2001 Tex. Gen. Laws 68 and Act of May 30, 2003, 78<sup>th</sup> Leg., R.S., ch. 992, 2003 Tex. Gen. Laws 2896; and the non-conflicting provisions of Chapter 36, Texas Water Code.
- 9) “District office” means the office of the District as established by resolution of the Board.
- 10) “Drilling permit” means a permit for a water well issued or to be issued by the District allowing a water well to be drilled.
- 11) “Existing well” means a well drilled and completed on or before December 19, 2002.
- 12) “Groundwater” means water percolating below the surface of the earth, but does not include water produced with oil in the production of oil and gas.
- 13) “Hearing body” means the Board, any committee of the Board, or a Hearing Examiner at any hearing held under the authority of the District Act.
- 14) “Injection well” includes:
  - a) An air conditioning return flow well used to return water used for heating or cooling in a heat pump to the aquifer that supplied the water;
  - b) A cooling water return flow well used to inject water previously used for cooling;
  - c) A drainage well used to drain surface fluid into a subsurface formation;
  - d) A recharge well used to replenish the water in an aquifer;

- e) A saltwater intrusion barrier well used to inject water into a freshwater aquifer to prevent the intrusion of salt water into the freshwater;
  - f) A sand backfill well used to inject a mixture of water and sand, mill tailings, or other solids into subsurface mines;
  - g) A subsidence control well used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water; or
  - h) A closed system geothermal well used to circulate water, other fluids, or gases through the earth as a heat source or heat sink.
- 15) “Landowner” means the person who bears ownership of the land surface.
  - 16) “Leachate well” means a well used to remove contamination from soil or groundwater.
  - 17) “Monitoring well” means a well installed to measure some property of the groundwater or aquifer it penetrates, and does not produce more than 5,000 gallons of groundwater per year.
  - 18) “New well” means a well that was not yet drilled and completed on or before December 19, 2002.
  - 19) “Open meetings law” means Chapter 551, Texas Government Code.
  - 20) “Person” includes corporation, individual, organization, government or governmental subdivision or agency, business trust, estate, trust, partnership, association, or any other legal entity.
  - 21) “Pollution” means the alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the District that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or impairs the usefulness or public enjoyment of the water for any lawful or reasonable use.
  - 22) “Presiding officer” means the President, Vice-President, Secretary, or other Board member presiding at any meeting, hearing, or other proceeding.
  - 23) “Rules” means the rules of the District compiled in this document and as may be supplemented or amended from time to time.
  - 24) “Section” means the land designated by a survey number found in the Baylor, Haskell and Knox County Survey Maps, Texas General Land Office - Archives Division, Austin, Texas.
  - 25) “Texas Public Information Act” means Chapter 552, Texas Government Code.
  - 26) “Use for a beneficial purpose” has the meaning assigned by Chapter 36, Texas Water Code.
  - 27) “Waste” has the meaning assigned by Chapter 36, Texas Water Code.
  - 28) “Water meter” means a water flow-measuring device that can accurately record the amount of groundwater produced during a measured time.
  - 29) “Well” shall mean a water well, injection well, recharge well, dewatering well, or monitoring well used to withdraw groundwater from the groundwater supply within the District.
  - 30) “Well owner” or “well operator” means the person who owns the land upon which a well is located or is to be located or the person who operates a well or a water distribution system supplied by a well.
  - 31) “Well system” means a well or group of wells tied to the same distribution system.

- 32) “Withdraw” means extracting groundwater by pumping or by another method.
- 33) “Windmill” means a wind-driven or hand-driven device that uses a piston pump to remove groundwater.

**Rule 1.2 Purpose of Rules**

These rules are adopted to achieve the provisions of the District Act and accomplish its purposes.

**Rule 1.3 Use and Effect of Rules**

The District uses these rules as guides in the exercise of the powers conferred by law and in the accomplishment of the purposes of the District Act. They may not be construed as a limitation or restriction on the exercise of any discretion nor be construed to deprive the District or Board of the exercise of any powers, duties or jurisdiction conferred by law, nor be construed to limit or restrict the amount and character of data or information that may be required to be collected for the proper administration of the District Act.

**Rule 1.4 Amending of Rules**

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

**Rule 1.5 Headings and Captions**

The section and other headings and captions contained in these rules are for reference purposes only. They do not affect the meaning or interpretation of these rules in any way.

**Rule 1.6 Construction**

A reference to a title, rule or section without further identification is a reference to a title, chapter or section. Construction of words and phrases is governed by the Code Construction Act, Subchapter B, Chapter 311, Government Code.

**Rule 1.7 Methods of Service Under the Rules**

Except as otherwise expressly provided in these rules, any notice or documents required by these rules to be served or delivered may be delivered to the recipient, or the recipient's authorized representative, in person, by agent, by courier receipted delivery, by certified mail sent to the recipient's last known address, or by telephonic document transfer to the recipient's current telecopier

number. Service by mail is complete upon deposit in a post office or other official depository of the United States Postal Service. Service by telephonic document transfer is complete upon transfer, except that any transfer occurring after 5:00 p.m. will be deemed complete on the following business day. If service or delivery is by mail, and the recipient has the right, or is required, to do some act within a prescribed time after service, three days will be added to the prescribed period. Where service by one of more methods has been attempted and failed, the service is complete upon notice publication in a newspaper of general circulation in Haskell, Knox and Baylor Counties.

### **Rule 1.8 Severability**

If any one or more of the provisions contained in these rules are for any reason held to be invalid, illegal, or unenforceable in any respect, the invalidity, illegality, or unenforceability may not affect any other rules or provisions of these rules, and these rules must be construed as if such invalid, illegal or unenforceable rules or provision had never been contained in these rules.

## **SECTION 2. BOARD**

### **Rule 2.1 Purpose of Board**

The Board was created to determine policy and regulate the withdrawal of groundwater within the boundaries of the District for conserving, preserving, protecting, and recharging the groundwater within the District, and to exercise its rights, powers, and duties in a way that will effectively and expeditiously accomplish the purposes of the District Act. The Board's responsibilities include, but are not limited to, the adoption and enforcement of reasonable rules and other orders.

### **Rule 2.2 Board Structure and Officers**

The Board consists of the members appointed and qualified as required by the District Act. The Board will elect one of its members to serve as President, to preside over Board meetings and proceedings; one to serve as Vice President, to preside in the absence of the President; and one to serve as Secretary, to keep a true and complete account of all meetings and proceedings of the Board. The Board will elect officers every other year. Members and officers serve until their successors are appointed and sworn in accordance with the District Act and these rules.

### **Rule 2.3 Meetings**

The Board will hold a regular meeting at least once quarterly as the Board may establish from time to time by resolution. At the request of the President, or by written request of at least three members, the Board may hold special meetings. All Board meetings will be held according to the Texas Open Meetings Law.

**Rule 2.4      Committees**

The President may establish committees for formulation of policy recommendations to the Board and appoint the chair and membership of the committees. Committee members serve at the pleasure of the President.

**Rule 2.5      Ex Parte Communications**

- a) Board members may not communicate, directly or indirectly, about any issue of fact or law in any contested case before the board, with any agency, person, party, or their representatives except on notice and opportunity for all parties to participate.
- b) Notwithstanding Subsection (a) of this Rule, a Board member may communicate ex parte with other members of the Board, the General Manager, employees, or attorneys of the District as long as such communication does not violate other applicable law. Subsection (a) of this Rule does not apply to a Board member who abstains from voting on any matter in which ex parte communications have occurred.

**SECTION 3. DISTRICT STAFF**

**Rule 3.1      General Manager**

The Board may employ a person to be the General Manager of the District, who is the District’s chief administrative officer. The General Manager shall have full authority to manage and operate the affairs of the District subject only to the direction given by the Board through policies and orders adopted by it. The Board will determine the salary and review the position of General Manager each year at the beginning of the third quarter of every fiscal year. The General Manager, with approval of the Board, may employ all persons necessary for the proper handling of the business and operation of the District. Employee salaries shall be set by the Board with recommendations from the General Manager.

**Rule 3.2      Delegation of Authority**

The General Manager may delegate duties as may be necessary to effectively and expeditiously accomplish those duties, provided that no such delegation may relieve the General Manager from the General Manager’s responsibilities under the Texas Water Code, the District Act, and the policies, orders, and permits promulgated by the Board. To the extent not otherwise prohibited by law, the Board may delegate its duties as may be necessary to effectively and expeditiously accomplish those duties.

## SECTION 4. DISTRICT RECORDS

### Rule 4.1 Minutes and Records of the District

All documents, reports, records, and minutes of the District are available for public inspection and copying under the Texas Public Information Act. Upon written application of any person, the District shall furnish copies of its public records that are not otherwise exempt from disclosure under the Texas Public Information Act or other law. A reasonable copying charge may be assessed pursuant to policies established by the District. A list of the charges for copies shall be furnished by the District.

### Rule 4.2 Certified Copies

Requests for certified copies must be in writing. Certified copies will be made under the direction of the Board of Directors. A certification charge and copying charge may be assessed, pursuant to policies established by the Board of Directors. A list of the charges for copies shall be furnished by the District.

## SECTION 5. SPACING AND LOCATION REQUIREMENTS

### Rule 5.1 Spacing Requirements

- a) Except as provided under Rule 11.1, a well to be drilled subsequent to December 19, 2002 shall not be drilled:
  - 1) within 50 feet from the property line of any adjoining landowner; or
  - 2) within 100 feet of any existing well.
- b) Wells drilled prior to December 19, 2002 shall be drilled in accordance with the rules in effect, if any, on the date such drilling commenced.
- c) A well exempt from permitting under Rule 10.5(a)(3) is exempt from the spacing requirements under Rule 5.1. Other wells exempt from permitting under Rule 10.5 shall comply with the spacing and location requirements under Rules 5.1 and 5.2.

### Rule 5.2 Location Requirements

- a) All new wells must comply with the location requirements set forth under this rule, except that leachate wells, monitoring wells, and de-watering wells may be located where necessity dictates.
- b) A well must be located a minimum horizontal distance of **50 feet** from any water-tight sewage facility and liquid-waste collection facility.
- c) A well must be located a minimum horizontal distance of 150 feet from any contamination, such as existing or proposed livestock or poultry yards, privies, and septic system absorption fields.

- d) A well must be located at a site not generally subject to flooding; provided, however, that if a well must be placed in a flood prone area, it must be completed with a watertight sanitary well seal and steel casing extending a minimum of **24 inches** above the known flood level.
- e) No well may be located within five-hundred (500) feet of a sewage treatment plant, solid waste disposal site, or land irrigated by sewage plant effluent, or within three-hundred (300) feet of a sewage wet well, sewage pumping station, or a drainage ditch that contains industrial waste discharges or wastes from sewage treatment systems.
- f) After an application for a well permit has been granted, the well, if drilled, must be drilled within ten (10) yards (30 feet) of the location specified in the permit, and not elsewhere. If the well should be commenced or drilled at a different location, the drilling or operation of such well may be enjoined by the Board pursuant to Chapter 36, Texas Water Code, and these Rules. As described in the Texas Water Well Drillers and Pump Installers Rules, all well drillers and persons having a well drilled, deepened, or otherwise altered shall adhere to the provisions of these Rules prescribing the drilling location and proper completion of wells, as well as the spacing and location requirements set forth under this section.

## **SECTION 6. PRODUCTION LIMITATIONS**

### **Rule 6.1      Maximum Allowable Production**

Subject to Subsections (b) and (c) of this Rule, a well or a well system shall not be operated such that the total annual production from the well or well systems exceeds three (3) acre feet of water per surface acre of land. Only land that is contiguous to the acre where the well is located and owned by the same person that owns the acre where the well is located shall be included in such calculation.

- b) Notwithstanding Subsection (a) of this Rule and because of the isolated, localized, and discontinuous nature of the aquifer throughout the District, no person shall be entitled to claim as surface acreage for purposes of calculating the maximum allowable production of a well or well system any land that is located in a separate Section than the Section on which the well or well system is located. To the extent that wells comprising a well system are located on more than one Section, the wells located on a particular Section shall be considered as a separate well system from any wells physically located on another Section or Sections for all purposes under these Rules, including the calculation of the appropriate production limitation for a particular well or well system.
- c) In the event that the well owner does not own the tract of land on which the well is located and no other wells are located on the tract of land, the well owner shall provide evidence to the District of the well owner's authority to claim the production rights for the surface acreage of the tract of land on which the well is located. In the event that the well owner does not own the tract of land on which the well is located and where other wells owned by persons other than such well owner are located on the same tract of land, such well owner or the owner of the land shall provide written evidence to the District establishing how the total right of groundwater production associated with the acreage included in the tract of land is to be allocated amongst the various wells or well systems located on the land. Failure to provide evidence of such allocation to the satisfaction of the District shall result in all wells located on the tract being shut down by order of the District to cease production for the remainder of the calendar year once the three

acre-feet of water per surface acre limit set forth under Subsections (a) and (b) of this Rule has been reached in a given year by the aggregate production of all wells located on the tract.

## **SECTION 7. OTHER DISTRICT ACTIONS AND DUTIES**

### **Rule 7.1 District Management Plan**

The District Management Plan specifies the acts, procedures, performance and avoidance necessary to prevent waste, the reduction of artesian pressure, or the draw-down of the water table.

The District shall use the Rules of the District to implement the Management Plan. The Board will review the plan at least every fifth year. If the Board considers a new plan necessary or desirable, based on evidence presented at hearing, a new plan will be adopted. A plan, once adopted, remains in effect until the adoption of a new plan.

### **Rule 7.2 Aquifer Storage and Recovery (ASR)**

No ASR project shall be operated within the District, unless such person has obtained a permit authorizing the project from the commission and a copy of such permit has been filed with the District prior to the commencement of injection or recovery operations associated with the ASR project. A person applying for a permit from the commission to authorize an ASR project involving an aquifer within the boundaries of the District shall file a copy of the notice of such application and a copy of the application with the District within ten (10) days of publication of notice or of filing of the application with the commission, whichever is earlier.

## **SECTION 8. TRANSFER OF GROUNDWATER OUT OF THE DISTRICT:**

### **Rule 8.1 Permit Required**

- a) No person shall produce groundwater within the District and transport such water for use outside of the district under the following conditions unless the person producing and transporting the water across the boundaries of the District shall obtain a permit to do so from the District:
- 1) to increase, on or after March 2, 1997, the amount of groundwater to be transferred under a continuing arrangement in effect before that date; or
  - 2) to transfer groundwater out of the district on or after March 2, 1997, under a new arrangement.

- b) The permit to produce water for transport outside of the District shall be applied for and considered by the Board in the same manner as applications for permits for groundwater use inside of the District, except that:
  - 1) a person transporting groundwater outside of the District shall be subject to payment of the Groundwater Transport Regulatory Fee under Rule 8.2; and
  - 2) the Board shall also consider the following additional criteria in reviewing applications for permits to transport water outside of the District:
    - a) the availability of water in the district and in the proposed receiving area during the period for which the water supply is requested;
    - b) the projected effect of the proposed transfer on aquifer conditions, depletion, subsidence, or effects on existing permit holders or other groundwater users within the district; and
    - c) the approved regional water plan and certified district management plan.

**Rule 8.2 Groundwater Transport Regulatory Fee**

- 1) a) A person transporting groundwater outside of the District shall be subject to payment of the Groundwater Transport Regulatory Fee. The Groundwater Transport Regulatory Fee shall be paid to the District on a monthly basis for water produced from wells located within the District for use outside of the District, which fee shall be established by resolution of the Board and paid to the District no less than 30 days after the end of the given reporting month. In no case shall the Board establish a fee in an amount that exceeds: \$1 per acre-foot of water used for agricultural use; or
  - 2) 17 cents per thousand gallons of water used for any other purpose.
- b) An exempt well is not excused from payment of the Groundwater Transport Regulatory Fee if the groundwater produced from the exempt well is subsequently transported for use outside of the District. The owner of such an exempt well shall identify to the District the amount of water exported from the District on a monthly basis and pay the Groundwater Transport Regulatory Fee to the District in an amount equal to the fee for a non-exempt well for any water actually transported outside of the District.
- c) All owners of non-exempt wells who begin transporting water for use outside of the District before October 1, 2003 shall report to the District the amount of water produced and the amount of water actually exported on a monthly basis. All owners of non-exempt wells who begin transporting water for use on or after October 1, 2003 shall report to the District the amount of water produced and the amount of water actually exported on a monthly basis and shall file annual reports with the District describing the amount of water transported and used. The report shall be filed with the District no later than February 15 of each year on the appropriate form provided by the District and shall state the following:
  - 1.) the name of the owner;
  - 2.) the well, permit or registration numbers of each well that is producing water for transport;
  - 3.) the total amount of groundwater produced from each well or well system during the

- immediately preceding calendar year;
- 4.) the total amount of groundwater transported outside the district from each well or well system during each month of the immediately preceding calendar year;
  - 5.) the purposes for which the water was transported;
  - 6.) the amount and source of any surface water transported; and
  - 7.) any other information requested by the District.
- d) Groundwater that is discharged pursuant to a permit issued by the commission and not sold is not considered to have been transferred from the District unless the discharge is part of an overall water transfer and sale.
- e) All groundwater produced within the District that is subsequently transported across the boundaries of the District for use outside of the District shall be metered as set forth under Section 15 of these Rules.

## **SECTION 9. DEPOSITS FOR WELL DRILLING PERMITS**

### **Rule 9.1 Deposits**

- a) Each application for a permit to drill a well or any other activity permitted by the District for which a driller's log (State Well Report) is required to be completed by state law must be accompanied by a \$250.00 deposit, which will be accepted and deposited by the District staff. The deposit shall be returned to the applicant by the District if: (1) the application is denied; (2) the application is granted, upon the receipt of a correctly completed driller's log of the well; or (3) the permit location is abandoned without having been drilled or altered or results in a dry hole, upon return and surrender of the permit marked "abandoned" by the applicant.
- b) In the event that neither the driller's log of the well nor the permit marked "abandoned" is returned to the District office within eight (8) months after the application date of the permit, the deposit shall become the property of the District.

## **SECTION 10. REGISTRATION AND PERMITS**

### **Rule 10.1 Registration and Grandfathering of Existing Wells**

- a) It is a violation of these rules for a well owner or operator to produce water from any well within the District, except leachate wells, monitoring wells, and de-watering wells, without a valid well registration or well permit from the District. Owners and operators of wells that were drilled and completed on or before December 19, 2002, shall have until January 1, 2004, to register their wells with the District on forms to be provided by the District upon request by the owner or operator.
- b) The District shall register such an existing well upon receipt from the owner or operator of the following information on a form to be provided by the District, to the extent that such information is requested on the form:

- 1) the name and address of the owner of the land on which the well is located;
  - 2) if different from owner, the name and address of the applicant and documentation establishing authority to operate the well;
  - 3) a statement of the nature and purpose of use of the water produced from the well, and the amount to be used for each purpose;
  - 4) a declaration that the applicant will comply with the district's management plan, rules, and production limitations;
  - 5) the location of the well and the estimated rate at which water will be withdrawn;
  - 6) the location of use of the water, including a legal description of tracts to be irrigated with water from the well if the well is used for irrigation; and
  - 7) a water well closure plan or declaration that the applicant will comply with well plugging guidelines and report closure to the commission and the District.
- c) Existing wells registered in accordance with this section shall not be required to obtain a drilling permit from the District, nor shall they be subject to the District's spacing requirements under Rule 5.1, unless the registration is revoked for violation of registration conditions, District rules, or other applicable law.
- d) Failure by the owner or operator of a well that was drilled and completed prior to December 19, 2002 to register such well with the District by January 1, 2004:
- 1) shall be a violation of these rules if the well is operated after January 1, 2004;
  - 2) shall result in the owner forfeiting the ability to register the well under this Rule and, instead, shall result in the owner or operator being required to obtain a registration or permit for the well under Rule 10.2; and
  - 3) shall create a rebuttable presumption that the well was not an existing well, which, among other things, will subject the well to enforcement of the District's well spacing requirements under Rule 5.1 and subject the well to potential enforcement for failure to comply with the permitting requirements of these Rules.
- e) Any person who becomes the owner of a registered well must, within 60 calendar days from the date of the change in ownership, notify the District to change the name on the registration.

## **Rule 10.2 Registration and Permitting of New Wells**

- a) Except as otherwise provided under these Rules, it is a violation of these Rules for any person, including a well owner, well operator, or water well driller, to drill, equip, or complete any well in the District or to substantially alter the size of a well or well pump in any well in the District without first filing either an administratively complete well registration or an administratively complete permit application, as appropriate for the type of well, with the District.
- b) All new wells, except leachate wells, monitoring wells, and de-watering wells, must be registered with the District by the well owner, well operator, or water well driller prior to being drilled, equipped, completed, or substantially altered in accordance with the application procedure set forth for existing wells under Rule 10.1(b). The General Manager shall review the registration and make a preliminary determination on whether the well qualifies under the

exemptions from permitting provided under Rule 10.5. Providing the preliminary determination is ruled the well is exempt, the registrant may begin drilling immediately upon receiving the approved registration. If the preliminary determination by the General Manager is that the well is not exempt from permitting, the owner, operator, or driller shall submit a well permit application before proceeding with drilling, equipping, completion, or alteration.

### **Rule 10.3      General Permitting Policies and Procedures**

- a) **Permit Requirement:** The well owner, well operator, or any other person acting on behalf of the well owner, must file a completed well application for a water well permit before a new, non-exempt well may be drilled, equipped, completed, or substantially altered. Providing the application for a permit is deemed administratively complete, meaning that it meets all of the guidelines and requirements of these rules and contains all of the required information, the applicant may thereupon proceed at his own risk to drill, equip, complete, or alter such well. This application for a permit shall not, however, be officially granted until the opportunity for a due process public hearing has been satisfied and the Board has approved the permit.
- b) **Permit Applications:** Each original application for a water well permit or permit renewal requires a separate application. Application forms will be provided by the District and furnished to the applicant upon request. Applications shall contain all of the information set forth under Rule 10.1(b) for well registrations and shall be submitted on a form to be provided by the District, to the extent that such information is requested on the form. The District may at its discretion utilize the same form for permit applications as it does for well registrations.
- c) **Notice of Permit Hearing:** Once the District has received an administratively complete original application for a permit, the General Manager shall issue written notice indicating a date and time for a hearing on the application in accordance with these Rules. The District may schedule as many applications at one hearing as deemed necessary.
- d) **Decision and Issuance of Permit:** In deciding whether or not to issue a permit, and in setting the terms of the permit, the Board must consider whether the application complies with the District Rules.
- e) **Duration of Permits:** Unless specified otherwise by the Board or these Rules, permits to drill, equip, complete, or substantially alter a well or pump size are effective for those purposes for a term ending 120 calendar days after the date the permit was issued.
- f) **Permit Provisions:** The permit shall contain the standard provisions listed in Rule 10.4. The permit may also contain provisions relating to the means and methods of transportation of water produced within the District.
- g) **Aggregation of Withdrawal:** In issuing a permit, the authorized withdrawal for a given well may be aggregated with the authorized withdrawal from other permitted wells designated by the District. District Rules 5 & 6 shall be considered in determining whether or not to allow aggregation of withdrawal. For the purpose of categorizing wells by the amount of groundwater production, where wells are permitted with an aggregate withdrawal, the total authorized withdrawal may be assigned to the wells in the aggregate, rather than allocating to each well its pro rata share of production, except as otherwise provided in these Rules.
- h) **Effect of Acceptance of Permit:** Acceptance of the permit by the person to whom it is issued constitutes acknowledgment of and agreement to comply with all of its terms, provisions,

conditions, limitations, and restrictions.

#### **Rule 10.4 Permit Provisions**

All permits are granted subject to these Rules, orders of the Board, and the laws of the State of Texas. In addition to any special provisions or other requirements incorporated into the permit, each permit issued must contain the following standard permit provisions:

- a) This permit is granted in accordance with the provisions of the Rules of the District, and acceptance of this permit constitutes an acknowledgment and agreement that the permittee will comply with the Rules of the District.
- b) This permit confers only the right to use the permit in compliance with the terms of the permit and the Rules of the District, including but not limited to the production limitations under Rule 6.1, and its terms may be modified or amended pursuant to the provisions of Rule 6.1 and the other Rules of the District as Rule 6.1 and the other Rules of the District may be amended in the future. To protect the permit holder from illegal use by a new landowner, within 60 days after the date of sale, the permit holder must notify the District in writing of the name of the new owner. Any person who becomes the owner of a currently permitted well must, within 60 calendar days from the date of the change in ownership, file an application for an amendment to effect a transfer of the permit.
- c) The operation of the well for the authorized withdrawal must be conducted in a non-wasteful manner.
- d) At the time a water meter is required under Section 15 of the District's Rules, it shall be installed to accurately record gallons produced during a specified period of time.
- e) The well site must be accessible to District representatives for inspection, and the permittee agrees to cooperate fully in any reasonable inspection of the well and well site by the District representatives.
- f) The application pursuant to which this permit has been issued is incorporated in this permit, and this permit is granted on the basis of and contingent upon the accuracy of the information supplied in that application. A finding that false information has been supplied is grounds for immediate revocation of the permit.
- g) Violation of a permit's terms, conditions, requirements, or special provisions, including pumping amounts in excess of authorized withdrawal, is punishable by civil penalties as provided by the District's Rules and other enforcement.

#### **Rule 10.5 Exemptions**

- a) The requirement to obtain a permit under Section 10 of these Rules does not apply to:
  - 1) a well used solely for domestic use or for providing water for livestock or poultry on a tract of land larger than 10 acres that is either drilled, completed, or equipped so that it is incapable of producing more than 25,000 gallons of groundwater a day;
  - 2) the drilling of a water well used solely to supply water for a rig that is actively engaged in drilling or exploration operations for an oil or gas well permitted by the Railroad

Commission of Texas provided that the person holding the permit is responsible for drilling and operating the water well and the well is located on the same lease or field associated with the drilling rig; or

- 3) the drilling of a water well authorized under a permit issued by the Railroad Commission of Texas under Chapter 134, Natural Resources Code, or for production from such a well to the extent the withdrawals are required for mining activities regardless of any subsequent use of the water.
- b) A well originally exempt under Subsection (a) is not exempt under this rule if it is subsequently used for a purpose or in a manner that is not exempt under Subsection (a).
- c) An entity exempt under Subsection (a)(3) of this Rule shall report monthly to the District:
  - 1) the total amount of water withdrawn during the month;
  - 2) the quantity of water necessary for mining activities; and
  - 3) the quantity of water withdrawn for other purposes.
- d) A water well exempted under Subsection (a) shall:
  - 1) be registered in accordance with Rule 10.1; and
  - 2) comply with the location, completion, and re-completion requirements of Section 12 and Rule 5.2 of these Rules.
- e) The driller of a well exempted under Subsection (a) shall file the drilling log with the District.
- f) Notwithstanding Subsection (a), a well to supply water for a subdivision of land for which a plat approval is required by Chapter 232, Local Government Code, is not exempt under Subsection (a).
- g) Groundwater withdrawn from a well exempt from permitting under Subsection (a) and subsequently transported outside the boundaries of the District is subject to the Groundwater Transport Regulatory Fee under Section 8 of these Rules.

## **SECTION 11. REWORKING AND REPLACING A WELL**

### **Rule 11.1     Procedures**

- a) An existing well or permitted new well may be reworked, re-drilled, or re-equipped in a manner that will not increase the production capacity of the well by increasing the size of the column pipe or pump without the need for the owner or operator to obtain a permit under Rule 10.2. Such a well shall maintain the existing well or new permitted well status of the original well.
- b) A permit must be applied for and obtained under Rule 10.2, if a party wishes to increase the rate of production of an existing well or permitted new well by increasing the size of the column pipe or pump size when reworking, re-equipping, or re-drilling such well.
- c) A permit must be applied for and granted by the Board if a party wishes to replace an existing well or permitted new well with a replacement well.
- d) A replacement well, in order to be considered such, must be drilled within ten (10) yards (30 feet) of the well to be replaced. The replacement well shall not be drilled nearer the property line

if the original well was “grandfathered” from otherwise violating the spacing requirements of Rule 5.1.

- e) In the event a permit application submitted in accordance with this Rule meets the spacing requirements of these Rules, the Board may grant such application without further notice or hearing.

## **SECTION 12. WELL COMPLETION**

### **Rule 12.1 Standards of Completion for All Wells**

- a) All wells must be completed in accordance with the following specifications and in compliance with local county or incorporated city ordinances. All wells must also be completed in compliance with the rules and regulations of the Texas Department of Licensing and Regulation related to Water Well Drillers and Pump Installers.
- b) The annular space between the borehole and the casing shall be filled from the ground level to a depth of not less than 10 feet below the land surface or well head with cement slurry.
- c) All wells shall have a concrete slab or sealing block above the cement slurry around the well at the ground surface.
- d) The slab or block shall extend at least **two (2) feet** from the well in all directions and have a minimum thickness of **four inches** and shall be separated from the well casing or mastic coating or sleeve to prevent bonding of the slab to the casing.
- e) The surface of the slab shall be sloped to drain away from the well. The casing shall extend a minimum of one foot above the original ground surface.
- f) A slab or block as described in Subsections (c) – (e) of this Rule is required above the cement slurry except when a pitless adapter is used. Pitless adapters may be used in such wells, provided that:
  - 1) the pitless adapter is welded to the casing or fitted with another suitably effective seal; and
  - 2) the annular space between the borehole and the casing is filled with cement to a depth not less than 15 feet below the adapter connection.
- g) All wells, especially those that are gravel packed, shall be completed so that aquifers or zones containing waters that are known to differ significantly in chemical quality are not allowed to commingle through the borehole-casing annulus or the gravel pack and cause quality degradation of any aquifer or zone.
- h) The well casing shall be capped or completed in a manner that will prevent pollutants from entering the well.
- i) Water well drillers shall indicate the method of completion performed on the Well Report (TDLR Form #001 WWD, Section 10, Surface Completion).

### **Rule 12.2 Re-completions**

- a) The landowner shall have the continuing responsibility of insuring that a well does not allow commingling of undesirable water and fresh water or the unwanted loss of water through the wellbore to other porous strata.
- b) If a well is allowing the commingling of undesirable water and fresh water or the unwanted loss of water, and the casing in the well cannot be removed and the well re-completed within the applicable rules, the casing in the well shall be perforated and cemented in a manner that will prevent the commingling or loss of water. If such a well has no casing, then the well shall be cased and cemented or plugged in a manner that will prevent such commingling or loss of water.
- c) The Board may direct the landowner to take steps to prevent the commingling of undesirable water and fresh water or the unwanted loss of water.

## **SECTION 13. PROHIBITION AGAINST WASTE AND POLLUTION**

### **Rule 13.1 Prohibition Against Waste and Pollution**

- a) No person shall allow, cause, suffer, permit, or commit “waste” as that term is defined in Rule 1.1.
- b) Groundwater shall not be produced in or used within or without the District, in such a manner as to constitute waste as defined in Rule 1.1.
- c) No person shall cause “pollution” of the groundwater reservoir or aquifer in the District as defined in Rule 1.1.
- d) No person shall allow the continued existence of a deteriorated well.
- e) Groundwater produced in the District shall be used for a beneficial purpose.

## **SECTION 14. HEARINGS**

### **Rule 14.1 Types of Hearings**

The District conducts two general types of hearings: (1) Permit hearings involving permit matters, in which the rights, duties, or privileges of a party are determined after an opportunity for an adjudicative hearing, and (2) rulemaking hearings involving matters of general applicability that implement, interpret, or prescribe the law or District policy, or that describe the procedure or practice requirements of the District. All hearings shall be held before a quorum of the Board.

- a) **Permit Hearings:**
  - 1) **Permit Applications, Amendments, and Revocations:** The District shall hold hearings on permit applications, permit renewals or amendments, and permit revocations or suspensions.
  - 2) **Hearings on Motions for Rehearing:** Motions for Rehearing will be heard by the Board pursuant to Rule 14.3.

b) **Rulemaking Hearings:**

- 1) Rules and District Management Plan: The Board may hold a hearing, after giving notice, to consider adoption of a new District Management plan or revising an existing District Management Plan or to amend the District Rules or adopt new District Rules.
- 2) Other Matters: A public hearing may be held on any matter within the jurisdiction of the Board if the Board deems a hearing to be in the public interest or necessary to effectively carry out the duties and responsibilities of the District.

**Rule 14.2 Notice and Schedule of Hearings**

- a) Notices of all hearings of the District shall be prepared by the General Manager. For all rulemaking hearings, the notice shall include the subject matter of the hearing, the time, date, and place of the hearing, and any other information deemed relevant by the General Manager or the Board. For all permit hearings, the notice shall, at a minimum, state the following information:
  - 1) the name of the applicant;
  - 2) the address or approximate proposed location of the well;
  - 3) the time, date, and location of the hearing; and,
  - 4) any other information the Board or General Manager deem appropriate to include in the notice.
- b) For permit hearings, not less than 72 hours prior to the time of the hearing, notice shall be:
  - (1) posted by the General Manager at a place convenient to the public in the District Office; and
  - (2) provided by the General Manager to the county clerk of each county in the District, whereupon such county clerk shall post the notice on a bulletin board at a place convenient to the public in the county courthouse.
- c) For rulemaking hearings, not less than five days prior to the date of the hearing, notice shall be:
  - (1) posted by the General Manager at a place convenient to the public in the District Office;
  - (2) provided by the General Manger to the county clerk of each county in the District, whereupon such county clerk shall post the notice on a bulletin board at a place convenient to the public in the county courthouse; and
  - (3) published by the General Manager once in a newspaper of general circulation in each county in the District.
- d) Hearings may or may not be scheduled during the District's regular business hours, Monday through Friday of each week, except District holidays. All hearings shall be held at the District Office unless the Board directs otherwise. The District may schedule as many applications for consideration at one hearing as deemed desirable. Hearings may be continued from time to time and date to date without additional notice after the initial notice. The General Manager shall set a hearing date within 30 calendar days of a determination that the application is administratively complete. The hearing shall be held within 35 calendar days after the setting of the date.

### **Rule 14.3      General Procedures for Permit Hearings**

- a) Authority of Presiding Officer: The presiding officer may conduct the hearing or other proceeding in the manner the presiding officer deems most appropriate for the particular hearing. The presiding officer has the authority to:
  - 1) set hearing dates, other than the initial hearing date for permit matters, which shall be set by the General Manager in accordance with Rule 14.2;
  - 2) convene the hearing at the time and place specified in the notice for public hearing;
  - 3) rule on motions and on the admissibility of evidence;
  - 4) establish the order for presentation of evidence;
  - 5) administer oaths to all persons presenting testimony;
  - 6) examine witnesses;
  - 7) ensure that information and testimony are introduced as conveniently and expeditiously as possible, without prejudicing the rights of any party to the proceeding;
  - 8) conduct public hearings in an orderly manner in accordance with these rules;
  - 9) recess any hearing from time to time and place to place; and,
  - 10) exercise any other appropriate powers necessary or convenient to effectively carry out the responsibilities of presiding officer.
- b) Hearing Registration Forms: Each person attending and participating in a hearing of the District must submit a form providing the following information: the person's name; the person's address; who the person represents if other than himself; whether the person wishes to testify; and any other information relevant to the hearing.

### **Rule 14.4      Appearance; Presentation; Time for Presentation; Ability to Supplement; Conduct and Decorum; Written Testimony**

- a) Any interested person, including the General Manager, may appear at a hearing in person or may appear by representative provided the representative is fully authorized to speak and act for the principal. Such person or representative may present evidence, exhibits, or testimony, or make an oral presentation as determined by the Board. Any partner may appear on behalf of a partnership. A duly authorized officer or agent of a public or private corporation, political subdivision, governmental agency, municipality, association, firm, or other entity may appear on behalf of the entity. A fiduciary may appear for a ward, trust, or estate. A person appearing in a representative capacity may be required to prove proper authority.
- b) After the presiding officer calls a hearing to order, the presiding officer shall announce the subject matter of the hearing and the order and procedure for presentations.
- c) The presiding officer may prescribe reasonable time limits for the presentation of evidence and oral argument.
- d) In the discretion of the presiding officer, any person who appears at a hearing and makes a presentation before the Board may supplement that presentation by filing additional written evidence with the Board within 10 days after the date of conclusion of the hearing. Cumulative,

repetitive, and unduly burdensome evidence filed under this subsection will not be considered by the Board.

- e) Every person, party, representative, witness, and other participant in a proceeding must conform to ethical standards of conduct and must exhibit courtesy and respect for all other participants. No person may engage in any activity during a proceeding that interferes with the orderly conduct of District business. If in the judgment of the presiding officer, a person is acting in violation of this provision, the presiding officer will first warn the person to refrain from engaging in such conduct. Upon further violation by the same person, the presiding officer may exclude that person from the proceeding for such time and under such conditions as the presiding officer deems necessary.
- f) Written testimony: When a proceeding will be expedited and the interest of the parties will not be prejudiced substantially, testimony may be received in written form. The written testimony of a witness, either in narrative or question and answer form, may be admitted into evidence upon the witness being sworn and identifying the testimony as a true and accurate record of what the testimony would be if given orally.

#### **Rule 14.5 Evidence; Broadening the Issues**

- a) The presiding officer may admit evidence if it is relevant to an issue at the hearing.
- b) The presiding officer may exclude evidence that is irrelevant, immaterial, or unduly repetitious.
- c) No person will be allowed to appear in any hearing or other proceeding whose appearance, in the opinion of the presiding officer, is for the sole purpose of unduly broadening the issues to be considered in the hearing or other proceeding.

#### **Rule 14.6 Recording**

Hearings and other proceedings shall be recorded on audio cassette tape.

#### **Rule 14.7 Continuance**

The presiding officer may continue hearings or other proceedings from time to time and from place to place without the necessity of publishing, serving, mailing, or otherwise issuing a new notice. If a hearing or other proceeding is continued and a time and place (other than the District Office) for the hearing or other proceeding to reconvene are not publicly announced at the hearing or other proceeding by the presiding officer before it is recessed, a notice of any further setting of the hearing or other proceeding will be delivered at a reasonable time to persons who submitted a hearing registration form under Rule 14.3(b), and any other person the presiding officer deems appropriate, but it is not necessary to post a notice at the county courthouses or publish a newspaper notice of the new setting.

#### **Rule 14.8 Filing of Documents; Time Limit; Computing Time**

- a) Any papers or documents required to be filed under these rules or by law must be received in hand at the District Office within the time limit, if any, set by these rules or by the presiding officer for filing. Mailing within the time period is insufficient if the submissions are not actually received by the District within the time limit.
- b) In computing any period of time specified by these rules, by a presiding officer, by Board orders, or by law, the day of the act, event, or default after which the designated period of time begins to run is not included, but the last day of the period computed is included, unless the last day is a Saturday, Sunday, or legal holiday as determined by the Board, in which case the period runs until the end of the next day which is neither a Saturday, Sunday, nor legal holiday.

#### **Rule 14.9 Report**

Within 14 days after the date the hearing is finally concluded, the Presiding Officer must submit a hearing report to the Board. The report must include a summary of the subject matter of the hearing, the evidence or public comments received, and the Presiding Officer's recommendations for Board action on the subject matter of the hearing. Any person who participated in the hearing may review a copy of the hearing report and submit to the Board written exceptions to the hearing report. The Presiding Officer may direct the General Manager to prepare the hearing report and recommendations required by this Rule.

#### **Rule 14.10 Board Action**

Within 35 days after the final hearing date is concluded, the Board must take action on the subject matter of the hearing.

#### **Rule 14.11 Request for Rehearing and Appeal.**

A decision of the Board concerning a hearing matter may be appealed by requesting a rehearing before the Board within 20 calendar days of the date of the Board's decision. Such a rehearing request must be filed at the District Office in writing and must state clear and concise grounds for the request. Such a rehearing request is mandatory with respect to any decision or action of the Board before any appeal to District Court may be brought. The Board's decision is final if no request for rehearing is made within the specified time, upon the Board's denial of the request for rehearing, or upon rendering a decision after rehearing. If the rehearing request is granted by the Board, the date of the rehearing will be within 45 calendar days thereafter. The failure of the Board to grant or deny the request for rehearing within 90 calendar days of the date of submission shall constitute a denial of the request.

#### **Rule 14.12 Rulemaking Hearings Procedures**

- a) **General Procedures:** The presiding officer will conduct the rulemaking hearing in the manner the presiding officer deems most appropriate to obtain all relevant information pertaining to the subject of the hearing as conveniently, inexpensively, and expeditiously as possible. In conducting a rulemaking hearing, the presiding officer may elect to utilize procedures set forth in these Rules for permit hearings to the extent that and in the manner that the presiding officer deems most appropriate for the particular rulemaking hearing.
- b) **Submission of Documents:** Any interested person may submit written statements, protests, or comments, briefs, affidavits, exhibits, technical reports, or other documents relating to the subject of the hearing. Such documents must be submitted no later than the time of the hearing, as stated in the notice of hearing given in accordance with Rule 14.2; provided, however, that the presiding officer may grant additional time for the submission of documents.
- c) **Oral Presentations:** Any person desiring to testify on the subject of the hearing must so indicate on the registration form provided at the hearing. The presiding officer establishes the order of testimony and may limit the number of times a person may speak, the time period for oral presentations, and the time period for raising questions. In addition, the presiding officer may limit or exclude cumulative, irrelevant, or unduly repetitious presentations.
- d) **Conclusion of the Hearing:** At the conclusion of the hearing, the Board may take action on the subject matter of the hearing, take no action, or postpone action until a future meeting or hearing of the Board.

## **SECTION 15. METERING**

### **Rule 15.1     Metering Required**

- a) Notwithstanding any provision in these Rules to the contrary, to the extent that these Rules require meters to be installed on wells in existence before and on December 19, 2002, such meters shall be installed by the District at the District's expense. Notwithstanding any provision in these Rules to the contrary, to the extent that these Rules require meters to be installed on wells that come into existence after December 19, 2002, such meters shall be installed by the well owner at the well owner's expense.
- b) All owners of wells required under Section 15.2 to equip such wells with a meter shall do so with a flow measurement device meeting the specifications of these Rules and shall operate the meters on such wells to measure the flow rate and cumulative amount of groundwater withdrawn from the well.
- c) **Approved Meters:** A mechanically driven, digital, totalizing water meter is the only meter acceptable. The digital totalizer must not be resettable by the permittee and must be capable of a maximum reading greater than the maximum expected pumpage during the permit term. Battery operated registers must have a minimum five (5) year life expectancy and must be permanently hermetically sealed. Battery operated registers must visibly display the expiration date of the battery. All meters must meet the requirements for registration accuracy set forth in the American Water Works Association standards for cold-water meters
- d) A meter shall be installed by the owner of a well, as required under Rule 15.2, no later than four (4) months after December 19, 2002. The water meter must be installed according to the

manufacturer's published specifications in effect at the time of the meter's installation, or its accuracy must be verified by the permittee in accordance with Rule 15.5. If no specifications are published, there must be a minimum length of five pipe diameters of straight pipe upstream of the water meter and one pipe diameter of straight pipe downstream of the water meter. These lengths of straight pipe must contain no check valves, tees, gate valves, back flow preventers, blow-off valves, or any other fixture other than those flanges or welds necessary to connect the straight pipe to the meter. In addition, the pipe must be completely full of water throughout the region. All installed meters must measure only groundwater.

- e) Each meter shall be installed, operated, maintained, and repaired in accordance with the manufacturer's standards, instructions, or recommendations and shall ensure an error of not greater than plus or minus five percent.
- f) The owner of a well shall be responsible for the installation, operation, maintenance, and repair of the meter associated with that well.

### **Rule 15.2 Wells Subject to Metering**

- a) Persons producing or transporting groundwater within the District or transporting water across the District's boundaries shall install meters, if required, as set forth under this Section.
- b) The installation of meters shall be mandatory in the following situations and locations:
  - 1) If water is being produced from a well or well system located on a tract of land in one Section and any of such water produced is being used on a different Section of land, a meter shall be installed at the wellhead(s) and/or at a distribution point or points capable of ensuring an accurate accounting for the District of all water produced from the tract of land or Section and all water transported for use at a location outside of that Section;
  - 2) If water is being produced from a well or well system located within the boundaries of the District and any of such water produced is being transported across the District's boundaries for use outside of the District, a meter shall be installed at the wellhead(s) and/or at a distribution point or points, including at any point at which water is finally transported across the District's boundaries, capable of ensuring an accurate accounting for the District of all water produced from such well or well system and all water transported across the District's boundaries for use outside of the District;
  - 3) If a person has been under enforcement by the District for violation of District Rules or Chapter 36, Texas Water Code, and has been determined by the Board to have violated the same, all wells owned or operated by such person and located within the District shall have meters installed at the wellheads, unless a variance is granted by the Board for just cause at its sole discretion; or
  - 4) If the Board by order determines, for good cause, that a well or distribution system should be metered to further the purposes of these Rules, the District Act, or the District's groundwater management plan, the well or distribution system shall be metered in accordance with the Order of the Board.

### **Rule 15.3 Types of Meters**

- a) The types of meters approved for installation are:
  - 1) Internal Impeller;
  - 2) Magnetic;
  - 3) Time-Delay Ultrasonic; and
  - 4) Any flow measurement method approved in writing by the General Manager.
- b) All meters must be equipped with a non-resettable mechanical or electronic flow volume accumulator that reads in acre-feet.
- c) Types of flow meters prohibited by the District are:
  - 1) Doppler Ultrasonic;
  - 2) Pitot Tube; and
  - 3) Open Discharge.
- d) No metering method may be installed or modified prior to written approval given by the General Manager pursuant to an application filed with the District.
- e) The General Manager shall approve an application to install a metering method if the General Manager finds the application shows the following:
  - 1) the meter has a certified error of not greater than plus or minus five percent;
  - 2) for a meter, it meets the American Water Works Association design and operation standards for design, materials, and accuracy;
  - 3) the meter has a non-resettable totalizer, or lock box with resettable digital readout;
  - 4) the totalizing register of the meter has the capacity to record the total quantity of groundwater withdrawn from the aquifer for at least one full year; and
  - 5) the meter, if used for the distribution of potable water, shall be American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 61 certified.
- g) The owner of the meter shall give written notice to the District of the intended start date of the installation or modification 30 days prior to the installation or modification to allow the District to inspect and approve the meter installation or modification.

**Rule 15.4 Pre-Existing Meters and Alternative Measuring Methods**

- a) Within four (4) months of December 19, 2002, the owner of a meter or alternative measuring method shall register the meter or method with the District.
- b) All meters existing on the December 19, 2002 shall be inspected by the District for compliance with the meter specifications set forth in these Rules. If the meter complies with these specifications, the General Manager shall approve the meter in writing and advise the owner of the approval. If the meter does not comply with these specifications, the General Manager will issue a notice of deficiency and direct the owner of the meter to install a new meter or modify the existing meter in compliance with Section 15 of these Rules.
- c) If at any time the owner of a well has reason to believe that a condition, of any kind whatsoever, may exist that affects the accuracy of a meter, then the owner of the well shall, within seven (7)

days of learning of the fact(s), notify the General Manager that the accuracy of the meter may be in question. Such notification shall be in writing on a form provided by the District.

- d) The General Manager may conduct an investigation and, if facts warrant, direct the owner of the meter, at the owner's cost, to evaluate and test the accuracy of the meter and take appropriate corrective action, including replacement, to restore the accuracy and proper working condition of the meter as specified in these Rules.

#### **Rule 15.5 Accuracy Verification**

- a) The General Manager may require the permittee, at the permittee's expense, to test the accuracy of the water meter and submit a certificate of the test results. The certificate shall be on a form provided by the District. The General Manager may further require that such test be performed by a third party qualified to perform such tests. The third party shall be approved by the General Manager prior to the test. Except as otherwise provided herein, certification tests will be required no more than once every three years for the same meter and installation. If the test results indicate an accuracy outside the range of 95% to 105% of the actual flow, then appropriate steps shall be taken by the permittee to repair or replace the water meter within 90 calendar days from the date of the test. The District, at its own expense, may undertake random tests and other investigations at any time for the purpose of verifying water meter readings. If the District's tests or investigations reveal that a water meter is not registering within the accuracy range of 95% to 105% of the actual flow, or is not properly recording the total flow of groundwater withdrawn from the well or wells, the permittee shall reimburse the District for the cost of those tests and investigations, and the permittee shall take appropriate steps to remedy the problem within 90 calendar days from the date of the tests or investigations. If a water meter or related piping or equipment is tampered with or damaged so that the measurement accuracy is impaired, the District may require the permittee, at the permittee's expense, to take appropriate steps to remedy any problem, and to retest the water meter within 90 calendar days from the date the problem is discovered and reported to the permittee.
- b) Meter Testing and Calibration Equipment: Only equipment capable of accuracy results of plus or minus two percent of actual flow may be used to calibrate or test meters.
- c) Calibration of Testing Equipment: All approved testing equipment must be calibrated every two years by an independent testing laboratory or company capable of accuracy verification. A copy of the accuracy verification must be presented to the District before any [further] tests may be performed using that equipment.

#### **Rule 15.6 Removal and Disabling of Meters**

- a) A meter may not be removed or otherwise disabled, including for routine maintenance, unless the owner gives the District notice in writing on a form provided by the District of the intent to remove or disable the meter. Except in cases of routine maintenance, such notice must be approved in writing by the General Manager before the meter is removed or disabled.
- b) The readings on the meter must be recorded prior to removal and again upon reinstallation. The monthly record of pumpage will include an estimate of the amount of groundwater withdrawn during the period the meter was not installed and operating.

- c) A meter may be removed or otherwise disabled only by the owner of the meter or the owner's authorized representative.

### **Rule 15.7 Meter Reading and Groundwater Use Reporting**

Owners of wells defined under Rule 15.2 must read each water meter and record the meter readings and the actual amount of pumpage in a log at least monthly. The logs containing the periodic recordings shall be available for inspection by the District at reasonable business hours and copies of such logs must be furnished to the District upon request.

### **Rule 15.8 Prohibition and Enforcement**

- a) Except as otherwise provided by District Rule or Board Order, no person may take any action that disables or impairs a meter from accurately measuring and recording the flow rate and cumulative amount of groundwater withdrawn from a well.
- b) If the withdrawals are not being metered in accordance with this Section, the Board may issue an order:
  - 1) suspending the right to make withdrawals from a well; and
  - 2) requiring corrective action to bring the operation of the well into compliance with this Section.

### **Rule 15.9 Location of Meters**

The location of meters required under this Section shall be determined by the General Manager.

## **SECTION 16. INVESTIGATIONS AND ENFORCEMENT**

### **Rule 16.1 Right to Inspect and Test Wells**

Any authorized officers, employees, agent, or representative of the District shall have the right at all reasonable times to enter upon lands upon which a well or wells may be located, within the boundaries of the District, to inspect such wells or well and to install, read, or interpret any meter, weir box, or other instrument for the purpose of measuring production of water from said well or wells or for determining the pumping capacity of said well or wells; and any authorized officer, employee, agent, or representative of the District shall have the right at all reasonable times to enter upon any lands upon which a well or wells may be located, within the boundaries of the District, for the purposes of testing the pump and the power unit of the well or wells and of making any other reasonable and necessary inspections and tests that may be required or necessary for the ensured compliance or enforcement of the Rules and regulations of the District. The operation of any well may be enjoined by the Board immediately upon the refusal to permit the gathering of information from such well as provided above. Inhibiting or prohibiting access to any Board Member or District agent or employee who is attempting to conduct an investigation under the District Rules constitutes

a violation of these Rules and subjects the person who is inhibiting or prohibiting access, as well as any other person who authorizes or allows such action, to the penalties set forth in § 36.102 of the Texas Water Code.

### **Rule 16.2 Conduct of Investigation**

Investigations or inspections that require entrance upon property must be conducted at reasonable times, and must be consistent with the establishment's rules and regulations concerning safety, internal security, and fire protection. The persons conducting such investigations must identify themselves and present credentials upon request of the owner, lessee, operator, or person in charge of the well.

### **Rule 16.3 Rule Enforcement**

If it appears that a person has violated, is violating, or is threatening to violate any provision of the District Rules, the Board of Directors may institute and conduct a suit in the name of the District for enforcement of the Rules pursuant to the provisions of § 36.102 of the Texas Water Code.

### **Rule 16.4 Sealing of Wells**

- a) Following due process, the District may, upon order from a judge of a court of law, seal wells that are prohibited from withdrawing groundwater within the District by the District Rules to ensure that a well is not operated in violation of the District Rules. A well may be sealed when:  
(1) no application has been made for a permit to drill a new water well which is not exempted;  
(2) no application has been timely made for registration of an existing well; or (3) the Board has denied, canceled, or revoked a permit or registration.
- b) A well may be sealed by physical means and tagged to indicate that the well has been sealed by the District. Other appropriate action may be taken as necessary to preclude operation of the well or to identify unauthorized operation of the well.
- c) Tampering with, altering, damaging, or removing the seal of a sealed well, or in any other way violating the integrity of the seal, or pumping groundwater from a well that has been sealed constitutes a violation of these Rules and subjects the person performing that action, as well as any well owner or primary operator who authorizes or allows that action, to such penalties as provided by the District Rules.

### **Rule 16.5 Covering of Wells**

- a) In this Rule, “open or uncovered well” means an artificial excavation that is dug or drilled for the purpose of exploring for or producing water from the underground water reservoir and is not capped or covered as required.
- b) Every owner or operator of any land within the District upon which is located any open or uncovered well is, and shall be, required to close or cap the same permanently or temporarily as

set forth below and in accordance with Chapter 36, Texas Water Code, and subsequent changes thereto.

- c) Except when the well is in actual use, the District may require the owner or lessee of land on which an open or uncovered well is located to keep the well permanently closed or capped with a covering capable of preventing surface pollutants from entering the well and capable of sustaining weight of at least 400 pounds.
- d) If an owner or lessee fails or refuses to close or cap a well in compliance with this Rule within 10 days after being requested to do so in writing by an officer, agent, or employee of the District, any person, firm, or corporation employed by the District may go on the land and close or cap the well safely and securely according to this Rule.
- e) Reasonable expenses incurred by the District in closing or capping a well under this Rule constitute a lien on the land on which the well is located.
- f) The lien is perfected by filing the following in the deed records of the county where the well is located:
  - 1) the existence of the well;
  - 2) the legal description of the property on which the well is located;
  - 3) the approximate location of the well on the property; and
  - 4) an affidavit stating:
    - A) the failure or refusal of the owner or lessee, after notification, to close or cap the well within 10 days after the notification;
    - B) that the well was closed or capped by the District or by an authorized agent representative, or employee of the District; and
    - C) the expense incurred by the District in closing the well.
- g) Nothing in this Rule affects the enforcement of Subchapter A, Chapter 756, Health and Safety Code.

## **SECTION 17. FEES**

### **Rule 17.1 Fees of the District**

The Board, by resolution, may establish the following fees:

- 1) fees for administrative acts of the District, including fees for the cost of reviewing and processing permits and the cost of hearings for permits; such administrative fees shall not unreasonably exceed the cost to the District for performing such administrative acts;
- 2) a fee for the transportation of groundwater out of the District;
- 3) a fee for checks returned to the District for insufficient funds, account closed, signature missing, or any other reason causing a check to be returned by the District's depository;
- 4) a fee for tampering with a meter of a permittee or registrant of the District;

- 5) a fee for failing to install a meter when required to do so by District Rule; and
- 6) any other fee determined necessary by the Board.

### **Rule 17.2 Payment of Fees**

All fees are due at the time of application, permitting, or assessment, as applicable, and are late after 30 days beyond the date of application, permitting, or assessment, as applicable.

### **Rule 17.3 Failure to Make Fee Payments**

Payments received within 30 days following the due date will not be subject to a late payment fee. Failure to make complete and timely payment of a fee as required by these Rules or Board Order shall automatically result in a late payment fee of ten percent of the amount not paid. The fee payment plus the late payment fee must be made within 30 days following the date of the assessment of the late payment fee, otherwise any associated permit or registration may be declared void by the Board.

### **Rule 17.4 Enforcement**

After a permit or registration is declared void pursuant to Rule 17.3 for failure to make payment of a fee, all enforcement mechanisms provided by law and these Rules shall be available to prevent unauthorized use of the well and may be initiated by the General Manager without further authorization from the Board.

**APPENDIX E**  
**Notices**

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BROADCAST REPORT

TIME : 07/10/2023 10:16AM  
 NAME : RPGCD  
 FAX : 9404221094  
 TEL : 9404221095  
 SER.# : U66430A1F640833

PAGE(S)

03

DATE	TIME	FAX NO./NAME	DURATION	PAGE(S)	RESULT	COMMENT
07/10	10:08AM	19408894300	02:37	03	OK	PC ECM
07/10	10:11AM	19408646164	01:03	03	OK	PC ECM
07/10	10:13AM	19404592005	01:15	03	OK	PC ECM
07/10	10:15AM	19404224385	53	03	OK	PC ECM

BUSY : BUSY/NO RESPONSE  
 NG : POOR LINE CONDITION  
 CV : COVERPAGE

FILED FOR RECORD  
AT 10:45 O'CLOCK A M

JUL 10 2023

BELIA ABILA

Clerk County Court, Haskell County, Texas

The Directors of the Rolling Plains Groundwater Conservation District will meet at the North Central Texas Municipal Water Authority, 135 N. Munday Ave., Munday, Texas on Thursday, July 20, 2023 at 7:00 p.m.

Management Plan Hearing  
Permit Hearing  
Regular Quarterly Meeting  
AGENDA

Management Plan Hearing

1. Call to Order
2. Discussion by General Manager regarding the Proposed Groundwater Management Plan
3. Receive Public Comment on the Proposed Groundwater Management Plan
4. Close Hearing

Permit Hearing

1. Call to Order
2. Public Comment
3. Receive Permit Hearing Report from General Manager and Consider Granting, Denying or Amending Applications for the Following Drilling Permits:
  - a. Richard Carter N33° 11' 24.32" W099° 51' 23.22"
  - b. Richard Carter N33° 11' 34.73" W099° 51' 29.77"
  - c. Richard Carter N33° 11' 48.26" W099° 49' 38.14"
  - d. James Cloud N33° 11' 24.25" W099° 50' 8.48"
  - e. Cowen Cattle Co. N33° 37' 27.41" W099° 28' 25.9"
  - f. Cowen Cattle Co. N33° 37' 27.95" W099° 28' 28.45"
  - g. Cowen Cattle Co. N33° 37' 27.08" W099° 28' 32.88"
  - h. Abraham Froese N33° 10' 47.36" W099° 51' 47.96"
  - i. Abraham Froese N33° 10' 31.01" W099° 51' 48.31"
  - j. Isaac Harms N33° 31' 17.01" W099° 34' 9.44"
  - k. Isaac Harms N33° 30' 54.43" W099° 30' 22.22"
  - l. E & J Leonard N33° 13' 6.53" W099° 55' 27.91"
  - m. David Adams N33° 10' 7.1" W099° 43' 11.21"
  - n. Ross Short N33° 13' 29.75" W099° 55' 18.08"
  - o. Justin Hannsz N33° 8' 2.18" W099° 43' 16.43"
  - p. Justin Hannsz N33° 7' 59.99" W099° 43' 20.06"
  - q. Justin Hannsz N33° 7' 57.83" W099° 43' 21.43"
  - r. Justin Hannsz N33° 7' 53.26" W099° 43' 20.42"
4. Public Comments
5. Adjourn.

Regular Meeting

Discuss, consider, and take possible action as necessary concerning the following items of business:

1. Call to Order
2. Roll Call
3. Public Comment

4. Approval of Minutes of the Previous Meeting
5. Approval of Financial Report & Payment of Current Bills
6. Review and Adopt Investment Policy and Approved Brokers
7. Discuss and act on bank signatory resolution
8. Discuss and act on resolution adopting the District's Groundwater Management Plan
9. Receive status report on water quality project
10. Receive status report on database corrections
11. Discuss and act to adopt FY 2024 Budget
12. Manager's Report
13. Discuss and act on results from Managed Aquifer Recharge Request For Qualifications including selection of certain respondents for placing under contract
14. Discussion and possible action on purchase of District vehicle
15. Public Comments
16. Adjourn

At any time during the meeting and in compliance with the Texas Open Meetings Act, Chapter 551, Government Code, Vernon's Texas Codes, Annotated, the Rolling Plains Groundwater Conservation District Board may meet in executive session on any of the above agenda items for consultation concerning attorney-client matters (§551.071); deliberation regarding real property (§551.072); deliberation regarding prospective gift (§551.073); personnel matters (§551.074); and deliberation regarding security devices (§551.076). Any subject discussed in the executive session may be subject to action during an open meeting.

#### Certification

I do hereby certify that on or before July 12, 2023, at or before 4:00 p.m., I posted and filed by fax copy the above notice of meeting with each County Clerk's office located within the District and also posted a copy in the front window of the Rolling Plains GCD office in a place convenient and readily accessible to the general public all times and that it will remain so posted continuously for at least five days preceding the scheduled time of said meeting in accordance with the Texas Open Meetings Act.

/s/ Lynn Smith  
General Manager  
Rolling Plains GCD  
940-422-1095

Management Plan Hearing  
Permit Hearing  
Regular Quarterly Meeting  
AGENDA

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  - r. Justin Hannsz N33° 7' 53.26" W099° 43' 20.42"
4. Public Comments
5. Adjourn.

Regular Meeting

Discuss, consider, and take possible action as necessary concerning the following items of business:

1. Call to Order
2. Roll Call
3. Public Comment

THIS COPY OF POSTING  
WAS POSTED ON  
THE 10 DAY OF July 2023  
BY [Signature] CLERK, KNOX COUNTY, TEXAS  
DEPUTY

4. Approval of Minutes of the Previous Meeting
5. Approval of Financial Report & Payment of Current Bills
6. Review and Adopt Investment Policy and Approved Brokers
7. Discuss and act on bank signatory resolution
8. Discuss and act on resolution adopting the District's Groundwater Management Plan
9. Receive status report on water quality project
10. Receive status report on database corrections
11. Discuss and act to adopt FY 2024 Budget
12. Manager's Report
13. Discuss and act on results from Managed Aquifer Recharge Request For Qualifications including selection of certain respondents for placing under contract
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/s/ Lynn Smith  
General Manager  
Rolling Plains GCD  
940-422-1095

*Hot Deals  
In the  
Classifieds!*

# Buy It - Sell It - Find It Classified Get Results

## Real Estate

**For Rent or Sale - 901 W. California Vacant Lot; 1617 N. Plainview Rd, Furnished, Country Living, 3 BR on 2 acres; 709 W California, 2 BR, Furnished; 800 N. Foley, 2 BR; 607 1/2 N East, 2 BR; 607 N East, 3BR. Moore Realty Inc., Ray Lynn Moore Broker. 940-733-4743. 29-tfc**

## Legal Notices

**PUBLIC NOTICE -**  
NOTICE IS HEREBY GIVEN that a public hearing will be held at 7 p.m. on the 20th day of July 2023 before the Board of Directors of the Rolling Plains Groundwater Conservation District at 135 N. Munday Ave., Munday, Texas, regarding proposed revisions to the District Groundwater Management Plan. The Board of Directors encourages all citizens of Baylor, Haskell, and Knox Counties to participate and to make their views known at this public hearing. Copies of the proposed revised District Groundwater Management Plan can be obtained at the District office located at 135 Munday Ave., Munday, Texas. 6c

## Misc. For Sale

**For Sale - All In Stock Ink Cartridges \$5.00 each, HP - 02BK, 19, 20, 23, 25, 26, 28, 29, 45, 49, 58, 60, 74, 75, 78, 92, 92/93 combo, 94, 95, 96, 98, 920, 920XL, 920 combo, 932, 932XL, 934, 940 combo. Purchase at the Banner Office. 51-tfc**

## Autos

**For Sale - '05 Hyundai Elantra. '03 Mercury Marquis, 78K. \$300 monthly, Moore Used Cars. 940-733-4743. 6-tfc**

PragerU.com

**SOHO**  
Non Profit  
Organization  
Hours Open:

**Garage Sale Ads  
\$4.50  
One Way To Earn Extra  
Cash!  
Call 940-889-2616  
To Place Yours  
In The  
Baylor County  
Banner**

**Transfer Station  
Hours**  
The City of Seymour  
Transfer Station  
Winter Hours:  
Tues. - Sat. 9 a.m. - 5 p.m.



## Hunter Education Class To Be Offered

On Friday, July 28, 2023, Josh Kouns, Baylor County Extension Agent, will offer a Hunter Education Class. Those who would like to participate in this class must be 9 years and up. The cost is \$15 and it will be held between 9 a.m. and 4 p.m.

Lunch will be provided.

Registration is due by Friday, July 7, 2023. Please contact Josh for more information by calling 940-889-5581 or by emailing him at josh.kouns@ag.tamu.edu.

**Seymour  
Rodeo Parade  
"Texas Pride"  
July 8th**



**Monday, July 10 -**  
Beef Steak Fingers, Corn O'Brien, Broccoli Cauliflower Medley, Wheat Roll, Banana Pudding, and Milk.

**Tuesday, July 11 -**  
Chicken Spaghetti, Squash Medley, Garden Salad, Garlic Bread, Escalloped Apples, and Milk.

**Wednesday, July 12 -**  
Baked Chicken, Hot Potato Salad, Peas and Carrots, Wheat Roll, Frosted Angel Food Cake and Milk.

**Thursday, July 13 -**  
Meatloaf, Mashed Potatoes, Herbed Green Beans, Dinner Roll, Fresh Fruit, and Milk.

**Friday, July 14 -**  
Crunchy Baked Fish, Potato Wedges, Coleslaw, Wheat Bread, Tartar Sauce, Fresh Fruit, and Milk.

They Deserve Due Process  
americangulag.org

TEXAS A&M  
**AGRI**  
EXTEN  
Baylor Co  
Extension A  
Josh Kou

## Private App Class Offer

If you are interested in obtaining a pesticide applicator license, contact Josh at County Extension 940-889-5581 to

Cliff's C  
"Turn your  
into wisd  
-SO

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SE

**Public Notice**

**NOTICE OF PUBLIC HEARING**

rs Court will boxes, meteorological equipment, maintenance  
 2023, meeting and operations building, paving, fencing, electrical  
 on to Amend a substations, generation transmission tie line and  
 os Fork Solar, associated towers, and interconnection facilities and  
 Agreement to would be located in the Haskell County Reinvestment  
 the provisions Zone-Brazos Fork created by the Haskell County  
 Tax Abatement Commissioner's Court on November 24, 2020.  
 e. The meeting The Reinvestment Zone is northeast of the city of  
 ommissioner's Haskell, Texas, generally bounded by Highway 380  
 urchase at 1 on the south, Highway 277 on the west, County  
 ent is up to a Roads 1080 and 268 on the north and the Haskell  
 ration facility County/Throckmorton County Boundary on the east.  
 ion systems, Anticipated cost to construct the facility is up to  
 ections, roads, approximately \$285 million.  
 zial generation A map and legal description of the Haskell County  
 racking and Reinvestment Zone-Brazos Fork is available for  
 es, combiner viewing at the office of the Haskell County Judge.

**ADVERTISEMENT AND INVITATION FOR BIDS**

of Weinert will receive bids for the WWTP Improvements - TDA  
ect CDV21-0048 until 2:00 PM on August 16, 2023, at 102 South  
t., Weinert, TX 76388. The bids will be publicly opened and read  
0 PM on August 16, 2023, at 102 South Breustedt St., Weinert, TX

ited for several items and quantities of work as follows: The project  
 tallation of a synthetic liner in the WWTP ponds and improvements  
 ng lift station.

ct Documents, including Drawings and Technical Specifications are  
 ob & Martin, LLC, 3465 Curry Lane, Abilene, TX 79606.

the Bid/Contract Documents must be ordered online at [www.jacobmartin.com](http://www.jacobmartin.com). Orders for Bid/Contract Documents may include hard copies  
 , mail out, or digital download via [www.jacobmartin.com](http://www.jacobmartin.com). Upon  
 of online payment, hard copies may be picked up at Jacob & Martin,  
 ed at 3465 Curry Lane, Abilene, TX 79606. Cost for hard copies  
 Contract Documents will be \$100.00 for 11x17 Half Size Plans or  
 igital Download. Contractors must purchase a set of Bid/Contract  
 from Jacob & Martin, LLC to be considered a registered plan holder  
 id on the project.

in the amount of 5 percent of the bid issued by an acceptable surety  
 mitted with each bid. A certified check or bank draft payable to the  
ert or negotiable U.S. Government Bonds (as par value) may be  
 lieu of the Bid Bond.

t to be constructed will be financed with assistance from the Texas  
 of Agriculture (TDA) under the U.S. Department of Housing and  
 lopment Community Development Block Grant (CDBG) program  
 t to all applicable Federal and State laws and regulations. Attention

the fact that not less than, the federally determined prevailing  
 n and Related Acts) wage rate, as issued by the Texas Department  
 re Office of Rural Affairs, and contained in the contract documents,  
 l on this project. In addition, the successful bidder must ensure that  
 nd applicants for employment are not discriminated against because  
 or, religion, sex, sexual orientation,  
 ty, or national origin. Adherence to the  
 nt's Section 3 Policy is required for all

The Haskell Star  
  
**Classifieds**  
 940-864-2810  
 (Stamford Star Classifieds page A5)

**Public Notice**

**NOTICE IS HEREBY GIVEN** that a public hearing will be held at 7:00 p.m. on the 20th day of July 2023, before the Board of Directors of the Rolling Plains Groundwater Conservation District at 135 N. Munday Ave., Munday, Texas, regarding proposed revisions to the District Groundwater Management Plan. The Board of Directors encourages all citizens of Baylor, Haskell, and Knox Counties to participate and to make their views known at this public hearing. Copies of the proposed revised District Groundwater Management Plan can be obtained at the District office located at 135 Munday Ave., Munday, Texas.

**Help Wanted**

**Help Wanted – Dishwasher**  
 The Experienced Senior Citizen's Center is needing a dishwasher / kitchen help, 3 days a week. 940-864-3875, or 940-256-2163

**Job description: RN Position**  
 Haskell Memorial Hospital currently has positions available for full-time registered nurses on night shift. Qualified candidates must possess a current Texas nursing license, have previous hospital experience of at least one year in med/surg and/or ER, and prior EHR experience.  
 Haskell Memorial has a competitive salary structure including shift premiums and holiday premiums.  
 Full-time Pay: \$33.00 - \$37.00 per hour. Contact Haskell Memorial Hospital 940-228-4321.

Haskell Memorial Hospital is seeking a full-time dietary aid for the kitchen. Experience with meal preparation and service is a must. Benefits, PTO, and retirement are included. Call 940-228-4321 for more information.

**APPENDIX F**  
**Adoption**  
**Resolution**

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**RESOLUTION NO. 2023-001**

**OF ROLLING PLAINS GROUNDWATER CONSERVATION DISTRICT REGARDING  
2023 AMENDMENT TO THE  
2020 -2025 DISTRICT GROUNDWATER MANAGEMENT PLAN**

**WHEREAS**, the Haskell-Knox Underground Water Conservation District was created in May, 1993 by authority of HB 2862 of the 73rd Texas legislature; and

**WHEREAS**, by authority of SB 611 of the 77th Texas legislature; the name was changed to the Rolling Plains Groundwater Conservation District (District), and

**WHEREAS**, the District is required by Chapter 36.1071 of the Texas Water Code to develop and adopt a Groundwater Management Plan; and

**WHEREAS**, the District is required to submit the adopted Groundwater Management Plan to the Executive Administrator of the Texas Water Development Board for review and certification; and

**WHEREAS**, the District's revised Groundwater Management Plan shall be certified by the Executive Administrator, if the plan is administratively complete; and

**WHEREAS**, the District Board of Directors has determined that 2023 Amendment to the 2020-2025 Groundwater Management Plan addresses the requirements of Chapter 36.1071,

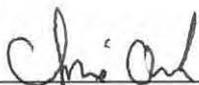
**NOW, THEREFORE**, be it resolved that the Board of Directors of the Rolling Plains Groundwater Conservation District, following notice and hearing, hereby adopts the 2023 Amendment to the 2020-2025 Groundwater Management Plan; and

**FURTHER**, be it resolved, that the 2023 Amendment to the 2020-2025 Groundwater Management Plan shall become effective immediately upon adoption.

Adopted this 20th day of July, 2023, by the Board of Directors of the Rolling Plains Groundwater Conservation District.

By:   
President

ATTEST:

  
\_\_\_\_\_

Secretary/Treasurer

## Rolling Plains GCD Groundwater Management Plan Coordination

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From: manager . (manager@rpgcd.org)

To: stacey.green@rra.texas.gov; pamela.hannemann@brazos.org; davidk@nctmwa.org

Date: Monday, July 31, 2023 at 02:59 PM CDT

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To fulfill the statutory requirement for coordination with surface water management entities and regional water planning groups, please find attached a copy of the Rolling Plains Groundwater Conservation District adopted Groundwater Management Plan Amendment that has been submitted to the Texas Water Development Board as mandated by Chapter 36 of the Texas Water Code. The management plan will be in force for 5 years from the date originally adopted by the Board, with periodic review. If there should be any additional information that you require, please do not hesitate to call.

Lynn Smith, P.G.  
General Manager  
Rolling Plains GCD  
940-273-4230 (Cell)



Groundwater Management Plan RPGCD 2023 Adopted.pdf  
3.4MB