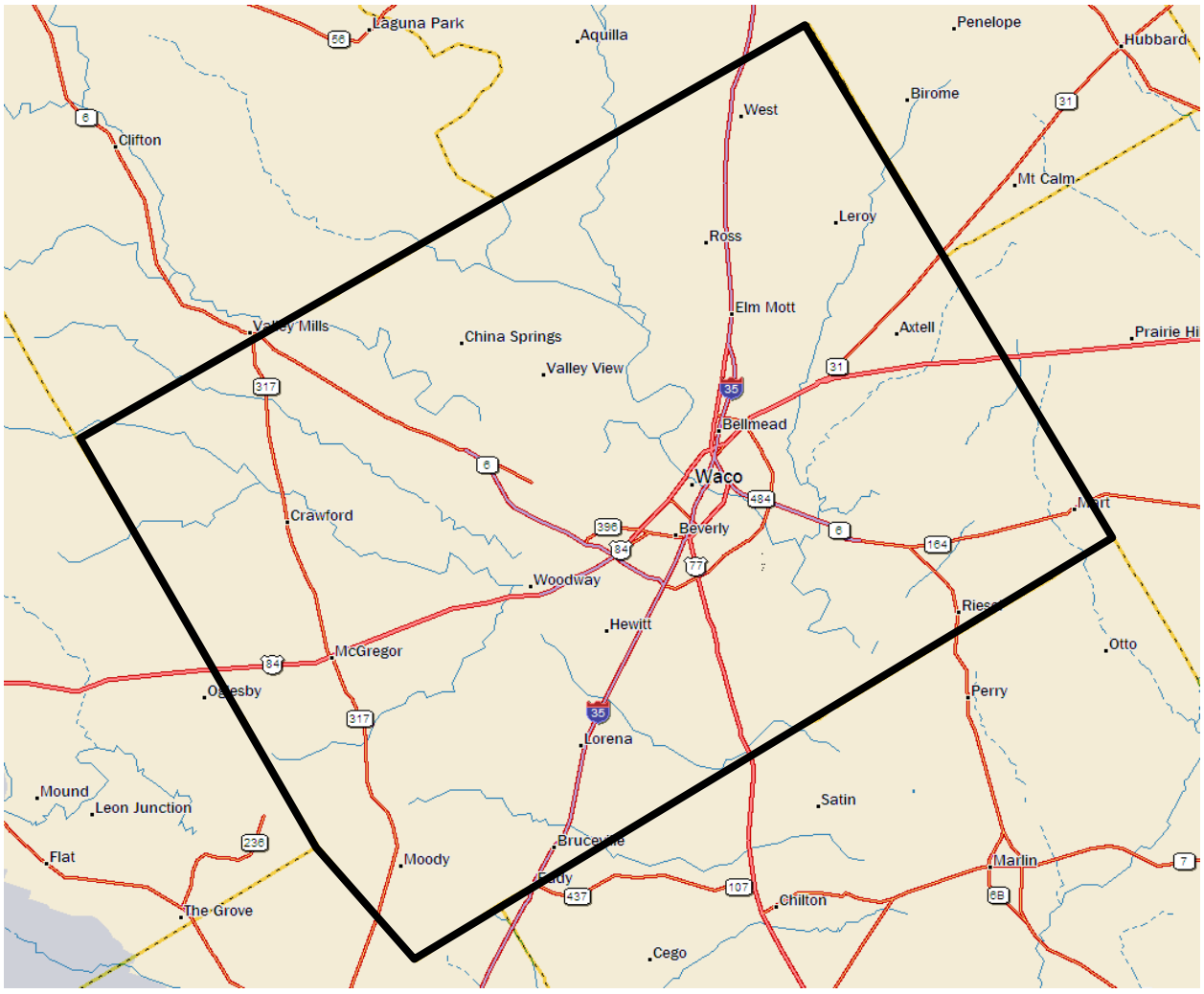
Southern Trinity Groundwater Conservation District

Groundwater Management Plan



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1. Introduction

This plan will become effective upon adoption by the District's Board of Directors and approval as administratively complete by the Texas Water Development Board. The plan will remain in effect for five (5) years after the date of approval unless amended or replaced sooner.

1.1. Background and Purpose

The District was created by legislation in the 80th Texas Legislature in 2007 (SB1985), and amended by the 81st Texas Legislature in 2009 (SB2513). The purpose of the District is to conserve, preserve, protect, recharge and prevent the waste of groundwater and to control subsidence caused by groundwater withdrawals, consistent with Section 59, Article XVI, Texas Constitution and Chapter 36, Texas Water Code.

1.2. Groundwater Resources

The District has within its boundaries the Trinity, the Woodbine, and the Brazos River Alluvium aquifers. The following paragraphs describe the aquifers and their approximate locations within the District. The relationship to confining units and other groundwater resources within the District are also discussed. Appendix 10.1 contains chart of showing the geological cross-section passing through the District from Northwest to Southwest. This cross-section shows the out crop and recharge area of the Trinity Aquifer.

1.2.1. Trinity Aquifer

The Trinity Aquifer is located throughout McLennan County as a confined aquifer. Its recharge area occurs outside the District to the north and west. There are a number of named, geologic formations that, collectively, are considered to comprise the Trinity Aquifer. To the west of McLennan County, the aquifer is designated the Twin Mountains formation where the sands crop out on the surface and receive recharge from precipitation. To the north where the Glen Rose formation is absent, the Trinity aquifer is called the Antlers formation and to the south it is designated the Travis Peak. The portion of the Trinity Aquifer with in the District has three water bearing formations: the Paluxy, the Hensell and the Hosston. The aquifer dips to the southeast becoming deeper below the surface in the eastern part of the district. The increase in depth to the southeast is accentuated by the Balcones Fault Zone, which consists primarily of normal faults downthrown to the southeast. As the aquifer dips to the southeast the Hensell and Hosston become divided by several formations including the Pearsall, Cow Creek, Hammett and Sligo.

The Paluxy, Glen Rose, Pearsall, Cow Creek, Hammett and Sligo formations are not major contributors to aquifer production but they are included with the Hensell and Hosston formations as the Trinity Aquifer in the District. The Paluxy formation only occurs in the western part of

the District. The outcrop of the Paluxy occurs outside of the District boundaries to the north and west. There is very little or no use of groundwater in the portion of Paluxy within McLennan County.

1.2.2. Brazos River Alluvium

The Brazos River Alluvium Aquifer consists of water bearing alluvial sediments that occur in floodplain and terrace deposits proximate to the Brazos River as it flows through McLennan County. The Brazos River Alluvium aquifer is an unconfined aquifer that receives recharge primarily from direct precipitation on the floodplain surface but may also be recharged from overbank flows during flood events and from lateral flow from adjacent formations. The aquifer discharges through springs and seeps into the Brazos River and streams within the outcrop of the alluvium.

1.2.3. Woodbine Aquifer

The Woodbine Aquifer is a minor aquifer that extends only into a very limited portion of the northernmost part of the McLennan County. The outcrop of the Woodbine occurs within the District boundaries but is covered by alluvium over much of its area. There is no or very little use of the groundwater in the portion of the Woodbine Aquifer within McLennan County.

1.2.4. Other Groundwater Resources

Shallow or perched groundwater occurs in the fractured weathered veneer of the Fredericksburg and Washita series and in other formations in McLennan County. Little water is produced from this shallow or perched groundwater in McLennan County but it supports small springs and local stream base flow.

1.3. Texas Water Development Board - Groundwater Availability Model (GAM)

The Trinity and Woodbine aquifers are included in a TWDB GAM model (Bené *et al*, 2004). The Northern Trinity/Woodbine Aquifer GAM is a 7-layer model that has the ability to resolve inflow and vertical movement of water between layers. This model was used as a reference for estimating recharge from precipitation, the amount of flow into and out of the district, and the amount of inflow from overlying or underlying units. The model does not include the Brazos River Alluvium Aquifer.

1.4. Priority Groundwater Management Area

The Texas Commission on Environmental Quality designated portions of the Trinity Aquifer, including that portion within the District, as a priority groundwater management area (Appendix 10.3). This TCEQ finding indicates that the decline in groundwater levels in the Central Trinity

Aquifer is a significant problem and that the decline in groundwater levels will cause groundwater availability and quality problems for the region.

2. Groundwater Management

The District has adopted rules to regulate groundwater withdrawals, primarily by means of well spacing and production limits (Appendix 10.17). The District will make periodic assessments of groundwater conditions within the District and will report those conditions to the Board. The District will undertake investigations and, to the extent appropriate, cooperate with third-party investigations, of the groundwater resources within the District, and the results of the investigations will be made available to the public.

The District has adopted rules designed to achieve the desired future conditions (DFCs) for the groundwater resources within the District, as those DFCs are agreed upon by Groundwater Management Area 8 (GMA 8). With respect to the Trinity, Woodbine, and Brazos River Alluvium aquifers, the District will adopt an historic use period and provide preferential permitting rights to those well owners that can demonstrate beneficial and non-wasteful groundwater usage during that period. A similar approach might be adopted for other groundwater sources within the District as well. The District may, at the Board's discretion after notice and hearing, amend or revoke any permit for non-compliance, or reduce the production authorized by permit for the purpose of protecting the aquifer and groundwater availability. The District will enforce the terms and conditions of permits and the rules of the District as authorized by Chapter 36 of the Texas Water Code.

The District will employ reasonable technical resources within its budgetary constraints to evaluate the groundwater resources within the District and to determine the effectiveness of regulatory or conservation measures.

The District will establish and enforce rules that require, among other things, the following

1. spacing requirements for certain non-exempt groundwater wells;
2. permits limiting the annual amount of groundwater that can be produced from non-exempt wells;
3. a limit on the maximum amount of groundwater permitted for withdrawal from the Trinity Aquifer within the District; and
4. a limit on the maximum amount of groundwater permitted for withdrawal from the Woodbine Aquifer within the District; and
5. a limit on the maximum amount of groundwater permitted for withdrawal from the Brazos River Alluvium Aquifer within the District.

3. Estimates of Annual Volumes of Water

The estimates of annual volumes of water discussed in this section were obtained from a report prepared by the Texas Water Development Board (TWDB GAM Run 08-69 Report). A copy of this report is included in Appendix 10.2. This report contains estimates of the annual amount of recharge from precipitation, annual volumes of water that discharge from aquifers to springs, annual volumes of groundwater inflow and outflow to and from aquifers and volume of flow between aquifers. All values reflect estimated groundwater flow with respect to the District's boundaries. Appendix 10.4 contains a copy of a Technical Memo regarding "The Brazos River Alluvium Aquifer Flow System in McLennan County, Texas" and contains estimates of the annual amount of recharge from precipitation, annual volumes of water that discharges from aquifers to springs, and annual volumes of interflow and outflow from aquifers within the Brazos River Alluvium Aquifer.

3.1. Estimate of the Annual Volume of Water That Discharges from the Aquifers to Springs and Any Surface Water Bodies, Including Lakes, Streams and Rivers, 31 TAC §356.5(a)(5)(D), TWC §36.1071(e)(3)(D)

3.1.1. Trinity Aquifer (Paluxy, Glen Rose, Hensell, Pearsall/Cow Creek/Hammett, Sligo, and Hosston Formations)

The estimate for discharges from Trinity Aquifer is zero (Table 1 in Appendix 10.2).

3.1.2. Brazos River Alluvium Aquifer

The estimate of discharge from the Brazos River Alluvium Aquifer to the Brazos River is 2,500 acre-feet per year in McLennan County (Yelderman, 2008, Appendix 10.4, Page 10-29).

3.1.3. Woodbine Aquifer and Washita/Fredericksburg Series

The estimate of the total annual volume of water that discharges from the Woodbine Aquifer is 36 acre-feet and from the Washita/Fredericksburg series is 9,534 acre-feet. No discussion was provided in the report regarding the location of the discharge but it is likely much of the discharge is to seeps along the sides and beds of streams (Table 1 in Appendix 10.2).

3.1.4. All other Aquifers, Formations, or Series

The estimate of the total annual volume of water that discharges from all other aquifers, formations, or series is zero.

3.2. Estimate of the Managed Available Groundwater in the District Based On The Desired Future Condition of the Aquifers, 31 TAC §356.5(a)(5)(A); TWC §36.1071(e)(3)(A)

3.2.1. Trinity Aquifer (Hensell, Pearsall/Cow Creek/Hammett, Sligo, and Hosston Formations)

Managed Available Groundwater for the portion of the Trinity Aquifer within the District has been determined by the Texas Water Development Board to be 20,690 acre-feet per year (Appendix 10.5).

3.2.2. Brazos River Alluvium Aquifer

Managed Available Groundwater for the portion of the Brazos River Alluvium Aquifer within the District has been determined by the Texas Water Development Board to be 15,023 acre-feet per year (Appendix 10.6).

3.2.3. Woodbine Aquifer

Managed Available Groundwater for the portion of the Woodbine Aquifer within the District has been determined by the Texas Water Development Board to be 5 acre-feet per year (Appendix 10.7)

3.3. Estimate of The Amount of Groundwater Being Used Within The District On An Annual Basis, 31 TAC §356.5(a)(5)(B); TWC §36.1071(e)(3)(B)

Comprehensive groundwater production and consumption data for McLennan County have been accumulated and reported since February 2008 to the District. Public water systems are required to report pumping to the Texas Water Development Board, but commercial, industrial, and agricultural producers are not required to report. As a result, the District believes that the best source of data for the estimated amount of groundwater being used for McLennan County comes from the data reported to the Southern Trinity Conservation District for the year 2008 and data reported to the Texas Water Development Board for years prior to 2008.

3.3.1. Trinity Aquifer (Paluxy, Glen Rose, Hensell, Pearsall/Cow Creek/Hammett, Sligo, and Hosston Formations)

The best available data regarding groundwater use from the Trinity Aquifer within the District comes from reports to the Southern Trinity Groundwater Conservation District in the year 2008 of the amount of groundwater pumped by non-exempt well owners. The District rules have required reporting the amount of groundwater produced from all non-exempt wells drilled into the Trinity Aquifer, in McLennan County. Amount reported of groundwater pumpage from the well screened in the Trinity is 19,830 acre-feet for 2008 (Appendix 10.8). Appendix 10.9

contains tables listing the annual groundwater pumpage and water use in McLennan County for various years. The data in Appendix 10.9 was obtained from the Texas Water Development Board (TWDB) – Water Uses Survey Database for Historical Groundwater Pumping and Water Use.

3.3.2. Brazos River Alluvium Aquifer

The amount of production reported for 2003 by the TWDB from irrigation wells in the Brazos River Alluvium Aquifer within the District was 645 acre-feet (Appendix 10.10).

3.3.3. Woodbine Aquifer

There are no known non-exempt wells located in the portion of the Woodbine Aquifer within the District. The exempt-use, if any, is likely less than 5 acre-feet per year.

3.3.4. All Other Aquifers and Geological Formations or Series

There is no estimate of the amount of groundwater being used within the District on an annual basis for any other aquifers or geological formations or series.

3.4. Estimate of the Annual Amount of Recharge, From Precipitation, To The Groundwater Resources Within The District, 31 TAC §356.5(a)(5)(C); TWC §36.1071(e)(3)(C)

3.4.1. Trinity Aquifer (Paluxy, Glen Rose, Hensell, Pearsall/Cow Creek/Hammett, Sligo, and Hosston Formations)

There is no known recharge from precipitation to the Trinity Aquifer (Paluxy Aquifer, Glen Rose Formation, Hensell Aquifer, Pearsall/Cow Creek/Hammett/Sligo Formations and Hosston Aquifer) within the District.

3.4.2. Brazos River Alluvium Aquifer

Recharge from precipitation to the Brazos River Alluvium Aquifer is estimated to be 11,000 acre-feet per year within the District (Appendix 10.4, Page 10-28).

3.4.3. Woodbine Aquifer

The estimate of annual recharge from precipitation to the Woodbine aquifer within the District is 1,312 acre-feet (Appendix 10.2).

3.4.4. Washita/Fredericksburg Series

The estimate of annual recharge from precipitation to the Washita/Fredericksburg Series within the District is 28,373 acre-feet (Appendix 10.2).

3.4.5. All Other Aquifers, Formations, or Series

There are no recharge estimates available from precipitation to all other aquifers, formations, or series within the District.

3.5. Estimate of the Annual Volume of Flow Into and Out of the District Within Each Aquifer, and Between Aquifers, In the District, 31 TAC §356.5(a)(5)(E); TWC §36.1071(e)(3)(E)[1]

3.5.1. Trinity Aquifer (Hensell, Pearsall/Cow Creek/Hammett, Sligo, and Hosston Formations)

The estimated annual volume of flow into the District for the Trinity Aquifer is 9,324 acre-feet. The estimated annual volume of flow out of the District for the Trinity Aquifer is 464 acre-feet. The estimate of the annual volume of flow from the Glen Rose Formation to the Trinity Hensell Aquifer is 748 acre-feet. The estimated annual volume of flow from the Hensell Aquifer to Pearsall/Cow Creek/Hammett/Sligo formations is 1,483 acre-feet. The estimated annual volume of flow between from the Pearsall/Cow Creek/Hammett/Sligo formations to the Hosston Aquifer is 1,814 acre-feet (Appendix 10.2).

3.5.2. Trinity Aquifer (Paluxy Formation)

The estimated annual volume of flow into the District for the Paluxy Formation is 134 acre-feet. The estimated annual volume of flow out of the District for the Paluxy Formation is 54 acre-feet. The estimate of the annual volume of flow between from the Washita and Fredericksburg series to the Paluxy Formation is 91 acre-feet. The estimate of the annual volume of flow between from the Paluxy Formation to the Glen Rose Formation is 309 acre-feet (Appendix 10.2).

3.5.3. Trinity Aquifer (Glen Rose Formation)

The estimated annual volume of flow into the District for the Glen Rose Formation is 362 acre-feet. The estimated annual volume of flow out of the District for the Glen Ross Formation is 45 acre-feet. The estimate of the annual volume of flow from the Paluxy Formation to the Glen Rose Formation is 309 acre-feet. The estimate of the annual volume of flow between from the Glen Rose Formation to the Trinity Hensell Aquifer is 748 acre-feet (Appendix 10.2).

[1] All estimates of annual volumes of flow, except for the Brazos River Alluvium Aquifer, where obtained from Texas Water Development Board GAM Run 08-69 which is included in Appendix 10.2. Estimates of annual volumes of flow for the Brazos River Alluvium Aquifer where obtained from Technical Memorandum by Yelderman, 2008 of which a copy is included in Appendix 10.4 or through personal communication with Yelderman.

3.5.4. Brazos River Alluvium Aquifer

Estimated annual volume of flow into the district for the Brazos River Alluvium Aquifer is 340 acre-feet per year. Estimated annual volume of flow out of the district for the Brazos River Alluvium Aquifer is 360 acre-feet per year (Yelderman, 2008). The Brazos River Alluvium Aquifer is a water table aquifer and has no overlying aquifer. It is underlain in McLennan County by slowly permeable aquitards and therefore there is no measurable vertical inflow between the Brazos River Alluvium Aquifer and overlying or underlying units.

3.5.5. Woodbine Aquifer

The estimated annual volume of flow into the District for the Woodbine Aquifer is 40 acre-feet. The estimated annual volume of flow out of the District for the Woodbine Aquifer is 69 acre-feet. The estimate of the annual volume of flow between from the Washita and Fredericksburg series to the Woodbine Aquifer is 2 acre-feet (Appendix 10.2).

3.5.6. Washita/Fredericksburg Series

The estimated annual volume of flow into the District for the Washita/Fredericksburg Series is 426 acre-feet. The estimated annual volume of flow out of the District for the Washita/Fredericksburg Series is 291 acre-feet. The estimate of the annual volume of flow between from the Washita/Fredericksburg Series to the Woodbine Aquifer is 2 acre-feet. The estimate of the annual volume of flow between from the Washita/Fredericksburg Series to the Paluxy Formation is 91 acre-feet (Appendix 10.2).

3.6. Estimate of the Projected Surface Water Supply Within the District According To the Most Recently Adopted 2007 State Water Plan, 31 TAC §356.5(a)(5)(F); TWC §36.1071(e)(3)(F)

The projected surface water supply for McLennan County ranges from 114,869 acre-feet in 2010 to 115,431 acre-feet in 2060 (see Appendix 10.11, page 10-113).

3.7. Estimate of the Projected Total Demand for Water Within the District According to the 2007 State Water Plan 31 TAC §356.5(a)(5)(G); TWC §36.1071(e)(3)(G)

The 2007 State Water Plan lists the water demands within District as 92,053 acre-feet in 2010 and increasing to 117,827 acre-feet in 2060 (Appendix 10.12).

4. Performance Standards and Management Objectives For Effecting the Plan 31 TAC §356.5(a)(2)&(3); TWC §36.1071(e)(1)

The District will prepare and present an annual report to the Board of Directors on the performance of the District in regards to achieving management goals and objectives. The Board

will maintain the adopted report on file, for public inspection, at the District's offices. This methodology will apply to all management goals contained within this plan.

5. Actions, Procedures, Performance and Avoidance Necessary To Effectuate The Management Plan 31 TAC §356.5(A)(4); TWC §36.1071(E)(2)

The District's rules relating to permitting, well spacing, production limits, and transportation of groundwater outside of the district will be developed consistent with this plan and in consideration of the best technical data that are reasonable available regarding the groundwater resources within the District.

The District will seek cooperation with other agencies in the implementation of this plan and the management of groundwater supplies within the District. Activities of the District will be undertaken in cooperation and coordinated with the appropriate state, regional or local water management entity.

6. Evidence of Coordination and Adoption of Plan

6.1. Certified Copy of The District's Resolution Adopting The Plan 31 TAC §356.6(a)(2)

Appendix 10.14 contains a copy of the District resolution adopting this plan.

6.2. Evidence That The Plan Was Adopted After Notice and Hearing 31 TAC §356.6(a)(5)

Documentation demonstrating that the plan was adopted after appropriate public notice and hearing are located at Appendix 10.15 - Evidence of Notice and Hearing.

6.3. Coordination of Management Plan With Surface Water Management Entities 31 TAC §356.6(a)(4); TWC §36.1071(a)

The District provided a draft of its proposed Management Plan to the surface water management entities within its boundaries and invited comments from those entities. Copies of the letters transmitting the draft are located in Appendix 10.16.

6.4. Copy of District's Current Rules 31 TAC §356.6(a)(3)

A hard copy of the District's current, existing rules are included at Appendix 10.17.

7. Consideration of State Water Plan Water Supply Needs and Water Management Strategies 31 TAC §356.5(a)(7); TWC §36.1071(e)(4)

7.1. Water Supply Needs

Table C-47 (page 10-112 of Appendix 10.11) of Region G Water as adopted in the Texas Water Development Board 2007 State Water Plan list the total water supply and water demand projections for McLennan County. The total annual groundwater supply, shown at the bottom of page 10-112 of Appendix 10.11 ranges from 4,154 acre-feet per year in 2000 to 4,028 acre-feet in 2060. The District believes that the values for total annual groundwater supply and demand in this table are in error. Page 10-113 of Appendix 10.11 shows a table listing the projected surface water supplies for McLennan County as obtained from the TWDB 2007 State Water Plan database. Appendix 10.12 shows a table listing the projected water demands for McLennan County as obtained from the TWDB 2007 State Water Plan database.

There are a number of other sources indicating that the overall groundwater demand in the District is substantially more than the total water demands shown in the 2007 State Water Plan. Pursuant to the District's existing rules, well owners must meter and report groundwater production to the District on a monthly basis. They also pay a production fee on the reported quantity of water produced. The total amount of groundwater use reported in 2008 was 17,845 acre-feet (Appendix 10.8). The non-reported or under reported amount is estimated at 10% of the reported amount and the exempt-well use is estimated at 200 acre-feet. The estimate of total production is 19,830 acre-feet. The District believes that this estimate constitutes the best data currently available as to total groundwater production in the District.

7.2. Water Management Strategies

The adopted State Water Plan for Region G lists 15 general water management strategies. All of these strategies were reviewed and considered in the development of this plan. Appendix 10.13 from the 2007 State Water Plan lists the Projected Water Management Strategies for the District.

8. Management Goals, 31TAC §356.5(a)(6)

For each of the following management goals, except to the extent that a goal is not applicable or not cost-effective, the District has identified specific objectives and listed performance standards to assess the progress of those objectives. The Board will evaluate the District's progress for attaining its management goals by periodically reviewing the performance standards and possibly modifying the management plan.

8.1. Providing the Most Efficient Use of Groundwater 31 TAC 356.5(a)(1)(A); TWC §36.1071(a)(1)

In order to meet this goal, the District has established the following Management Objectives:

1. The District will establish a District Aquifer Water Level Observation Well Program with one or more observation well or wells located within the portions of the Trinity and Brazos River Alluvium aquifers within the District, and measure the depth to groundwater in each well or wells at least once annually.
2. The District will provide educational leadership to citizens within the District concerning efficient use of groundwater. The activity will be accomplished annually through at least one printed publication, such as a brochure, and one public presentation at service organizations and/or public schools.

In order to assess the progress of the objectives listed above, the District has designated the following Performance Standards:

1. Establish a District Aquifer Water Level Observation Well Program and its criteria, and begin measurements of the observation wells within one year following the adoption and approval of this plan.
2. Water levels at these observation well or wells will be measured a minimum of once annually.
3. The number of publications and speaking appearances by the District each year will be included in an annual report to the Board.

8.2. Controlling and Preventing Waste of Groundwater 31 TAC 356.5(a)(1)(B); TWC §36.1071(a)(2)

In order to meet this goal, the District has established the following Management Objectives:

1. The District will provide educational leadership to citizens within the District identifying ways to minimize and avoid the waste of groundwater. This will be accomplished annually through at least one printed or on-line publication, such as a brochure, and one public presentation at service organizations and/or public schools.
2. The District will implement a Well Closure Program. The objective of the well closure program is to obtain the closure and plugging of derelict and abandoned wells in a manner that is consistent with state law, for the protection of the aquifers, the environment, and the public safety. The District will conduct a program to identify, inspect, categorize and cause abandoned and derelict wells to be closed and plugged. The District will fund or otherwise achieve the closure of at least one abandoned well during years when the District's revenues are at a level sufficient to fund the program.

In order to assess the progress of the objective listed above, the District has designated the following Performance Standard:

1. The number of publications and speaking appearances by the District each year will be included in the annual report to the Board.

2. When applicable, the annual funding for the District's Well Closure Program, and the number of wells closed and plugged as a result of the Well Closure Program will be included in the annual report to the Board.

8.3. Controlling and Preventing Subsidence, 31 TAC 356.5(a)(1)(C); TWC §36.1071(a)(3)

This management goal is not applicable to the District. Because subsidence is not likely to affect the District, the District has not established any Management Objectives or Performance Standards for this conservation goal. Subsidence is unlikely to occur in the District. The geologic formations in the District range in age from Cretaceous (sandstones, limestones and shales of the Hosston, Hensell, Paluxy and Woodbine formations) to Quaternary (floodplain deposits of the Brazos River Alluvium). The Cretaceous formations are generally consolidated to semi-consolidated, and have little potential for compaction and subsidence due to groundwater withdrawals. The Brazos River Alluvium is poorly consolidated, but generally too thin to experience measurable (if any) subsidence due to groundwater withdrawals.

8.4. Addressing Conjunctive Surface Water Management Issues 31 TAC 356.5(a)(1)(D); TWC §36.1071(a)(4)

In order to meet this goal, the District has established the following Management Objective:

> Each year the District will confer at least once with the Brazos River Authority (BRA) and the cities of Crawford, Mart, Robinson, and Waco on cooperative opportunities for conjunctive resource management.

In order to assess the progress of the objective listed above, the District has designated the following Performance Standard:

> The number of conferences with the BRA and the cities of Crawford, Mart, Robinson and Waco on conjunctive resource management each year will be included in the annual report to the Board.

8.5. Addressing Natural Resource Issues that Impact the Use and Availability of Groundwater and Which are Impacted by the Use of Groundwater 31 TAC 356.5(a)(1)(E); TWC §36.1071(a)(5)

In order to meet this goal, the District has established the following Management Objectives:

1. Each year the District will confer at least once with a representative of the Texas Railroad Commission (RRC) on the impact of oil and gas production on groundwater availability and quality, as well as the impact of groundwater production on the production of oil and gas in the District.

2. Also, during each year the District will evaluate permit applications for new wells, if any are filed, and the information submitted by the applicants on those wells prior to drilling, in order to assess the impact of these wells on the groundwater resources in the District.

In order to assess the progress of the objectives listed above, the District has designated the following Performance Standards:

1. The number of conferences with a representative of the Texas RRC each year will be included in an annual report to the Board.
2. Annual reports to the District Board of Directors on the number of new well permit applications on file, the number of evaluations and the possible impacts of those new wells on the groundwater resources in the District.

8.6. Addressing Drought Conditions 31 TAC 356.5(a)(1)(F); TWC §36.1071(a)(6)

In order to meet this goal, the District has established the following Management Objective:

The District will track rainfall records from nearby weather stations on an on going basis. This data will be compared to hydrographs in monitoring wells used by the District. Additionally, the District will monitor the updated Palmer Drought Severity Index (PDSI) map by downloading at least one map monthly and check for periodic updates to the Drought Preparedness Council Situation Report posted on the Texas Department of Public Safety web site and the Agricultural Drought Task Force hosted by the Texas Agrlife Extension. The district staff will provide in its annual report in January the precipitation amounts, water levels and any apparent associated trends. Upon Board approval, the District's web site and/or local newspapers will disseminate information to the public.

In order to assess the progress of the objective listed above, the District has designated the following Performance Standards:

Report on precipitation amounts as compared to water levels within the District; and, Manner and timing of distribution of precipitation and water level data to the public.

8.7. Addressing Conservation, Recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, or Brush Control, where Appropriate and Cost Effective 31 TAC 356.5(a)(1)(G); TWC §36.1071(a)(7)

In order to meet this goal, the District has established the following Management Objective:

The District will provide educational leadership to citizens within the District concerning groundwater conservation, rainwater harvesting, and brush control. The educational efforts will be through at least one printed publication, such as a brochure, and at least one public speaking program at a service organization and/or public school. Each of the following topics will be addressed:

A. Conservation of groundwater

The District will provide educational leadership to citizens within the District concerning groundwater conservation,. The educational efforts will be through at least one printed publication, such as a brochure, annually and at least one public speaking program at a service organization and/or public school annually.

B. Rainwater Harvesting

The District will provide educational leadership to citizens within the District concerning, rainwater harvesting. The educational efforts will be through at least one printed publication, such as a brochure, annually and at least one public speaking program at a service organization and/or public school annually.

C. Brush Control

The District will provide educational leadership to citizens within the District concerning brush control. The educational efforts will be through at least one printed publication, such as a brochure, annually and at least one public speaking program at a service organization and/or public school annually.

In order to assess the progress of the objectives listed above, the District has designated the following Performance Standard:

The number of brochures issued and the number of public speaking programs regarding water conservation, rainwater harvesting, and brush control will be included in the annual report to the District Board.

8.7.1. Recharge Enhancement

The District has opted to not include in this plan any management objectives related to recharge enhancement because the District does not consider these measures to be appropriate or cost effective for the District. Therefore, this goal is not applicable to the District at this time.

8.7.2. Precipitation Enhancement

The District has opted to not include in this plan any management objectives related to precipitation enhancement because the District does not consider these measures to be appropriate or cost effective for the District. Therefore, this goal is not applicable to the District at this time.

8.8. Addressing, in a Quantitative Manner, the Desired Future Condition of the Groundwater Resources in the District, 31 TAC 356.5(a)(1)(H); TWC §36.1071(a)(8)

Groundwater Management Area 8 (GMA 8) has established Desired Future Conditions (DFCs) for all aquifers within the District. Pursuant to those DFCs Texas Water Development Board has established the Managed Available Groundwater within the Southern Trinity Groundwater Conservation District for the Trinity, Woodbine, and Brazos River Alluvium aquifers (Appendices 10.5, 10.6, and 10.7).

8.8.1. Trinity Aquifer (Paluxy, Glen Rose, Hensell, Pearsall/Cow Creek/Hammett, Sligo, and Hosston Formations)

Currently there is no significant use of water from the Paluxy or Glen Rose formations in McLennan County. Groundwater wells in the Trinity Aquifer are completed in a variety of ways and may be open, perforated, or screened in both the Hensell and Hosston formations. Therefore, the District manages them as a single aquifer. The average DFC of these two formations is 508 feet of draw down per 50 years or 10.16 feet of draw down per year. The District will limit the total amount of groundwater produced or withdrawn from the portion of the Trinity Aquifer within the District as necessary to limit the draw down in such aquifer to less than 508 feet in the year 2050.

In order to meet this goal, the District has established the following Management Objective:

> The District will measure the water level in one or more wells open, perforated, or screened in the portion of the Paluxy, Glen Rose, Hensell and/or Hosston formations within the District and shall calculate the annual and cumulative draw down and provide such information to the District's Board of Directors.

In order to assess the progress of the objectives listed above, the District has designated the following Performance Standard:

> The District will provide an analysis report of the effects from pumping on groundwater levels, including the annual and cumulative draw down statistics, in the annual report to the District Board of Directors.

8.8.2. Woodbine Aquifer

The Woodbine Aquifer is a minor aquifer that extends only into a very small portion of the northernmost part of the McLennan County. The outcrop of the Woodbine occurs within the District boundaries but is covered by alluvium over much of its area. There is no or very little use of the groundwater in the portion of the Woodbine Aquifer within McLennan County and currently the District is not aware of any well that is operational in the portion of the Woodbine Aquifer that is located within the District. The average DFC for the Woodbine formation is 61

feet of drawdown per 50 years or 0.8 feet of drawdown per year. The District will limit the total amount of the groundwater produced or withdrawn from the Woodbine Aquifer as necessary to meet the DFCs.

In order to meet this goal, the District has established the following Management Objective:

> The District will attempt to locate a well screened in the Woodbine Aquifer and if located will annually measure the water level in one or more wells open, perforated or screened in the portion of the Woodbine Aquifer within the District, and shall calculate the annual and cumulative draw down and provide such information to the District's Board of Directors.

In order to assess the progress of the objectives listed above, the District has designated the following Performance Standard:

> If the District locates a well within the Woodbine Aquifer and within the District, then the District will provide an analysis report of the effects from pumping on groundwater levels, including the annual and cumulative draw down statistics, if any, in the annual report to the District Board of Directors.

8.8.3. Brazos River Alluvium Aquifer

The average DFC of the Brazos River Alluvium Aquifer is to maintain 82% of estimated saturated thickness after 50 years McLennan County. The District will limit the total amount of groundwater produced or withdrawn from the portion of the Brazos River Alluvium Aquifer as necessary to meet the DFCs.

In order to meet this goal, the District has established the following Management Objective:

> The District will annually measure the water level in one or more wells open, perforated, or screened in the portion of the Brazos River Alluvium within the District and shall calculate the annual and cumulative draw down and provide such information to the District's Board of Directors.

In order to assess the progress of the objectives listed above, the District has designated the following Performance Standard:

> The District will provide an analysis report of the effects from pumping on groundwater levels, including the annual and cumulative draw down statistics, in the annual report to the District Board of Directors.

9. References

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10.1 Geological Cross Section Showing the Outcrop and Recharge Area of the Trinity Aquifer

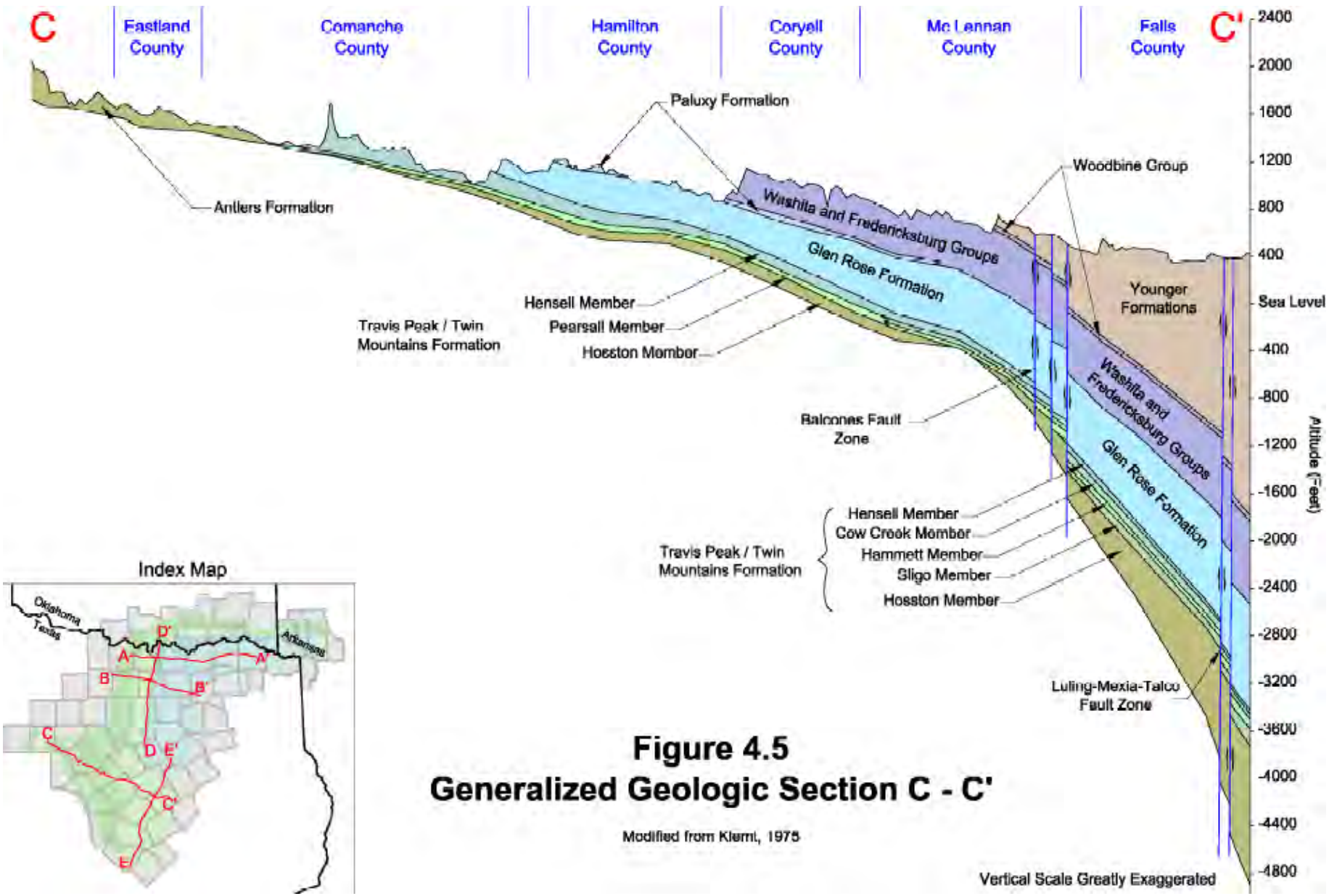


Figure 4.5
Generalized Geologic Section C - C'

Modified from Klemt, 1975

10.2. TWDB GAM Run 08-69 Trinity Aquifer

GAM Run 08-69

by Mr. Wade Oliver
Texas Water Development Board
Groundwater Availability Modeling Section
(512) 463-3132
September 10, 2008

EXECUTIVE SUMMARY:

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

(1) the annual amount of recharge from precipitation to the groundwater resources within the district, if any;
(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 purpose of this model run is to provide information to the currently unconfirmed McLennan County Groundwater Conservation District for its groundwater management plan. The groundwater management plan for McLennan County Groundwater Conservation District is due for approval by the executive administrator of the Texas Water Development Board three years after the date of the district confirmation election, currently scheduled for November 2008.

This report discusses the methods, assumptions, and results from model runs using the groundwater availability model for the northern section of the Trinity Aquifer. Table 1 summarizes the groundwater availability model data required by statute for McLennan County Groundwater Conservation District's groundwater management plan. Figure 1 shows the area of the model from which the values in Table 1 were extracted.

The Brazos River Alluvium Aquifer also underlies the McLennan County Groundwater Conservation District; however, a groundwater availability model for this minor aquifer has not been completed at this time. If the district would like information for the Brazos River Alluvium Aquifer, they may request it from the Groundwater Technical Assistance Section of the Texas Water Development Board.

METHODS:

We ran the groundwater availability model for the northern section of the Trinity Aquifer and (1) extracted water budgets for each year of the 1980 through 1999 period and (2) averaged the annual water budget values for recharge, surface water outflow, inflow to the district, outflow from the district, net inter-aquifer flow (upper), and net inter-aquifer flow (lower) for the portions of the Trinity Aquifer located within the district.

PARAMETERS AND ASSUMPTIONS:

- We used version 1.01 of the groundwater availability model for the northern section of the Trinity Aquifer. See Bené and others (2004) for assumptions and limitations of the model.

- The northern section of the Trinity Aquifer model includes seven layers representing:

    1. the Woodbine Aquifer (Layer 1),
    2. the Washita and Fredericksburg Confining Unit (Layer 2),
    3. the Paluxy Aquifer (Layer 3),
    4. the Glen Rose Confining Unit (Layer 4),
    5. the Hensell Aquifer (Layer 5),
    6. the Pearsall/Cow Creek/Hammett/Sligo Confining Unit (Layer 6), and
    7. the Hosston Aquifer (Layer 7).

- The mean absolute error (a measure of the difference between simulated and actual water levels during model calibration) for the four main aquifers in the model (Woodbine, Paluxy, Hensell, and Hosston) for the calibration and verification time periods (1980 to 2000) ranged from approximately 37 to 75 feet. The root mean squared error was less than ten percent of the maximum change in water levels across the model (Bené and others, 2004).

- The evapotranspiration package of the groundwater availability model was used to represent evaporation, transpiration, springs, seeps, and discharge to streams not modeled by the streamflow-routing package as described in Bené and others (2004).

- We used Processing Modflow for Windows (PMWIN) version 5.3 (Chiang and Kinzelbach, 2001) as the interface to process model output results.

RESULTS:

A groundwater budget summarizes the water entering and leaving the aquifer according to the groundwater availability model. Selected components were extracted from the groundwater budget for the aquifers located within the district and averaged over the duration of the calibrated portion of the model run (1980 to 1999) in the district, as shown in Table 1. The components of the modified budgets shown in Table 1 include:

- Precipitation recharge—This is the areally distributed recharge sourced from precipitation falling on the outcrop areas of the aquifers (where the aquifer is exposed at land surface) within the district.

- Surface water outflow—This is the total water exiting the aquifer (outflow) to surface water features such as streams, reservoirs, and drains (springs).

- Flow into and out of district—This component describes lateral flow within the aquifer between the district and adjacent counties.

- Flow between aquifers—This describes the vertical flow, or leakage, between aquifers or confining units. This flow is controlled by the relative water levels in each aquifer or confining unit and aquifer properties of each aquifer or confining unit that define the amount of leakage that occurs. “Inflow” to an aquifer from an overlying or underlying aquifer will always equal the “Outflow” from the other aquifer.

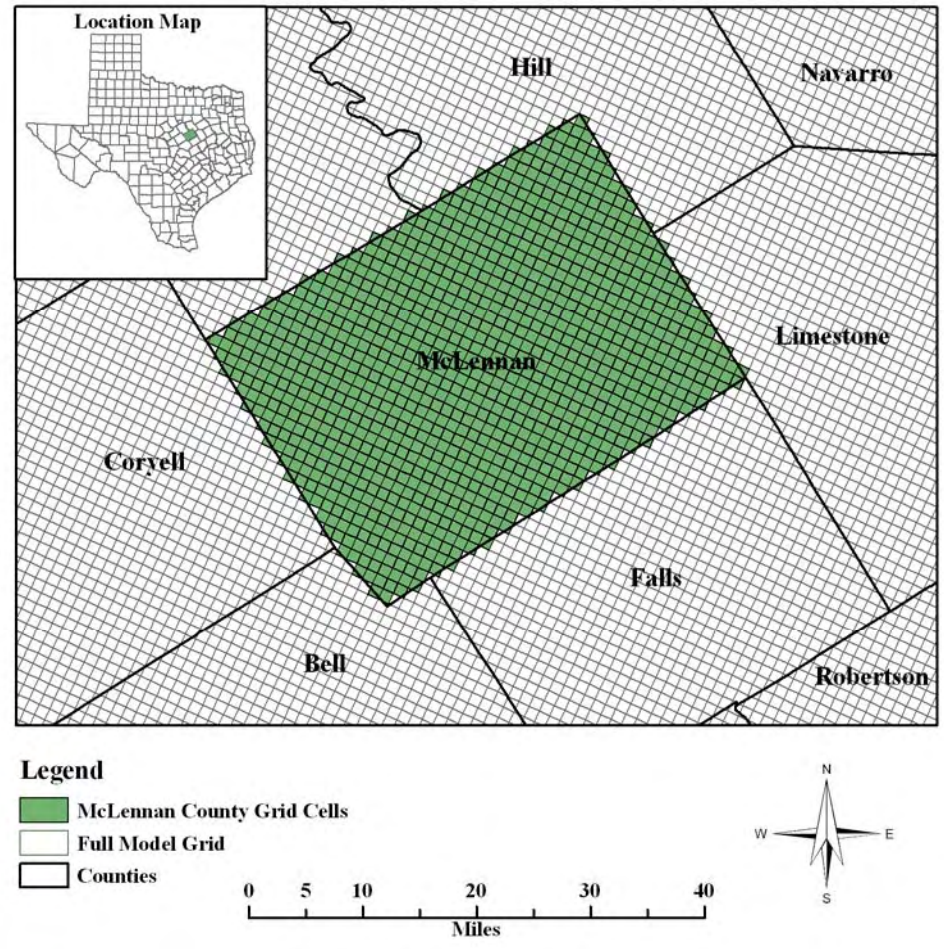
The information needed for the district’s management plan is summarized in Table 1. It is important to note that sub-regional water budgets are not exact. This is due to the size of the model cells and the approach used to extract data from the model. To avoid double accounting, a model cell that straddles a political boundary, such as district or county boundaries, 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 needed for McLennan County Groundwater Conservation District's groundwater management plan. All values are reported in acre-feet per year. All numbers are 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	Woodbine Aquifer	1,312
	Washita and Fredericksburg series	28,373
	Paluxy Aquifer	0
	Glen Rose Formation	0
	Hensell Aquifer	0
	Pearsall/Cow Creek/Hammett/Sligo formations	0
	Hosston Aquifer	0
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers*	Woodbine Aquifer	36
	Washita and Fredericksburg series	9,534
	Paluxy Aquifer	0
	Glen Rose Formation	0
	Hensell Aquifer	0
	Pearsall/Cow Creek/Hammett/Sligo formations	0
	Hosston Aquifer	0
Estimated annual volume of flow into the district within each aquifer in the district	Woodbine Aquifer	40
	Washita and Fredericksburg series	426
	Paluxy Aquifer	134
	Glen Rose Formation	362
	Hensell Aquifer	3,011
	Pearsall/Cow Creek/Hammett/Sligo formations	12
	Hosston Aquifer	6,301
Estimated annual volume of flow out of the district within each aquifer in the district	Woodbine Aquifer	69
	Washita and Fredericksburg series	291
	Paluxy Aquifer	54
	Glen Rose Formation	45
	Hensell Aquifer	181
	Pearsall/Cow Creek/Hammett/Sligo formations	0
	Hosston Aquifer	283
Estimated net annual volume of flow between each aquifer in the district	Washita and Fredericksburg series to Woodbine Aquifer	2
	Washita and Fredericksburg series to Paluxy Aquifer	91
	Paluxy Aquifer to Glen Rose Formation	309
	Glen Rose Formation to Hensell Aquifer	748
	Hensell Aquifer to Pearsall/Cow Creek/Hammett/Sligo formations	1,483
	Pearsall/Cow Creek/Hammett/Sligo formations to Hosston Aquifer	1,814

* The evapotranspiration package of the groundwater availability model includes evaporation, transpiration, springs, seeps, and discharge to streams not modeled by the streamflow-routing package as described in Bené and others (2004). The surface water outflow estimate in Table 1 includes the results from the evapotranspiration package for model grid cells containing springs and streams not modeled by the streamflow-routing package.

Figure 1: Area of the groundwater availability model for the northern section of the Trinity Aquifer from which the information in Table 1 was extracted. Note that model grid cells that straddle a political boundary were assigned to one side of the boundary based on the centroid of the model cell as described above.



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Chiang, W., and Kinzelbach, W., 2001, Groundwater Modeling with PMWIN, 346 p.

Cynthia K. Ridgeway is Manager of the Groundwater Availability Modeling Section and is responsible for oversight of work performed by employees under her direct supervision. The seal appearing on this document was authorized by Cynthia K. Ridgeway, P.G., on September 10, 2008.

10.3. TCEQ – Designation of Priority Groundwater Management Area

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 17, 2008

Rodney Kroll, President
McLennan Groundwater Conservation District
4900 Sanger Avenue
Waco, Texas 76710

Re: Designation of the Central Texas Trinity Aquifer Priority Groundwater Management Area (PGMA); TCEQ Docket No. 2008-0099-MIS; SOAH Docket No. 582-08-1502

Dear Mr. Kroll:

The Texas Commission on Environmental Quality (TCEQ) designated the Central Texas Trinity Aquifer PGMA in Bosque, Coryell, Hill, McLennan, and Somervell counties and recommended a groundwater conservation district or districts be created. The TCEQ considered this matter at its public agenda in Austin on October 22, 2008, and the designation of the area became effective on October 31, 2008.

A copy of the TCEQ order designating the subject PGMA is being provided to you in accordance with Title 30 Texas Administrative Code, Section 294.43. Copies of the order have also been provided to the Texas AgriLife Extension Service requesting groundwater management educational programming in the PGMA, and to the commissioners courts of the affected counties notifying them of education responsibilities under Texas Water Code, Section 35.012(c).

If you have any questions about this matter please contact Mr. Kelly Mills of my staff at 512.239.4512 or kmills@tceq.state.tx.us.

Sincerely,

Todd Chenoweth, Director
Water Supply Division

TC/mlc

1 Enclosure/ TCEQ Docket 2008-0099-MIS; SOAH 582-08-15 designation order

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AN ORDER Designating the Central Texas - Trinity Aquifer - Priority Groundwater Management Area and Approving the Executive Director's Recommendations Regarding Groundwater Conservation Districts in the PGMA, TCEQ Docket No. 2008-0099-MIS; SOAH Docket No. 582-08-1502

On October 22, 2008, the Texas Commission on Environmental Quality (Commission or TCEQ) considered Executive Director's Petition for Designation of the Central Texas – Trinity Aquifer – Priority Groundwater Management Area (PGMA) and the Executive Director's recommendations for creation of Groundwater Conservation Districts (GCDs) in the PGMA. The Administrative Law Judge (ALJ) with the State Office of Administrative Hearings (SOAH), presented a Proposal for Decision (PFD) which recommended that the Commission designate the Central Texas PGMA and approve the Executive Director's recommendations for creation of GCDs in the PGMA. After considering the ALJ's PFD, the Commission adopts the following Findings of Fact and Conclusions of Law:

FINDINGS OF FACT

Procedural History

1. In 1990, the Executive Director (ED) wrote a report concerning critical area designation in McLennan, Coryell, Bosque, Hill, Somervell, Brown, Erath, Callahan, Falls, Hamilton, Eastland, Bell, Lampasas, Mills, Comanche, Limestone, and Milam Counties. The Texas Water Commission decided not to designate the area at that time, but determined that the area should be restudied in the future.

2. In 1998, the ED reinitiated the study and requested reports from the Texas Water Development Board (TWDB) and Texas Parks & Wildlife Department (TPWD). The TWDB and TPWD prepared reports and sent them to the ED in 1999.

3. On October 18, 2004, the Executive Director sent notice of the initiation of the study to approximately 532 stakeholders. These stakeholders included area legislators, planning entities, county officials, municipalities, river authorities, groundwater conservation districts, water districts, entities supplying public drinking water, agricultural interest groups, selected federal and state agencies, and environmental interest groups. Seven comments were received.

4. The Executive Director mailed notice of its draft report, "Updated Evaluation for the Central Texas – Trinity Aquifer – Priority Groundwater Management Study Area," (the report) to the same stakeholders. Three stakeholders provided written comment after this notice was given.

5. When the report was final, notice of the final report was sent to the same stakeholders and notice was placed in the *Texas Register*. A copy of the draft report was placed in the county clerk's offices in the proposed PGMA, libraries and public places in the 16-county study area, and all GCDs adjacent to or in the study area.

6. Notice of the hearing was mailed on February 8, 2008, to all the stakeholders, governing bodies of each county, adjacent GCDs, river authorities, municipalities, water authorities or other entities that supply public drinking water, including each holder of a CCN, and irrigation districts in the proposed PGMA.

7. Notice of the hearing was published in the following newspapers:

The Clifton Record, Bosque County, February 29, 2008
Bosque County News, Bosque County, February 22, 2008
Gatesville Messenger, Coryell County, February 27, 2008
The Copperas Cove Leader, Coryell County, February 22, 2008
The Mart Messenger, Coryell County, February 22, 2008
The Hillsboro Reporter, Hill County, February 25, 2008
Waco Tribune Herald, McLennan County, February 27, 2008

The Lonestar Iconoclast, McLennan County, February 22, 2008
The McGregor Mirror, McLennan County, February 26, 2008
The Glen Rose Reporter, Somervell County, February 26, 2008

8. The ALJ conducted a preliminary hearing and took jurisdiction of this matter on April 3, 2008 in Waco, Texas.

9. Hearing on the merits was held May 1, 2008, in Waco, Texas.

10. At the Evidentiary Hearing, parties were allowed to present evidence and cross examine the Executive Director's witnesses.

Designation of the Central Texas – Trinity Aquifer – PGMA

11. Water needs throughout the study area are primarily met with surface water. Despite that fact, almost constant quantities of groundwater are being used in the study area.

12. The Trinity Group aquifer is the only major aquifer in the study area.

13. The Trinity Aquifer supplies about 52.9 percent of the groundwater available in the study area.

14. The Trinity Aquifer provides all of the groundwater in Callahan, Comanche, Coryell, Eastland, Erath, Hamilton, Mills, and Somervell Counties.

15. The major portion of groundwater used in Bell, Brown, and Hill counties is from the Trinity Aquifer.

16. The Trinity Aquifer supplies water to Bosque and McLennan Counties.

17. The population of the study area will increase by approximately 32.5 percent from 2000 to 2030.

18. Bosque, Coryell, and Somervell Counties will experience an increase in population from 2000 to 2030 of more than 30% percent.

19. Major water level declines occur in areas of high groundwater usage in the study area.

20. Groundwater declines occur only in the confined portion of the Trinity aquifer and not in the outcrop or recharge zones. In the outcrop area the water levels fluctuate according to the amount of rainfall. Counties in the outcrop area are in the western part of the study area, and include Erath, Comanche, Lampasas, and Hamilton, Callahan, Brown, Eastland, and Mills counties

21. More groundwater is being withdrawn than is effectively recharged to aquifers in the Central Texas PGMA study area.

22. Historically, pumpage in the study area has exceeded effective recharge resulting in declining water levels, removal of water from aquifer storage, and possible deterioration of chemical quality.

23. The greatest groundwater level declines in the study area are from wells completed in the Trinity Aquifer Hosston Formation in the Waco metropolitan area in McLennan County with declines of over 400 feet. The Trinity Aquifer Hensell Formation has also recorded significant water-level declines with well over 200 feet of decline in Coryell County. Declines from 171 feet have been shown in Somervell County, and 337 feet in Bosque County.

24. The 2004 GAM Report for the Northern Trinity/Woodbine Aquifer indicates that the model runs predict future water-level drawdown and recovery in the study area. Up to 100 feet of drawdown is predicted to occur in Bosque, Falls, Limestone, and McLennan counties. Although the report indicates that artesian pressure could recover due to reduction in pumping, the predictive simulation very likely underestimated future pumping and future pumping would likely be at the same or greater levels.

25. The 2006 Region G Water Plan states that the present use of groundwater exceeds or is near the estimate of long-term reliable groundwater supply in many counties in the study area. The pumping in Bell, Bosque, Callahan, Coryell, Eastland, Erath, Falls, Hill, Lampasas, Limestone, McLennan and Somervell counties is at or above the estimated long term sustainable supply.

26. The 2007 State Water Plan (draft at the time of the report) illustrates that the most significant historical water-level declines in the state have occurred in the Trinity aquifer in the study area centered in McLennan County. Also, there are water level declines of between 50 and 250 feet from 1994 to 2004 in Bell, Bosque, Falls, Hill and McLennan counties

27. The "Assessment of Groundwater Use in the Northern Trinity Aquifer Due to Urban Growth and Barnett Shale Development" (the Barnett Shale report) was prepared because the TWDB was concerned about the effects of growth and gas exploration on groundwater resources in the area. These effects were not considered in the Region G Plan.

28. Bell County has a GCD, the Clearwater Underground Water Conservation District.

29. Falls and Limestone County do not anticipate new groundwater users or significant new demands on the Trinity Aquifer through the year 2030.

30. The Barnett Shale report finds that water use for the study area is likely to increase to 2.1 million acre feet of water by 2025; Barnett Shale use may rise from about 10,000 to about 25,000 acre feet per year; and groundwater modeling results suggest that water levels may decline from less than 10 to more than 150 feet.

31. Barnett Shale water use and demand projections could push Trinity aquifer use above the regional water plan estimates of sustainable supply for Bosque, Comanche, Erath, Hamilton, Hill, and Somervell counties.

32. There is no historical use of groundwater from Hamilton County for exploration or production in the Barnett Shale.

33. Erath and Comanche are already in confirmed GCDs.

34. Water quality has been impacted by long-term urbanization of the region and other activities such as confined animal feeding operations.

35. Groundwater use can decrease groundwater reserves, which impacts the springs, which in turn impacts species that rely on surface water. Long term decreases in groundwater can exacerbate water quality and impact these species.

36. Designation of the area as a PGMA could lead to more efficient use of existing water resources of the area.

37. Coryell, Hill, Bosque, McLennan, and Somervell Counties are experiencing or are expected to experience critical groundwater problems in the next 25 years.

38. The other eleven counties in the study area, except Eastland County, are not experiencing critical groundwater problems within the next 25 years.

39. Eastland County, which has experienced and may continue to experience water shortages for irrigation, does not appear to have any long term water level declines in the Trinity aquifer. This indicates that there has been no significant mining of the aquifer in Eastland County.

Groundwater Conservation District Recommendations

40. There are no federal or state agencies that have the authority to regulate groundwater in this area, and local governments cannot provide the type of groundwater regulation required to protect these resources.

41. GCDs are statutorily charged and authorized to manage groundwater resources within their jurisdiction. They have many powers, such as enacting rules requiring well permits, regulating spacing of wells, and regulating transfers of groundwater out of the districts.

42. GCDs must adopt management plans and join other districts in a Groundwater Management Area (GMA) in joint planning, including determining "desired future conditions" for the aquifers in the GMA.

43. Management through a GCD or GCDs would be the best management option for the five counties in the PGMA.

44. GCDs are the preferred method of groundwater management in the State.

45. The proposed PGMA could benefit from GCD monitoring, assessment, planning, and permitting programs as well as water well spacing and well closure programs for the Trinity Aquifer.

46. A GCD must generate revenue, usually though a property tax or from well production fees.

47. The feasibility of a GCD is dependent upon many factors, including the size and total tax base of the GCD, the quantity of water that is subject to production fees, and the scale and scope of the programs undertaken by the GCD.

48. Creation of a GCD or GCDs in the PGMA is feasible and practicable.

49. A minimum of about $250,000 in revenue must be generated annually to operate a single-county GCD and fund meaningful groundwater management programs.

50. Under Chapter 36 of the Texas Water Code, a GCD may not levy a tax at a rate exceeding 50 cents per $100 assessed valuation to pay for maintenance and operating expenses.

51. Within the proposed PGMA, only McLennan County could generate tax revenue to support a single-county GCD if the rate was less than $0.01 per $100 valuation.

52. Counties in the PGMA other than McLennan would require higher tax rates, but it is feasible to create a GCD with tax powers in those counties.

53. A multi-county GCD would be more economical, have the money to perform more regulatory functions, and would cover a larger area of the aquifer.

54. It is doubtful that any of the counties in the PGMA study area would be able to finance meaningful single-county GCD operation through well production fees alone.

55. Funding of a GCD by both property taxes and production fees is the best option for the PGMA counties.

56. One GCD in all five counties is the most feasible, economic, and practicable option for protection and management of the groundwater resources. This would also avoid duplication of administrative and groundwater management programs and would cover the largest area of the aquifer. Local committees could be established for localized input.

57. Two GCDs have already been created in the proposed PGMA by legislation. These two districts are the McLennan County GCD and the Tablerock GCD in Coryell County. The legislation for both GCDs requires that by September 1, 2011, both of the GCDs' boundaries must include one adjacent county, or the districts shall be dissolved by the TCEQ. Neither GCD has been confirmed as yet.

58. If both GCDs are confirmed and a county is added to both GCDs, two multi-county GCDs in the proposed PGMA would be the best option for the PGMA. One GCD would consist of Bosque, Somervell, and Coryell Counties, and the other would consist of McLennan and Hill Counties.

CONCLUSIONS OF LAW

Jurisdiction and Notice

1. Texas Water Code § 35.008(a) gives the Commission authority to designate a PGMA in the Central Texas Trinity Aquifer Area.

2. SOAH has jurisdiction over matters related to the hearing in this matter, including the authority to issue a proposal for decision with Findings of Fact and Conclusions of Law, under Tex. Gov't Code Chapter 2003; Tex. Water Code § 35.008.

3. SOAH obtained jurisdiction of this matter on April 3, 2008.

4. The Executive Director provided notice of the commencement of his PGMA study as required by Tex. Water Code § 35.007(c) and Tex. Admin. Code Chapter 294.

5. The Executive Director provided notice of this PGMA report as required by Tex. Water Code § 35.007(g) and Tex. Admin. Code Chapter 294.

6. The Executive Director provided notice of the evidentiary hearing as required by Tex. Water Code § 35.009 and Tex. Admin. Code Chapter 294.

Hearing

1. An evidentiary hearing concerning the creation of a PGMA was held in one of the counties in which the PGMA would be located as required by Tex. Water Code § 35.008(c).

2. The evidentiary hearing concerning creation of the PGMA complied with Tex. Water Code § 35.008.

PGMA Designation

1. The hearing on the petition to designate the Central Texas – Trinity Aquifer – PGMA was conducted in accordance with Water Code Chapter 35 and the Commission's and SOAH's applicable procedural rules.

2. Under Tex. Water Code § 35.007(a), PGMAs are those areas of the State that are experiencing or are expected to experience, within the immediately following 25-year period, critical groundwater problems, including shortages of surface water or groundwater, land subsidence resulting from groundwater withdrawal, and contamination of groundwater supplies.

3. The five counties of Bosque, McLennan, Hill, Coryell, and Somervell are experiencing or are expected to experience, within the immediately following 25-year period, critical groundwater problems, including shortages of surface water or groundwater.

Creation of a District

1. Tex. Water Code § 35.008(b) and (g) require the TCEQ to consider and recommend whether one of more GCDs should be created over all or part of a PGMA, whether all or part of the land in the PGMA should be added to an existing district, or whether a combination of these actions should be taken.

2. Tex. Water Code § 35.008(b) requires the TCEQ to determine whether a GCD is feasible and practicable.

3. GCDs are the best management tool for the PGMA.

4. GCDs are feasible and practicable in the five-county PGMA.

5. If elections do not confirm McLennan County GCD and Tablerock GCD, the most practicable and feasible GCD option for the five-county PGMA is one GCD that covers all five counties.

6. Because two GCDs, McLennan County and Tablerock GCD, have been legislatively created in the PGMA, and both GCDs are required to add a county by September 1, 2011, and, if either or both GCDs add a county by September 1, 2011, and are confirmed by September 1, 2012, then the most feasible and practicable option for GCD creation is two GCDs. One GCD would consist of Bosque, Somervell, and Coryell Counties, and the other would consist of McLennan and Hill Counties.

7. The enabling legislation of the McLennan District and the Tablerock District allow those districts to have until September 1, 2012, to be confirmed at a confirmation election.

EXPLANATION OF CHANGES TO ALJ'S OCTOBER 24, 2005 ORDER

During its October 22, 2008, open meeting, the Commission adopted all but one of the revisions to the proposed Order recommended by the ALJ in his September 9, 2008 letter, as thereafter revised by the ALJ during his presentation during the October 22, 2008 meeting. The ALJ during his presentation read during the open meeting a revised Conclusion of Law No. 6, which he requested replace the version that he earlier recommended in his September 9, 2008 letter. By letter dated October 22, 2008, and distributed to all parties, the ALJ states how Conclusion of Law No. 6 was revised by the ALJ and read at the open meeting. However, while the ALJ recommended on page 5 of his September 9, 2008 letter the addition of proposed Conclusion of Law No. 9 as recommended by the Executive Director in his response to McLennan County Groundwater Conservation District's exceptions, the Commission did not adopt that recommendation and voted to deny the recommendation to add Conclusion of Law No. 9 to its order. Accordingly, this Order contains the revisions the ALJ recommended to Finding of Fact Nos. 27, 28, 41, 57, and 58, and to Conclusions of Law Nos. 3 and 6. It also contains new Conclusion of Law No. 7 as requested by McLennan GCD and recommended by the ALJ on page four of his September 9, 2008 letter.

The Commission also adopted the two minor revisions to Finding of Fact No. 1 and Finding of Fact No. 20 recommended by the Executive Director during the October 22, 2008 open meeting. Thus, revised Finding of Fact No. 1 in this Order includes a reference to Milam County along with the references to the other 16 counties that were included in the 1990 report, and the third sentence in Finding of Fact No. 20 is revised to refer to the western part of the study area and not to the eastern part of the study area as requested by the Executive Director. The Commission also determined to add a new Ordering Provision, which is Ordering Provision

No. 5 in this Order, which requires the Commission's Chief Clerk to forward a copy of this order to all persons on the mailing list for this matter.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY THAT:

1. The Central Texas – Trinity Aquifer – PGMA be created to cover Bosque, McLennan, Coryell, Hill, and Somervell Counties.

2. All other motions, requests for entry of specific findings of fact or conclusions of law and any other requests for general or specific relief not expressly granted herein are hereby DENIED for want of merit.

3. The effective date of this Order is the date the Order is final as provided by Tex. Gov't Code § 2001.144.

4. If any provision, sentence, clause, or phrase of this Order is for any reason held to be invalid, the invalidity of any portion shall not affect the validity of the remaining portions of the Order.

5. The Chief Clerk of the Texas Commission on Environmental Quality shall forward a copy of this order to all persons on the mailing list for this matter.

Issue Date: OCT 31 2008

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

Buddy Garcia

Buddy Garcia, Chairman

10.4. Yelderman - Brazos River Alluvium Aquifer Flow System-Technical Memo

The Brazos River Alluvium Aquifer Flow System in McLennan County, Texas

Technical Memo
11-1-08

by
Joe C. Yelderman Jr.

Baylor University
Department of Geology
Waco, Texas

The Brazos River Alluvium Aquifer Flow System in McLennan County, Texas

Introduction

The Brazos River alluvium is composed of interbedded sediments ranging in size from clays to gravels. These sediments were deposited by the Brazos River and occur both in the modern floodplain and in terraces. The lower (younger) terraces in some locations are laterally contiguous with the modern floodplain and hydrologically connected but in other locations they are separated topographically by underlying bedrock formations that are less permeable. In some places the Brazos River sediments have been reworked by tributary streams and redeposited in the floodplain or terraces along with the local tributary deposits. These processes have formed a sediment package with interfingering laterally and multiple fining-upward sequences vertically. The result is a complex geological framework for an unconfined aquifer that has significant lateral and vertical heterogeneity. Because these alluvial sediments occur immediately adjacent to the present Brazos River channel, a hydrologic connection between groundwater and surface water appears obvious. Groundwater levels are known to fluctuate in response to river levels indicating a fairly direct connection (Cronin and Wilson,1967; Pinkus,1987). However, the flow directions are less obvious to the casual observer and because of the system heterogeneity, recharge and discharge volumes are difficult to quantify. This technical memo describes the flow system for the Brazos River Alluvium Aquifer in McLennan County and estimates the annual recharge and discharge volumes.

Flow System Description

A flow system is the groundwater flow in a portion of an aquifer that occurs from recharge area to point of discharge. The description of a flow system includes the area (or location) of groundwater recharge, the direction of groundwater flow and the area (or location) of groundwater discharge. In most cases it includes the sources of the recharge and the methods of discharge. These characteristics specific to the Brazos River Alluvium Aquifer in McLennan County are described below.

Flow Directions

The groundwater in the Brazos River Alluvium Aquifer in McLennan County flows toward the Brazos River with few exceptions (Cronin and Wilson, 1967; Harlan, 1990; Pinkus, 1987; Turco and others, 2007). In the floodplain the flow is predominately

toward the Brazos River and slightly down-valley. However, in the terraces, tributaries may influence the groundwater flow and locally deflect flow toward the tributary channel (Harlan, 1985). Pumping, especially high-volume pumping such as dewatering efforts by local surface mining may temporarily modify local flow directions. Mine reclamation and landfill activities may permanently modify local flow directions.

Recharge Areas

Recharge occurs over the entire alluvium surface although recharge is greater in areas with sandier soils than where clay soils occur. Open pits from surface mining or other activities may allow more direct recharge and act as point-source recharge areas. Lateral flow occurs from adjacent bedrock formations on the outer edges of the alluvium. The Brazos River Alluvium Aquifer in McLennan County receives some lateral flow from the contiguous alluvial deposits in Hill County.

Recharge Sources

Recharge occurs primarily from precipitation, which is almost exclusively rainfall in McLennan County. However, additional sources of recharge occur in the form of infiltration as a result of flood water inundation, lateral flow from adjacent formations, vertical flow from underlying formations, infiltration from losing streams, leaky pipes and tanks containing water from outside sources, leach field infiltration from on-site wastewater treatment if the water came from an outside source and infiltration from irrigation applications which originated from surface water or another aquifer other than the Brazos River Alluvium Aquifer.

Floodwater inundation is infrequent and is probably not significant over a long period. However, it could be important for the season or year in which it occurs.

The bedrock formations that abut the alluvium are not considered aquifers but could contribute some lateral flow. This lateral flow may be locally important if the adjacent geologic unit is a fairly large terrace with substantial amounts of sand or gravel.

The bedrock formations underneath the alluvium are not considered aquifers and the head in the alluvium is generally thought to be higher than the head in these underlying formations. Therefore, the vertical flow would be downward rather than upward and these underlying units probably would not contribute water to the alluvium aquifer in McLennan County.

There are a few losing streams within the Brazos River Alluvium Aquifer in McLennan County and they are localized in area. Therefore, they probably contribute only a small portion of the total recharge (Cronin and Wilson, 1967).

Leaky pipes and tanks are not considered a significant source of recharge but there are few data available to quantify their contribution.

The amount of leachfield infiltration is unknown but leachfields are designed to have a significant amount of evapotranspiration and probably do not contribute a significant amount to the total volume of recharge to the Brazos River Alluvium Aquifer in McLennan County at this time.

There is some lawn irrigation from municipal water supplies and some turf grass irrigation directly from the Brazos River but most agricultural irrigation water in the past originated from the Brazos River Alluvium Aquifer and did not contribute significantly to the overall recharge volume.

Recharge to the Brazos River Alluvium Aquifer in McLennan County also occurs as lateral flow downgradient within the alluvium from Hill County.

Discharge Areas

Discharge in McLennan County occurs as seeps and springs along the Brazos River and in some cases as seeps and springs along tributaries. Point source discharge occurs at pumping wells and open pits which intersect the water table. The down-valley flow component of the Brazos River Alluvium Aquifer results in groundwater flow out of McLennan County to alluvial deposits in Falls County

Discharge Sources

Discharge occurs primarily as seeps and springs into the Brazos River and tributaries. However, additional sources of discharge in McLennan County include pumping wells, open pits that are being dewatered, evapotranspiration from surface water bodies, wetland areas that intersect the water table and down-valley flow from McLennan County to Falls County. The majority of the discharge is thought to occur as seeps and springs to the Brazos River.

Annual Recharge Volumes

Methods

The estimate of recharge to the Brazos River Alluvium Aquifer in McLennan County calculated in this memo focused on the recharge from precipitation and considered the other potential sources of recharge to be either insignificant in volume or impractical to calculate accurately. Using GIS and published maps for the Brazos River Alluvium in McLennan County, Bruce Byars from the Center for Spatial Research at Baylor University calculated there were 62,442 acres of Brazos River Alluvium exposed on the surface and available for recharge in McLennan County. Cronin and Wilson (1967) estimated the annual recharge for Falls County was 2.1 inches (.175 feet). Since Falls County and McLennan County are adjacent to each other and their climates are similar, the annual recharge for Falls County was used for McLennan County and Multiplied by the alluvium outcrop area (.175 feet/year * 62,442 acres).

The down-valley flow was calculated using Darcy's Law (Q=KIA; where Q = the volumetric flow rate, K = hydraulic conductivity, I = water table gradient, and A = the cross sectional area perpendicular to the discharge flow direction)

Results

The recharge depth times the recharge area resulted in 10,927 acre-feet/year, but other recharge sources may contribute additional recharge. It is also probable that some of the area mapped as alluvium is covered with impermeable surfaces such as streets and roof tops that would deflect potential recharge precipitation to runoff. Therefore a reasonable estimate of the annual recharge to the Brazos River Alluvium Aquifer in McLennan County is approximately11,000 acre-feet.

Annual Discharge Volumes

Methods

The estimate of discharge from the Brazos River Alluvium Aquifer in McLennan County calculated in this memo focused on the discharge from seeps and springs into the Brazos River and considered the other potential sources of discharge to be either insignificant in volume or impractical to calculate accurately. Using GIS and published maps for the Brazos River in McLennan County, Bruce Byars from the Center for Spatial Research at Baylor University calculated there were 21.46 miles of river in McLennan County. I used two methods to calculate discharge and then estimated the amount to be something in between the two calculations. The first method was a version of Darcy's law and the second was based on seepage meters measured by Harlan (1990).

Darcy's law (Q=KIA; where Q = the volumetric flow rate, K = hydraulic conductivity, I = water table gradient, and A = the cross sectional area perpendicular to the discharge flow direction) was used to calculate the volumetric flow rate per day (Q = ft^3/day, K = ft/day, I = ft/ft and A = ft^2) and then the result was multiplied by 365 days per year to get the annual discharge in ft^3/year. The volume of annual discharge was then converted from ft^3/year to acre-feet/year for comparison with other volumes used in groundwater management.

Harlan (1990) placed seepage meters in several areas of the Brazos River and measured the seepage rate in ft^3/sec. Each seepage meter was 2.62 ft^2 in area. I estimated the seepage area for each side of the river to be approximately 10 feet since most seepage into lakes and rivers occurs along the edges.

Results

Darcy's law: Cronin and Wilson (1967) reported K values from 4.72×10^{-8} cm/sec to 8.49×10^{-2} cm/sec. I used a mid-range value of 3×10^{-4} ft/sec (9461 ft/yr). Harlan reported gradients in the floodplain from 10 to 14.5 feet/mile. I used the mid-range value of 12 feet/mile or .00227 ft/ft. The area was calculated using 113,332 feet of linear river in McLennan County multiplied by an average of 20 feet of saturated section for a cross-sectional area of 2,266,640 ft^2 and this was multiplied by the 2 sides of the river resulting in 4,533,280 ft^2. The area (ft^2) was then multiplied by the hydraulic conductivity, K (ft/year) and the gradient (12 feet/5280 feet) to get ft^3/year. The volumetric rate in ft^3/year was then multiplied by .0000229568 acre-feet/ft^3 and the result is 2237 acre-feet/year of discharge.

Seepage meters: Using the linear river footage of 113332 feet multiplied by the 10 feet of seepage area times 2 for each side of the river and then dividing by the 2.62 ft^2 for each seepage meter resulted in 865,130 seepage meters. The rate of seepage was determined by Harlan (1990) to be 152.5 ft^3/year for each seepage meter (or each 2.62ft^2). Therefore the discharge along the Brazos River in McLennan County would be 865,130 times 152.5 ft^3/year resulting in 131,932,325 ft^3/year. When converted to acre-feet/year the result is a discharge volume of 3028 acre-feet/year.

The results from the two methods described above are on the same order of magnitude and indicate that seeps and springs from the Brazos River Alluvium Aquifer probably contribute about 2500 acre-feet/year to the Brazos River.

Discussion

The data available for these calculations are limited in space and time. Much more research needs to be conducted specific to the area of McLennan County in order to develop better data. The difference between the recharge and discharge volumes indicates that either the calculations are incorrect due to inaccurate data or there are additional sources of discharge that were not considered in this approach. Increased urbanization continues to change the recharge and discharge of the Brazos River Alluvium Aquifer in McLennan County and should probably be monitored in order to accurately assess any changes.

References

Cronin, James G. and Wilson, Clyde A., 1967, Ground Water in the Flood-plain Alluvium of the Brazos River, Whitney Dam to Vicinity of Richmond, Texas, Texas Water Development Board, Report 41, 206 p.

Harlan, Scott K., 1985, Hydrogeological Assessment of the Brazos River Alluvial Aquifer: Waco-Marlin, Texas, Unpublished Bachelors Thesis, Baylor University, Waco, Texas, 120 p.

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Pinkus, Joel R., 1987, Hydrogeologic Assessment of Three Solid Waste Disposal Sites in the Brazso River Alluvial Deposits, Unpublished Masters Thesis, Baylor University, Waco, Texas, 157 p.

Turco, Michael J., East, Jeffery W. and Milburn, Matthew S., 2007, Base flow (1966-2005) and streamflow gain and loss (2006) of the Brazos River, McLennan County to Fort Bend County, Texas: U.S. Geological Survey Scientific Investigations Report 2007-5286, 27 p.

10.5. TWDB GAM Run 08-84 Trinity Aquifer

March 31, 2009

Ms. Tricia Law
McLennan County Groundwater Conservation District
3015 Bellmead Dr.
Waco, TX 76705

Re: Managed available groundwater estimates for the Trinity Aquifer in Groundwater Management Area 8

Dear Ms. Law:

The Texas State Water Code, Section 36.108, Subsection (o), states that Texas Water Development Board's executive administrator shall provide each district and regional water planning group located wholly or partly within a groundwater management area with the managed available groundwater in the management area based upon the desired future condition of the groundwater resource. Attachment A lists the desired future conditions submitted by the groundwater conservation districts. This letter and Attachment B (GAM Run 08-84) are in response to this directive.

Managed available groundwater is defined in the Texas State Water Code as the amount of water that may be permitted by a district for beneficial use in accordance with the desired future condition of the aquifer as determined under Texas State Water Code, Section 36.108. For various planning purposes the managed available groundwater estimates have been reported at the combined aquifer, county, river basin, regional water planning area, groundwater management area, groundwater conservation district (if applicable), and geographic area (if designated) level.

We understand that groundwater conservation district have options on how to distribute managed available groundwater in a groundwater management area; therefore we encourage open communication and coordination between groundwater conservation districts, regional water planning groups, and the TWDB to ensure that managed available groundwater reported in regional water plans and groundwater management plans are not in conflict. In addition, please note that estimates of managed available groundwater are based on the best available scientific tools that can be used to evaluate managed available groundwater and that these estimates may be based on assumptions made on the magnitude and distribution of pumping in the aquifer.

Therefore, it is important for groundwater conservation districts to monitor whether or not their management of pumping is achieving their desired future conditions. Districts are encouraged to work with the TWDB to better define available groundwater as better data become available for how the aquifer responds to the actual magnitude and distribution of pumping now and in the future.

Sincerely,

J. Kevin Ward
Executive Administrator

Attachment A: List of Desired Future Conditions Submitted by the Groundwater Conservation Districts
Attachment B: GAM Run 08-84mag

c w/atts.: Cary Betz, Texas Commission of Environmental Quality Water Supply Division
Kelly Mills, Texas Commission of Environmental Quality Groundwater Planning and Assessment Division
Robert Mace, Ph.D., P.G., Deputy Executive Administrator, TWDB, Water Science and Conservation
Rima Petrossian, P.G., Manager, TWDB Groundwater Technical Assistance Section
Cindy Ridgeway, P.G., Manager, TWDB Groundwater Availability Modeling Section
Shirley Wade, Ph.D., P.G., Groundwater Modeler, TWDB Groundwater Availability Modeling Section
Carolyn Brittin, Deputy Executive Administrator, TWDB Water Resources Planning and Information
David Meesey, Manager, TWDB Regional Water Planning Section
Matt Nelson, Planner, Region G, TWDB Regional Water Planning Section
Angela Masloff, Planner, Region C, TWDB Regional Water Planning Section
Temple McKinnon, Planner, North East Texas Region, TWDB Regional Water Planning Section
Angela Kennedy, Planner, Region F, TWDB Regional Water Planning Section
Tom Gooch, Freese & Nichols, Inc.
Stephanie Griffin, Freese & Nichols, Inc.
Simone Kiel, Freese & Nichols, Inc.
Ray Flemons, Bucher, Willis & Ratliff
David Dunn, HDR Engineering
Kerry Maroney, Biggs & Mathews
Mark Lowry, Turner Collie & Braden

Attachment A
Desired Future Conditions Submitted by the Groundwater Conservation Districts

As noted in your letter dated October 6, 2008, and memorandum dated December 15, 2008, the submitted desired future condition for the northern segment of the Trinity Aquifer in Groundwater Management Area 8 was as follows:

Bell County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 134 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 155 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 286 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 319 feet after 50 years.

Bosque County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 26 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 33 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 201 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 220 feet after 50 years.

Brown County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 1 foot after 50 years.

Burnet County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 11 feet after 50 years.

- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 29 feet after 50 years.

Callahan County

- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 2 feet after 50 years.

Collin County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 298 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 247 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 224 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 236 feet after 50 years.

Comanche County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 2 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 11 feet after 50 years.

Cooke County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 26 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 42 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 60 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 78 feet after 50 years.

Coryell County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 15 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 15 feet after 50 years.

- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 156 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 179 feet after 50 years.

Dallas County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 240 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 224 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 263 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 290 feet after 50 years.

Delta County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 175 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 162 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 162 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 159 feet after 50 years.

Denton County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 98 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 134 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 180 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 214 feet after 50 years.

Eastland County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 0 feet after 50 years.

Ellis County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 265 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 283 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 336 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 362 feet after 50 years.

Erath County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 11 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 27 feet after 50 years.

Falls County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 279 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 354 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 459 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 480 feet after 50 years.

Fannin County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 212 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 196 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 182 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 181 feet after 50 years.

Grayson County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 175 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 161 feet after 50 years.

- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 160 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 165 feet after 50 years.

Hamilton County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 2 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 39 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 51 feet after 50 years.

Hill County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 209 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 253 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 381 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 406 feet after 50 years.

Hood County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 2 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 16 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 56 feet after 50 years.

Hunt County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 286 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 245 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 215 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 223 feet after 50 years.

Johnson County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 37 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 83 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 208 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 234 feet after 50 years.

Kaufman County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 303 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 286 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 295 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 312 feet after 50 years.

Lamar County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 132 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 130 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 136 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 134 feet after 50 years.

Lampasas County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 12 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 23 feet after 50 years.

Limestone County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 328 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 392 feet after 50 years.

- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 475 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 492 feet after 50 years.

McLennan County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 251 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 291 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 489 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 527 feet after 50 years.

Milam County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 252 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 294 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 337 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 344 feet after 50 years.

Mills County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 3 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 12 feet after 50 years.

Montague County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 3 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 12 feet after 50 years.

Navarro County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 344 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 353 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 399 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 413 feet after 50 years.

Parker County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 5 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 6 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 16 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 40 feet after 50 years.

Red River County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 82 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 77 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 78 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 78 feet after 50 years.

Rockwall County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 346 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 272 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 248 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 265 feet after 50 years.

Somervell County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 4 feet after 50 years.

- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 53 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 113 feet after 50 years.

Tarrant County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 33 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 75 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 160 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 173 feet after 50 years.

Taylor County

- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 3 feet after 50 years.

Travis County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 124 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 61 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 98 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 116 feet after 50 years.

Williamson County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 108 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 88 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 142 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 166 feet after 50 years.

Wise County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 4 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 14 feet after 50 years.

- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 23 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 53 feet after 50 years.

Attachment B

GAM Run 08-84mag

GAM Run 08-84mag

by Shirley C. Wade, P.G.
Texas Water Development Board
Groundwater Availability Modeling Section
(512) 936-0883
March 5, 2009

REQUESTOR:

Ms. Cheryl Maxwell of the Clearwater Underground Water Conservation District acting on behalf of Groundwater Management Area 8.

DESCRIPTION OF REQUEST:

In a letter dated October 6, 2008, Ms. Cheryl Maxwell provided the Texas Water Development Board (TWDB) with the desired future conditions for the Trinity Aquifer in Groundwater Management Area 8 and requested that TWDB estimate managed available groundwater values. A memorandum dated December 15, 2008 provided clarification to the desired future conditions outlined in the letter dated October 6, 2008. In order to match the results of GAM Run 08-06 (Donnelly, 2008) that memorandum made the following corrections:

- the average drawdown for Grayson County in the Glen Rose portion of the Trinity Aquifer was changed from 160 feet to 161 feet,
- the average drawdown for Grayson County in the Hensell portion of the Trinity Aquifer was changed from 161 feet to 160 feet,
- the average drawdown for Brown County in the Hosston portion of the Trinity Aquifer was changed from 2 feet to 1 foot, and
- the average drawdown for Somervell County in the Hosston portion of the Trinity Aquifer was changed from 114 to 113 feet.

This groundwater availability modeling run presents the managed available groundwater for the Trinity Aquifer in Groundwater Management Area 8.

DESIRED FUTURE CONDITIONS:

Desired future conditions for the Trinity Aquifer submitted to TWDB by the groundwater conservation districts in Groundwater Management Area 8:

Bell County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 134 feet after 50 years.

- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 155 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 286 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 319 feet after 50 years.

Bosque County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 26 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 33 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 201 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 220 feet after 50 years.

Brown County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 1 foot after 50 years.

Burnet County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 11 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 29 feet after 50 years.

Callahan County

- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 2 feet after 50 years.

Collin County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 298 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 247 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 224 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 236 feet after 50 years.

Comanche County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 2 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 11 feet after 50 years.

Cooke County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 26 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 42 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 60 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 78 feet after 50 years.

Coryell County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 15 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 15 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 156 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 179 feet after 50 years.

Dallas County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 240 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 224 feet after 50 years.

- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 263 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 290 feet after 50 years.

Delta County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 175 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 162 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 162 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 159 feet after 50 years.

Denton County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 98 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 134 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 180 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 214 feet after 50 years.

Eastland County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 0 feet after 50 years.

Ellis County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 265 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 283 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 336 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 362 feet after 50 years.

Erath County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 11 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 27 feet after 50 years.

Falls County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 279 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 354 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 459 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 480 feet after 50 years.

Fannin County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 212 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 196 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 182 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 181 feet after 50 years.

Grayson County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 175 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 161 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 160 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 165 feet after 50 years.

Hamilton County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 2 feet after 50 years.

- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 39 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 51 feet after 50 years.

Hill County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 209 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 253 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 381 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 406 feet after 50 years.

Hood County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 2 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 16 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 56 feet after 50 years.

Hunt County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 286 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 245 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 215 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 223 feet after 50 years.

Johnson County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 37 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 83 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 208 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 234 feet after 50 years.

Kaufman County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 303 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 286 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 295 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 312 feet after 50 years.

Lamar County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 132 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 130 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 136 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 134 feet after 50 years.

Lampasas County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 12 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 23 feet after 50 years.

Limestone County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 328 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 392 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 475 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 492 feet after 50 years.

McLennan County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 251 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 291 feet after 50 years.

- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 489 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 527 feet after 50 years.

Milam County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 252 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 294 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 337 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 344 feet after 50 years.

Mills County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 3 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 12 feet after 50 years.

Montague County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 0 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 3 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 12 feet after 50 years.

Navarro County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 344 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 353 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 399 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 413 feet after 50 years.

Parker County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 5 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 6 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 16 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 40 feet after 50 years.

Red River County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 82 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 77 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 78 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 78 feet after 50 years.

Rockwall County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 346 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 272 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 248 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 265 feet after 50 years.

Somervell County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 1 foot after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 4 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 53 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 113 feet after 50 years.

Tarrant County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 33 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 75 feet after 50 years.

- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 160 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 173 feet after 50 years.

Taylor County

- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 3 feet after 50 years.

Travis County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 124 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 61 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 98 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 116 feet after 50 years.

Williamson County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 108 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 88 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 142 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 166 feet after 50 years.

Wise County

- From estimated year 2000 conditions, the average drawdown of the Paluxy Aquifer should not exceed approximately 4 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Glen Rose Aquifer should not exceed approximately 14 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hensell Aquifer should not exceed approximately 23 feet after 50 years.
- From estimated year 2000 conditions, the average drawdown of the Hosston Aquifer should not exceed approximately 53 feet after 50 years.

This information is summarized in Table 1.

Table 1. Summary of requested desired future conditions for the Trinity Aquifer in Groundwater Management Area 8.

County	Average water level decrease (feet)			
	Paluxy	Glen Rose	Hensell	Hosston
Bell	134	155	286	319
Bosque	26	33	201	220
Brown	0	0	1	1
Burnet	1	1	11	29
Callahan	n/a	n/a	0	2
Collin	298	247	224	236
Comanche	0	0	2	11
Cooke	26	42	60	78
Coryell	15	15	156	179
Dallas	240	224	263	290
Delta	175	162	162	159
Denton	98	134	180	214
Eastland	0	0	0	0
Ellis	265	283	336	362
Erath	1	1	11	27
Falls	279	354	459	480
Fannin	212	196	182	181
Grayson	175	161	160	165
Hamilton	0	2	39	51
Hill	209	253	381	406
Hood	1	2	16	56
Hunt	286	245	215	223
Johnson	37	83	208	234
Kaufman	303	286	295	312
Lamar	132	130	136	134
Lampasas	0	1	12	23
Limestone	328	392	475	492
McLennan	251	291	489	527
Milam	252	294	337	344
Mills	0	0	3	12
Montague	0	1	3	12
Navarro	344	353	399	413
Parker	5	6	16	40
Red River	82	77	78	78
Rockwall	346	272	248	265
Somervell	1	4	53	113
Tarrant	33	75	160	173
Taylor	n/a	n/a	n/a	3
Travis	124	61	98	116
Williamson	108	88	142	166
Wise	4	14	23	53

EXECUTIVE SUMMARY:

TWDB staff ran the groundwater availability model for the northern part of the Trinity Aquifer and the Woodbine Aquifer to determine the managed available groundwater based on the desired future conditions for the Trinity Aquifer adopted by the groundwater conservation districts in Groundwater Management Area 8. The results (Tables 2, 3, 4, and 5) show 65,025 acre-feet per year of managed available groundwater for the Paluxy Aquifer (of which 89 acre-feet are outside the official aquifer boundary), 7,287 acre-feet per year of managed available groundwater for the Glen Rose Formation (of which 55 acre-feet are outside the official aquifer boundary) , 46,067 acre-feet per year of managed available groundwater for the Hensell Aquifer (of which 342 acre-feet are outside the official aquifer boundary), and 130,340 acre-feet per year of managed available groundwater for the Hosston Aquifer (of which 875 acre-feet are outside the official aquifer boundary)in Groundwater Management Area 8.

METHODS:

This request is based on previous GAM Run 08-06 (Donnelly, 2008). In that simulation, average streamflows and evapotranspiration rates were used for each year of the predictive simulation. Average recharge was used for the first forty-seven years of the simulation, followed by a three-year drought-of-record.

PARAMETERS AND ASSUMPTIONS:

The groundwater availability model for the northern part of the Trinity Aquifer was used for this model run. The parameters and assumptions for this model are described below:

- We used version 1.01 of the groundwater availability model for the northern part of the Trinity Aquifer for this run. See Bené and others (2004) for assumptions and limitations of the model.

- The model includes seven layers, representing the Woodbine Aquifer (Layer 1), the Washita and Fredericksburg Groups (Layer 2), the Paluxy Formation (Layer 3), the Glen Rose Formation (Layer 4), the Hensell Formation (Layer 5), the Pearsall/Cow Creek/Hammett/Sligo Members (Layer 6), and the Hosston Formation (Layer 7). The Trinity Aquifer is comprised of the Paluxy, Hensell, and Hosston formations. The Woodbine, Paluxy, Hensell, and Hosston layers are the main aquifers used in the region.

- The mean absolute error (a measure of the difference between simulated and actual water levels during model calibration) for the four main aquifers in the model (Woodbine, Paluxy, Hensell, and Hosston) for the calibration and verification time periods (1980 to 2000) ranged from approximately 38 to 75 feet. The root mean squared error was less than ten percent of the maximum change in water levels across the model (Bené and others, 2004).

- We used average annual recharge conditions based on climate data from 1980 to 1999 for the simulation. The last three years of the simulation used drought-of-record recharge conditions, which were defined as the years 1954 to 1956.

- The model uses the MODFLOW stream-routing package to simulate the interaction between the aquifer(s) and major intermittent streams flowing in the region. Flow both from the stream to the aquifer and from the aquifer to the stream is allowed, and the direction of flow is determined by the water levels in the aquifer and stream during each stress period in the simulation.

- Spatial and vertical pumpage distribution is described in GAM Run 08-06 (Donnelly, 2008).

Estimates of managed available groundwater were calculated for several geographic areas created by the geographic information systems overlay analysis of counties, groundwater conservation districts, regional water planning areas, major river basins, the boundary extents of Groundwater Management Area 8, and the northern portion of the Trinity Aquifer. These geographically divided sections of managed available groundwater values provide the greatest amount of flexibility to the groundwater management districts for summarizing managed available groundwater for both desired future conditions of the groundwater management area and for district level groundwater management planning. The geographically divided sections of managed available groundwater values also assist the regional water planning areas with their planning efforts. It should be noted that the model included portions of the units that comprise the Trinity Aquifer that spatially fall outside the official aquifer boundaries. We have provided estimates for these outliers separately from areas within the official aquifer boundary. These areas may contain water with total dissolved solids greater than 3,000 part per million.

Table 2. Estimates of managed available groundwater for the Paluxy Aquifer by geographic subdivisions. See Figure 1 to locate Map Reference (MapRef).

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
43	N. Trinity-Paluxy	Bell	G	Brazos	Clearwater	8	Bell	n/a	96
45	N. Trinity-Paluxy	Bosque	G	Brazos	None	8	Bosque	n/a	1,013
50	N. Trinity-Paluxy	Brown	F	Brazos	None	8	Brown	n/a	1
52	N. Trinity-Paluxy	Brown	F	Colorado	None	8	Brown	n/a	17
54	N. Trinity-Paluxy	Burnet	K	Brazos	Central Texas	8	Burnet	n/a	141
56	N. Trinity-Paluxy	Burnet	K	Colorado	Central Texas	8	Burnet	n/a	41
59	N. Trinity-Paluxy	Collin	C	Sabine	None	8	Collin	n/a	0
60	N. Trinity-Paluxy-outside	Collin	C	Sabine	None	8	Collin	n/a	0
61	N. Trinity-Paluxy	Collin	C	Trinity	None	8	Collin	n/a	1,762
62	N. Trinity-Paluxy-outside	Collin	C	Trinity	None	8	Collin	n/a	0
64	N. Trinity-Paluxy	Comanche	G	Brazos	Middle Trinity	8	Comanche	n/a	18
66	N. Trinity-Paluxy	Comanche	G	Colorado	Middle Trinity	8	Comance	n/a	1
70	N. Trinity-Paluxy	Cooke	C	Red	None	8	Cooke	n/a	640
71	N. Trinity-Paluxy	Cooke	C	Trinity	None	8	Cooke	n/a	2,888
73	N. Trinity-Paluxy	Coryell	G	Brazos	None	8	Coryell	n/a	254
74	N. Trinity-Paluxy	Dallas	C	Trinity	None	8	Dallas	n/a	433
76	N. Trinity-Paluxy	Delta	D	Sulphur	None	8	Delta	n/a	0
77	N. Trinity-Paluxy-outside	Delta	D	Sulphur	None	8	Delta	n/a	0
78	N. Trinity-Paluxy	Denton	C	Trinity	None	8	Denton	n/a	9,822
80	N. Trinity-Paluxy	Eastland	G	Brazos	None	8	Eastland	n/a	4
82	N. Trinity-Paluxy	Ellis	C	Trinity	None	8	Ellis	n/a	400
83	N. Trinity-Paluxy-outside	Ellis	C	Trinity	None	8	Ellis	n/a	0
85	N. Trinity-Paluxy	Erath	G	Brazos	Middle Trinity	8	Erath	n/a	4,230
87	N. Trinity-Paluxy	Falls	G	Brazos	None	8	Falls	n/a	0

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
88	N. Trinity-Paluxy-outside	Falls	G	Brazos	None	8	Falls	n/a	0
90	N. Trinity-Paluxy	Fannin	C	Red	None	8	Fannin	n/a	205
91	N. Trinity-Paluxy	Fannin	C	Sulphur	None	8	Fannin	n/a	0
92	N. Trinity-Paluxy	Fannin	C	Trinity	None	8	Fannin	n/a	83
95	N. Trinity-Paluxy	Grayson	C	Red	None	8	Grayson	n/a	3,863
96	N. Trinity-Paluxy	Grayson	C	Trinity	None	8	Grayson	n/a	845
98	N. Trinity-Paluxy	Hamilton	G	Brazos	None	8	Hamilton	n/a	291
99	N. Trinity-Paluxy	Hill	G	Trinity	None	8	Hill	n/a	48
100	N. Trinity-Paluxy	Hill	G	Brazos	None	8	Hill	n/a	1,206
101	N. Trinity-Paluxy	Hood	G	Trinity	Upper Trinity	8	Hood	n/a	11
103	N. Trinity-Paluxy	Hood	G	Brazos	Upper Trinity	8	Hood	n/a	931
108	N. Trinity-Paluxy	Hunt	D	Sulphur	None	8	Hunt	n/a	0
109	N. Trinity-Paluxy-outside	Hunt	D	Sulphur	None	8	Hunt	n/a	0
111	N. Trinity-Paluxy	Hunt	D	Sabine	None	8	Hunt	n/a	0
112	N. Trinity-Paluxy-outside	Hunt	D	Sabine	None	8	Hunt	n/a	0
113	N. Trinity-Paluxy	Hunt	D	Trinity	None	8	Hunt	n/a	551
114	N. Trinity-Paluxy	Johnson	G	Trinity	None	8	Johnson	n/a	6,791
115	N. Trinity-Paluxy	Johnson	G	Brazos	None	8	Johnson	n/a	2,702
117	N. Trinity-Paluxy-outside	Kaufman	C	Sabine	None	8	Kaufman	n/a	4
119	N. Trinity-Paluxy	Kaufman	C	Trinity	None	8	Kaufman	n/a	13
120	N. Trinity-Paluxy-outside	Kaufman	C	Trinity	None	8	Kaufman	n/a	85
122	N. Trinity-Paluxy	Lamar	D	Red	None	8	Lamar	n/a	0
123	N. Trinity-Paluxy	Lamar	D	Sulphur	None	8	Lamar	n/a	0
124	N. Trinity-Paluxy-outside	Lamar	D	Sulphur	None	8	Lamar	n/a	0
126	N. Trinity-Paluxy	Lampasas	G	Brazos	Saratoga	8	Lampasas	n/a	13

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
128	N. Trinity-Paluxy	Lampasas	G	Colorado	Saratoga	8	Lampasas	n/a	0
130	N. Trinity-Paluxy	Limestone	G	Trinity	None	8	Limestone	n/a	0
131	N. Trinity-Paluxy-outside	Limestone	G	Trinity	None	8	Limestone	n/a	0
133	N. Trinity-Paluxy	Limestone	G	Brazos	None	8	Limestone	n/a	0
134	N. Trinity-Paluxy-outside	Limestone	G	Brazos	None	8	Limestone	n/a	0
135	N. Trinity-Paluxy	McLennan	G	Brazos	None	8	McLennan	n/a	231
137	N. Trinity-Paluxy	Milam	G	Brazos	Post Oak Savannah	8	Milam	n/a	0
138	N. Trinity-Paluxy-outside	Milam	G	Brazos	Post Oak Savannah	8	Milam	n/a	0
140	N. Trinity-Paluxy	Mills	K	Brazos	Fox Crossing	8	Mills	n/a	3
142	N. Trinity-Paluxy	Mills	K	Colorado	Fox Crossing	8	Mills	n/a	2
145	N. Trinity-Paluxy	Montague	B	Red	Upper Trinity	8	Montague	n/a	29
147	N. Trinity-Paluxy	Montague	B	Trinity	Upper Trinity	8	Montague	n/a	476
149	N. Trinity-Paluxy	Navarro	C	Trinity	None	8	Navarro	n/a	413
150	N. Trinity-Paluxy-outside	Navarro	C	Trinity	None	8	Navarro	n/a	0
151	N. Trinity-Paluxy	Parker	C	Trinity	Upper Trinity	8	Parker	n/a	9,370
153	N. Trinity-Paluxy	Parker	C	Brazos	Upper Trinity	8	Parker	n/a	430
156	N. Trinity-Paluxy	Red River	D	Red	None	8	Red River	n/a	206
157	N. Trinity-Paluxy-outside	Red River	D	Red	None	8	Red River	n/a	0
159	N. Trinity-Paluxy	Red River	D	Sulphur	None	8	Red River	n/a	267
160	N. Trinity-Paluxy-outside	Red River	D	Sulphur	None	8	Red River	n/a	0
161	N. Trinity-Paluxy-outside	Rockwall	C	Sabine	None	8	Rockwall	n/a	0
162	N. Trinity-Paluxy	Rockwall	C	Trinity	None	8	Rockwall	n/a	958
163	N. Trinity-Paluxy-outside	Rockwall	C	Trinity	None	8	Rockwall	n/a	0

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
165	N. Trinity-Paluxy	Somervell	G	Brazos	None	8	Somervell	n/a	120
166	N. Trinity-Paluxy	Tarrant	C	Trinity	Northern Trinity	8	Tarrant	n/a	10,544
169	N. Trinity-Paluxy	Travis	K	Brazos	None	8	Travis	n/a	0
171	N. Trinity-Paluxy	Travis	K	Colorado	None	8	Travis	n/a	3
174	N. Trinity-Paluxy	Williamson	G	Colorado	None	8	Williamson	n/a	10
175	N. Trinity-Paluxy-outside	Williamson	G	Brazos	None	8	Williamson	n/a	0
176	N. Trinity-Paluxy	Williamson	K	Brazos	None	8	Williamson	n/a	0
177	N. Trinity-Paluxy	Williamson	G	Colorado	None	8	Williamson	n/a	1
178	N. Trinity-Paluxy	Williamson	K	Colorado	None	8	Williamson	n/a	0
180	N. Trinity-Paluxy	Wise	C	Trinity	Upper Trinity	8	Wise	n/a	2,559

Aquifer marked as outside with table row shaded denotes that the volume of water is from an area of the model outside the official aquifer boundary.

GCD = Groundwater conservation district.
GeoArea = Geographic areas defined by unique desired future conditions as specified by a groundwater management area.
GMA = Groundwater management area.
MAG = Managed available groundwater in units of acre-feet per year.
Clearwater = Clearwater Underground Water Conservation District
McLennan C. = McLennan County Groundwater Conservation District
N. Trinity = Northern Trinity Groundwater Conservation District
Fox Crossing = Fox Crossing Water District
Saratoga = Saratoga Underground Water Conservation District
RWPA = Regional water planning area.

Table 3. Estimates of managed available groundwater for the Glen Rose Aquifer by geographic subdivisions. See Figure 2 to locate MapRef.

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
43	N. Trinity-Glen Rose	Bell	G	Brazos	Clearwater	8	Bell	n/a	880
44	N. Trinity-Glen Rose	Bosque	G	Brazos	None	8	Bosque	n/a	258
49	N. Trinity-Glen Rose	Brown	F	Brazos	None	8	Brown	n/a	0
51	N. Trinity-Glen Rose	Brown	F	Colorado	None	8	Brown	n/a	0
53	N. Trinity-Glen Rose	Burnet	K	Brazos	Central Texas	8	Burnet	n/a	145
55	N. Trinity-Glen Rose	Burnet	K	Colorado	Central Texas	8	Burnet	n/a	60
58	N. Trinity-Glen Rose	Collin	C	Sabine	None	8	Collin	n/a	0
59	N. Trinity-Glen Rose-outside	Collin	C	Sabine	None	8	Collin	n/a	0
60	N. Trinity-Glen Rose	Collin	C	Trinity	None	8	Collin	n/a	0
61	N. Trinity-Glen Rose-outside	Collin	C	Trinity	None	8	Collin	n/a	0
63	N. Trinity-Glen Rose	Comanche	G	Brazos	Middle Trinity	8	Comanche	n/a	0
64	N. Trinity-Glen Rose	Comanche	G	Colorado	Middle Trinity	8	Comanche	n/a	0
68	N. Trinity-Glen Rose	Cooke	C	Red	None	8	Cooke	n/a	0
69	N. Trinity-Glen Rose	Cooke	C	Trinity	None	8	Cooke	n/a	0
70	N. Trinity-Glen Rose	Coryell	G	Brazos	None	8	Coryell	n/a	784
71	N. Trinity-Glen Rose	Dallas	C	Trinity	None	8	Dallas	n/a	0
73	N. Trinity-Glen Rose	Delta	D	Sulphur	None	8	Delta	n/a	0
74	N. Trinity-Glen Rose-outside	Delta	D	Sulphur	None	8	Delta	n/a	0
75	N. Trinity-Glen Rose	Denton	C	Trinity	None	8	Denton	n/a	0
77	N. Trinity-Glen Rose	Eastland	G	Brazos	None	8	Eastland	n/a	0
79	N. Trinity-Glen Rose	Ellis	C	Trinity	None	8	Ellis	n/a	0
80	N. Trinity-Glen Rose-outside	Ellis	C	Trinity	None	8	Ellis	n/a	0

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
82	N. Trinity-Glen Rose	Erath	G	Brazos	Middle Trinity	8	Erath	n/a	1
84	N. Trinity-Glen Rose	Falls	G	Brazos	None	8	Falls	n/a	2
85	N. Trinity-Glen Rose-outside	Falls	G	Brazos	None	8	Falls	n/a	0
87	N. Trinity-Glen Rose	Fannin	C	Red	None	8	Fannin	n/a	0
88	N. Trinity-Glen Rose	Fannin	C	Sulphur	None	8	Fannin	n/a	0
89	N. Trinity-Glen Rose	Fannin	C	Trinity	None	8	Fannin	n/a	0
92	N. Trinity-Glen Rose	Grayson	C	Red	None	8	Grayson	n/a	0
93	N. Trinity-Glen Rose	Grayson	C	Trinity	None	8	Grayson	n/a	0
95	N. Trinity-Glen Rose	Hamilton	G	Brazos	None	8	Hamilton	n/a	46
96	N. Trinity-Glen Rose	Hill	G	Trinity	None	8	Hill	n/a	0
97	N. Trinity-Glen Rose	Hill	G	Brazos	None	8	Hill	n/a	10
98	N. Trinity-Glen Rose	Hood	G	Trinity	Upper Trinity	8	Hood	n/a	0
100	N. Trinity-Glen Rose	Hood	G	Brazos	Upper Trinity	8	Hood	n/a	4
105	N. Trinity-Glen Rose	Hunt	D	Sulphur	None	8	Hunt	n/a	0
106	N. Trinity-Glen Rose-outside	Hunt	D	Sulphur	None	8	Hunt	n/a	0
108	N. Trinity-Glen Rose	Hunt	D	Sabine	None	8	Hunt	n/a	0
109	N. Trinity-Glen Rose-outside	Hunt	D	Sabine	None	8	Hunt	n/a	0
110	N. Trinity-Glen Rose	Hunt	D	Trinity	None	8	Hunt	n/a	0
111	N. Trinity-Glen Rose	Johnson	G	Trinity	None	8	Johnson	n/a	4
112	N. Trinity-Glen Rose	Johnson	G	Brazos	None	8	Johnson	n/a	20
114	N. Trinity-Glen Rose-outside	Kaufman	C	Sabine	None	8	Kaufman	n/a	0
116	N. Trinity-Glen Rose	Kaufman	C	Trinity	None	8	Kaufman	n/a	0
117	N. Trinity-Glen Rose-outside	Kaufman	C	Trinity	None	8	Kaufman	n/a	0

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
119	N. Trinity-Glen Rose	Lamar	D	Red	None	8	Lamar	n/a	0
120	N. Trinity-Glen Rose	Lamar	D	Sulphur	None	8	Lamar	n/a	0
121	N. Trinity-Glen Rose-outside	Lamar	D	Sulphur	None	8	Lamar	n/a	0
123	N. Trinity-Glen Rose	Lampasas	G	Brazos	Saratoga	8	Lampasas	n/a	769
125	N. Trinity-Glen Rose	Lampasas	G	Colorado	Saratoga	8	Lampasas	n/a	4
127	N. Trinity-Glen Rose	Limestone	G	Trinity	None	8	Limestone	n/a	0
128	N. Trinity-Glen Rose-outside	Limestone	G	Trinity	None	8	Limestone	n/a	0
130	N. Trinity-Glen Rose	Limestone	G	Brazos	None	8	Limestone	n/a	4
131	N. Trinity-Glen Rose-outside	Limestone	G	Brazos	None	8	Limestone	n/a	0
132	N. Trinity-Glen Rose	McLennan	G	Brazos	None	8	McLennan	n/a	265
134	N. Trinity-Glen Rose	Milam	G	Brazos	Post Oak Savannah	8	Milam	n/a	95
135	N. Trinity-Glen Rose-outside	Milam	G	Brazos	Post Oak Savannah	8	Milam	n/a	54
136	N. Trinity-Glen Rose	Mills	K	Brazos	Fox Crossing	8	Mills	n/a	59
138	N. Trinity-Glen Rose	Mills	K	Colorado	Fox Crossing	8	Mills	n/a	7
141	N. Trinity-Glen Rose	Montague	B	Red	Upper Trinity	8	Montague	n/a	0
143	N. Trinity-Glen Rose	Montague	B	Brazos	Upper Trinity	8	Montague	n/a	0
145	N. Trinity-Glen Rose	Navarro	C	Trinity	None	8	Navarro	n/a	0
146	N. Trinity-Glen Rose-outside	Navarro	C	Trinity	None	8	Navarro	n/a	0
147	N. Trinity-Glen Rose	Parker	C	Trinity	Upper Trinity	8	Parker	n/a	189
149	N. Trinity-Glen Rose	Parker	C	Brazos	Upper Trinity	8	Parker	n/a	3
152	N. Trinity-Glen Rose	Red River	D	Red	None	8	Red River	n/a	0

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
153	N. Trinity-Glen Rose-outside	Red River	D	Red	None	8	Red River	n/a	0
155	N. Trinity-Glen Rose	Red River	D	Sulphur	None	8	Red River	n/a	0
156	N. Trinity-Glen Rose-outside	Red River	D	Sulphur	None	8	Red River	n/a	0
157	N. Trinity-Glen Rose-outside	Rockwall	C	Sabine	None	8	Rockwall	n/a	0
158	N. Trinity-Glen Rose	Rockwall	C	Trinity	None	8	Rockwall	n/a	0
159	N. Trinity-Glen Rose-outside	Rockwall	C	Trinity	None	8	Rockwall	n/a	0
160	N. Trinity-Glen Rose	Somervell	G	Brazos	None	8	Somervell	n/a	134
161	N. Trinity-Glen Rose	Tarrant	C	Trinity	Northern Trinity	8	Tarrant	n/a	112
164	N. Trinity-Glen Rose	Travis	K	Brazos	None	8	Travis	n/a	4
166	N. Trinity-Glen Rose	Travis	K	Colorado	None	8	Travis	n/a	2,608
168	N. Trinity-Glen Rose	Williamson	G	Brazos	None	8	Williamson	n/a	604
169	N. Trinity-Glen Rose-outside	Williamson	G	Brazos	None	8	Williamson	n/a	1
170	N. Trinity-Glen Rose	Williamson	K	Brazos	None	8	Williamson	n/a	81
171	N. Trinity-Glen Rose	Williamson	G	Colorado	None	8	Williamson	n/a	37
172	N. Trinity-Glen Rose	Williamson	K	Colorado	None	8	Williamson	n/a	37
174	N. Trinity-Glen Rose	Wise	C	Trinity	Upper Trinity	8	Wise	n/a	5

Aquifer marked as outside with table row shaded denotes that the volume of water is from an area of the model outside the official aquifer boundary.

GCD = Groundwater conservation district.
GeoArea = Geographic areas defined by unique desired future conditions as specified by a groundwater management area.
GMA = Groundwater management area.
MAG = Managed available groundwater in units of acre-feet per year.
Clearwater = Clearwater Underground Water Conservation District
McLennan C. = McLennan County Groundwater Conservation District
N. Trinity = Northern Trinity Groundwater Conservation District
Fox Crossing = Fox Crossing Water District
Saratoga = Saratoga Underground Water Conservation District

RWPA = Regional water planning area.

Table 4. Estimates of managed available groundwater for the Hensell Aquifer by geographic subdivisions. See Figure 3 for location of MapRef.

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
43	N. Trinity-Hensell	Bell	G	Brazos	Clearwater	8	Bell	n/a	1,099
44	N. Trinity-Hensell	Bosque	G	Brazos	None	8	Bosque	n/a	1,749
48	N. Trinity-Hensell	Brown	F	Brazos	None	8	Brown	n/a	2
50	N. Trinity-Hensell	Brown	F	Colorado	None	8	Brown	n/a	77
52	N. Trinity-Hensell	Burnet	K	Brazos	Central Texas	8	Burnet	n/a	590
54	N. Trinity-Hensell	Burnet	K	Colorado	Central Texas	8	Burnet	n/a	100
56	N. Trinity-Hensell	Callahan	G	Brazos	None	8	Callahan	n/a	9
58	N. Trinity-Hensell	Callahan	G	Colorado	None	8	Callahan	n/a	114
59	N. Trinity-Hensell	Collin	C	Sabine	None	8	Collin	n/a	0
60	N. Trinity-Hensell-outside	Collin	C	Sabine	None	8	Collin	n/a	0
61	N. Trinity-Hensell	Collin	C	Trinity	None	8	Collin	n/a	103
62	N. Trinity-Hensell-outside	Collin	C	Trinity	None	8	Collin	n/a	0
64	N. Trinity-Hensell	Comanche	G	Brazos	Middle Trinity	8	Comanche	n/a	413
65	N. Trinity-Hensell	Comanche	G	Colorado	Middle Trinity	8	Comanche	n/a	6
69	N. Trinity-Hensell	Cooke	C	Red	None	8	Cooke	n/a	298
70	N. Trinity-Hensell	Cooke	C	Trinity	None	8	Cooke	n/a	1,313
71	N. Trinity-Hensell	Coryell	G	Brazos	None	8	Coryell	n/a	1,765
72	N. Trinity-Hensell	Dallas	C	Trinity	None	8	Dallas	n/a	1,121
74	N. Trinity-Hensell	Delta	D	Sulphur	None	8	Delta	n/a	50
75	N. Trinity-Hensell-outside	Delta	D	Sulphur	None	8	Delta	n/a	131
76	N. Trinity-Hensell	Denton	C	Trinity	None	8	Denton	n/a	3,112
78	N. Trinity-Hensell	Eastland	G	Brazos	None	8	Eastland	n/a	73
80	N. Trinity-Hensell	Eastland	G	Colorado	None	8	Eastland	n/a	6

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
81	N. Trinity-Hensell	Ellis	C	Trinity	None	8	Ellis	n/a	1,142
82	N. Trinity-Hensell-outside	Ellis	C	Trinity	None	8	Ellis	n/a	0
84	N. Trinity-Hensell	Erath	G	Brazos	Middle Trinity	8	Erath	n/a	9,142
86	N. Trinity-Hensell	Falls	G	Brazos	None	8	Falls	n/a	22
87	N. Trinity-Hensell-outside	Falls	G	Brazos	None	8	Falls	n/a	0
89	N. Trinity-Hensell	Fannin	C	Red	None	8	Fannin	n/a	203
90	N. Trinity-Hensell	Fannin	C	Sulphur	None	8	Fannin	n/a	0
91	N. Trinity-Hensell	Fannin	C	Trinity	None	8	Fannin	n/a	0
94	N. Trinity-Hensell	Grayson	C	Red	None	8	Grayson	n/a	1,929
95	N. Trinity-Hensell	Grayson	C	Trinity	None	8	Grayson	n/a	416
96	N. Trinity-Hensell	Hamilton	G	Brazos	None	8	Hamilton	n/a	1,109
97	N. Trinity-Hensell	Hill	G	Trinity	None	8	Hill	n/a	9
98	N. Trinity-Hensell	Hill	G	Brazos	None	8	Hill	n/a	924
99	N. Trinity-Hensell	Hood	G	Trinity	Upper Trinity	8	Hood	n/a	16
101	N. Trinity-Hensell	Hood	G	Brazos	Upper Trinity	8	Hood	n/a	3,579
106	N. Trinity-Hensell	Hunt	D	Sulphur	None	8	Hunt	n/a	0
107	N. Trinity-Hensell-outside	Hunt	D	Sulphur	None	8	Hunt	n/a	0
109	N. Trinity-Hensell	Hunt	D	Sabine	None	8	Hunt	n/a	0
110	N. Trinity-Hensell-outside	Hunt	D	Sabine	None	8	Hunt	n/a	0
111	N. Trinity-Hensell	Hunt	D	Trinity	None	8	Hunt	n/a	0
112	N. Trinity-Hensell	Johnson	G	Trinity	None	8	Johnson	n/a	349
113	N. Trinity-Hensell	Johnson	G	Brazos	None	8	Johnson	n/a	716
115	N. Trinity-Hensell-outside	Kaufman	C	Sabine	None	8	Kaufman	n/a	9
117	N. Trinity-Hensell	Kaufman	C	Trinity	None	8	Kaufman	n/a	30
118	N. Trinity-Hensell-outside	Kaufman	C	Trinity	None	8	Kaufman	n/a	201

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
120	N. Trinity-Hensell	Lamar	D	Red	None	8	Lamar	n/a	660
121	N. Trinity-Hensell	Lamar	D	Sulphur	None	8	Lamar	n/a	0
122	N. Trinity-Hensell-outside	Lamar	D	Sulphur	None	8	Lamar	n/a	1
124	N. Trinity-Hensell	Lampasas	G	Brazos	Saratoga	8	Lampasas	n/a	878
126	N. Trinity-Hensell	Lampasas	G	Colorado	Saratoga	8	Lampasas	n/a	7
128	N. Trinity-Hensell	Limestone	G	Trinity	None	8	Limestone	n/a	0
129	N. Trinity-Hensell-outside	Limestone	G	Trinity	None	8	Limestone	n/a	0
131	N. Trinity-Hensell	Limestone	G	Brazos	None	8	Limestone	n/a	15
132	N. Trinity-Hensell-outside	Limestone	G	Brazos	None	8	Limestone	n/a	0
133	N. Trinity-Hensell	McLennan	G	Brazos	None	8	McLennan	n/a	4,190
135	N. Trinity-Hensell	Milam	G	Brazos	Post Oak Savannah	8	Milam	n/a	36
136	N. Trinity-Hensell-outside	Milam	G	Brazos	Post Oak Savannah	8	Milam	n/a	0
137	N. Trinity-Hensell	Mills	K	Brazos	Fox Crossing	8	Mills	n/a	832
139	N. Trinity-Hensell	Mills	K	Colorado	Fox Crossing	8	Mills	n/a	114
142	N. Trinity-Hensell	Montague	B	Red	Upper Trinity	8	Montague	n/a	20
144	N. Trinity-Hensell	Montague	B	Trinity	Upper Trinity	8	Montague	n/a	342
146	N. Trinity-Hensell	Navarro	C	Trinity	None	8	Navarro	n/a	256
147	N. Trinity-Hensell-outside	Navarro	C	Trinity	None	8	Navarro	n/a	0
148	N. Trinity-Hensell	Parker	C	Trinity	Upper Trinity	8	Parker	n/a	884
150	N. Trinity-Hensell	Parker	C	Brazos	Upper Trinity	8	Parker	n/a	557
153	N. Trinity-Hensell	Red River	D	Red	None	8	Red River	n/a	19
154	N. Trinity-Hensell-outside	Red River	D	Red	None	8	Red River	n/a	0
156	N. Trinity-Hensell	Red River	D	Sulphur	None	8	Red River	n/a	0
157	N. Trinity-	Red River	D	Sulphur	None	8	Red River	n/a	0

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
158	N. Trinity-Hensell-outside	Rockwall	C	Sabine	None	8	Rockwall	n/a	0
159	N. Trinity-Hensell	Rockwall	C	Trinity	None	8	Rockwall	n/a	0
160	N. Trinity-Hensell-outside	Rockwall	C	Trinity	None	8	Rockwall	n/a	0
161	N. Trinity-Hensell	Somervell	G	Brazos	None	8	Somervell	n/a	741
162	N. Trinity-Hensell	Tarrant	C	Trinity	Northern Trinity	8	Tarrant	n/a	2,535
165	N. Trinity-Hensell	Travis	K	Brazos	None	8	Travis	n/a	2
167	N. Trinity-Hensell	Travis	K	Colorado	None	8	Travis	n/a	154
169	N. Trinity-Hensell	Williamson	G	Brazos	None	8	Williamson	n/a	363
170	N. Trinity-Hensell-outside	Williamson	G	Brazos	None	8	Williamson	n/a	0
171	N. Trinity-Hensell	Williamson	K	Brazos	None	8	Williamson	n/a	39
172	N. Trinity-Hensell	Williamson	G	Colorado	None	8	Williamson	n/a	5
173	N. Trinity-Hensell	Williamson	K	Colorado	None	8	Williamson	n/a	8
175	N. Trinity-Hensell	Wise	C	Trinity	Upper Trinity	8	Wise	n/a	1,480

Aquifer marked as outside with table row shaded denotes that the volume of water is from an area of the model outside the official aquifer boundary.

GCD = Groundwater conservation district.
GeoArea = Geographic areas defined by unique desired future conditions as specified by a groundwater management area.
GMA = Groundwater management area.
MAG = Managed available groundwater in units of acre-feet per year.
Clearwater = Clearwater Underground Water Conservation District
McLennan C. = McLennan County Groundwater Conservation District
N. Trinity = Northern Trinity Groundwater Conservation District
Fox Crossing = Fox Crossing Water District
Saratoga = Saratoga Underground Water Conservation District
RWPA = Regional water planning area.

Table 5. Estimates of managed available groundwater for the Hosston Aquifer by geographic subdivisions. See Figure 4 for location of MapRef.

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
44	N. Trinity-Hosston	Bell	G	Brazos	Clearwater	8	Bell	n/a	4,993
45	N. Trinity-Hosston	Bosque	G	Brazos	None	8	Bosque	n/a	2,829
49	N. Trinity-Hosston	Brown	F	Brazos	None	8	Brown	n/a	25
51	N. Trinity-Hosston	Brown	F	Colorado	None	8	Brown	n/a	1,923
53	N. Trinity-Hosston	Burnet	K	Brazos	Central Texas	8	Burnet	n/a	1,847
55	N. Trinity-Hosston	Burnet	K	Colorado	Central Texas	8	Burnet	n/a	622
57	N. Trinity-Hosston	Callahan	G	Brazos	None	8	Callahan	n/a	1,783
59	N. Trinity-Hosston	Callahan	G	Colorado	None	8	Callahan	n/a	1,871
60	N. Trinity-Hosston	Collin	C	Sabine	None	8	Collin	n/a	0
61	N. Trinity-Hosston-outside	Collin	C	Sabine	None	8	Collin	n/a	0
62	N. Trinity-Hosston	Collin	C	Trinity	None	8	Collin	n/a	239
63	N. Trinity-Hosston-outside	Collin	C	Trinity	None	8	Collin	n/a	0
65	N. Trinity-Hosston	Comanche	G	Brazos	Middle Trinity	8	Comanche	n/a	23,215
66	N. Trinity-Hosston	Comanche	G	Colorado	Middle Trinity	8	Comanche	n/a	68
69	N. Trinity-Hosston	Cooke	C	Red	None	8	Cooke	n/a	346
70	N. Trinity-Hosston	Cooke	C	Trinity	None	8	Cooke	n/a	1,365
71	N. Trinity-Hosston	Coryell	G	Brazos	None	8	Coryell	n/a	913
72	N. Trinity-Hosston	Dallas	C	Trinity	None	8	Dallas	n/a	3,904
74	N. Trinity-Hosston	Delta	D	Sulphur	None	8	Delta	n/a	50
75	N. Trinity-Hosston-outside	Delta	D	Sulphur	None	8	Delta	n/a	131
76	N. Trinity-Hosston	Denton	C	Trinity	None	8	Denton	n/a	6,399
78	N. Trinity-Hosston	Eastland	G	Brazos	None	8	Eastland	n/a	4,412

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
80	N. Trinity-Hosston	Eastland	G	Colorado	None	8	Eastland	n/a	225
81	N. Trinity-Hosston	Ellis	C	Trinity	None	8	Ellis	n/a	2,417
82	N. Trinity-Hosston-outside	Ellis	C	Trinity	None	8	Ellis	n/a	0
84	N. Trinity-Hosston	Erath	G	Brazos	Middle Trinity	8	Erath	n/a	15,723
86	N. Trinity-Hosston	Falls	G	Brazos	None	8	Falls	n/a	137
87	N. Trinity-Hosston-outside	Falls	G	Brazos	None	8	Falls	n/a	8
89	N. Trinity-Hosston	Fannin	C	Red	None	8	Fannin	n/a	209
90	N. Trinity-Hosston	Fannin	C	Sulphur	None	8	Fannin	n/a	0
91	N. Trinity-Hosston	Fannin	C	Trinity	None	8	Fannin	n/a	0
94	N. Trinity-Hosston	Grayson	C	Red	None	8	Grayson	n/a	1,930
95	N. Trinity-Hosston	Grayson	C	Trinity	None	8	Grayson	n/a	417
96	N. Trinity-Hosston	Hamilton	G	Brazos	None	8	Hamilton	n/a	698
97	N. Trinity-Hosston	Hill	G	Trinity	None	8	Hill	n/a	4
98	N. Trinity-Hosston	Hill	G	Brazos	None	8	Hill	n/a	946
99	N. Trinity-Hosston	Hood	G	Trinity	Upper Trinity	8	Hood	n/a	37
101	N. Trinity-Hosston	Hood	G	Brazos	Upper Trinity	8	Hood	n/a	6,567
106	N. Trinity-Hosston	Hunt	D	Sulphur	None	8	Hunt	n/a	0
107	N. Trinity-Hosston-outside	Hunt	D	Sulphur	None	8	Hunt	n/a	0
109	N. Trinity-Hosston	Hunt	D	Sabine	None	8	Hunt	n/a	0
110	N. Trinity-Hosston-outside	Hunt	D	Sabine	None	8	Hunt	n/a	0
111	N. Trinity-Hosston	Hunt	D	Trinity	None	8	Hunt	n/a	0
112	N. Trinity-Hosston	Johnson	G	Trinity	None	8	Johnson	n/a	787
113	N. Trinity-Hosston	Johnson	G	Brazos	None	8	Johnson	n/a	1,502
115	N. Trinity-Hosston-outside	Kaufman	C	Sabine	None	8	Kaufman	n/a	32
117	N. Trinity-Hosston	Kaufman	C	Trinity	None	8	Kaufman	n/a	104

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
118	N. Trinity-Hosston-outside	Kaufman	C	Trinity	None	8	Kaufman	n/a	703
120	N. Trinity-Hosston	Lamar	D	Red	None	8	Lamar	n/a	660
121	N. Trinity-Hosston	Lamar	D	Sulphur	None	8	Lamar	n/a	0
122	N. Trinity-Hosston-outside	Lamar	D	Sulphur	None	8	Lamar	n/a	1
124	N. Trinity-Hosston	Lampasas	G	Brazos	Saratoga	8	Lampasas	n/a	1,265
126	N. Trinity-Hosston	Lampasas	G	Colorado	Saratoga	8	Lampasas	n/a	181
128	N. Trinity-Hosston	Limestone	G	Trinity	None	8	Limestone	n/a	0
129	N. Trinity-Hosston-outside	Limestone	G	Trinity	None	8	Limestone	n/a	0
131	N. Trinity-Hosston	Limestone	G	Brazos	None	8	Limestone	n/a	50
132	N. Trinity-Hosston-outside	Limestone	G	Brazos	None	8	Limestone	n/a	0
133	N. Trinity-Hosston	McLennan	G	Brazos	None	8	McLennan	n/a	16,004
135	N. Trinity-Hosston	Milam	G	Brazos	Post Oak Savannah	8	Milam	n/a	102
136	N. Trinity-Hosston-outside	Milam	G	Brazos	Post Oak Savannah	8	Milam	n/a	0
137	N. Trinity-Hosston	Mills	K	Brazos	Fox Crossing	8	Mills	n/a	379
139	N. Trinity-Hosston	Mills	K	Colorado	Fox Crossing	8	Mills	n/a	1,005
142	N. Trinity-Hosston	Montague	B	Red	Upper Trinity	8	Montague	n/a	80
144	N. Trinity-Hosston	Montague	B	Trinity	Upper Trinity	8	Montague	n/a	1,727
146	N. Trinity-Hosston	Navarro	C	Trinity	None	8	Navarro	n/a	1,204
147	N. Trinity-Hosston-outside	Navarro	C	Trinity	None	8	Navarro	n/a	0
148	N. Trinity-Hosston	Parker	C	Trinity	Upper Trinity	8	Parker	n/a	2,006
150	N. Trinity-Hosston	Parker	C	Brazos	Upper Trinity	8	Parker	n/a	1,809
153	N. Trinity-Hosston	Red River	D	Red	None	8	Red River	n/a	38
154	N. Trinity-Hosston-	Red River	D	Red	None	8	Red River	n/a	0

MapRef	Aquifer	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
	outside								
156	N. Trinity-Hosston	Red River	D	Sulphur	None	8	Red River	n/a	0
157	N. Trinity-Hosston-outside	Red River	D	Sulphur	None	8	Red River	n/a	0
158	N. Trinity-Hosston-outside	Rockwall	C	Sabine	None	8	Rockwall	n/a	0
159	N. Trinity-Hosston	Rockwall	C	Trinity	None	8	Rockwall	n/a	0
160	N. Trinity-Hosston-outside	Rockwall	C	Trinity	None	8	Rockwall	n/a	0
161	N. Trinity-Hosston	Somervell	G	Brazos	None	8	Somervell	n/a	1,490
162	N. Trinity-Hosston	Tarrant	C	Trinity	Northern Trinity	8	Tarrant	n/a	5,556
164	N. Trinity-Hosston	Taylor	G	Brazos	None	8	Taylor	n/a	153
166	N. Trinity-Hosston	Taylor	G	Colorado	None	8	Taylor	n/a	278
167	N. Trinity-Hosston	Travis	K	Brazos	None	8	Travis	n/a	2
169	N. Trinity-Hosston	Travis	K	Colorado	None	8	Travis	n/a	1,117
171	N. Trinity-Hosston	Williamson	G	Brazos	None	8	Williamson	n/a	546
172	N. Trinity-Hosston-outside	Williamson	G	Brazos	None	8	Williamson	n/a	0
173	N. Trinity-Hosston	Williamson	K	Brazos	None	8	Williamson	n/a	37
174	N. Trinity-Hosston	Williamson	G	Colorado	None	8	Williamson	n/a	15
175	N. Trinity-Hosston	Williamson	K	Colorado	None	8	Williamson	n/a	16
177	N. Trinity-Hosston	Wise	C	Trinity	Upper Trinity	8	Wise	n/a	5,238

Aquifer marked as outside with table row shaded denotes that the volume of water is from an area of the model outside the official aquifer boundary.

GCD = Groundwater conservation district.

GeoArea = Geographic areas defined by unique desired future conditions as specified by a groundwater management area.

GMA = Groundwater management area.

MAG = Managed available groundwater in units of acre-feet per year.

Clearwater = Clearwater Underground Water Conservation District

McLennan C. = McLennan County Groundwater Conservation District

N. Trinity = Northern Trinity Groundwater Conservation District
Fox Crossing = Fox Crossing Water District
Saratoga = Saratoga Underground Water Conservation District
RWPA = Regional water planning area.

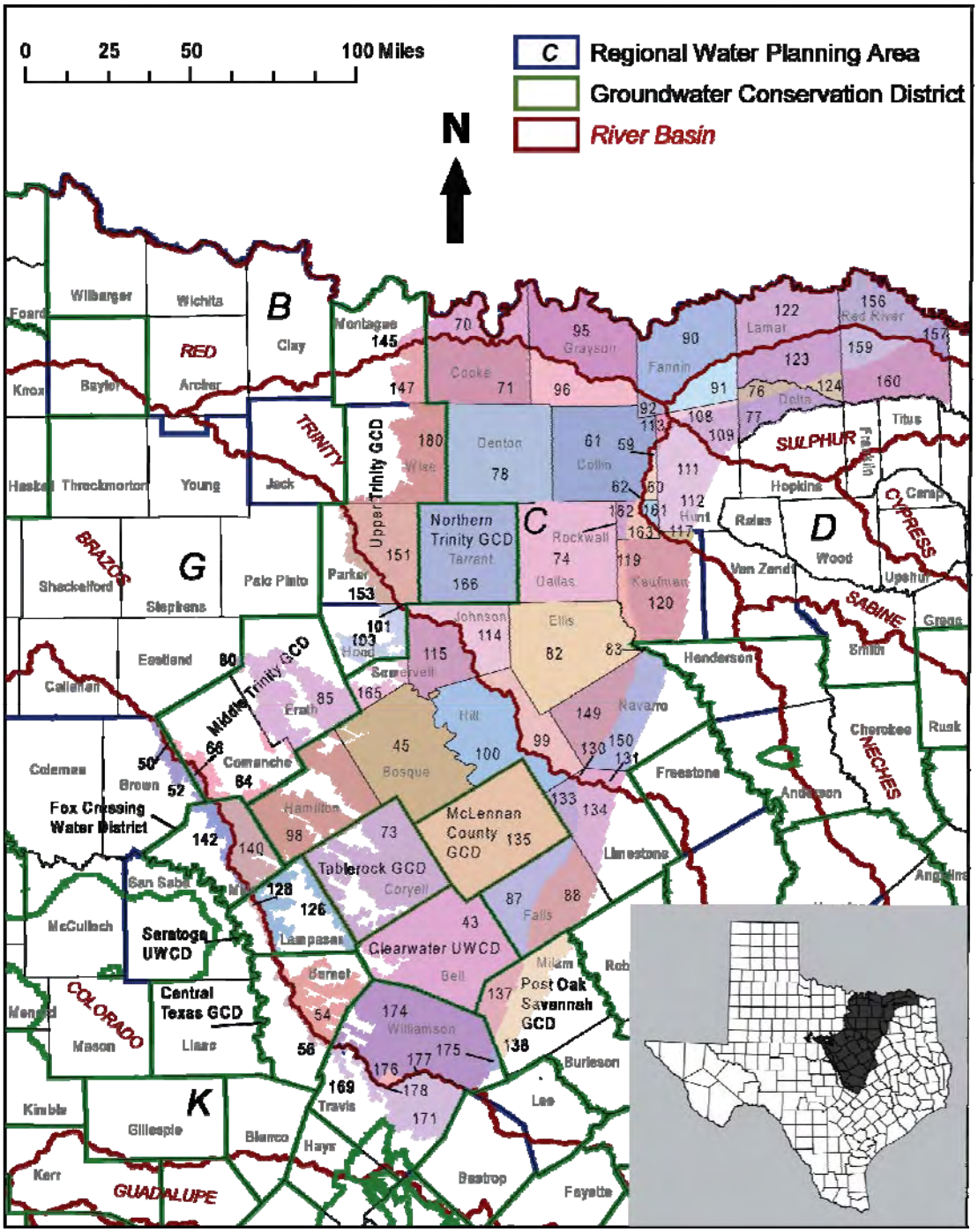

Figure 1. Geographic subdivisions of managed available groundwater for the Paluxy Aquifer. See Table 2 for descriptions of the geographic subdivisions.

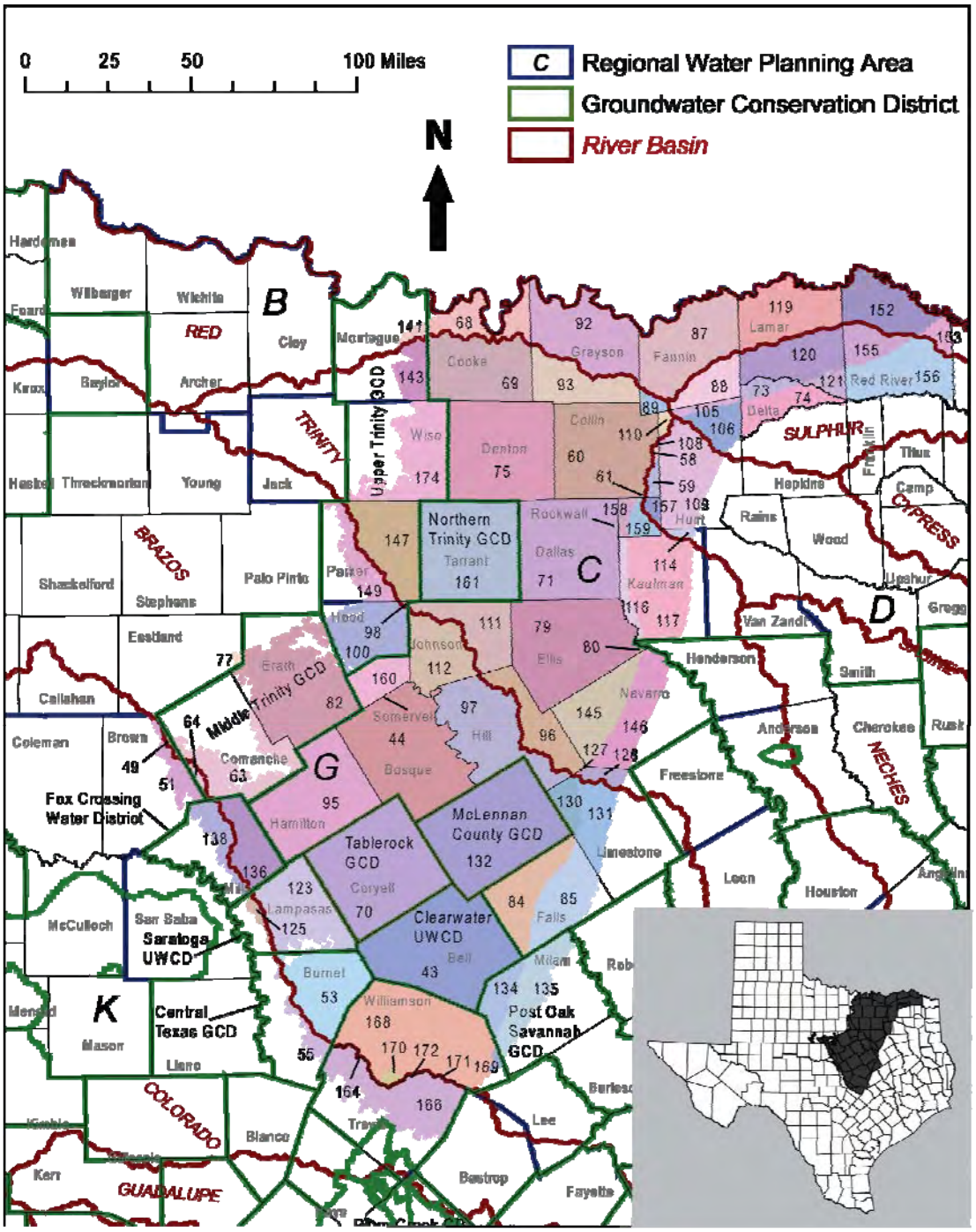

Figure 2. Geographic subdivisions of managed available groundwater for the Glen Rose Aquifer. See Table 3 for descriptions of the geographic subdivisions.

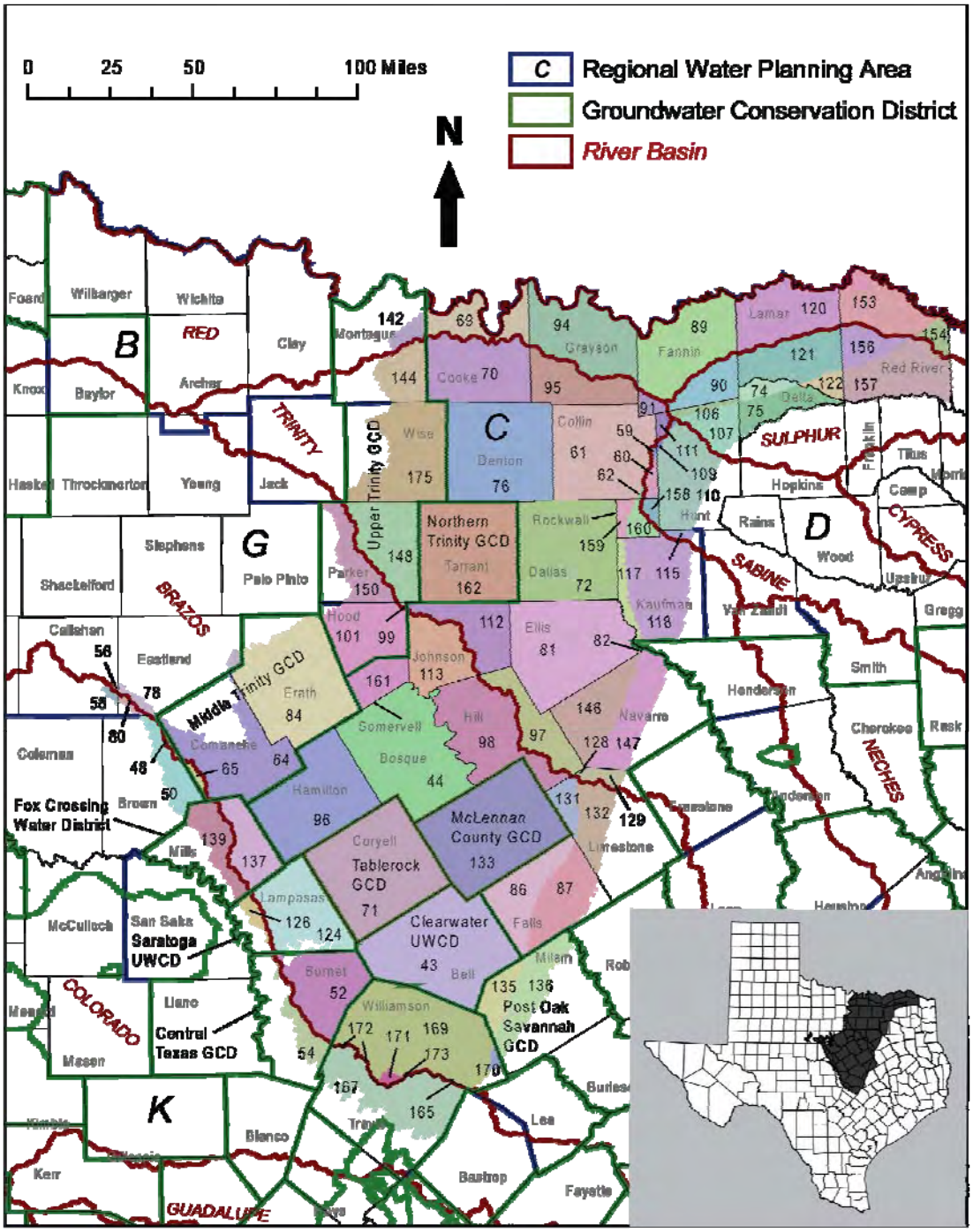

Figure 3. Geographic subdivisions of managed available groundwater for the Hensell Aquifer. See Table 4 for descriptions of the geographic subdivisions.

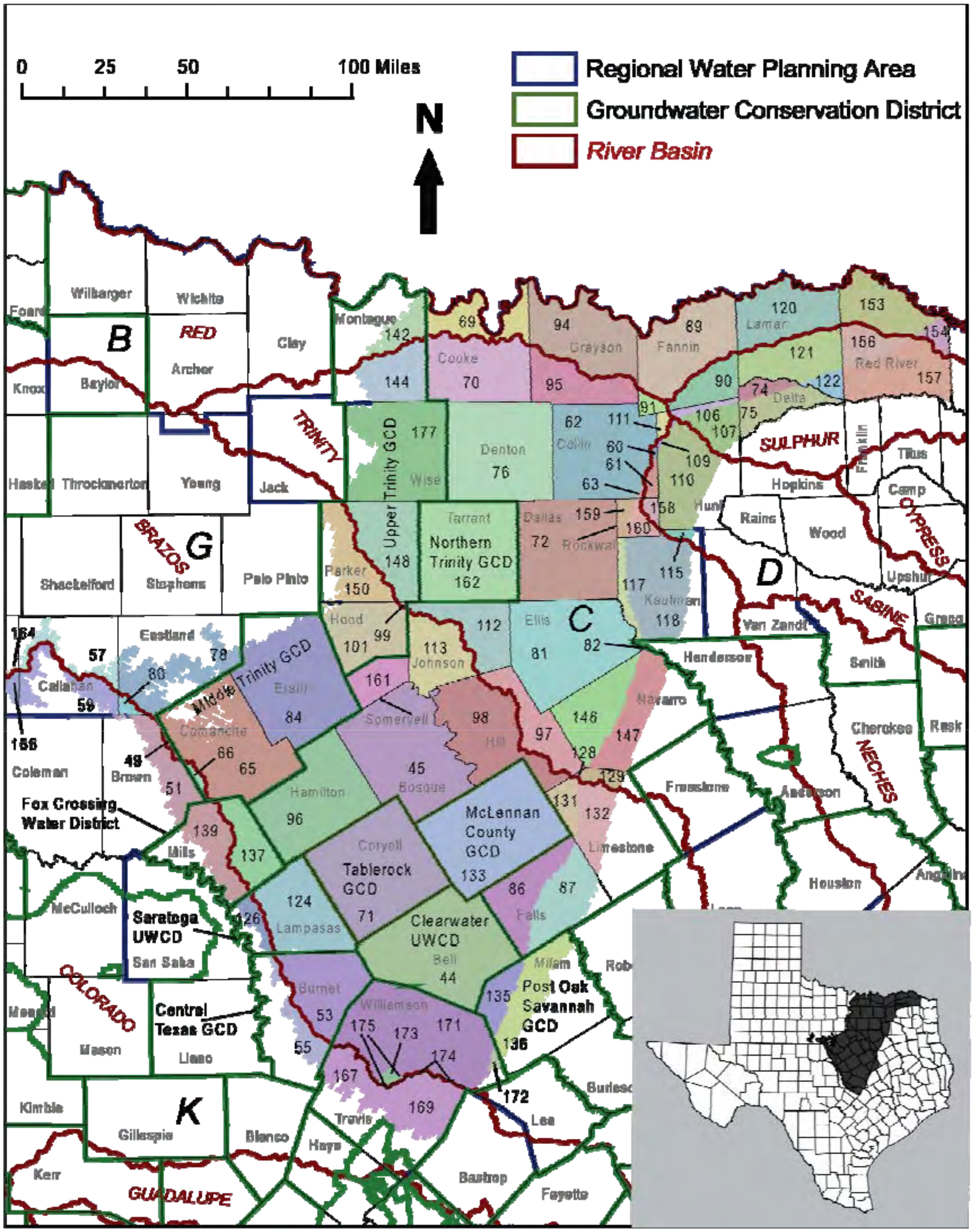

Figure 4. Geographic subdivisions of managed available groundwater for Hosston Unit of the northern part of the Trinity Aquifer. See Table 5 for descriptions of the geographic subdivisions.

RESULTS:

Water level declines in the Trinity Aquifer for the counties in Groundwater Management Area 8 were verified to meet the desired future conditions developed by groundwater conservation districts in Groundwater Management Area 8. The results (Figure 1 and Table 2) show 65,025 acre-feet per year of managed available groundwater for the Paluxy Aquifer in Groundwater Management Area 8. Of those, 89 acre-feet per year may not be fresh water. Under the jurisdiction of the Northern Trinity Groundwater Conservation District, Tarrant County has 10,544 acre-feet per year of managed available groundwater in the Paluxy Aquifer. Under the jurisdiction of the Upper Trinity Groundwater Conservation District; Montague, Wise, Parker, and Hood counties have 13,806 acre-feet per year of managed available groundwater in the Paluxy Aquifer. The remaining counties in Regional Planning Area C have 22,413 acre-feet per year of managed available groundwater in the Paluxy Aquifer. McLennan County Groundwater Conservation District has 231 acre-feet per year, Clearwater Underground Water Conservation District (Bell County) has 96 acre-feet per year, Tablerock Groundwater Conservation District (Coryell County) has 254 acre-feet per year, Saratoga Underground Water Conservation District (Lampasas County) has 13 acre-feet per year, and the Middle Trinity Groundwater Conservation District (Erath and Comanche counties) has 4,249 acre-feet per year of managed available groundwater in the Paluxy Aquifer. The remaining counties in Regional Planning Area G have 12,187 acre-feet per year of managed available groundwater. Central Texas Groundwater Conservation District (Burnet County) has 182 acre-feet per year and Fox Crossing Water District (Mills County) has 6 acre-feet per year. The remaining counties in Regional Planning Area K have 3 acre-feet per year of managed available groundwater. The counties in Regional Planning Area D have 1,024 acre-feet per year of managed available groundwater and the counties in Regional Planning Area F have 18 acre-feet per year in the Paluxy Aquifer.

The results (Figure 2 and Table 3) show 7,387 acre-feet per year of managed available groundwater for the Glen Rose Formation in Groundwater Management Area 8. Of those, 55 acre-feet per year may not be fresh water. Under the jurisdiction of the Northern Trinity Groundwater Conservation District, Tarrant County has 112 acre-feet per year of managed available groundwater in the Glen Rose Aquifer. Under the jurisdiction of the Upper Trinity Groundwater Conservation District; Montague, Wise, Parker, and Hood counties have 201 acre-feet per year of managed available groundwater in the Glen Rose Aquifer. The remaining counties in Regional Planning Area C have 0 acre-feet per year of managed available groundwater in the Glen Rose Formation. McLennan County Groundwater Conservation District has 265 acre-feet per year, Clearwater Underground Water Conservation District (Bell County) has 880 acre-feet per year, Tablerock Groundwater Conservation District (Coryell County) has 784 acre-feet per year, Saratoga Underground Water Conservation District (Lampasas County) has 774 acre-feet per year, the Middle Trinity Groundwater Conservation District (Erath and Comanche counties) has 1 acre-foot per year of managed available groundwater in the Glen Rose Formation and the Post Oak Savannah Groundwater Conservation District has 149 acre-feet per year of managed available groundwater in the Glen Rose Aquifer. The remaining counties in Regional Planning Area G have 1,122 acre-feet per year of managed available

groundwater. Central Texas Groundwater Conservation District (Burnet County) has 205 acre-feet per year and Fox Crossing Water District (Mills County) has 66 acre-feet per year. The remaining counties in Regional Planning Area K have 2,731 acre-feet per year of managed available groundwater. The counties in Regional Water Planning Area D have 0 acre-feet per year of managed available groundwater and the counties in Regional Water Planning Area F have 0 acre-feet per year in the Glen Rose Aquifer.

The results (Figure 3 and Table 4) show 46,067 acre-feet per year of managed available groundwater for the Hensell Aquifer in Groundwater Management Area 8. Of those, 342 acre-feet per year may not be fresh water. Under the jurisdiction of the Northern Trinity Groundwater Conservation District, Tarrant County has 2,535 acre-feet per year of managed available groundwater in the Hensell Aquifer. Under the jurisdiction of the Upper Trinity Groundwater Conservation District; Montague, Wise, Parker, and Hood counties have 6,879 acre-feet per year of managed available groundwater in the Hensell Aquifer. The remaining counties in Regional Planning Area C have 10,134 acre-feet per year of managed available groundwater in the Hensell Aquifer. McLennan County Groundwater Conservation District has 4,190 acre-feet per year, Clearwater Underground Water Conservation District (Bell County) has 1,099 acre-feet per year, Tablerock Groundwater Conservation District (Coryell County) has 1,765 acre-feet per year, Saratoga Underground Water Conservation District (Lampasas County) has 885 acre-feet per year, the Middle Trinity Groundwater Conservation District (Erath and Comanche counties) has 9,562 acre-foot per year of managed available groundwater in the Hensell Aquifer and the Post Oak Savannah Groundwater Conservation District has 36 acre-feet per year of managed available groundwater in the Hensell Aquifer. The remaining counties in Regional Planning Area G have 6,204 acre-feet per year of managed available groundwater. Central Texas Groundwater Conservation District (Burnet County) has 690 acre-feet per year and Fox Crossing Water District (Mills County) has 945 acre-feet per year. The remaining counties in Regional Planning Area K have 203 acre-feet per year of managed available groundwater. The counties in Regional Planning Area D have 861 acre-feet per year of managed available groundwater and the counties in Regional Planning Area F have 79 acre-feet per year in the Hensell Aquifer.

The results (Figure 4 and Table 5) show 130,340 acre-feet per year of managed available groundwater for the Hosston Aquifer in Groundwater Management Area 8. Of those, 875 acre-feet per year may not be fresh water. Under the jurisdiction of the Northern Trinity Groundwater Conservation District, Tarrant County has 5,556 acre-feet per year of managed available groundwater in the Hosston Aquifer. Under the jurisdiction of the Upper Trinity Groundwater Conservation District; Montague, Wise, Parker, and Hood counties have 17,463 acre-feet per year of managed available groundwater in the Hosston Aquifer. The remaining counties in Regional Planning Area C have 19,269 acre-feet per year of managed available groundwater in the Hosston Aquifer. McLennan County Groundwater Conservation District has 16,004 acre-feet per year, Clearwater Underground Water Conservation District (Bell County) has 4,993 acre-feet per year, Tablerock Groundwater Conservation District (Coryell County) has 913 acre-feet per year, Saratoga Underground Water Conservation District (Lampasas County) has 1,446 acre-feet per year, the Middle Trinity Groundwater Conservation District (Erath and Comanche counties) has 39,006 acre-foot per year of managed available groundwater in

the Hosston Aquifer and Post Oak Savannah Groundwater Conservation District (Milam County) has 103 acre-feet per year of managed available groundwater. The remaining counties in Regional Planning Area G have 17,734 acre-feet per year of managed available groundwater. Central Texas Groundwater Conservation District (Burnet County) has 2,469 acre-feet per year and Fox Crossing Water District (Mills County) has 1,383 acre-feet per year. The remaining counties in Regional Planning Area K have 1,172 acre-feet per year of managed available groundwater. The counties in Regional Planning Area D have 880 acre-feet per year of managed available groundwater and the counties in Regional Planning Area F have 1,948 acre-feet per year in the Hosston Aquifer.

In addition, we have reviewed the results from this model simulation and compared the results from GAM Run 08-14mag (Wade, 2008) for the Woodbine Aquifer to verify that they are physically possible, individually and collectively.

Note that estimates of managed available groundwater are based on the best available scientific tools that can be used to evaluate managed available groundwater and that these estimates can be a function of assumptions made on the magnitude and distribution of pumping in the aquifer. Therefore, it is important for groundwater conservation districts to monitor whether or not they are achieving their desired future conditions and to work with the TWDB to refine managed available groundwater given the reality of how the aquifer responds to the actual magnitude and distribution of pumping now and in the future.

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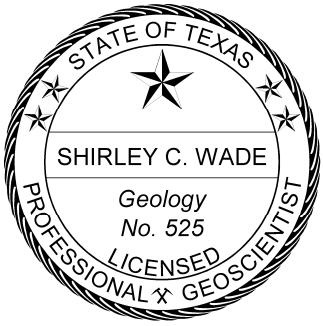
Donnelly, A., 2008, GAM08-06 Final Report, Texas Water Development Board GAM Run Report, October 26, 2007, 44 p.

Wade, S., 2008, GAM08-14mag Report, Texas Water Development Board GAM Run Report, May 6, 2008, 7 p.



The seal appearing on this document was authorized by Shirley C. Wade, P.G., on March 5, 2009.

10.6 TWDB GTA Aquifer Assessment 07-05 Brazos River Alluvium

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Executive Administrator

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Thomas Weir Labatt III, *Member*
Joe M. Crutcher, *Member*

November 7, 2008

Ms. Cheryl Maxwell, General Manager
Clearwater Underground Water Conservation District
P.O. Box 729
Belton, Texas 76513

Re: Managed available groundwater estimates for the Brazos River Alluvium Aquifer in Groundwater Management Area 8

Dear Ms. Maxwell:

The Texas State Water Code, Section 36.108, Subsection (o), states that Texas Water Development Board's executive administrator shall provide each district and regional water planning group located wholly or partly within a groundwater management area with the managed available groundwater in the management area based upon the desired future condition of the groundwater resource. This letter and the attached report (GTA Aquifer Assessment 07-05mag) are in response to this directive.

As noted in your letter dated December 26, 2007, the submitted desired future condition for the northern segment of the Brazos River Alluvium Aquifer in Groundwater Management Area 8 was as follows:

- Maintain approximately 90 percent of the estimated saturated thickness after 50 years in Milam County.
- Maintain approximately 100 percent of the saturated thickness after 50 years in Falls County.
- Maintain approximately 82 percent of the estimated saturated thickness after 50 years in McLennan County.
- Maintain approximately 90 percent of the estimated saturated thickness after 50 years in Hill and Bosque counties.

Managed available groundwater is defined in the Texas Water Code as the amount of water that may be permitted by a district for beneficial use in accordance with the desired future condition of the aquifer as determined under Texas Water Code, Section 36.108. For various planning purposes, the managed available groundwater estimates have been reported at the combined aquifer, county, river basin, regional water planning area, groundwater management area, groundwater conservation district (if applicable), and geographic area/subdivision (if designated) level.

We understand that groundwater conservation districts have options on how to distribute managed available groundwater in a groundwater management area; therefore, we encourage open communication and coordination between groundwater conservation districts, regional water planning

groups, and the TWDB to ensure that managed available groundwater reported in regional water plans and groundwater management plans are not in conflict. In addition, please note that estimates of managed available groundwater are based on the best available scientific tools that can be used to evaluate managed available groundwater and that these estimates may be based on assumptions made on the magnitude and distribution of pumping in the aquifer.

Therefore, it is important for groundwater conservation districts to monitor whether or not their management of pumping is achieving their desired future conditions. Districts are encouraged to work with the TWDB to better define available groundwater as better data becomes available for how the aquifer responds to the actual magnitude and distribution of pumping now and in the future.

Sincerely,

J. Kevin Ward
Executive Administrator

Attachment: GTA Aquifer Assessment 07-05mag

c: Cary Betz, Texas Commission of Environmental Quality, Water Supply Division

Kelly Mills, Texas Commission of Environmental Quality, Groundwater Planning and Assessment Division

Carolyn Brittin, Deputy Executive Administrator, TWDB, Water Resources Planning and Information Division

Bill Mullican, Deputy Executive Administrator, TWDB, Water Science and Conservation

Robert Mace, Ph.D., P.G., Director, TWDB, Groundwater Resources

David Meesey, Manager, TWDB, Regional Water Planning Section

Matt Nelson, Planner-Region G, TWDB, Regional Water Planning Section

Rima Petrossian, P.G., Manager, TWDB, Groundwater Technical Assistance Section

Cindy Ridgeway, P.G., Manager, TWDB, Groundwater Availability Modeling Section

Robert Bradley, P.G., TWDB, Groundwater Technical Assistance Section

David Dunn, HDR Engineering

GTA Aquifer Assessment 07-05mag

by Robert G. Bradley, P.G.
Texas Water Development Board
Groundwater Technical Assistance Section
(512) 936-0870
July 10, 2008

REQUESTOR:

Cheryl Maxwell, of the Clearwater Underground Water Conservation District acting on behalf of Groundwater Management Area 8.

DESCRIPTION OF REQUEST:

In a letter dated December 26, 2007, Ms. Cheryl Maxwell provided the Texas Water Development Board (TWDB) with the desired future conditions for the Edwards (Balcones Fault Zone), Blossom, Brazos River Alluvium, Nacatoch, and Woodbine aquifers in Groundwater Management Area 8 and requested that TWDB estimate managed available groundwater values. This aquifer analysis presents the managed available groundwater for the Brazos River Alluvium Aquifer in Groundwater Management Area 8.

DESIRED FUTURE CONDITIONS:

- Maintain approximately 90 percent of the estimated saturated thickness after 50 years in Milam County.
- Maintain approximately 100 percent of the saturated thickness after 50 years in Falls County.
- Maintain approximately 82 percent of the estimated saturated thickness after 50 years in McLennan County.
- Maintain approximately 90 percent of the estimated saturated thickness after 50 years in Hill and Bosque counties.

METHODS:

The desired future conditions requested for the Brazos River Alluvium Aquifer were based on maintaining a percentage of the estimated saturated thickness left in 50 years.

The aquifer was subdivided by county and groundwater conservation district boundaries. The areal extent of each aquifer subdivision was calculated. These areas were used to calculate estimated recharge and pumped volumes.

To determine the volume from storage used, the areas were multiplied by the estimated aquifer specific yield, and then by the percent of drained saturated

thickness necessary to maintain the desired future condition. This volume was then divided by 50 years to obtain a yearly volume.

Recharge to the aquifer was calculated by multiplying each area by the average precipitation and an estimated recharge rate.

Water-level data from the TWDB groundwater database was used to calculate average saturated thickness. Shah and Houston (2007) provided raster surface elevations for the top and bottom of the Brazos River Alluvium. Every water level measurement was assigned an elevation from the top of aquifer data. The base of aquifer elevations at every well were subtracted from the water level elevations. This resulted in a saturated thickness for every water-level measurement for the aquifer. Average saturated thickness was determined by averaging all saturated thickness estimates within an aquifer subdivision.

The calculations were done in a Microsoft Excel worksheet.

PARAMETERS AND ASSUMPTIONS:

- The Brazos River Alluvium Aquifer in GMA 8 is wholly contained in the Brazos River Basin and the Brazos G Regional Water Planning Group boundaries.
- The average total thickness of the Brazos River Alluvium is 28 feet in Bosque and Falls counties, combined; 33 feet in McLennan and Falls counties, individually; and 55 feet in Milam County (Shah and Houston (2007).
- Estimated saturated thickness of 35 feet in the GMA 8 submission is overestimated based on data from Shah and Houston (2007).
- The areas for each subdivision were calculated from the Texas Water Development Board (TWDB) shapefile for the Brazos River Alluvium, projected into the GAM projection (Anaya, 2001).
- Areas, in acres, were calculated within ArcGIS 9.2.
- Average annual precipitation was used to calculate recharge volumes.
- The average annual precipitation for the aquifer area was determined from the Texas Climatic Atlas (Narasimhan and others, 2008).
- Average annual precipitation was estimated to be 35 inches for Bosque, Hill and McLennan counties, and 37 inches for Falls and Milam counties (Table 1).
- Recharge from precipitation is estimated to be 7.5 percent of annual precipitation (Williams, 2007; Cronin and Wilson, 1967).
- An average saturated thickness for each aquifer subdivision is used to make volume calculations.
- Bosque and Falls counties were combined to determine aquifer thickness and average saturated thickness.
- The managed available groundwater volume estimates are the amount that is depleted from the aquifer to maintain the desired future condition.

- Annual volumes are calculated by dividing the total volume by 50 years.
- Total annual managed available groundwater is calculated by adding the annual volume to the recharge volume.
- Specific yield of the aquifer is estimated to be 0.15 (Cronin and Wilson, 1967, pp.2, 27).

RESULTS:

The recharge estimate for the Brazos River Alluvium Aquifer in GMA 8 is 33,042 acre-feet per year.

The volume of water available in the Brazos River Alluvium Aquifer for the counties in Groundwater Management Area 8 were confirmed to meet the desired future conditions developed by groundwater conservation districts in Groundwater Management Area 8. The results (Figure 1, Tables 2 and 3) show 33,644 acre-feet per year of managed available groundwater for the Brazos River Alluvium Aquifer in Groundwater Management Area 8. Under the authority of the McLennan County Groundwater Conservation District, the county has 15,023 acre-feet per year of managed available groundwater in the Brazos River Alluvium Aquifer. Post Oak Savannah Groundwater Conservation District has 475 acre-feet per year. In the remainder of the aquifer, Bosque, Hill, and Falls Counties have a total of 18,146 acre-feet per year of managed available groundwater.

Table 1. Estimated total annual recharge volume for the Brazos River Alluvium Aquifer by geographic subdivisions (See Figure 1).

GMA	Aquifer	County	GCD	Map area	Areal extent (acres)	Average precipitation (inches)	Average precipitation (feet)	Recharge rate (percent)	Estimated annual recharge (acre-feet)
8	Brazos River Alluvium	Bosque	None	1	3,752	35	2.9	7.5	821
		Hill	None	2	952	35	2.9	7.5	208
				3	1,907	35	2.9	7.5	417
		McLennan	McLennan GCD	4	66,047	35	2.9	7.5	14,448
		Falls	None	5	72,146	37	3.1	7.5	16,684
		Milam	Post Oak Savannah GCD	6	2,005	37	3.1	7.5	464
								Total	33,042

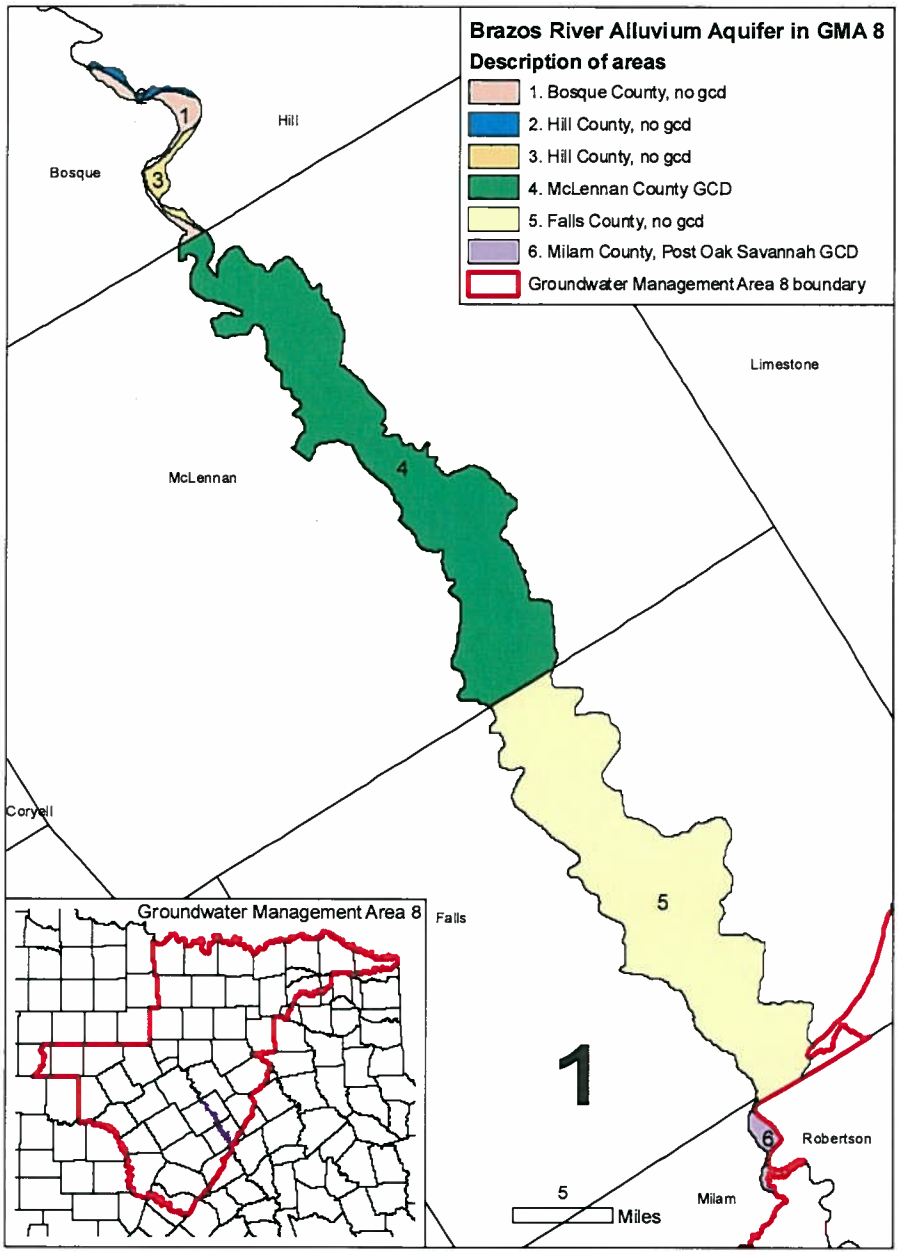


Figure 1. Geographic subdivisions for analyzing managed available groundwater the Brazos River Alluvium Aquifer in groundwater management area 8.

Table 2. Estimates of managed available groundwater for the Brazos River Alluvium Aquifer by geographic subdivisions (see Figure 1).

GMA	Aquifer	County	GCD	Map area	Specific yield	Areal extent (acres)	Estimated saturated thickness (feet)	Desired future percent of saturated thickness	Desired future saturated thickness (feet)	Saturated thickness drained (feet)	Estimated total volume from storage (acre-feet)	Estimated annual volume from storage (acre-feet)	Estimated annual recharge (acre-feet)	Estimated Annual Total Volume (acre-feet)
8	Brazos River Alluvium	Bosque	None	1	0.15	3,752	8	90	7.2	0.8	450	9	821	830
		Hill	None	2	0.15	952	8	90	7.2	0.8	114	2	208	210
				3	0.15	1,907	8	90	7.2	0.8	229	5	417	422
		McLennan	McLennan GCD	4	0.15	66,047	16	82	13.1	2.9	28,730	575	14,448	15,023
		Falls	None	5	0.15	72,146	30	100	30.0	0.0	0	0	16,684	16,684
		Milam	Post Oak Savannah GCD	6	0.15	2,005	19	90	17.1	1.9	571	11	464	475
											Total	602	33,042	33,644

Table 3. Estimates of managed available groundwater for the Brazos River Alluvium Aquifer (See Figure 1).

Aquifer	Map Key	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (acre-feet per year)
Brazos River Alluvium	1	Bosque	G	Brazos	None	8	Bosque	n/a	830
Brazos River Alluvium	2	Hill	G	Brazos	None	8	Hill	n/a	210
Brazos River Alluvium	3	Hill	G	Brazos	None	8	Hill	n/a	422
Brazos River Alluvium	4	McLennan	G	Brazos	MCGCD	8	McLennan	n/a	15,023
Brazos River Alluvium	5	Falls	G	Brazos	None	8	Falls	n/a	16,684
Brazos River Alluvium	6	Milam	G	Brazos	POSGCD	8	Milam	n/a	475

GCD = Groundwater conservation district.
GeoArea = Geographic areas defined by unique desired future conditions as specified by a groundwater management area.
GMA = Groundwater management area.
MAG = Managed available groundwater in units of acre-feet per year.
MCGCD = McLennan County Groundwater Conservation District
POSGCD = Post Oak Savannah Groundwater Conservation District
RWPA = Regional water planning area.

STIPULATIONS:

Additional data are needed to create improved estimates; however, these estimates are a simplistic interpretation of the requested conditions. These solutions assume homogeneous and isotropic aquifers; however, conditions for the Brazos River Alluvium may not behave in a uniform manner. Recharge is the largest variable and most influential variable used in these calculations.

Please note that estimates of managed available groundwater are based on the best available scientific tools that can be used to evaluate managed available groundwater and that these estimates may be based on assumptions made on the magnitude and distribution of pumping in the aquifer. Therefore, it is important for groundwater conservation districts to monitor whether or not their management of pumping is achieving their desired future conditions. Districts are encouraged to work with the Texas Water Development Board to better define available groundwater as better evidence becomes available for how the aquifer responds to the actual magnitude and distribution of pumping now and in the future.

REFERENCES:

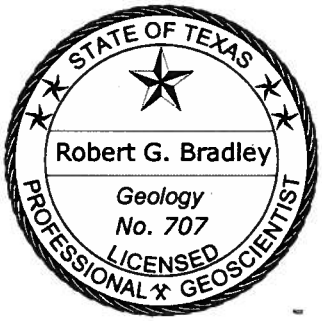
Anaya, R., 2001, GAM technical memo 01-01(rev a): Texas Water Development Board technical memorandum, 2p.

Cronin, J., and Wilson, C., 1967, Ground water in the flood plain alluvium of the Brazos River, Whitney Dam to the vicinity of Richmond, Texas: Texas Water Development Board Report 41, 80p.

Shah, S.D., and Houston, N.A., 2007, Geologic and Hydrogeologic Information for a Geodatabase for the Brazos River Alluvium Aquifer, Bosque County to Fort Bend County, Texas: U.S. Geological Survey Open-File Report 2007–1031, version 3, 10p.

Narasimhan, B., Srinivasan, R., Quiring, S., and Nielsen-Gammon, J.W., 2008, Digital Climatic Atlas of Texas: Texas A&M University, Texas Water Development Board Contract, Report 2005-483-5591, 108p.

Williams, C.R, 2007, Adopted desired future conditions of minor aquifers: memorandum to Cheryl Maxwell, Groundwater Management Area 8, 19p.



The seal appearing on this document was authorized by Robert G. Bradley, P.G., on July 10, 2008.

10.7. TWDB GAM Run 08-14 Woodbine Aquifer

November 10, 2008

Ms. Tricia Law
McLennan County Groundwater Conservation District
3015 Bellmead Drive
Waco, Texas 76705

Re: Managed available groundwater estimates for the Woodbine Aquifer in Groundwater Management Area 8

Dear Ms. Law:

The Texas State Water Code, Section 36.108, Subsection (o), states that Texas Water Development Board's (TWDB) Executive Administrator shall provide each district and regional water planning group, located wholly or partly within a groundwater management area, with the managed available groundwater in the management area based upon the desired future condition of the groundwater resource. This letter and the attached report (GAM Run 08-14mag) are in response to this directive.

As noted in your letter dated December 26, 2007, the submitted desired future condition for the Woodbine Aquifer in Groundwater Management Area 8 was as follows:

- From estimated year 2000 conditions, the average drawdown should not exceed approximately 154 feet after 50 years in Collin County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 0 feet after 50 years in Cooke County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 112 feet after 50 years in Dallas County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 16 feet after 50 years in Denton County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 102 feet after 50 years in Ellis County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 186 feet after 50 years in Fannin County.

- From estimated year 2000 conditions, the average drawdown should not exceed approximately 28 feet after 50 years in Grayson County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 87 feet after 50 years in Hill County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 353 feet after 50 years in Hunt County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 4 feet after 50 years in Johnson County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 211 feet after 50 years in Kaufman County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 297 feet after 50 years in Lamar County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 61 feet after 50 years in McLennan County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 177 feet after 50 years in Navarro County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 202 feet after 50 years in Red River County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 241 feet after 50 years in Rockwall County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 2 feet after 50 years in Tarrant County.

Managed available groundwater is defined in the Texas Water Code as the amount of water that may be permitted by a district for beneficial use in accordance with the desired future condition of the aquifer as determined under Texas Water Code, Section 36.108. For various planning purposes, the managed available groundwater estimates have been reported at the combined aquifer, county, river basin, regional water planning area, groundwater management area, groundwater conservation district (if applicable), and geographic area/subdivision (if designated) level.

We understand that groundwater conservation districts have options on how to distribute managed available groundwater in a groundwater management area; therefore, we encourage open communication and coordination between groundwater conservation districts, regional water planning groups, and the TWDB to ensure that managed available groundwater reported in regional water plans and groundwater management plans are not in conflict. In addition, please note that estimates of managed available groundwater are based on the best available scientific tools that can be used to evaluate managed available groundwater and that these estimates may be based on assumptions made on the magnitude and distribution of pumping in the aquifer.

GAM Run 08-14mag

by Shirley C. Wade, P.G.
Texas Water Development Board
Groundwater Availability Modeling Section
(512) 463-3132
May 6, 2008

REQUESTOR:

Ms. Cheryl Maxwell of the Clearwater Underground Water Conservation District acting on behalf of Groundwater Management Area 8.

DESCRIPTION OF REQUEST:

In a letter dated December 26, 2007, Ms. Cheryl Maxwell provided the Texas Water Development Board (TWDB) with the desired future conditions for the Edwards (Balcones Fault Zone), Blossom, Brazos River Alluvium, Nacatoch, and Woodbine aquifers in Groundwater Management Area 8 and requested that TWDB estimate managed available groundwater values. This groundwater availability modeling run presents the managed available groundwater for the Woodbine Aquifer in Groundwater Management Area 8.

DESIRED FUTURE CONDITIONS:

Desired future conditions for the Woodbine Aquifer submitted to TWDB by the groundwater conservation districts in Groundwater Management Area 8:

- From estimated year 2000 conditions, the average drawdown should not exceed approximately 154 feet after 50 years in Collin County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 0 feet after 50 years in Cooke County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 112 feet after 50 years in Dallas County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 16 feet after 50 years in Denton County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 102 feet after 50 years in Ellis County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 186 feet after 50 years in Fannin County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 28 feet after 50 years in Grayson County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 87 feet after 50 years in Hill County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 353 feet after 50 years in Hunt County.

- From estimated year 2000 conditions, the average drawdown should not exceed approximately 4 feet after 50 years in Johnson County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 211 feet after 50 years in Kaufman County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 297 feet after 50 years in Lamar County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 61 feet after 50 years in McLennan County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 177 feet after 50 years in Navarro County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 202 feet after 50 years in Red River County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 241 feet after 50 years in Rockwall County.
- From estimated year 2000 conditions, the average drawdown should not exceed approximately 2 feet after 50 years in Tarrant County.

This information is summarized in Table 1.

Table 1. Summary of requested desired future conditions for the Woodbine Aquifer in Groundwater Management Area 8.

County	Average water level decrease (feet)
Collin	154
Cooke	0
Dallas	112
Denton	16
Ellis	102
Fannin	186
Grayson	28
Hill	87
Hunt	353
Johnson	4
Kaufman	211
Lamar	297
McLennan	61
Navarro	177
Red River	202
Rockwall	241
Tarrant	2

EXECUTIVE SUMMARY:

TWDB staff ran the groundwater availability model for the northern part of the Trinity Aquifer and the Woodbine Aquifer to determine the managed available groundwater based on the desired future conditions for the Woodbine Aquifer adopted by the groundwater conservation districts in Groundwater Management Area 8. The results are listed in Table 2:

METHODS:

This request is based on previous GAM run 07-30 (Wade, 2007). In that simulation, average streamflows and evapotranspiration rates were used for each year of the predictive simulation. Average recharge was used for the first forty-seven years of the simulation, followed by a three-year drought-of-record.

PARAMETERS AND ASSUMPTIONS:

The groundwater availability model for the northern part of the Trinity Aquifer was used for this model run. The parameters and assumptions for this model are described below:

- We used version 1.01 of the groundwater availability model for the northern part of the Trinity Aquifer for this run. See Bené and others (2004) for assumptions and limitations of the model.

- The model includes seven layers, representing the Woodbine Aquifer (Layer 1), the Washita and Fredericksburg Series (Layer 2), the Paluxy Formation (Layer 3), the Glen Rose Formation (Layer 4), the Hensell Formation (Layer 5), the Pearsall/Cow Creek/Hammett/Sligo formations (Layer 6), and the Hosston Formation (Layer 7). The Woodbine, Paluxy, Hensell, and Hosston layers are the main aquifers used in the region.

- The mean absolute error (a measure of the difference between simulated and actual water levels during model calibration) for the four main aquifers in the model (Woodbine, Paluxy, Hensell, and Hosston) for the calibration and verification time periods (1980 to 2000) ranged from approximately 37 to 75 feet. The root mean squared error was less than ten percent of the maximum change in water levels across the model (Bené and others, 2004).

- We used average annual recharge conditions based on climate data from 1980 to 1999 for the simulation. The last three years of the simulation used drought-of-record recharge conditions, which were defined as the years 1954 to 1956.

- The model uses the MODFLOW stream-routing package to simulate the interaction between the aquifer(s) and major intermittent streams flowing in the region. Flow both from the stream to the aquifer and from the aquifer to the stream is allowed, and the direction of flow is determined by the water levels in the aquifer and stream during each stress period in the simulation.

- Spatial and vertical pumpage distribution is described in GAM run 07-30 (Wade, 2007).

Table 2. Estimates of managed available groundwater for the Woodbine Aquifer by geographic subdivisions (See Figure 1).

Aquifer	Map Key	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
Woodbine	39	Collin	C	Sabine	None	8	Collin	n/a	40
Woodbine	40	Collin	C	Trinity	None	8	Collin	n/a	2,469
Woodbine	47	Cooke	C	Red	None	8	Cooke	n/a	18
Woodbine	48	Cooke	C	Trinity	None	8	Cooke	n/a	136
Woodbine	50	Dallas	C	Trinity	None	8	Dallas	n/a	2,313
Woodbine	51	Delta	C	Sulphur	None	8	Delta	n/a	20
Woodbine	52	Denton	C	Trinity	None	8	Denton	n/a	4,126
Woodbine	55	Ellis	C	Trinity	None	8	Ellis	n/a	5,441
Woodbine	59	Fannin	C	Red	None	8	Fannin	n/a	2,676
Woodbine	60	Fannin	C	Sulphur	None	8	Fannin	n/a	21
Woodbine	61	Fannin	C	Trinity	None	8	Fannin	n/a	600
Woodbine	69	Grayson	C	Red	None	8	Grayson	n/a	6,590
Woodbine	70	Grayson	C	Trinity	None	8	Grayson	n/a	5,497
Woodbine	83	Hill	G	Brazos	None	8	Hill	n/a	1,249
Woodbine	82	Hill	G	Trinity	None	8	Hill	n/a	1,012
Woodbine	92	Hunt	D	Sabine	None	8	Hunt	n/a	1,867
Woodbine	91	Hunt	D	Sulphur	None	8	Hunt	n/a	849
Woodbine	93	Hunt	D	Trinity	None	8	Hunt	n/a	124
Woodbine	97	Johnson	G	Brazos	None	8	Johnson	n/a	141
Woodbine	96	Johnson	G	Trinity	None	8	Johnson	n/a	4,591
Woodbine	99	Kaufman	C	Sabine	None	8	Kaufman	n/a	0
Woodbine	100	Kaufman	C	Trinity	None	8	Kaufman	n/a	200
Woodbine	102	Lamar	D	Red	None	8	Lamar	n/a	1,910
Woodbine	103	Lamar	D	Sulphur	None	8	Lamar	n/a	1,734
Woodbine	111	Limestone	G	Brazos	None	8	Limestone	n/a	34

Aquifer	Map Key	County	RWPA	River Basin	GCD	GMA	GeoArea	Year	MAG (Acre-feet per year)
Woodbine	114	McLennan	G	Brazos	McLennan C.	8	McLennan	n/a	5
Woodbine	130	Navarro	C	Trinity	None	8	Navarro	n/a	300
Woodbine	137	Red River	D	Red	None	8	Red River	n/a	162
Woodbine	138	Red River	D	Sulphur	None	8	Red River	n/a	4
Woodbine	140	Rockwall	C	Sabine	None	8	Rockwall	n/a	0
Woodbine	141	Rockwall	C	Trinity	None	8	Rockwall	n/a	144
Woodbine	152	Tarrant	C	Trinity	N. Trinity	8	Tarrant	n/a	632

GCD = Groundwater conservation district.

GeoArea = Geographic areas defined by unique desired future conditions as specified by a groundwater management area.

GMA = Groundwater management area.

MAG = Managed available groundwater in units of acre-feet per year.

McLennan C. = McLennan County Groundwater Conservation District

N. Trinity = Northern Trinity Groundwater Conservation District

RWPA = Regional water planning area.

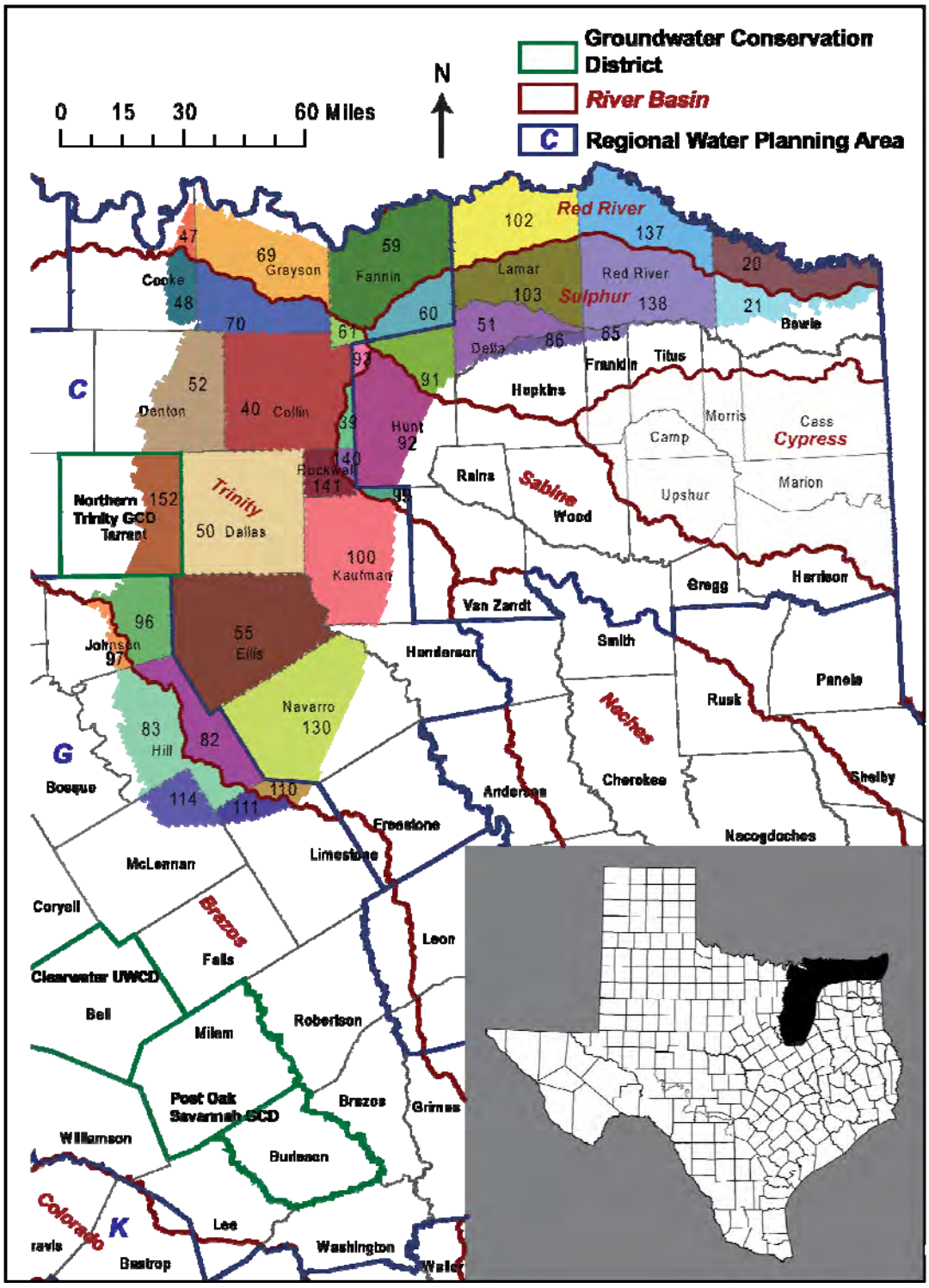


Figure 1. Geographic subdivisions of managed available groundwater for the Woodbine Aquifer. See Table 2 for descriptions of the geographic subdivisions.

RESULTS:

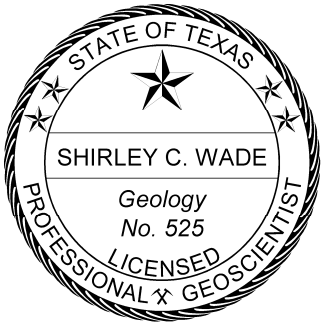
Water level declines in the Woodbine Aquifer for the counties in Groundwater Management Area 8 were verified to meet the desired future conditions developed by groundwater conservation districts in Groundwater Management Area 8. The results (Figure 1 and Table 2) show 44,905 acre-feet per year of managed available groundwater for the Woodbine Aquifer in Groundwater Management Area 8. Under the jurisdiction of the Northern Trinity Groundwater Conservation District, Tarrant County has 632 acre-feet per year of managed available groundwater in the Woodbine Aquifer. The remaining counties in Regional Planning Area C have 30,591 acre-feet per year of managed available groundwater. McLennan County Groundwater Conservation District has 5 acre-feet per year. The remaining counties in Regional Planning Area G have 7,027 acre-feet per year of managed available groundwater. The counties in Regional Planning Area D have 6,650 acre-feet per year of managed available groundwater.

Note that estimates of managed available groundwater are based on the best available scientific tools that can be used to evaluate managed available groundwater and that these estimates can be a function of assumptions made on the magnitude and distribution of pumping in the aquifer. Therefore, it is important for groundwater conservation districts to monitor whether or not they are achieving their desired future conditions and to work with the TWDB to refine managed available groundwater given the reality of how the aquifer responds to the actual magnitude and distribution of pumping now and in the future. In addition, any changes to the assumptions for the volume and distribution of pumpage in the Trinity Aquifer in the counties located within and surrounding the Woodbine Aquifer have the potential of affecting the managed available groundwater estimates described in this report.

REFERENCES:

Bené, J., Harden, B., O'Rourke, D., Donnelly, A., and Yelderman, J., 2004, Northern Trinity/Woodbine Groundwater Availability Model: contract report to the Texas Water Development Board by R.W. Harden and Associates, 391 p.

Wade, S.C., 2007, GAM07-30 Final Report, Texas Water Development Board GAM Run Report, October 26, 2007, 25 p.



The seal appearing on this document was authorized by Shirley Wade, P.G., on May 6, 2008.

10.8 Southern Trinity Groundwater Conservation District 2008 Water Usage Summary

STGCD Estimate of 2008 Trinity Aquifer Production (1000 Gal)

		Total	1	2	3	4	5	6	7	8	9	10	11	12
1	Axtell W.S.C.	18,491	1,224	1,224	1,242	2,134	2,378	2,708	2,526	760	527	0	2,213	1,555
2	Axtell W.S.C.	57,602	2,209	2,209	1,911	2,053	1,929	3,992	7,276	6,034	6,204	6,510	13,423	3,852
3	Behringer Water System	2,783	275	275	186	132	149	342	352	276	201	189	352	54
4	China Springs Water No. 1	10,045	1,001	1,001	860	866	1,135	0	2,180	1,442	609	0	0	951
5	China Spring Ranch	11,866	1,023	1,023	1,111	945	500	1,867	1,030	871	718	372	1,251	1,155
6	Goodall Water System	7,245	2,086	2,086	126	186	166	0	0	462	670	461	455	547
7	North Bosque Estates WSC	26,119	1,234	1,234	1,795	1,662	1,554	3,419	3,463	2,857	2,562	1,757	2,029	2,553
8	North County W.S.C.	33,559	1,671	1,671	2,358	2,141	2,370	3,709	4,002	3,016	3,381	6,430	2,245	565
9	Rivercrest Water Co.	13,919	591	591	891	739	834	1,628	2,055	1,843	1,481	1,088	1,159	1,019
10	Smith Water Co.	2,898	139	139	452	171	183	411	397	219	213	210	192	172
11	Tubbs Water System	4,003	296	296	310	309	143	623	414	395	327	282	266	342
12	Western Hills Water No. 1	8,279	438	438	483	474	616	1,272	1,776	754	716	633	382	297
14	Bold Springs WSC No 2	25,130	1,215	1,215	848	3,431	2,595	3,275	2,902	2,445	2,570	1,828	1,413	1,393
15	Bold Springs WSC No 3	34,817	1,606	1,606	3,056	948	1,871	3,988	5,638	890	7,283	3,037	2,530	2,364
16	Bosque Basin W.S.C.	**31,025**	0	0	0	0	0	0	0	0	0	0	0	0
17	Bosqueville Green Acres	**4,380**	0	0	0	0	0	0	0	0	0	0	0	0
19	Central Bosque WSC	**36,500**	0	0	0	0	0	0	0	0	0	0	0	0
20	Cargill Meat Solutions	182,037	13,215	13,215	13,773	17,438	14,871	15,557	17,526	14,179	15,176	17,027	14,664	15,396
21	Cedar Ridge Deep Well	6,303	332	332	701	210	722	528	1,124	0	1,060	431	856	7
23	Chalk Bluff W.S.C.	38,836	2,111	2,111	4,654	3,397	2,714	4,141	4,419	0	8,723	2,501	2,169	1,896
25	Chalk Bluff W.S.C.	44,181	1,147	1,147	2,382	3,366	3,186	6,291	7,522	0	7,600	4,373	4,117	3,050
26	Chalk Bluff W.S.C.	39,325	0	0	0	1,412	1,223	3,592	5,291	0	15,892	4,601	3,927	3,387
27	Western Hills Water No. 2	10,438	184	184	103	730	944	1,702	1,945	572	2,270	722	522	560
28	Western Hills Water No. 3	17,881	656	656	891	6,364	377	1,272	2,091	1,451	1,396	1,087	869	771
29	Western Hills Water No. 4	38,669	2,628	2,628	2,847	2,964	3,104	3,954	3,882	3,608	3,322	3,041	2,885	3,806
33	China Springs Water No. 3	57,758	3,855	0	2,687	2,850	4,320	6,092	9,287	6,013	7,028	6,730	5,041	3,855
39	City of Bellmead No. 1	123,437	10,990	0	0	8,182	12,462	13,872	15,488	12,692	13,909	13,060	11,792	10,990
40	City of Bellmead No. 2	135,555	15,310	15,310	13,803	13,105	9,144	10,291	11,338	9,139	10,098	9,625	8,818	9,574
41	City of Bellmead No. 3	126,342	13,228	13,228	11,282	10,243	7,944	10,127	14,043	10,778	9,390	9,185	8,511	8,383
42	City of Bellmead No. 4	101,664	10,490	10,490	9,946	8,504	6,943	9,019	10,723	8,421	7,100	6,938	6,592	6,498
44	City of Bruceville-	14,173	1,148	0	0	0	0	1,242	3,147	2,384	1,220	1,974	1,910	1,148
45	City of Bruceville-	29,879	2,385	0	5,995	0	3,933	2,653	2,809	2,757	2,512	2,377	2,073	2,385
46	City of Bruceville-	20,919	1,694	0	4,372	0	3,369	1,222	1,800	1,761	1,669	1,703	1,635	1,694
47	City of Bruceville-	24,603	1,829	0	3,325	0	2,688	2,848	3,759	2,703	1,940	844	2,838	1,829
49	City of Crawford No. 1	69,095	1,872	0	0	47,539	6,237	1,856	2,057	1,920	2,134	1,790	1,818	1,872
50	City of Crawford No. 2	64,198	1,767	0	0	40,600	6,643	2,777	2,617	2,283	2,495	1,871	1,378	1,767
53	City of Hewitt No. 6	178,790	8,275	8,275	15,850	0	27,071	4,078	11,969	20,658	20,046	21,234	19,917	21,417
54	City of Hewitt No. 2	58,836	4,573	4,573	12,391	0	5,070	8,353	11,344	3,216	0	3,074	3,720	2,522
55	City of Hewitt No. 3	17,707	911	911	1,114	0	2,577	2,079	2,461	2,176	1,692	1,396	1,174	1,216
56	City of Hewitt No. 4	108,507	277	277	2,798	0	15,831	20,160	19,420	17,106	15,630	8,513	5,518	2,977
58	City of Lacy	0	0	0	0	0	0	0	0	0	0	0	0	0
59	City of Lorena No. 2	10,766	0	0	3,503	0	7,263	0	0	0	0	0	0	0

60	City of Lorena No. 3	542	0	0	80	0	462	0	0	0	0	0	0	0
62	City of Mart No. 1	18,155	0	0	6,748	0	6,331	5,076	0	0	0	0	0	0
63	City of McGregor No. 3	35,196	0	0	0	725	1,352	9,424	13,014	5,942	2,630	1,804	305	0
64	City of McGregor No. 4	27,460	0	0	7,194	713	1,384	684	4,163	4,457	4,362	2,901	1,602	0
67	City of McGregor No. 2B	30,459	0	0	5,202	2,121	2,579	4,361	5,658	2,782	2,673	2,631	2,452	0
68	City of McGregor No. 4B	48,190	0	0	5,174	2,124	2,525	4,962	21,269	0	6,862	2,724	2,550	0
69	City of Moody No. 1	4,969	335	335	0	90	300	286	1,090	1,117	763	247	70	336
70	City of Moody No. 2	4,672	230	0	0	0	333	295	0	2,353	805	252	174	230
78	City of Robinson No. 3	55,403	11,406	11,406	4,392	3,963	3,903	3,499	3,557	3,515	3,417	3,366	163	2,816
82	City of Robinson No. 7	55,560	0	0	0	1	0	11,859	8,070	7,621	7,109	7,068	6,815	7,017
83	City of Robinson No. 8	126,900	66	66	793	7,505	9,110	13,443	46,700	11,936	11,955	9,363	9,306	6,657
84	City of Robinson No. 9	130,293	9,086	9,086	10,035	9,011	10,895	13,852	14,159	12,411	12,574	10,632	10,439	8,113
85	City of Robinson No. 10	129,431	8,958	8,958	10,173	9,186	10,881	14,052	14,386	12,032	12,034	10,467	10,299	8,005
86	City of West No. 1	52,641	4,820	4,820	4,764	3,868	4,572	3,514	5,417	5,711	5,924	5,094	4,137	0
92	City of Woodway No. 1	133,895	10,366	10,366	9,792	9,778	10,058	16,413	17,323	13,390	10,190	10,310	8,789	7,120
93	City of Woodway No. 2	110,624	11,426	11,426	12,127	11,253	11,831	9,554	9,951	6,936	6,893	5,791	5,432	8,004
94	City of Woodway No. 3	128,529	9,347	9,347	8,800	10,081	10,457	13,301	11,537	10,737	11,545	10,361	11,940	11,076
95	City of Woodway No. 4	173,074	4,967	4,967	7,092	10,493	14,868	25,023	19,488	17,361	20,246	17,986	15,600	14,983
96	City of Woodway No. 5	83,036	11,556	11,556	7,042	5,308	3,888	10,211	13,344	9,702	5,793	2,400	1,850	386
97	City of Woodway No. 6	150,953	5,261	5,261	10,568	15,134	16,254	15,664	13,204	11,722	11,571	18,726	16,822	10,766
98	Cross Country WSC No. 1	8,351	759	0	0	0	0	0	0	0	0	0	7,592	0
99	Cross Country WSC No. 3	15,232	823	0	0	0	0	0	0	0	0	0	13,586	823
101	Cross Country WSC No. 5	36,970	2,859	0	0	0	0	0	0	0	0	0	31,252	2,859
102	Cross Country WSC No. 6	34,436	1,927	0	0	0	0	0	0	0	0	0	30,582	1,927
103	Cottonwood WSC No. 1	18,824	1,296	0	0	0	0	0	8,136	1,605	1,847	1,627	1,448	1,296
104	East Crawford No. 1	23,785	1,195	0	0	0	0	0	0	0	0	11,947	0	10,643
105	East Crawford No. 2	52,696	4,093	0	0	0	0	0	0	0	0	41,191	3,319	4,093
106	E.O.L. WSC No. 1	19,953	1,437	1,437	911	0	2,496	2,765	2,630	2,471	2,043	1,276	1,369	1,118
107	E.O.L. WSC No. 2	16,865	1,304	1,304	1,116	0	1,532	1,571	1,825	1,859	1,491	2,465	1,375	1,023
108	E.O.L. WSC No. 3	19,419	1,138	1,138	1,336	0	2,237	1,539	2,419	2,028	2,086	2,346	1,616	1,536
109	Gholson WSC No. 1	18,803	1,674	0	0	0	4,102	1,835	295	4,382	0	3,482	1,359	1,674
110	Gholson WSC No. 3	27,389	2,353	0	0	0	6,694	2,590	3,495	3,049	2,782	2,146	1,927	2,353
111	H & H WSC No. 1	16,975	1,064	1,064	945	957	1,392	1,714	2,097	1,729	2,245	1,191	1,112	1,465
112	H & H WSC No. 2	31,084	2,134	2,134	1,923	1,959	1,746	3,667	4,830	3,611	2,058	2,800	2,485	1,737
113	Hilltop WSC No. 1	7,215	593	0	0	1,106	0	1,405	1,057	1,016	736	709	0	593
114	Hilltop WSC No. 2	48,052	3,788	0	0	8,459	0	10,548	6,474	5,536	4,161	5,145	153	3,788
115	Hilltop WSC No. 3	102,837	8,203	0	0	15,640	0	24,515	15,264	10,919	9,918	10,175	0	8,203
117	Leroy Tours Gerald	17,708	930	930	1,055	1,280	1,857	2,241	2,928	1,701	1,408	1,429	1,011	938
118	Leroy Tours Gerald	26,317	1,719	1,719	1,788	1,590	1,823	2,850	3,139	2,342	2,566	2,134	2,203	2,444
122	Elm Creek W.S.C. No. 1	24,223	4,323	4,323	126	0	696	2,270	117	883	2,531	4,817	2,612	1,525
123	Elm Creek W.S.C. No. 2	18,821	2,733	2,733	116	0	894	2,440	885	1,311	1,625	2,135	2,312	1,637
125	McLennan Co WCID No. 2	25,610	1,867	0	0	7,079	0	5,920	3,889	2,537	469	0	1,982	1,867
126	McLennan Co WCID No. 2	21,095	1,796	0	0	3,047	0	2,446	1,510	1,273	3,732	4,743	752	1,796

STGCD Estimate of 2008 Trinity Aquifer Production (1000 Gal)

127	McLennan Co WCID No. 2	29,716	1,700	0	0	9,027	0	6,791	3,551	2,374	1,972	2,601	0	1,700
128	Hog Creek W.S.C. No. 1	84,639	12,908	12,908	4,301	11,335	5,399	2,440	6,767	7,105	9,500	4,821	3,400	3,755
129	Hog Creek W.S.C. No. 2	129,991	6,640	6,640	6,631	3,274	6,235	14,286	16,308	20,607	21,103	10,475	9,306	8,486
130	North Bosque W.S.C. No. 1	83,758	9,741	0	0	0	0	0	0	68,188	0	4,114	1,715	0
131	North Bosque W.S.C. No. 2	96,455	11,866	0	0	0	0	0	0	83,060	0	1,093	436	0
132	Country WSC No.1	**3,285**	0	0	0	0	0	0	0	0	0	0	0	0
133	Riesel-Meir Settlement	51,038	3,456	0	0	0	0	19,734	6,705	4,852	4,730	4,239	3,866	3,456
136	Ross W.S.C. No. 1	13,362	1,038	0	459	0	426	326	3,353	0	4,646	1,214	862	1,038
137	Ross W.S.C. No. 2	258	47	0	2	0	5	2	16	0	102	18	19	47
138	Ross W.S.C. No. 3	30,201	3,310	0	391	0	564	526	5,899	0	8,238	3,897	4,066	3,310
139	South Bosque WSC No. 1	3,120	208	208	236	209	220	328	366	269	259	275	256	286
140	Prairie Hill W.S.C. No. 2	6,810	1,983	0	0	0	1,042	425	434	194	75	414	260	1,983
141	Prairie Hill W.S.C. No. 3	6,562	1,747	0	0	0	664	0	670	602	640	285	207	1,747
142	M. S. W.S.C. No. 1	4,370	315	315	553	118	98	378	0	1,175	422	366	305	325
144	Pure WSC No. 1	20,237	627	627	1,428	1,554	1,584	2,271	2,821	2,557	1,855	2,122	1,275	1,516
145	Windsor Water Co No 1	2,410	196	0	0	0	423	220	242	321	6	598	208	196
146	Spring Valley WSC No 1	6,309	1,689	1,689	1,092	0	887	158	169	48	11	160	0	406
147	City of Hewitt No. 5	70,802	3,798	3,798	4,282	0	8,545	8,811	10,312	6,843	6,714	6,738	6,442	4,519
148	Bold Springs WSC No 4	23,183	10,980	10,980	0	99	30	0	158	213	36	0	13	674
149	City of Hewitt No. 7	174,569	18,586	18,586	21,418	0	37,401	14,189	16,519	9,171	7,372	6,291	11,922	13,114
150	Sanderson Farms, Inc No 1	190,314	16,762	0	0	37,038	16,267	14,045	16,883	17,508	17,337	20,029	17,683	16,762
151	Sanderson Farms, Inc No 2	213,298	17,404	0	0	48,478	22,803	16,389	17,517	16,890	17,523	20,484	18,406	17,404
152	Midway ISD	428	0	0	119	0	0	0	0	0	0	309	0	0
153	C.S. Community WSC	18,601	5,328	5,328	768	718	743	767	1,070	830	902	727	589	831
154	North Bosque W.S.C. No. 3	413,480	50,023	0	0	0	0	0	0	350,160	0	10,107	3,190	0
155	Spring Valley WSC No 2	21,420	5,298	5,298	0	0	53	1,608	3,583	3,090	1,254	1,030	0	206
156	Windsor Water Co No 2	1,000	0	0	0	0	389	236	273	98	4	0	0	0
157	West Brazos WSC No. 1	17,429	1,068	1,068	889	1,302	6,226	0	0	1,278	1,993	1,427	1,299	879
158	Texas State Technical Col	675	0	0	0	0	0	351	293	31	0	0	0	0
159	U S Army Corps of	67	0	0	0	0	67	0	0	0	0	0	0	0
160	Levi W.S.C.	**80,300**	0	0	0	0	0	0	0	0	0	0	0	0
161	U S Army Corps of	27	0	0	0	0	27	0	0	0	0	0	0	0
162	Gholson WSC No. 2	18,030	1,317	0	0	0	4,631	1,764	2,200	2,593	1,547	1,524	1,137	1,317
165	Patrick WSC	9,125	0	0	0	0	0	0	0	0	0	0	0	0
171	Menlow Water Supply Corp	5,177	0	0	0	0	0	0	0	0	0	5,177	0	0
172	Elm Creek W.S.C. No. 3	3,288	274	0	0	0	0	0	0	0	0	0	0	3,014
		5,815	MG											
	Total Reported Production	17,845	AF											
	Estimate of Exempt Well Production	200	AF											
	Estimate of Non-Report or Under Reported (10%)	1,785	AF											
	Estimate of 2008 Trinity Production	19,830	AF											

Notes: All Values for January 2008 where estimated from February 2008 production or December 2008 or based on average production. Totals in bold indicated annual production was based on TCEQ average daily water use estimate.

10.9 TWDB Water Use Survey Historical Water Use Estimate Summary

Historical Water Use Estimate Summary

TWDB - Water Use Survey

McLennan County

Unit: Acre Feet (ACFT)

GW = groundwater; SW = surface water

Year	Source	Municipal	Manufacturing	Steam Electric	Irrigation	Mining	Livestock	Total
2000	GW	14,306	740	173	396	0	62	15,677
	SW	29,791	2,064	24,239	2,423	16	557	59,090
	Total	**44,097**	**2,804**	**24,412**	**2,819**	**16**	**619**	**74,767**
2001	GW	10,132	500	597	706	0	193	12,128
	SW	21,437	3,926	6,739	4,340	481	1,737	38,660
	Total	**31,569**	**4,426**	**7,336**	**5,046**	**481**	**1,930**	**50,788**
2002	GW	13,509	175	597	690	0	201	15,172
	SW	28,579	1,379	6,739	4,240	481	1,800	43,218
	Total	**42,088**	**1,554**	**7,336**	**4,930**	**481**	**2,001**	**58,390**
2003	GW	14,107	333	597	645	0	183	15,865
	SW	29,845	2,612	6,739	2,715	481	1,644	44,036
	Total	**43,952**	**2,945**	**7,336**	**3,360**	**481**	**1,827**	**59,901**
2004	GW	14,529	201	597	2,232	0	185	17,744
	SW	30,737	1,583	6,739	3,343	481	1,659	44,542
	Total	**45,266**	**1,784**	**7,336**	**5,575**	**481**	**1,844**	**62,286**

NOTE: All Pumpage reported in acre-feet 12/15/2008

Source: TWDB Water Use Survey Database (http://www.twdb.state.tx.us/wushistorical/DesktopDefault.aspx?PageID=1)

10.10 TWDB Water Use Survey Historical Groundwater Pumpage Summary

Historical Groundwater Pumpage Summary

TWDB - Water Use Survey

McLennan County

Unit: Acre Feet (ACFT)

Year	Aquifer	Municipal	Manufacturing	Steam Electric	Irrigation	Mining	Livestock	Total
2000	BRAZOS RIVER ALLUVIUM	0	0	0	396	0	0	396
	TRINITY	14,651	726	173	0	0	62	15,612
	Total	**14,651**	**726**	**173**	**396**	**0**	**62**	**16,008**
2001	BRAZOS RIVER ALLUVIUM	0	0	0	706	0	0	706
	TRINITY	11,774	192	1,708	0	0	193	13,867
	Total	**11,774**	**192**	**1,708**	**706**	**0**	**193**	**14,573**
2002	BRAZOS RIVER ALLUVIUM	0	0	0	690	0	0	690
	TRINITY	12,139	657	1,708	0	0	200	14,704
	Total	**12,139**	**657**	**1,708**	**690**	**0**	**200**	**15,394**
2003	BRAZOS RIVER ALLUVIUM	0	0	0	645	0	0	645
	TRINITY	9,974	938	151	0	0	495	11,558
	Total	**9,974**	**938**	**151**	**645**	**0**	**495**	**12,203**

NOTE: All Pumpage reported in acre-feet 12/15/2008

Source: TWDB Water Use Survey Database (http://www.twdb.state.tx.us/wushistorical/DesktopDefault.aspx?PageID=2)

10.11 2007 State Water Plan Projected Surface Water Supplies McLennan County

McLennan County Population, Water Supply, and Water Demand Projections (Table C-47 from Region G Water Plan as adopted in the State Water Plan)

		Year						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Municipal	Municipal Demand	44,105	47,046	50,004	52,499	55,064	56,727	59,404
	Municipal Existing Supply							
	Groundwater	1,485	1,485	1,485	1,485	1,485	1,485	1,485
	Surface water	89,039	88,722	88,509	88,285	88,027	87,759	87,554
	Total Existing Municipal Supply	90,524	90,207	89,994	89,770	89,512	89,244	89,039
	Municipal Balance	46,419	43,161	39,990	37,271	34,448	32,517	29,635
Industrial	Manufacturing Demand	2,804	3,526	4,068	4,577	5,096	5,561	6,022
	Manufacturing Existing Supply							
	Groundwater	232	232	232	232	232	232	232
	Surface water	1,997	2,510	2,895	3,256	3,625	3,955	4,282
	Total Manufacturing Supply	2,229	2,742	3,127	3,488	3,857	4,187	4,514
	Manufacturing Balance	(575)	(784)	(941)	(1,089)	(1,239)	(1,374)	(1,508)
	Steam-Electric Demand	24,412	37,098	32,983	35,720	39,056	43,123	48,081
	Steam-Electric Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	14,120	14,111	14,102	14,093	14,083	14,074	14,065
	Total Steam-Electric Supply	14,120	14,111	14,102	14,093	14,083	14,074	14,065
	Steam-Electric Balance	(10,292)	(22,987)	(18,881)	(21,628)	(24,973)	(29,049)	(34,016)
	Mining Demand	481	416	399	389	380	371	366
	Mining Existing Supply							
	Groundwater	481	416	399	389	380	371	366
	Surface water	0	0	0	0	0	0	0
	Total Mining Supply	481	416	399	389	380	371	366
	Mining Balance	0	0	0	0	0	0	0
Agriculture	Irrigation Demand	2,819	2,816	2,814	2,812	2,809	2,806	2,803
	Irrigation Existing Supply							
	Groundwater	1,956	1,954	1,953	1,951	1,949	1,947	1,945
	Surface water	8,374	8,375	8,376	8,377	8,377	8,378	8,379
	Total Irrigation Supply	10,330	10,329	10,329	10,328	10,326	10,325	10,324
	Irrigation Balance	7,511	7,513	7,515	7,516	7,517	7,519	7,521
	Livestock Demand	1,151	1,151	1,151	1,151	1,151	1,151	1,151
	Livestock Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	1,151	1,151	1,151	1,151	1,151	1,151	1,151
	Total Livestock Supply	1,151	1,151	1,151	1,151	1,151	1,151	1,151
	Livestock Balance	0	0	0	0	0	0	0
Total	Municipal & Industrial Demand	71,802	88,086	87,454	93,185	99,596	105,782	113,873
	Existing Municipal & Industrial Supply							
	Groundwater	2,198	2,133	2,116	2,106	2,097	2,088	2,083
	Surface water	105,156	105,342	105,506	105,634	105,736	105,788	105,901
	Total Municipal & Industrial Supply	107,354	107,475	107,622	107,740	107,833	107,876	107,984
	Municipal & Industrial Balance	35,552	19,389	20,168	14,555	8,237	2,094	(5,889)
	Agriculture Demand	3,970	3,967	3,965	3,963	3,960	3,957	3,954
	Existing Agricultural Supply							
	Groundwater	1,956	1,954	1,953	1,951	1,949	1,947	1,945
	Surface water	9,525	9,526	9,527	9,528	9,528	9,529	9,530
	Total Agriculture Supply	11,481	11,480	11,480	11,479	11,477	11,476	11,475
	Agriculture Balance	7,511	7,513	7,515	7,516	7,517	7,519	7,521
	Total Demand	75,772	92,053	91,419	97,148	103,556	109,739	117,827
	Total Supply							
	Groundwater	4,154	4,087	4,069	4,057	4,046	4,035	4,028
	Surface water	114,681	114,868	115,033	115,161	115,264	115,317	115,431
	Total Supply	118,835	118,955	119,102	119,218	119,310	119,352	119,459
	Total Balance	43,063	26,902	27,683	22,070	15,754	9,613	1,632

2007 State Water Plan - Projected Surface Water Supplies - McLennan County

Water User Group	Source Name	2010	2020	2030	2040	2050	2060
Bellmead	Waco Lake/Reservoir	2,622	2,751	2,873	2,984	3,065	3,202
Beverly Hills	Waco Lake/Reservoir	414	416	416	414	416	424
Bruceville-Eddy	Brazos River Authority Little River Lake/ Reservoir System	818	953	1,069	1,187	1,261	1,374
Hewitt	Waco Lake/Reservoir	2,029	2,237	2,395	2,571	2,684	2,877
Lacy-Lakeview	Waco Lake/Reservoir	835	989	1,116	1,256	1,338	1,477
Lorena	Brazos River Authority Main Stem Lake/ Reservoir System	1,000	1,000	1,000	1,000	1,000	1,000
Mart	Brazos River Run-of-River	0	0	0	0	0	0
McGregor	Brazos River Authority Little River Lake/ Reservoir System	1,742	1,730	1,719	1,706	1,697	1,700
Moody	Brazos River Authority Little River Lake/ Reservoir System	202	203	203	204	206	212
Robinson	Brazos River Run-of-River	2,510	2,510	2,510	2,510	2,510	2,510
Waco	Waco Lake/Reservoir	67,420	66,572	65,834	65,064	64,472	63,662
Waco	Brazos River Run-of-River	5,600	5,600	5,600	5,600	5,600	5,600
Woodway	Waco Lake/Reservoir	2,944	2,925	2,903	2,882	2,867	2,874
County Other	Waco Lake/Reservoir	202	191	183	180	179	178
County Other	Brazos River Authority Little River Lake/ Reservoir System	350	398	431	435	430	430
Manufacturing	Waco Lake/Reservoir	2,503	2,888	3,249	3,618	3,948	4,275
Manufacturing	Brazos River Combined Run-of-River Manufacturing	7	7	7	7	7	7
Steam Electric Power	Lake Creek Lake/ Reservoir	9,991	9,982	9,973	9,963	9,954	9,945
Steam Electric Power	Tradinghouse Creek Lake/Reservoir	4,120	4,120	4,120	4,120	4,120	4,120
Irrigation	Brazos River Combined Run-of-River Irrigation	8,375	8,376	8,377	8,377	8,378	8,379
Livestock	Livestock Local Supply	1,151	1,151	1,151	1,151	1,151	1,151
Elm Creek WSC	Brazos River Authority Little River Lake/ Reservoir System	34	34	34	34	34	34
Project Surface Water Supply (af/yr)		114,869	115,033	115,163	115,263	115,317	115,431

12/15/2008

10.12 2007 State Water Plan McLennan County Water Supply and Water Demand Projections

2007 State Water Plan - Project Water Demands - McLennan County

RWPG	Water User Group	River Basin	2010	2020	2030	2040	2050	2060
G	Bellmead	Brazos	2,622	2,751	2,873	2,984	3,065	3,202
G	Beverly Hills	Brazos	414	416	416	414	416	424
G	Bruceville-Eddy	Brazos	825	961	1,077	1,195	1,270	1,383
G	Crawford	Brazos	65	67	68	69	70	73
G	Gholson	Brazos	150	169	184	202	213	231
G	Hewitt	Brazos	2,029	2,237	2,395	2,571	2,684	2,877
G	Lacy-Lakeview	Brazos	835	989	1,116	1,256	1,338	1,477
G	Lorena	Brazos	369	408	440	475	497	533
G	Mart	Brazos	335	354	367	383	394	415
G	McGregor	Brazos	933	923	913	902	894	899
G	Moody	Brazos	202	203	203	204	206	212
G	Riesel	Brazos	109	116	120	126	129	137
G	Robinson	Brazos	1,110	1,153	1,182	1,210	1,236	1,291
G	Valley Mills	Brazos	1	1	1	1	1	1
G	Waco	Brazos	24,876	26,453	27,781	29,159	30,033	31,304
G	West	Brazos	459	467	475	482	490	506
G	Woodway	Brazos	2,944	2,925	2,903	2,882	2,867	2,874
G	County Other	Brazos	6,635	6,904	7,167	7,399	7,574	7,881
G	Manufacturing	Brazos	3,526	4,068	4,577	5,096	5,561	6,022
G	Steam Electric Power	Brazos	37,098	32,983	35,720	39,056	43,123	48,081
G	Mining	Brazos	416	399	389	380	371	366
G	Irrigation	Brazos	2,816	2,814	2,812	2,809	2,806	2,803
G	Livestock	Brazos	1,151	1,151	1,151	1,151	1,151	1,151
G	Hallsburg	Brazos	139	150	158	166	172	182
G	Chalk Bluff WSC	Brazos	441	527	599	676	722	798
G	Cross Country WSC	Brazos	445	497	541	585	614	661
G	Elm Creek WSC	Brazos	184	227	261	298	320	357
G	North Bosque WSC	Brazos	367	454	530	608	655	730
G	Tri-County SUD	Brazos	12	13	14	15	16	18
G	West Brazos WSC	Brazos	161	181	195	214	224	244
G	Western Hills WS	Brazos	384	458	520	588	627	694
Total Projected Water Demands (af/yr)			92,053	91,419	97,148	103,556	109,739	117,827

Source: Volume 3, 2007 State Water Planning Database 12/15/2008
(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

10.13 2007 State Water Plan Projected Water Management Strategies

State Water Plan - Projected Water Management Strategies - Region G - Brazos River Basin - McLennan County

WUG	Water Management Strategy	Source Name	Source County	2010	2020	2030	2040	2050	2060
Elm Creek WSC	Voluntary Redistribution	Little River Lake/ Reservoir System	Reservoir	200	260	230	300	281	370
West Brazos WSC	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	146	166	180	199	209	229
Bellmead	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	2,622	2,751	2,873	2,984	3,065	3,202
Chalk Bluff WSC	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	1,160	1,766	2,846	2,881	2,918	2,955
Crawford	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	65	65	65	65	65	70
Cross Country WSC	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	434	476	521	570	619	668
Gholson	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	956	1,462	2,539	2,574	2,611	2,647
Hallsburg	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	150	150	150	160	170	180
Hallsburg	Municpal Water Conservation	Conservation	McLennan	4	10	8	6	6	6
Mart	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	350	350	350	400	400	400
North Bosque WSC	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	350	450	500	600	650	700
North Bosque WSC	Municipal Water Conservation	Conservation	McLennan	10	33	36	38	37	42
Riesel	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	150	150	150	150	150	150
West	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	450	450	450	450	450	450
Western Hills WS	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	400	500	550	600	650	700
County Other	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	6,000	6,000	6,500	6,500	6,500	7,000
County Other	Municpal Water Conservation	Conservation	McLennan	184	421	374	284	256	266
Manufacturing	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	1,000	1,000	1,500	1,500	1,500	1,700
Manufacturing	Manufacturing Water Conservation	Conservation	McLennan	106	203	320	357	389	422
Steam Electric Power	Steam Electric Conservation	Conservation	McLennan	1,113	1,649	2,500	2,734	3,019	3,366
Steam Electric Power	Interconnection of City of Waco System with Neighboring Communities	Waco Lake/Reservoir	Reservoir	7,000	3,000	6,000	9,000	14,000	19,000
Steam Electric Power	Wastewater Reuse	Direct Reuse	McLennan	16,000	16,000	16,000	16,000	16,000	16,000
				38,850	**37,312**	**44,642**	**48,352**	**53,945**	**60,523**

10.14 Resolution of Adoption of Plan

RESOLUTION AND ORDER NO. 010710-001

OF THE BOARD OF DIRECTORS OF THE SOUTHERN TRINITY GROUNDWATER CONSERVATION DISTRICT ADOPTING SOUTHERN TRINITY GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN.

WHEREAS, the Southern Trinity Groundwater Conservation District ("District") was created in 2007 by the Texas Legislature, Act of May 26, 2007, 80th Leg., R.S., ch. 1345, 2007 Tex. Gen. Laws 4594 (then the "McLennan County Groundwater Conservation District"), which act was amended in 2009 by the Texas Legislature, Act of May 31, 2009, 81st Leg., R.S. ch. 1248, 2009 Tex. Gen. Laws 3976, and codified in Texas Special District Local Laws Code, Chapter 8821 ("Act");

WHEREAS, the District has "all of the rights, powers, privileges, authority, functions, and duties," provided by Chapter 36, Texas Water Code. Act § 8821.101 (Vernon 2009);

WHEREAS, the District was created "to provide for the conservation, preservation, protection, recharging, and prevention of waste of groundwater . . ." TEX. WATER CODE ANN. § 36.0015 (Vernon 2008);

WHEREAS, Section 36.1071(a) of the Texas Water Code requires the District to, in coordination with surface water management entities in the region, to develop a comprehensive management plan, which addresses the following applicable management goals:

(1) providing the most efficient use of groundwater;
(2) controlling and preventing waste of groundwater;
(3) controlling and preventing subsidence;
(4) addressing conjunctive surface water management issues;
(5) addressing natural resource issues;
(6) addressing drought conditions;
(7) addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective; and
(8) addressing in a quantitative manner the desired future conditions of the groundwater resources;

WHEREAS, the Texas Water Code requires that the management plan use the best data available to the District and that it be forwarded to the regional water planning group for use in its planning process. TEX. WATER CODE ANN. § 36.1074(b);

WHEREAS, in accordance with Section 36.1074(c) of the Texas Water Code, the District sought and received technical assistance from the Texas Water Development Board in the development of the management plan, as well as preliminary review and comment on the plan;

WHEREAS, in accordance with Section 36.1074(h) of the Texas Water Code, in developing the management plan, the District used the groundwater availability modeling

information provided by the Texas Water Development Board together with available site-specific information provided by the District to the Texas Water Development Board for review and comment before being used in the plan;

WHEREAS, the management plan complies with Section 36.1071(e) of the Texas Water Code as it: (1) identifies the performance standards and management objectives under which the District will work to achieve the identified management goals; (2) specifies the actions, procedures, performance, and avoidance that are or may be necessary to effect the plan, including specifications and proposed rules; (3) includes estimates of: the managed available groundwater in the District based on the desired future condition established under Section 36.108 of the Texas Water Code, the amount of groundwater being used within the District on an annual basis, the annual amount of recharge from precipitation to groundwater resources within the District, for each aquifer, the annual volume of water that discharges to springs and any surface water bodies, the annual volume of flow into and out of the District within each aquifer and between aquifers in the District, the projected surface water supply in the District according to the most recently adopted state water plan; and the projected total demand for water in the District according to the most recently adopted state water plan; and (4) considers the water supply needs and water management strategies included in the adopted state water plan;

WHEREAS, pursuant to TEX. WATER CODE ANN. § 36.1074(g) and Section 9.401 of the District's rules, the District provided notice of the public hearing held on the proposed management plan by, at least 20 days before the hearing: posting the notice in a place readily accessible to the public at the District's office; providing the notice to the McLennan County Clerk; publishing the notice in the *Waco-Tribune Herald*, a newspaper of general circulation in McLennan County; providing the notice by mail, facsimile, or electronic mail to those persons who have requested notice; and making available a copy of the proposed management plan at a place accessible to the public during normal business hours;

WHEREAS, pursuant to § 36.1074(g), TEX. WATER CODE ANN. and Section 9.401 of the District's rules, the District held a public hearing at which the public was allowed to make comments on the proposed management plan;

WHEREAS, pursuant to § 36.064(b), TEX. WATER CODE ANN., the public hearing was conducted at an open meeting in accordance with the Texas Open Meetings Act;[1]

WHEREAS, pursuant to Section 9.401(d), the District allowed at least 30 days for the submission of written comments on the proposed management plan;

WHEREAS, the Board of Directors of the District has considered all written comments submitted on the proposed management plan received before December 28, 2009;

WHEREAS, Exhibit A to this order provides the District's responses to written comments submitted before December 28, 2009;

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[1] TEX. GOV'T CODE ANN. §§551.001-551.146 (Vernon 2004 & Supp. 2009).

WHEREAS, in light of the consideration of all written comments to the proposed management plan received before December 28, 2009, the District has prepared the management plan as attached hereto as Exhibit B and incorporated for all purposes; and

WHEREAS, the Board has reviewed the management plan and finds that it is consistent with the District's statutory authority and should be adopted.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED BY THE BOARD OF DIRECTORS OF THE SOUTHERN TRINITY GROUNDWATER CONSERVATION DISTRICT THAT:

Section 1. The District's Response to Public Comment is adopted by the Board and is incorporated into this Resolution and Order for all purposes.

Section 2. The Management Plan, which is attached to this Resolution and Order as Exhibit B is hereby adopted as the Management Plan by the Board.

Section 3. The Management Plan shall become effective on the date of approval by the executive director of the Texas Water Development Board.

PASSED AND APPROVED BY THE BOARD OF DIRECTORS OF THE SOUTHERN TRINITY GROUNDWATER CONSERVATION DISTRICT THIS 7TH DAY OF JANUARY, 2010.

Rodney Kroll
President, Board of Directors

ATTEST:

Glen Thurman
Secretary, Board of Directors

APPROVED AS TO FORM:

Deborah Clarke Trejo
Kemp Smith LLP, General Counsel

10.15 Evidence of Notice and Hearing

0005 ANNOUNCEMENTS

0010 Celebrations

Attention Classified Advertisers

Classified Advertisers Responsibilities: Please check your ad on the FIRST DAY it is published

Report any errors or problems before 11 AM the first day of publication. The Waco Tribune-Herald cannot be responsible for more than ONE day's incorrect publication if you do not call the error to our attention. Claims for adjustments must be made within 5 days of the first insertion, but will ONLY be made for the FIRST DAY of publication. The Waco Tribune-Herald cannot be liable for any amount greater than the amount paid for the first day of such advertising. We make every effort to avoid errors by carefully proofreading.

If you find an error please call (254) 757-3000

0040 Legal Notices

ADVERTISEMENT FOR BIDS
BID INVITATION
RFB NO. 2010-028
City of Waco
(Owner)

Sealed bids for Cameron Park Clubhouse Renovations for the City of Waco will be received by the CITY OF WACO in the office of Purchasing Services, 1415 North 4th Street, Waco, Texas, 76707 until 2:00 P.M. on December 17th and will be opened and publicly read at 2:00 P.M. in the office of Purchasing Services on the same day. Mailing address is Purchasing Services, P.O. Box 2570, Waco, Texas, 76702-2570.

Information for bidders, bid forms, contract forms, plans, specifications, bid bond forms, performance and payment bond forms and all other contract documents related to this project may be obtained for a $100.00 deposit per printed set for General Contractors ONLY (2 set maximum) a complete set on CD, available to both General Contractors and Subcontractors, may be PURCHASED for $15 by contacting Bryan Gray at 254-750-6640. Blueprint deposits and/or purchase of CD must be in the form of check or money order ONLY, made payable to City of Waco. Cash or credit card will NOT be accepted. Any bona-fide bidder, upon returning the documents in good condition within ten (10) days from the date of receipt of bids, shall be returned the deposit. All checks will be deposited after the ten-day deadline has passed and will no longer be refundable.

A pre-bid conference for this project will be held on December 3rd, 2009 at 10:00 A.M. at The Cameron Park Clubhouse, 2601 Sturgis, Waco, Texas. All subcontractors are welcome and encouraged to attend the session.

The owner reserves the right to waive any informality or to reject any and all bids.

Each bidder must submit a deposit with his bid, security in the minimum amount of 5% of the greatest amount of bid. The bid bond and surety's power of attorney must both reflect the bid opening date.

Bidders shall pay particular attention to the required employment conditions that must be observed and the minimum wage rates to be paid under the contract.

No bidder may withdraw their bid within 90 days after the actual date of the bid opening.

BID PROPOSAL

In compliance with Senate Bill No. 493, 2013 Purchasing Cooperative is soliciting vendors interested in submitting a proposal, for the purchase of food products.

#2014 Commodity Processing

Proposals are due 2:00 p.m., December 17, 2009 at Region 20, 3rd Floor AIS Building, 1314 Hines Avenue, San Antonio, TX 78208, at which time proposals will be publicly opened.

Interested bidders contact: Sharon Jonas, sharon.jonas@esc20.net (210) 370-5207 or Jeremy Taub, jeremy.taub@esc20.net(210)370-5491

NOTICE OF PUBLIC HEARING ON PROPOSED RULES AND GROUNDWATER MANAGEMENT PLAN

The Southern Trinity Groundwater Conservation District ("District") will conduct a public hearing concerning the District's possible adoption of: (1) various amendments to its rules; and (2) a Groundwater Management Plan. The purpose of the hearing is to provide interested members of the public the opportunity to appear and provide oral or written comments to the District related to the proposed rules and plan.

1.0 Date, Time, and Place of Public Hearing.

The date, time and place of the public hearing are as follows:
Date:Thursday, December 17, 2009
Time:9:00 a.m.
Location:City of Woodway,
City Council Chambers
922 Estates Drive
Woodway, Texas

2.0 Brief Explanation of the Subject of the Proposed Rulemaking

The District is proposing to adopt substantial amendments to its rules, which are intended to implement various mandates of Chapter 36 of the Texas Water Code and Chapter 8821 of the Special District Local Laws Code. Among other things, the proposed rules:

1. Add a number of new defined words and phrases used in the rules;
2. Establish the aggregate, annual volume of groundwater that may be produced from the Trinity Aquifer via all exempt and non-exempt wells in the District;
3. Establish the aggregate, annual volume of groundwater that may be produced from the Woodbine Aquifer via all exempt and non-exempt wells in the District;
4. Establish the aggregate, annual volume of groundwater that may be produced from the Brazos River Alluvium Aquifer via all exempt and non-exempt wells in the District;
5. Authorize the District to potentially issue only two types of groundwater production permits: Historic Use Production Permits (HUPPs) and Non-Historic Use Production Permits (NHUPPs);
6. Establish a process whereby those who can prove the beneficial and non-wasteful use of groundwater during the 10-year period from January 1, 2000 through December 31, 2009 may apply for and potentially obtain a HUPP, and impose a firm deadline for the submission of all HUPP applications;
7. Establish the criteria for eligibility for HUPPs and the terms and conditions applicable to same;
8. Establish a process whereby the District will determine whether sufficient water is available to authorize the issuance of NHUPPs and, if so, the deadline, process, and criteria by which persons may apply for and potentially obtain NHUPPs and the terms and conditions applicable to NHUPPs;
9. Establish a procedure for the complete or partial cancellation of an NHUPP that has not been put to beneficial use for a 10-year period;
10. Establish the processes whereby the amounts of groundwater authorized to be produced pursuant to HUPPs (and potentially NHUPPs) may be proportionately reduced by the District in order to achieve various management objectives and requirements of the District;
11. Establish a process whereby persons may apply for and potentially obtain groundwater exportation permits, and the criteria, terms and conditions applicable to such permits;
12. Revise the well spacing requirements;
13. Revise and expand the requirements and procedures for drilling replacement wells; and
14. Revise the District's existing fee rules to alter the fees it charges for groundwater production, the export of groundwater, and the submission of applications.

Because the proposed amendments to the rules are lengthy, an exhaustive analysis of all the proposed rules is not attempted here. All interested persons are encouraged to review the proposed rules for themselves by obtaining a copy from the District, as provided below.

3.0 Brief Explanation of the Subject of the Proposed Groundwater Management Plan

As required by TEX. WATER CODE § 36.1071, the District is proposing to adopt a comprehensive management plan that addresses a number of specified management goals for the District. Among other things, the proposed plan:

1. Identifies and describes the groundwater resources found within the District;
2. Describes, in general terms, the overall approach by which the District proposes to regulate and limit groundwater production;
3. As to the various, major sources of groundwater within the District, provides estimates of the annual volumes of water that: discharge to surface water bodies; are recharged by precipitation; and flow into and out of the District and between aquifers;
4. As to the various, major sources of groundwater within the District, provides estimates of annual usage within the District;
5. Provides estimates of projected surface water supplies in the District;
6. Provides estimates of overall projected demand for water in the District; and
7. Sets out various performance standards, and management objectives and goals for the District.

Because the proposed plan is lengthy, an exhaustive analysis of the plan is not attempted here. All interested persons are encouraged to review the proposed plan for themselves by obtaining a copy from the District, as provided below.

4.0 Procedures for Submitting Comments on the Proposed Rules and/or the Proposed Groundwater Management Plan

4.1Oral Comments

Any person may appear at the public hearing on the proposed rules and proposed Groundwater Management Plan. Any person making an appearance must indicate their desire to make oral comments on the registration form provided by the District at the public hearing. A person must disclose any affiliation on the registration form and, if applicable, the authority to speak for a person represented. Any other person attending the public hearing will be considered by the District to be an observer not desiring to make comment on the proposed rules or the proposed Groundwater Management Plan. The District will not consider any comments of an observer in any future action taken on the proposed rules or Management Plan.

All persons should indicate on the registration form whether their comments are generally directed to all of the proposed rules or plan or whether they are directed at specific rules or portions of the plan. If directed at a specific provision of the rules or plan, the relevant portion, should be identified on the registration form. If it becomes apparent during the oral comments that what were indicated to be merely general comments are, in fact, specific comments, the presiding officer at the hearing may ask the person to specifically identify the provision to which the oral comments are directed.

The presiding officer will establish the order of oral comments of persons at the hearing. As appropriate, the presiding officer may limit:

1. the number of times a person may speak;
2. the time period for oral comments;
3. cumulative, irrelevant, or unduly repetitious comments;
4. general comments that are so vague, undeveloped, or immaterial as to be impracticable for the District to ascertain the intent or purpose of the person making the general oral comments and that are otherwise unhelpful to the District in analyzing the proposed rules or plan;
5. the time period for asking or responding to questions; and
6. other matters that come to the attention of the presiding officer as requiring limitation.

Please note that while the District will consider oral comments, it will not prepare written responses to oral comments for review and consideration by the Board of Directors of the District when it deliberates on whether to adopt the proposed rules or plan as final.

4.2 Written Comments

The District encourages all interested parties to submit written comments regarding the proposed rules. Written comments on the proposed rules and plan must be filed with the District by no later than December 28, 2009. Written comments may be filed as follows:

1. by hand delivery to the District's general manager at the District's offices, 460 N. 6th Street, Waco, Texas during regular business hours Monday through Friday from 8 am to 1 pm or during any board meeting or hearing that occurs prior to December 28, 2009;
2. by mail to the District at P. O. Box 2205, Waco, Texas 76703; or
3. by hand delivery to the presiding officer at the public hearing.

Written comments should be filed on 8 1/2 x 11 inch paper and typed or legibly written. Written comments should indicate whether the comments are general and directed at all of the proposed rules or plan, or whether they are directed at specific provisions. If directed at specific provisions, the number of the proposed rule or section of the plan should be identified and followed by the comments on the specifically identified provision.

5.0 Procedures for Obtaining the Proposed Rules and Groundwater Management Plan

Copies of the proposed rules and plan may be obtained from the District as follows:

1. by calling (254) 759-5610, and requesting a copy of the rules and/or plan from the District's General Manager, Ms. Tricia Law; or
2. by visiting the offices of the District at 460 N. 6th Street, Waco, Texas.
3. or from the County of McLennan's website at link shown below:

http://www.co.mclennan.tx.us/commis/stgwcd.aspx

6.0 Opportunity to Appear and Comment at Board Meeting at Which the Proposed Rules or Groundwater Management Plan May be Adopted as Final

The meeting of the District's Board of Directors at which the proposed rules or Groundwater Management Plan will be considered for adoption as final will be an open meeting and, at that meeting, the public will be allowed to make comments on the proposed rules or plan, subject to whatever reasonable limits as to the number, frequency and length of comments the District is empowered to impose pursuant to the Texas Open Meetings Act, TEX. GOV'T CODE ANN. ch. 551.

ISSUED THIS 24th DAY OF NOVEMBER , 2009.

Tricia Law
General Manager,
Southern Trinity Groundwater
Conservation District

NOTICE TO ALL PERSONS HAVING CLAIMS AGAINST THE ESTATE OF JULEIN H. HENSEL, DECEASED

Notice is hereby given that original Letters Testamentary upon the Estate of Julein H. Hensel, Deceased, were issued to Alan J. Hensel and Norma Jean Rogers, on the 19th day of November, 2009, in Cause No. 20090456 PR1, in the Probate Court of McLennan County, Texas, which matter is still pending. All persons having claims against said estate are required to present same within the time prescribed by law to:

Alan J. Hensel and Norma Jean Rogers
c/o Daniel A. Palmer
Haley & Olson, P.C.
510 N. Valley Mills Drive, Suite 600
Waco, Texas 76710

NOTICE TO CONTRACTORS OF PROPOSED TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) CONTRACTS

Sealed proposals for contracts listed below will be received by TxDOT until the date(s) shown below, and then publicly read.

CONSTRUCTION/MAINTENANCE/ BUILDING FACILITIES CONTRACT(S)

Dist/Div: Austin
Contract 0700-03-107 for ADD TRAFFIC SIGNAL, RTL, LFT, & SHOULDERS in TRAVIS County will be opened on December 09, 2009 at

10.16 Letters Regarding Coordinating with Surface Water Management Entities

Southern Trinity Groundwater Conservation District

P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

Brazos River Authority
Phil Ford, General Manager
4600 Cobbs Drive
Waco, Texas 76710-3008

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

We are providing you with a draft of the Groundwater Management Plan in order to coordinate with you in the development of the plan. Please feel free to provided comments or input on the plan. Also, be advised that the District will hold a public hearing on the draft Groundwater Management plan on Thursday, December 17, 2009 at 9:00 a.m. The hearing will be held at City of Woodway, City Council Chambers, 922 Estates Drive, Woodway, Texas.

Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District
P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

Elm Creek Water Supply Corporation
Robert Baker, President
P. O. Box 538
Moody, Texas 76557

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District

P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

City of Woodway
Yost Zakhary, City Manager
922 Estates Drive
Woodway, Texas 76712

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District

P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

City of Waco
Larry Groth, City Manager
300 Austin Avenue
Waco, Texas 76702

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District

P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

City of Robinson
Robert Cervenka, City Manager
111 W Lyndale
Robinson, Texas 76706

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District

P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

City of Moody
Charlene Dowell, City Manager
P.O. Box 68
Moody, Texas 76557

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District

P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

City of McGregor
Dennis McDuffie, City Manager
302 S Madison
McGregor, Texas 76657

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District

P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

City of Mart
Rhonda Detrick, City Manager
P. O. Box 360
Mart, Texas 76664

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District
P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

City of Lorena
John Moran, City Manager
222 Frontage Road
Lorena, Texas 76655

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District

P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

City of Lacy Lakeview
Michael Nicoletti, City Manager
501 E Craven
Lacy Lakeview, Texas 76705

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District
P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

City of Hewitt
Dennis Woodard, City Manager
105 Tampico Drive
P. O. Box 610
Hewitt, Texas 76643

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District

P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

City of Crawford
Cheryl Christian, City Secretary
P. O. Box 7
Crawford, Texas 76638

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District

P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

City of Bruceville Eddy
Ginger Metcalf, City Secretary
143A Wilcox
Bruceville Eddy, Texas 76524

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District

P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

City of Bellmead
Victor Pena, City Manager
3015 Bellmead Drive
Bellmead, Texas 76705

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District
P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

Central Bosque Water Supply Corporation
Louis Engelbrecht, Vice President
P.O. Box 344
McGregor, Texas 76657

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Please feel free to contact me or the District's General Manager, Tricia K. Law, at (254) 759-5610 if you have any questions in regard to the draft plan.

Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

Southern Trinity Groundwater Conservation District
P. O. Box 2205
Waco, Texas 76703
254 759-5610

November 25, 2009

Spring Valley Water Supply Corporation
Linda Brandon, Manger
P. O. Box 399
Lorena, Texas 76655

Re: Draft Groundwater Management Plan for the Southern Trinity Groundwater Conservation District; Coordination with Surface Water Management Entities

Dear Sir/Madam:

Enclosed is a copy of a draft Groundwater Management Plan that has been prepared for the Southern Trinity Groundwater Conservation District ("District"). Once a Groundwater Management Plan is adopted by the District, the information provided in the plan will be used when the District formulates Rules for the District and develops it various programs and data collection activities.

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Sincerely,

Rodney Kroll, President
Southern Trinity Groundwater Conservation District

10.17 Rules

SOUTHERN TRINITY GROUNDWATER CONSERVATION DISTRICT RULES

Initially Adopted and Effective December 6, 2007
Revised February 28, 2008
Amended and Effective January 7, 2010

SOUTHERN TRINITY GROUNDWATER CONSERVATION DISTRICT RULES

TABLE OF CONTENTS

CHAPTER 1. DEFINITIONS AND GENERAL PROVISIONS

§ 1.1 Definitions of Terms

In the administration of its duties, the Southern Trinity Groundwater Conservation District follows the definitions of words, terms and phrases set forth in Chapter 8821 of the Special District Local Laws Code, Chapters 35 and 36 of the Texas Water Code, Chapters 1901 and 1902 of the Texas Occupations Code. In addition, the following words, terms and phrases, when used in these rules, and when used in any other rule or regulation of the District and not defined therein, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning. Words used in the present tense include the future tense. Words used in the plural number include the singular, and words in the singular include the plural. The word "shall" is always mandatory. The word "herein" means in these rules. The word "regulations" means the provisions of any applicable resolution, order, rule, regulation or policy.

(1) "Abandoned well" means a well that has not been in use for six consecutive months. A well is considered to be in use when the well is not a deteriorated well and contains the casing, pump, and pump column in good condition, or when the well is not a deteriorated well and has been properly capped.

(2) "Acre-foot" means the amount of water necessary to cover one acre of land one foot deep; 325,851 U.S. gallons of water.

(3) "Affected person" means a person who has a personal justiciable interest related to a legal right, duty, privilege, power, or economic interest that is within the District's regulatory authority and is or may be affected by the application in question. An interest common to members of the general public does not qualify as a personal justiciable interest.

(4) "Agricultural use" means a use or activity involving any of the following:

(A) cultivating the soil to produce crops for human food, animal feed, or planting seed, or for the production of fibers;

(B) the practice of floriculture, viticulture, silvicuture, and horticulture, including the cultivation of plants in containers, or nonsoil media, by a nursery grower;

(C) raising, feeding, or keeping animals for breeding purposes or for the production of food or fiber, leather, pelts, or other tangible products having a commercial value;

(D) planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure;

(E) wildlife management; and

(F) raising or keeping equine animals.

(5) "Aquifer" means a geologic formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.

(6) "Beneficial Use" means the use of the amount of water that is necessary for a purpose authorized by law when reasonable intelligence and reasonable diligence are used in applying the water to that purpose.

(7) "Best Management Practice (BMP)" means any of the water conservation practices that are identified in Texas Water Development Board Report 362.

(8) "Board" means the board of directors of the District.

(9) "Brazos River Alluvium Aquifer" means the water-bearing alluvial sediments occurring in floodplain and terrace deposits of the Brazos River. The Brazos River Alluvium Aquifer is defined by the Texas Water Development Board as a minor aquifer.

(10) "Business day" means a weekday, Monday through Friday, excluding District holidays.

(11) "Casing" means a watertight pipe which is installed in an excavated or drilled hole, temporarily or permanently, to maintain the hole sidewalls against caving, advance the borehole, and in conjunction with cementing and/or bentonite grouting, to confine the ground waters to their respective zones of origin, and to prevent surface contaminant infiltration.

(12) "Casing diameter" means the inside diameter of the casing of a well.

(13) "Conjunctive Use" means the combined use of groundwater and surface water sources that optimizes the beneficial characteristics of each source.

(14) "Contested case hearing" means a proceeding before the District in which the legal rights, duties or privileges of a party are to be determined by the board after an opportunity for an adjudicative hearing.

(15) "Contract user" means a person who withdrew or purchased groundwater during the Existing and Historic Use Period pursuant to a contract or other legal right from an existing well on land owned by another.

(16) "Desired Future Condition (DFC)" means the desired, quantified condition of groundwater resources for a specific aquifer within the District as defined in the District's Groundwater Management Plan and implemented by the District.

(17) "Deteriorated well" means a well or borehole that because of its condition, will cause, or may cause, pollution of any water in the state, including any groundwater, or cause a public nuisance.

(18) "Dewatering well" means a well used to remove water from a construction site or excavation, or to relieve hydrostatic pressure or uplift on permanent structures.

(19) "District" means the Southern Trinity Groundwater Conservation District.

(20) "District Act" means the Chapter 8821 of the Special District Local Laws Code, as may be amended.

(21) "District Office" means the location of the office of the District, as designated by the Board by written resolution. The location of the District Office may be changed from time to time by written resolution of the Board.

(22) "Domestic Use" means the private use of water to provide the daily water needs of a household, and includes water used on-site for: drinking, washing or culinary purposes; residential landscape watering, or watering of a family garden/orchard; watering of domestic animals; and for residential water recreation uses (e.g., swimming pool, hot tub). Domestic use does not include water used by, or to support, activities for which consideration is given or received or for which the product of the activity is sold. Domestic use does not include use by or for a public water system.

(23) "Drilling permit" means a permit issued by the District allowing for the construction, drilling, installation, equipping, completion, reworking, alteration, or modification of a well, or other work designed for the production of groundwater.

(24) "Evidence of Historic or Existing Use" means evidence that is material and relevant to a determination of the amount of groundwater beneficially used without waste by a permit applicant during the relevant time period set by District rule that regulates groundwater based on Historic Use. Evidence in the form of oral or written testimony shall be subject to cross-examination. The Texas Rules of Evidence govern the admissibility and introduction of Evidence of Historic or Existing Use, except that evidence not admissible under the Texas Rules of Evidence may be admitted if it is of the type commonly relied upon by reasonably prudent persons in the conduct of their affairs.

(25) "Exempt well" means any groundwater withdrawal well exempt from the requirement to obtain a permit under these rules.

(26) "Existing and Historic Use Period" means the time period from January 1, 2000, through December 31, 2009.

(27) "Existing well" means a well which:

(A) was in existence on or for which drilling had commenced on December 31, 2009;

(B) is capable of having water withdrawn from it; and

(C) was properly constructed in accordance with the District's Rules and applicable state law.

(28) "Federal conservation program" means the Conservation Reserve Program of the United States Department of Agriculture or any successor program.

(29) "Groundwater" means water percolating beneath the earth's surface within the boundaries of the District.

(30) "Groundwater Production" means to withdraw, pump, or otherwise obtain groundwater from an underground source.

(31) "Groundwater exportation permit" means a permit authorizing a person to export groundwater produced from a well within the District's boundaries pursuant to an authorization issued by the District to a place of use outside of the District's boundaries.

(32) "Hearing body" means the board, any committee of the board, or a hearing examiner that conducts a contested case hearing.

(33) "Hearing examiner" means the person appointed by the board to conduct a contested case hearing or other proceeding.

(34) "Historic Use" means the lawful production and placing to beneficial use, without waste, of groundwater during the Existing and Historic Use Period.

(35) "Historic Use Production Permit" means a permit authorizing a landowner or operator to produce groundwater based on a landowner or his or her contract user or predecessor in interest's production and beneficial use of groundwater without waste during the Existing and Historic Use Period.

(36) "Industrial use" means the use of water for or in connection with industrial activities, including but not limited to, manufacturing, bottling, brewing, food processing, scientific research and technology, recycling, production of concrete, asphalt, and cement, quarrying, and similar activities.

(37) "Landowner" means the person who owns the land surface or the right to withdraw groundwater from wells located on such land surface.

(38) "Leachate well" means a well used to remove contamination from soil or groundwater.

(39) "Managed Available Groundwater (MAG)" means the maximum, aggregate, amount of groundwater that may, to the extent possible, be authorized by the District to be produced for beneficial use from all exempt and non-exempt wells in a given aquifer in accordance with the District's Groundwater Management Plan and the Desired Future Condition

for that aquifer.

(40) "Maximum Historic Use (MHU)" means the maximum amount of groundwater that an applicant for an Historic Use Production Permit proves was produced and beneficially used without waste from the applicant's non-exempt well during any one calendar year of the Existing and Historic Use Period.

(41) "Meter" means a water flow measuring device that can, within +/- 5% of accuracy, measure the instantaneous rate of flow and record the amount of groundwater produced from a well during a measure of time.

(42) "Monitoring Well" means a well installed solely for the purpose of measuring some property of the groundwater or the aquifer it penetrates, and that does not produce more than 5,000 gallons of groundwater per year.

(43) "Municipal use" means water supplied to retail or wholesale end users by persons, municipalities, utilities, political subdivisions, or other water purveyors for domestic, industrial, or commercial uses, and fire fighting, sewer and drain flushing, swimming pools, and maintenance of public property.

(44) "New well" means a well for which drilling commenced after December 31, 2009.

(45) "Non-agricultural use" means the beneficial use of groundwater withdrawn from within the boundaries of the District for any use other than agricultural use.

(46) "Non-exempt well" means a well not exempt from the requirement to obtain a permit under these rules.

(47) "Non-Historic Use Production Permit" means a permit authorizing a landowner or operator to produce groundwater that is not based on Historic Use.

(48) "Open well" means a well, or exploratory hole, dug or drilled for the purpose of exploring for or producing water from the aquifer that is not capped or covered.

(49) "Open Meetings Law" means Chapter 551, Texas Government Code, as may be amended.

(50) "Party" means each person admitted as a party in a contested case hearing.

(51) "Permit" means a document issued by the District approving an application for a permit.

(52) "Permitted well" means a groundwater withdrawal well authorized to operate by a permit issued by the District.

(53) "Person" means a corporation, individual, organization, government, or governmental subdivision or agency, business trust, estate, trust, partnership, association or any other legal entity.

(54) "Pleadings" means any document filed by a party in a contested case hearing.

(55) "Pollution" means the alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the state, including groundwater, that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose, including the alteration of groundwater by saltwater or other deleterious matter admitted from another stratum or from the surface of the ground.

(56) "Presiding officer" means the President, Vice President, Secretary, or other board member presiding at any hearing or other proceeding or a hearing examiner conducting any hearing or other proceeding on behalf of the District.

(57) "Protestant" means any person opposing, in whole or in part, an application for which a request for a contested case hearing may be filed under the District's Rules.

(58) "Public Information Act" means Chapter 552, Texas Government Code, also referred to as the "Open Records Law," as may be amended from time to time.

(59) "Registration" means a certificate issued by the District for a well that qualifies as an exempt well.

(60) "Replacement well" means any well drilled with the purpose of replacing a well and drilled within 150 feet of the well to be replaced.

(61) "Reworked well" means a well that has been altered, modified, repaired or recompleted.

(62) "Rules" means the rules of the District compiled in this document and as may be supplemented or amended from time to time.

(63) "Section," as related to land, means the numbered section of a survey or block as shown in a county's real property records.

(64) "Sewage wet well" means a sewage well which incorporates a reservoir in addition to a pump.

(65) "Solid waste" means garbage, rubbish, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, municipal, commercial, mining, and agricultural operations and from community and institutional activities. The term:

(A) does not include:

(i) solid or dissolved material in domestic sewage, or solid or dissolved material in irrigation return flows, or industrial discharges subject to regulation by permit issued under Chapter 26, Water Code;

(ii) soil, dirt, rock, sand, and other natural or man-made inert solid materials used to fill land if the object of the fill is to make the land suitable for the construction of surface improvements; or

(iii) waste materials that result from activities associated with the exploration, development, or production of oil or gas or geothermal resources and other substance or material regulated by the Railroad Commission of Texas under Section 91.101, Texas Natural Resources Code, unless the waste, substance, or material results from activities associated with gasoline plants, natural gas or natural gas liquids processing plants, pressure maintenance plants, or repressurizing plants and is hazardous waste as defined by the administrator of the United States Environmental Protection Agency under the federal Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended (42 U.S.C. Section 6901 et seq.); and

(B) does include hazardous substances.

(66) "Trinity Aquifer" means the water-bearing geological group comprised of the Paluxy, Glenn Rose, Hensell, Pearsall, Cow Creek, Hammett, Sligo, and Hosston geologic formations. The Trinity Aquifer is defined by the Texas Water Development Board as a major aquifer.

(67) "Total aquifer storage" means the total calculated volume of groundwater that an aquifer is capable of producing.

(68) "Uncovered well" means an open well.

(69) "Waste" means any one or more of the following:

(A) production of groundwater at a rate and in an amount that causes or threatens to cause intrusion into an aquifer of water unsuitable for agricultural, gardening, domestic, or stock watering purposes;

(B) the flowing or producing of wells from an aquifer if the water produced is not used for a beneficial purpose;

(C) escape of groundwater from an aquifer to any other reservoir or geologic strata that does not contain groundwater;

(D) pollution or harmful alteration of groundwater in an aquifer by saltwater or by other deleterious matter admitted from another stratum or from the surface of the ground;

(E) willfully or negligently causing, suffering, or allowing groundwater produced from an aquifer to escape into any river, creek, natural watercourse, depression, lake, reservoir, drain, sewer, street, highway, road, or 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 Texas Commission on Environmental Quality under Chapter 26, TEXAS WATER CODE, as may be amended;

(F) 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

(G) for water produced from an artesian well, "waste" has the meaning assigned by Section 11.205, TEXAS WATER CODE, as may be amended.

(70) "Well" means any artificial opening or excavation in the ground to a depth greater than the top of any stratum containing groundwater.

(71) "Well operator" means the person who operates a well located on land owned by the well operator or owned by a third-party.

(72) "Well owner" means the person who owns the land upon which a well is, or is proposed to be, located.

(73) "Well system" means a well or group of wells tied together by pipeline and/or storage facilities.

(74) "Windmill" means a wind-driven or hand-driven device that uses a piston pump to withdraw groundwater.

(75) "Withdraw or Withdrawal" means producing or obtaining groundwater using man-made facilities by pumping or another method.

(76) "Woodbine Aquifer" means the water-bearing portion of the Woodbine geological group. The Woodbine Aquifer is defined by the Texas Water Development Board as a minor aquifer.

§ 1.3 Purpose of Rules

These rules are adopted to achieve the objectives of Article XVI, Section 59, Texas Constitution, the District Act, Chapter 36, Texas Water Code, the District's approved groundwater management plan, and other general laws applicable to the District, as may be amended.

§ 1.5 Construction

Construction of words and phrases is governed by the Code Construction Act, Subchapter B, Chapter 311, Texas Government Code. References to a code or statutory provision or section in these rules shall include such code or statutory provision as amended, reordered or re-codified. These rules shall be read, interpreted and applied in a manner that is consistent with the District Act and, if any definition or provision of these rules conflicts with or is inconsistent with any definition or provision of the District Act such definition or rule shall be read, construed and applied consistent with the District Act which shall govern and control.

§ 1.7 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.

§ 1.9 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, by email to the recipient's email address on file with the District, or by telephonic document transfer to the recipient's current telecopier number and shall be accomplished by 5:00 p.m. (local time) of the date on which it is due. Service by mail is complete upon delivery 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 or more of the above methods has been attempted and has failed, service may be completed by any other of the above-authorized methods of service. If personal service is not made or deemed to be made as above provided, if the location of a person to be served is unknown to the board, if unknown persons may have a property interest in the matter at issue, or in addition to any other service made, notice may be given by publication and the service by publication is complete upon the notice being published in a newspaper of general circulation in the District. Further, upon approval by the board, notice may be given in any manner authorized by the Texas Rules of Civil Procedure.

The person or the person's attorney of record shall certify compliance with this rule in writing over signature on the filed document. A certificate by a person or the person's attorney of record, or the return of an officer, or the affidavit of any person showing service of a document, shall be prima facie evidence of the fact of service. Nothing herein shall preclude any person from offering proof that the notice or instrument was not received and upon so finding, the District may extend the time for taking the action required of such party or grant such other relief as it deems just. In contested case hearings, copies of all documents filed with the presiding officer shall be served on all parties, including the District, no later than the day of filing.

§ 1.11 Severability

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

§ 1.112 Amendment of Rules

The Board may, following applicable notice, hearing, process and procedural requirements set forth in these rules and in Chapter 36, Texas Water Code, amend these rules and adopt new rules from time to time. These rules, as amended, shall apply to all groundwater usage within the territorial boundaries of the District.

CHAPTER 2. BOARD

§ 2.1 Purpose of the Board

The board was created to determine policy and regulate the withdrawal and use of groundwater within the boundaries of the District for conserving, preserving, protecting and recharging the groundwater within the District, and to exercise the District's rights, powers, and duties in a way that will effectively and expeditiously accomplish the purposes of the District Act and Chapter 36, Water Code. The board's responsibilities include, but are not limited to, the adoption and enforcement of reasonable rules and other orders.

§ 2.3 Ex Parte Communications

Board members may not communicate, directly or indirectly, about any issue of fact or law in any contested case that is before the board, with any agency, person, party or their representatives, except on notice and opportunity for all parties to participate. A board member may not communicate ex parte with other members of the board. This rule does not apply to a board member who abstains from voting on any matter in which ex parte communications have occurred.

CHAPTER 3. DISTRICT STAFF

§ 3.1 General Manager

The board may employ or contract with a person to serve as general manager of the District and to perform such services as the board may from time to time specify. The board may delegate to the general manager full authority to manage and operate the affairs of the District subject only to these rules and orders of the board. The general manager, with approval of the board, may employ all persons necessary for the proper handling of business and operation of the District, and their salaries will be set by the board.

If the position of general manager is vacant, the board may appoint an interim manager, or act to manage the District and perform any function of the general manager identified by these rules.

CHAPTER 4. DISTRICT RECORDS

§ 4.1 Minutes and Records of the District

All documents, reports, records, and minutes of the District are available for public inspection and copying consistent with the requirements of the Public Information Act. Copying charges may be assessed by the District. A list of charges for copies will be furnished by the District.

§ 4.3 Certified Copies

Requests for certified copies must be in writing. Certified copies will be made under the direction of the board. Certification charges may be assessed by the District.

§ 4.5 Notice of Change of Address or Phone Number

Applicants, registrants, permittees, and other persons with a matter or proceeding before the District shall give written notice to the District of any change of ownership, well operator, mailing address or telephone number within 30 days of such change.

CHAPTER 5. GROUNDWATER PRODUCTION

Subchapter A. General Provisions

§ 5.1 Beneficial Use; Prohibition on Waste

Groundwater produced within the District may only be used for a beneficial purpose. No person may produce or use groundwater in a manner that constitutes waste. Any person producing or using groundwater from within the District shall employ all reasonable methods to identify, prevent and stop the waste of water.

§ 5.3 Operation of Well at Higher Than Authorized Rate Prohibited

No person may operate a well within the District's boundaries at a rate of production higher than the rate authorized by a permit, these rules, or other applicable law.

§ 5.5 Conveyed Water; Pipelines

All persons shall use reasonable diligence to convey water from the wellhead where produced to the place of use in order to prevent evaporation, channel loss by percolation, or waste. Water conveyed greater than a distance of one-half mile from the wellhead where produced must be conveyed through a pipeline.

§ 5.7 Permits Subject to Revocation

All permits granted by the District are based upon and contingent upon the accuracy of the information supplied by the applicant. A finding that false information has been supplied is grounds for immediate revocation of the permit.

§ 5.9 General Provisions Applicable To Permits

(a) A valid Historic Use Production Permit, Non-Historic Use Production Permit, or Interim Production Status is required to withdraw or produce groundwater from a non-exempt well.

(b) A permit confers only the right to use the permit under the provisions of these rules. The permit's terms may be modified or amended pursuant to the provisions of these rules.

(c) Withdrawal or production of groundwater from a non-exempt well must be measured by the owner or operator and reported to the District according to the requirements of Chapter 8 of these rules.

(d) All well sites must be accessible to District representatives for inspection, and any permittee agrees to cooperate fully in any reasonable inspection of the well and well site by the District representatives.

(e) The application for a permit or permit amendment shall be in writing and sworn to by the applicant.

(f) Within 30 days after the date of a change in ownership of a permit, the permittee must notify the District in writing of the name of the new owner. Any person who becomes the owner of a permit must, within 30 calendar days from the date of the change in ownership, file a notice of transfer of ownership or an application to amend the permit, as applicable.

(g) Violation of a permit's terms, conditions, requirements, or special provisions, including pumping, withdrawing, or producing groundwater in excess of the quantity authorized by a permit issued by the District, is a violation of these rules and is punishable by penalties as provided by these rules and any applicable law.

(h) For any applications submitted to the District for which the applicant has requested that such applications be processed concurrently, the District may process and the Board may consider such applications concurrently according to the standards and rules applicable to each.

(i) Any increase in the volume of groundwater produced or in the rate of withdrawal from a well or wells, or change in the purpose of use or place of use of groundwater during the term of a permit issued by the District may not be made unless the Board has first approved a permit amendment authorizing the change.

Subchapter B. Groundwater Production Limitations

§ 5.101 Purpose

The purpose of this subchapter is to:

(a) establish the aggregate, annual volume of groundwater that may be produced from:

(1) exempt wells; and

(2) non-exempt wells operating pursuant to Historic Use Production Permits and Non-Historic Use Production Permits;

(b) establish the procedures for implementing, if necessary, proportional adjustments to the volume of groundwater allowed to be produced in any given year pursuant to Historic Use Production Permits; and

(c) establish the procedures for implementing, if necessary, proportional adjustments to the volume of groundwater allowed to be produced in any given year pursuant to Non-Historic Use Production Permits.

§ 5.103 Groundwater Available for Production from the Trinity Aquifer

(a) The aggregate, annual volume of groundwater that may be produced from the Trinity Aquifer from:

(1) exempt wells, as estimated in the District's approved Groundwater Management Plan; and

(2) non-exempt wells operating pursuant to Historic Use Production Permits and Non-Historic Use Production Permits shall be no greater than the volume of Managed Available Groundwater for the Trinity Aquifer ($MAG_{Trinity}$), except as provided in Subsection (d), below.

(b) The estimated volume of groundwater from the Trinity Aquifer allotted for production from exempt wells shall equal that amount as stated in the District's approved Groundwater Management Plan, as may be amended ($Exempt_{Trinity}$).

(c) The volume of groundwater that may be produced from the Trinity Aquifer by non-exempt wells ($Non\text{-}Exempt_{Trinity}$) shall not exceed the volume of Managed Available Groundwater for the Trinity Aquifer ($MAG_{Trinity}$) less the estimated volume of groundwater from the Trinity Aquifer allotted for production from exempt well ($Non\text{-}Exempt_{Trinity} \leq MAG_{Trinity} - Exempt_{Trinity}$).

(d) Unless a lower production amount is deemed appropriate for a given applicant

due to the factors identified in Section 5.211(a) below, each Historic Use Production Permit for the Trinity Aquifer shall initially authorize the permittee to produce his or her Maximum Historic Use (MHU). If, after all Historic Use Production Permit applications have been finally decided by the District, the aggregate of the annual volume of groundwater permitted for production pursuant to the Historic Use Production Permits exceeds the volume calculated in Subsection (c) above ($\text{Non-Exempt}_{\text{Trinity}}$), then the District shall, by written order no later than January 1, 2014, proportionally reduce the authorized production amount of each and every Historic Use Production Permit in order to equal the $\text{Non-Exempt}_{\text{Trinity}}$ amount, and such order shall effectively modify each Historic Use Production Permit.

(e) If, after all Historic Use Production Permit applications have been finally decided by the District, the aggregate of the annual volume of groundwater authorized for production pursuant to Historic Use Production Permits ($\text{HUPP}_{\text{Trinity}}$) is less than the volume calculated in Subsection (c) above ($\text{Non-Exempt}_{\text{Trinity}}$), then the District may grant Non-Historic Use Production Permits ($\text{NHUPP}_{\text{Trinity}}$) in an aggregate annual volume equal to or less than the difference between the volume calculated in Subsection (c) above and the aggregate of the annual volume of groundwater authorized for production pursuant to Historic Use Production Permits ($\text{NHUPP}_{\text{Trinity}} \leq \text{Non-Exempt}_{\text{Trinity}} - \text{HUPP}_{\text{Trinity}}$). No Non-Historic Use Production Permit applications shall be considered by the District until all Historic Use Production Permit applications have been finally decided by the District.

(f) The aggregate of the annual volume of groundwater production permitted pursuant to Historic Use Production Permits and Non-Historic Use Production Permits, if any, is subject to additional proportional reduction by written order of the District as may be necessary in order to achieve the Managed Available Groundwater, as it may be amended, or any Desired Future Condition of the Trinity Aquifer. If any additional proportional reduction is necessary, such reduction shall be first applied to Non-Historic Use Production Permits, even to the extent, if necessary, that Non-Historic Use Production Permits will be entirely voided, before any proportional reduction is made to Historic Use Production Permits.

§ 5.105 Groundwater Available for Production from the Woodbine Aquifer

(a) The aggregate, annual volume of groundwater that may be produced from the Woodbine Aquifer from:

(1) exempt wells, as estimated in the District's approved Groundwater Management Plan; and

(2) non-exempt wells operating pursuant to Historic Use Production Permits and Non-Historic Use Production Permits shall be no greater than the volume of Managed Available Groundwater for the Woodbine Aquifer ($\text{MAG}_{\text{Woodbine}}$), except as provided in Subsection (d), below.

(b) The estimated volume of groundwater from the Woodbine Aquifer allotted for production from exempt wells shall equal that amount as stated in the District's approved Groundwater Management Plan, as may be amended ($\text{Exempt}_{\text{Woodbine}}$).

(c) The volume of groundwater that may be produced from the Woodbine Aquifer by non-exempt wells ($Non\text{-}Exempt_{Woodbine}$) shall not exceed the volume of Managed Available Groundwater for the Woodbine Aquifer ($MAG_{Trinity}$) less the estimated volume of groundwater from the Woodbine Aquifer allotted for production from exempt wells ($Non\text{-}Exempt_{Woodbine} \leq MAG_{Woodbine} - Exempt_{Woodbine}$).

(d) Unless a lower production amount is deemed appropriate for a given applicant due to the factors identified in Section 5.211(a) below, each Historic Use Production Permit for the Woodbine Aquifer shall initially authorize the permittee to produce his or her Maximum Historic Use (MHU). If, after all Historic Use Production Permit applications have been finally decided by the District, the aggregate of the annual volume of groundwater permitted for production pursuant to the Historic Use Production Permits exceeds the volume calculated in Subsection (c) above ($Non\text{-}Exempt_{Woodbine}$), then the District shall, by written order, proportionally reduce the authorized production amount of each and every Historic Use Production Permit in order to equal the $Non\text{-}Exempt_{Woodbine}$ amount, and such order shall effectively modify each Historic Use Production Permit.

(e) If, after all Historic Use Production Permit applications have been finally decided by the District, the aggregate of the annual volume of groundwater authorized for production pursuant to Historic Use Production Permits ($HUPP_{Woodbine}$) is less than the volume calculated in Subsection (c) above ($Non\text{-}Exempt_{Woodbine}$), then the District may grant Non-Historic Use Production Permits ($NHUPP_{Woodbine}$) in an aggregate annual volume equal to or less than the difference between the volume calculated in Subsection (c) above and the aggregate of the annual volume of groundwater authorized for production pursuant to Historic Use Production Permits ($NHUPP_{Woodbine} \leq Non\text{-}Exempt_{Woodbine} - HUPP_{Woodbine}$). No Non-Historic Use Production Permit applications shall be considered by the District until all Historic Use Production Permit applications have been finally decided by the District.

(f) The aggregate of the annual volume of groundwater production permitted pursuant to Historic Use Production Permits and Non-Historic Use Production Permits, if any, is subject to additional proportional reduction by written order of the District as may be necessary in order to achieve the Managed Available Groundwater, as it may be amended, or any Desired Future Condition of the Woodbine Aquifer. If any additional proportional reduction is necessary, such reduction shall be first applied to Non-Historic Use Production Permits, even to the extent, if necessary, that Non-Historic Use Production Permits will be entirely voided, before any proportional reduction is made to Historic Use Production Permits.

§ 5.107 Groundwater Available for Production from the Brazos River Alluvium Aquifer

(a) The aggregate annual volume of groundwater that may be produced from the Brazos River Alluvium Aquifer from:

(1) exempt wells, as estimated in the District's approved Groundwater Management Plan; and

(2) non-exempt wells operating pursuant to Historic Use Production Permits and Non-Historic Use Production Permits shall be no greater than the volume of Managed Available Groundwater for the Brazos River Alluvium Aquifer ($MAG_{Alluvium}$), except as provided in Subsection (d), below.

(b) The estimated volume of groundwater from the Brazos River Alluvium Aquifer allotted for production from exempt wells shall equal that amount as stated in the District's approved Groundwater Management Plan, as may be amended ($Exempt_{Alluvium}$).

(c) The volume of groundwater that may be produced from the Brazos River Alluvium Aquifer by non-exempt wells ($Non\text{-}Exempt_{Alluvium}$) shall not exceed the volume of Managed Available Groundwater for the Brazos River Alluvium Aquifer ($MAG_{Alluvium}$) less the estimated volume of groundwater from the Brazos River Alluvium Aquifer allotted for production from exempt wells ($Non\text{-}Exempt_{Alluvium} \leq MAG_{Alluvium} - Exempt_{Alluvium}$).

(d) Unless a lower production amount is deemed appropriate for a given applicant due to the factors identified in Section 5.211(a), below, each Historic Use Production Permit for the Brazos River Alluvium Aquifer shall initially authorize the permittee to produce his or her Maximum Historic Use (MHU). If, after all Historic Use Production Permit applications have been finally decided by the District, the aggregate of the annual volume of groundwater permitted for production pursuant to the Historic Use Production Permits exceeds the volume calculated in Subsection (c) above ($Non\text{-}Exempt_{Alluvium}$), then the District shall, by written order, proportionally reduce the authorized production amount of each and every Historic Use Production Permit in order to equal the $Non\text{-}Exempt_{Alluvium}$ amount, and such order shall effectively modify each Historic Use Production Permit.

(e) If, after all Historic Use Production Permit applications have been finally decided by the District, the aggregate of the annual volume of groundwater authorized for production pursuant to Historic Use Production Permits ($HUPP_{Alluvium}$) is less than the volume calculated in Subsection (c) above ($Non\text{-}Exempt_{Alluvium}$), then the District may grant Non-Historic Use Production Permits ($NHUPP_{Alluvium}$) in an aggregate annual volume equal or to less than the difference between the volume calculated in Subsection (c) above and the aggregate of the annual volume of groundwater authorized for production pursuant to Historic Use Production Permits ($NHUPP_{Alluvium} \leq Non\text{-}Exempt_{Alluvium} - HUPP_{Alluvium}$). No Non-Historic Use Production Permit applications shall be considered by the District until all Historic Use Production Permit applications have been finally decided by the District.

(f) The aggregate of the annual volume of groundwater production permitted pursuant to Historic Use Production Permits and Non-Historic Use Production Permits, if any, is subject to additional proportional reduction by written order of the District as may necessary in order to achieve the Managed Available Groundwater, as it may be amended, or any Desired Future Condition of the Brazos River Alluvium Aquifer. If any additional proportional reduction is necessary, such reduction shall be first applied to Non-Historic Use Production Permits, even to the extent, if necessary, that Non-Historic Use Production Permits will be entirely voided, before any proportional reductions are made to Historic Use Production Permits.

Subchapter C. Groundwater Production Permits

§ 5.201 Types of Groundwater Production Permits

The District may issue the following types of groundwater production permits:

(1) Historic Use Production Permits (HUPPs); and

(2) Non-Historic Use Production Permits (NHUPPs).

In addition, as set forth in Subchapter G of this chapter, the District may qualify landowners or operators to produce groundwater under Interim Production Status (IPS) during the period prior to issuance of HUPPs and NHUPPs. Groundwater may not be produced from a non-exempt well within the District without holding a valid HUPP, NHUPP or IPS.

§ 5.203 Authorized Uses

As specifically designated in a groundwater production permit, a person may beneficially use groundwater withdrawn from the Aquifer for the following purposes of use:

(a) irrigation use; and

(b) municipal/industrial/other use.

§ 5.205 Filing Deadline for Applications for Historic Use Production Permits

In order to obtain an Historic Use Production Permit, the owner of a non-exempt well that was completed and operational prior to January 1, 2010, and that produced and used groundwater in any year during the Existing and Historic Use Period, must submit an application to the District for an Historic Use Production Permit by no later than 5:00 p.m., May 1, 2010. HUPP applications arriving at the District Office after that deadline will be returned to the applicant. Failure to file an application for a HUPP by 5:00 p.m. on May 1, 2010 shall preclude the well owner from making any future claim or application to the District for Historic Use of groundwater under these rules. Failure to file an application for a HUPP by 5:00 p.m. on May 1, 2010 for a well or wells shall preclude the owner or any operator from producing groundwater from the well or wells unless such owner or operator obtains a Non-Historic Use Production Permit, if available, converts the well to an exempt well or monitoring well, or obtains a transfer of production rights from the holder of a HUPP.

§ 5.207 Applications for Historic Use Production Permits (HUPPs)

All HUPP applicants must use the application form prescribed by the District and include all relevant information required by these rules. A single HUPP application may, at the applicant's discretion, be submitted for multiple wells owned or operated by the applicant. In addition to the information specified in § 9.107, an application for an Historic Use Production Permit shall contain the following:

(a) Name and Address of Owner. The full name, physical and mailing addresses, telephone number, fax number, and e-mail address of the landowner and operator, as applicable.

(b) Source of Supply. A statement identifying which aquifer(s) is/are the source of groundwater from the well.

(c) Rate of Withdrawal. The maximum rate of withdrawal, in gallons per minute, that the well is capable of producing.

(d) Method of Withdrawal. A description of the method used to withdraw groundwater.

(e) Declaration of Historic Use. A declaration of the amount of groundwater claimed to have been used in each year of the Existing and Historic Use Period, identifying the total amount of groundwater that the applicant or his or her contract user or predecessor in interest, withdrew and beneficially used without waste, and, if applicable, the number of acres irrigated without waste, during each calendar year of the Existing and Historic Use Period, calculated in accordance with the following guidelines, as may be applicable:

(1) For an applicant whose use during the Existing and Historic Use Period has been affected by a requirement of, or participation in, the federal conservation program, a credit for Beneficial Use shall be given for the amount that would have been withdrawn and beneficially used during the Existing and Historic Use Period by such applicant but for the operation of the federal conservation program. The credit may be based on irrigation use on comparable acres on a similarly-situated farm that is not in the federal conservation program.

(2) If, during the Existing and Historic Use Period, more than one user applied groundwater for a Beneficial Use on the same land, then all such Beneficial Use shall inure solely to the benefit of and may only be claimed by the landowner who last withdrew and used the water or whose contract user last withdrew and used the water during the Existing and Historic Use Period.

(f) Purpose of Historic Use. The purpose(s) for which the groundwater was used during the Existing and Historic Use Period.

(g) Purpose of Future Use: The purpose(s) for which the groundwater will be used.

(h) Crop Type. For irrigation applications, the crop type and acreage of all crops irrigated during the Existing and Historic Use Period.

(i) Irrigated Acreage. For irrigation applications, the deed and legal description of irrigable land irrigated to produce an agricultural crop during the Existing and Historic Use Period, including the year irrigated.

(j) Ownership of Well Land: The deed and legal description for the tract of land on

which the well is located.

(k) Federal Conservation Plan Documentation: For irrigation applications, where applicable, documentation regarding enrollment of each tract of land in the federal conservation program.

(l) Well locations: The number and location of each well owned by the applicant and for which the applicant claims groundwater was withdrawn and placed to Beneficial Use during the Existing and Historic Use Period.

(m) Place of Use: The place of use of groundwater withdrawn from each well, including, as applicable, a copy of the deed and legal description for the place of use or a copy of the map identifying the boundaries of the applicant's Certificate of Convenience and Necessity (CCN).

(n) Other Users: If the groundwater was withdrawn from the well or placed to a Beneficial Use by a contract user or predecessor in interest, then the name, address and telephone number of each contract user or predecessor in interest, and copies of the legal documents establishing the legal right of the contract user or predecessor in interest to withdraw and/or place groundwater from the well to Beneficial Use.

(o) Year Drilled: The year in which the well was drilled.

(p) Photograph: A photograph of the well taken approximately 100 feet from the wellhead.

(q) Well or Driller's Log: A copy of the State Well Report and, if available, any geophysical logs for the well.

(r) Plans: Any potable water supply entity shall provide a copy of its water conservation plan and drought contingency plan prepared for the TCEQ.

(s) Compliance with Management Plan: A declaration that the applicant will comply with the District's Groundwater Management Plan.

(t) Compliance with Rules: A declaration that the applicant is in compliance with all applicable District rules in effect since December 7, 2007, and will comply with the District's rules.

(u) Surface Water Bodies: The name of any surface water, including lakes, streams, or rivers, within 1,000 feet of the well.

(v) Waste and Conservation: A statement that the applicant agrees to avoid waste and achieve water conservation.

(w) Groundwater Quality: A statement that the applicant agrees to use reasonable

diligence to protect groundwater quality.

(x) Other Information: Any other information determined to be necessary by the District.

§ 5.211 Basis for Action on Historic Use Production Permit Applications

(a) The Board shall grant an application for an Historic Use Production Permit if the Board finds that:

(1) the application is complete;

(2) the application was timely filed in accordance with Section 5.205;

(3) the application complies with the rules of the District;

(4) all applicable fees and deposits have been paid;

(5) the applicant owns the proposed or existing well and the place of use;

(6) the applicant has a legal right to produce groundwater from the proposed or existing well;

(7) the wellhead is, or will be physically located, within the boundaries of the District;

(8) the withdrawals are proposed to be placed to a Beneficial Use;

(9) except as provided in Section 5.401(b), the place of use is located within the District's boundaries, unless the applicant also has obtained or applied for a groundwater exportation permit from the District;

(10) the applicant is in compliance with any permits the applicant holds from the District and with District rules;

(11) the activities of the applicant constituting the purpose of use for which the groundwater will be beneficially used will be managed to preserve, protect, prevent the pollution, degradation, or harmful alteration of, control and prevent the waste of, prevent the escape of groundwater from, and achieve the conservation of groundwater in and produced from, the aquifer;

(12) the proposed production of water will not unreasonably affect existing groundwater or surface water resources or existing holders of permits issued by the District;

(13) operation of the well will not cause unreasonable interference between wells;

(14) the application is consistent with the District's certified groundwater management plan, as may be amended; and

(15) the applicant proves the Beneficial Use of groundwater without waste during the Existing and Historic Use Period.

(b) Aggregation of Withdrawals. The authorized withdrawal amount for a given Historic Use Production Permit may be aggregated with the authorized withdrawal amounts for other Historic Use Production Permits held by the same permittee. Where aggregated, the total authorized withdrawal amount will be assigned to the wells in aggregate, rather than allocating to each well its pro-rata share of production.

(c) An Historic Use Production Permit issued by the District will initially authorize the permittee to produce his or her Maximum Historic Use (MHU), unless the District finds that a lower production amount is appropriate for a given applicant based upon the factors listed in Subsection (a), above. The initial production amount specified in an Historic Use Production Permit may subsequently be proportionally reduced by the District as provided in Subchapter B of this chapter.

(d) The Board shall not issue Historic Use Production Permits for lands for which the Board determines the applicant, his predecessor in interest, or a contract user did not beneficially use groundwater without waste during the Existing and Historic Use Period.

(e) The Board shall determine the volume of Maximum Historic Use (MHU) of groundwater by an applicant as follows:

(1) for irrigation purposes, it shall be the number of acres of Existing and Historic Irrigated Land proven to have been to have been irrigated during any one year of the Existing and Historic Use Period multiplied by 2.5 acre-feet per acre;

(2) for all other non-exempt uses, it shall be the maximum amount of groundwater proven to have been produced and beneficially used in a non-wasteful manner in any one calendar year during the Existing and Historic Use Period or for a municipal historical user within a certificate of convenience and necessity (CCN) who has less than one full year of use by some end users within the CCN, it shall be the maximum amount of groundwater proven to have been produced and beneficially used in a non-wasteful manner during part of the calendar year during the Existing and Historic Use Period calculated on an annualized basis; or

(3) for any land that was enrolled in the federal conservation program during the Existing and Historic Use Period, it shall be the number of acres of Existing and Historic Irrigated Land proven to have been land that was both irrigated for production prior to enrollment in the federal conservation program, and enrolled or participating in the program during the entirety of the Existing and Historic Use Period, multiplied by 2.5 acre-feet per acre.

(f) Existing and Historic Irrigated Land shall be classified by the District as the acres

of land that are irrigable and which were irrigated to produce an agricultural crop during one or more years of the Existing and Historic Use Period.

(g) The following measures shall be used by the District to determine if land within the District's boundaries is irrigable:

(1) the land is classified by the United States Department of Agriculture Farm Services Agency as "cropland" that is land that is capable of being farmed with normal farming equipment and any other requirements of the Farm Services Agency;

(2) the land is classified by the United States Department of Agriculture Natural Resources Conservation Services as "Additional Farmland of Statewide Importance" according to the procedures of Part 657.5 Identification of Important Farmlands (7 CFR 657); or

(3) any other method or methods determined by the Board to reasonably determine if land is irrigable.

(h) One or more of the following measures may be used by the District to determine if land classified by the District as irrigable was irrigated to produce an agricultural crop during the Existing and Historic Use Period:

(1) crop production reports from a governmental agency that are determined by the District to contain sufficient information to identify:

(A) the location of the land on which the agricultural crop was produced;

(B) that an agricultural crop was produced on such land;

(C) that such land was irrigated to produce the agricultural crop; and

(D) the year or years that the agricultural crop was produced;

(2) aerial photographs or imagery that were produced by or obtained from an agency of the United States or the State of Texas and are determined by the District to be:

(A) of sufficient quality to accurately determine the location of the irrigated field;

(B) properly documented as to source and date when the photograph was taken; and

(C) of sufficient quality that the irrigated land shown in the photograph can be correlated by the District to a legal description of the land and the appraisal district property identification number associated with such land;

(3) crop production reports from any reasonable source that are determined by the District to contain sufficient information to identify:

(A) the location of the land on which the agricultural crop was produced;

(B) that an agricultural crop was produced on such land;

(C) that such land was irrigated to produce the agricultural crop; and

(D) the year or years that the agricultural crop was produced;

(4) aerial photographs or imagery that were produced by or obtained from any source and are determined by the District to be:

(A) of sufficient quality to accurately determine the location of the irrigated field;

(B) properly documented as to source and date when the photograph was taken; and

(C) of sufficient quality that the irrigated land shown in the photograph can be correlated by the District to a legal description of the land and the appraisal district property identification number associated with such land; and

(5) any other method or methods determined by the Board to reasonably determine if irrigable land has been irrigated.

§ 5.213 Contents of Historic Use Production Permits

(a) An Historic Use Production Permit issued by the District shall include the following terms and conditions:

(1) the name of the person or entity to whom the permit is issued;

(2) the date the permit is issued;

(3) the location of the well;

(4) the purpose of use for which the water produced from the well will be used;

(5) the specific location of the place of use of the water produced from the well;

(6) except as provided in Section 5.401(b), if the place of use is not within the

District's boundaries, the permittee must obtain a groundwater exportation permit from the District prior to the withdrawal of groundwater under the permit;

(7) the requirements for the conveyance of water produced from the well to the place of use;

(8) the maximum rate of production in gpm, and any conditions relative thereto;

(9) the maximum amount of production in acre-feet per annum, and any conditions relative thereto;

(10) a water well closure plan or a declaration that the applicant will comply with well plugging requirements and report closure to the District and the Commission;

(11) metering and reporting requirements;

(12) a statement that the permit is subject to the Standard Permit Conditions set forth in Section 5.215 of these rules; and

(13) a statement that the permit is subject to limitation or modification as may be provided in the District's Rules or other applicable law; and

(14) other terms and conditions as may be required by the Board.

(b) Within 30 days of issuance, an Historic Use Production Permit shall be recorded with the Clerk of every county in which the well or wells or place of use are located and a copy shall be provided to the District.

§ 5.215 Standard Permit Conditions for Historic Use Production Permits

All Historic Use Production Permits issued by the District shall be subject to the following conditions:

(a) the duty to beneficially use and avoid waste of groundwater;

(b) the duty to conserve water in accordance with applicable law, and comply with the District's water conservation plan, as may be amended from time to time, and the permittee's plan approved by the District, as applicable;

(c) the duty to properly close (cap or plug) all wells in accordance with applicable law, and comply with the District's well closure plan, if any, as may be amended from time to time, and the permittee's plan approved by the District, as applicable;

(d) the duty to file all applicable reports with the District, and other appropriate federal, state, or local governments;

(e) the duty to reduce water production or consumption during times of drought in accordance with applicable law, and to comply with the District's drought management plan, as may be amended from time to time, and the permittee's plan approved by the District, as applicable;

(f) the duty to comply with the District's certified groundwater management plan, as may be amended from time to time;

(g) the duty to use diligence to protect groundwater quality within the District;

(h) the duty to comply with the District's rules, as may be amended;

(i) any permit review, renewal, or extension conditions;

(j) the duty to locate all wells, and confirm the actual location with the proposed location in the application or as provided for in the permit, consistent with the District's well spacing rules, prior to the production from any wells identified in the permit or application;

(k) the continuing right of the District to supervise and manage groundwater production and protect the aquifer;

(l) the duty to install, equip, operate, maintain, and close all wells in accordance with the District's rules, and other applicable federal, state, and local law;

(m) the duty to comply with the District's rules relating to transfers and amendments of permits;

(n) the duty to pay and be current in the payment of all applicable fees;

(o) the duty not to export groundwater from a well within the District's boundaries to a place of use outside the District's boundaries without a Groundwater Exportation Permit issued by the District;

(p) the duty to give notice to the District of any changes in name, address, or telephone number of the permittee, or the authorized representative, as applicable, in accordance with these rules;

(q) the duty to comply with all of the terms and conditions of the permit;

(r) the duty to ensure that the well site is accessible to District representatives for inspection, and to cooperate fully in any reasonable inspection of the well and well site by District representatives;

(s) the right of the District to enter land under § 36.123, TEXAS WATER CODE, as may be amended;

(t) the duty to comply with the metering and reporting requirements set forth in Chapter 8 of these rules;

(u) the duty to comply with any proportional adjustments mandated by Subchapter B of Chapter 5 of these rules; and

(v) any other conditions as the Board may deem appropriate.

§ 5.217 Groundwater Production in Violation of Historic Use Production Permit Prohibited

No holder of a Historic Use Production Permit may withdraw or use groundwater in a manner inconsistent with the terms of the permit, and any such production is illegal, wasteful per se, and a nuisance.

§ 5.219 Transfer of Ownership or Lease of Historic Use Production Permit; Notice

(a) The ownership of a Historic Use Production Permit may be transferred separately from the ownership of the place of use.

(b) Within 30 days after transfer of the ownership of a Historic Use Production Permit, or lease of the right to withdraw groundwater thereunder, the transferee shall file with the District a notice on a form prescribed by the District. For transfers of ownership, if the notice is complete, and the transfer is otherwise in compliance with this subchapter, the general manager shall reflect the new ownership and issue an amended permit to the transferor, transferee, or both, as may be appropriate. For leases, the general manager will update the District's permit records to reflect the lease.

§ 5.221 Historic Use Production Permit Transfers and Amendments; Applications

(a) A Historic Use Production Permit may be amended as follows:

(1) purpose of use;

(2) place of use;

(3) the total volume of groundwater authorized to be withdrawn in acre-feet per annum; or

(4) rate of production in gpm.

(b) Any person seeking to amend their permit as provided in Subsection (a) must first file with the District an application to amend on a form prescribed by the District.

(c) No permit transfer or amendment is effective until the transfer or amendment has

been approved by the Board.

§ 5.223 Basis for Granting Applications to Amend Historic Use Production Permits

The Board shall grant an application to amend a Historic Use Production Permit if it finds that:

(1) the elements provided for in §§ 5.207 and 5.211 are established; and

(2) during the term of the permit, the applicant, transferor, or transferee, as may be appropriate, demonstrates a positive compliance history with the permit's terms and conditions, and the District's rules.

§ 5.225 Availability of and Application for Non-Historic Use Production Permits

(a) If, pursuant to Subchapter B of this chapter, the District determines that there is sufficient groundwater available for the District to issue Non-Historic Use Production Permits in a given aquifer, then the Board will issue a written order authorizing the filing and processing of applications for Non-Historic Use Production Permits for the applicable aquifer (an "NHUPP Authorization Order"). The District will not accept for filing any NHUPP application for a given aquifer unless and until such an NHUPP Authorization Order has been issued by the Board for that aquifer.

(b) If the District issues an NHUPP Authorization Order for a given aquifer, then no groundwater may be produced from that aquifer from a non-exempt well for which there is not an associated Historic Use Production Permit without first applying for and obtaining a Non-Historic Use Production Permit. On the other hand, if, pursuant to Subchapter B of Chapter 5 of these rules, the District determines that there is not sufficient groundwater available for the District to issue Non-Historic Use Production Permits in a given aquifer, then no groundwater may be produced from a non-exempt well for which there is not an associated Historic Use Production Permit.

§ 5.227 Applications for Non-Historic Use Production Permits (NHUPP)

No Non-Historic Use Production Permit applications will be accepted, processed or considered by the District unless and until all applications for Historic Use Production Permit applications have been finally decided and the District has issued an NHUPP Authorization Order pursuant to Section 5.225 for a given aquifer. If NHUPPs may be applied for, an NHUPP applicant must use the application form prescribed by the District and include all relevant information required by these rules. A single NHUPP application may, at the applicant's discretion, be submitted for multiple wells owned or operated by the applicant. In addition to the information specified in § 9.107, an application for an NHUPP application shall contain the following:

(a) Name and Address of Owner: The full name, physical and mailing addresses, telephone number, fax number, and e-mail address of the landowner and operator, as applicable.

(b) Source of Supply: A statement identifying which aquifer(s) is/are the source of groundwater from the well.

(c) Rate of Withdrawal: The maximum rate of withdrawal in gallons per minute or cubic feet per second that the well is capable of producing.

(d) Method of Withdrawal: A description of the method used to withdraw groundwater.

(e) Declaration of Amount of Proposed Use. A declaration by the applicant of the volume of groundwater that is proposed to be used without waste for a beneficial purpose and detailed documentation showing the need for the proposed amount of use.

(f) Purpose of Use: The purpose(s) for which the groundwater will be used.

(g) Ownership of Land: The deed and legal description for the tract of land on which the well is or will be located.

(h) Information regarding availability, access to, and cost to obtain water from a source other than the aquifer identified by the applicant. Information regarding such other sources shall at a minimum include the availability of, access to, and cost to obtain surface water.

(i) Well location: The location of the well or proposed well.

(j) Place of Use: The place of use of groundwater to be withdrawn from the well.

(k) Year Drilled: The year in which the well was or will be drilled.

(l) Well or Driller's Log: A copy of any State well report and, if applicable, any geophysical log for the well.

(m) Plans: Any potable water supply entity shall provide a copy of its water conservation plan and drought contingency plan prepared for the Commission.

(n) Compliance with Management Plan: A declaration that the applicant will comply with the district's management plan.

(o) Compliance with Rules: A declaration that the applicant is in compliance with all applicable District rules in effect on or after December 7, 2007, and will comply with the District's rules.

(p) Surface Water Bodies: The name of any surface water, including lakes, streams, or rivers, within 1,000 feet of the well.

(q) Waste and Conservation: A statement that the applicant agrees to avoid waste and

achieve water conservation.

(r) Groundwater Quality: A statement that the applicant agrees to use reasonable diligence to protect groundwater quality.

(s) Other Information: Any other information determined to be necessary by the District.

§ 5.229 Basis for Action on Non-Historic Use Production Permit Applications

(a) In the event that the District has issued an NHUPP authorization order pursuant to Section 5.225 for a given aquifer, the Board shall grant an application for an Non-Historic Use Production Permit if the Board finds that:

(1) the application is complete;

(2) the application complies with the rules of the District;

(3) all applicable fees and deposits have been paid;

(4) the applicant owns the proposed or existing well;

(5) the applicant has a legal right to produce groundwater from the proposed or existing well;

(6) the wellhead is, or will be physically located, within the boundaries of the District;

(7) the withdrawals are proposed to be placed to a Beneficial Use;

(8) except as provided in Section 5.401(b), the place of use is located within the District's boundaries, unless the applicant also has obtained or applied for a groundwater exportation permit from the District;

(9) the applicant is in compliance with any permits the applicant holds from the District and with District rules;

(10) the activities of the applicant will be managed to preserve, protect, prevent the pollution, degradation, or harmful alteration of, control and prevent the waste of, prevent the escape of groundwater from, and achieve the conservation of groundwater in and produced from, the aquifer;

(11) the proposed production of water will not unreasonably affect existing groundwater or surface water resources or existing holders of permits issued by the District or exceed the MAG;

(12) operation of the well will not cause unreasonable interference between wells; and

(13) the application is consistent with the District's certified groundwater management plan, as may be amended.

(b) Aggregation of Withdrawals. The authorized withdrawal amount for a given Non-Historic Use Production Permit may be aggregated with the authorized withdrawal amounts for other Non-Historic Use Production Permits held by the same permittee. Where aggregated, the total authorized withdrawal amount will be assigned to the wells in aggregate, rather than allocating to each well its pro-rata share of production.

(c) The initial production amount specified in a Non-Historic Use Production Permit may subsequently be proportionally reduced, even to the extent that it is entirely voided, by the District as provided in Subchapter B of this Chapter.

§ 5.231 Contents of Non-Historic Use Production Permits

(a) A Non-Historic Use Production Permit issued by the District shall include the following terms and conditions:

(1) the name of the person or entity to whom the permit is issued;

(2) the date the permit is issued;

(3) the location of the well;

(4) the purpose of use for which the water produced from the well will be used;

(5) the specific location of the place of use of the water produced from the well;

(6) except as provided in Section 5.401(b), if the place of use is not within the District's boundaries, the permittee must obtain a groundwater exportation permit from the District prior to the withdrawal of groundwater under the permit;

(7) the requirements for the conveyance of water produced from the well to the place of use;

(8) the maximum rate of production in gpm, and any conditions relative thereto;

(9) the maximum amount of production in acre-feet per annum, and any conditions relative thereto;

(10) a water well closure plan or a declaration that the applicant will comply with well plugging requirements and report closure to the District and the Commission;

(11) metering and reporting requirements;

(12) a statement that the permit is subject to the Standard Permit Conditions set forth in Section 5.233 of these rules;

(13) a statement that the permit is subject to limitation or modification as may be provided in the District's rules or other applicable law; and

(14) any other terms and conditions as may be required by the Board.

(b) Within 30 days of issuance, a Non-Historic Use Production Permit shall be recorded with the Clerk of every county in which the well or wells or place of use are located and a copy shall be provided to the District.

§ 5.233 Standard Permit Conditions for Non-Historic Use Production Permits

Any Non-Historic Use Production Permit issued by the District shall be subject to the following conditions:

(a) the duty to beneficially use and avoid waste of groundwater;

(b) the duty to conserve water in accordance with applicable law, and comply with the District's water conservation plan, as may be amended from time to time, and the permittee's plan approved by the District, as applicable;

(c) the duty to properly close (cap or plug) all wells in accordance with applicable law, and comply with the District's well closure plan, if any, as may be amended from time to time, and the permittee's plan approved by the District, as applicable;

(d) the duty to file all applicable reports with the District, and other appropriate federal, state, or local governments;

(e) the duty to reduce water or production or consumption during times of drought in accordance with applicable law, and comply with the District's drought management plan, as may be amended from time to time, and the permittee's plan approved by the District, as applicable;

(f) the duty to comply with the District's certified groundwater management plan, as may be amended from time to time;

(g) the duty to use diligence to protect the groundwater quality within the District;

(h) the duty to comply with the District's rules, as may be amended;

(i) any permit review, renewal, or extension conditions;

(j) the duty to locate all wells, and confirm the actual location with the proposed location in the application or as provided for in the permit, consistent with the District's well spacing rules, prior to the production from any wells identified in the permit or application;

(k) the continuing right of the District to supervise and manage groundwater production and protect the aquifer;

(l) the duty to install, equip, operate, maintain, and close all wells in accordance with the District's rules, and other applicable federal, state, and local law;

(m) the duty to comply with the District's rules relating to transfers and amendments of permits;

(n) the duty to pay and be current in the payment of all applicable fees;

(o) except as provided in Section 5.401(b), the duty not to export groundwater from a well within the District's boundaries to a place of use outside the District's boundaries without a groundwater exportation permit issued by the District;

(p) the duty to give notice to the District of any changes in name, address, or telephone number of the permittee, or the authorized representative, as applicable, in accordance with these rules;

(q) the duty to comply with all of the terms and conditions of the permit;

(r) the duty to ensure that the well site is accessible to District representatives for inspection, and to cooperate fully in any reasonable inspection of the well and well site by District representatives;

(s) the right of the District to enter land under § 36.123, TEXAS WATER CODE, as may be amended;

(t) the duty to comply with the metering and reporting requirements set forth in Chapter 8 of these rules;

(u) the duty to comply with any proportional adjustments mandated by Subchapter B of Chapter 5; and

(v) any other conditions as the Board may deem appropriate.

§ 5.235 Reduction in Amount or Cancellation of Non-Historic Use Production Permit for Non-Use

(a) If all or part of the water authorized to be produced under a Non-Historic Use Production Permit has not been put to Beneficial Use at any time during between the time the permit is issued and ten years thereafter, then the permit is subject to cancellation by the District in whole or a reduction in the annual volume of production authorized by the permit.

(b) Prior to any cancellation or reduction, the District shall provide the opportunity for a hearing and give notice to the permittee at least 45 days before the date of the hearing.

(c) The District shall also have the notice of the hearing published once a week for two consecutive weeks, at least 30 days before the date of the hearing, in a newspaper published in each county in which diversion of water from the source of supply was authorized or proposed to be made and in each county in which the water was authorized or proposed to be used, as shown by the records of the District. If in any such county no newspaper is published, then the notice may be published in a newspaper having general circulation in the county.

(d) The District shall hold a hearing and shall give the permittee and other interested persons an opportunity to be heard and to present evidence on any matter pertinent to the questions at issue.

(e) At the conclusion of the hearing, the District may cancel the permit in whole or in part to the extent that it finds that:

(1) the water or any portion of the water authorized to be produced under the permit has not been put to a Beneficial Use during the 10-year period; and

(2) the permittee has not used reasonable diligence in applying the water or the unused portion of the water to an authorized Beneficial Use or is otherwise unjustified in the nonuse.

§ 5.237 Groundwater Production in Violation of Non-Historic Use Production Permit Prohibited

No holder of a Non-Historic Use Production Permit may withdraw or use groundwater in a manner inconsistent with the terms of the permit, and any such production is illegal, wasteful per se, and a nuisance.

§ 5.239 Transfer of Ownership or Lease of Non-Historic Use Production Permit; Notice

(a) The ownership of a Non-Historic Use Production Permit may be transferred separately from the ownership of the place of use.

(b) Within 30 days after transfer of the ownership of a Non-Historic Use Production

Permit, or lease of the right to withdraw groundwater thereunder, the transferee shall file with the District a notice on a form prescribed by the District. For transfers of ownership, if the notice is complete, and the transfer is otherwise in compliance with this subchapter, the general manager shall reflect the new ownership and issue an amended permit to the transferor, transferee, or both, as may be appropriate. For leases, the general manager will update the District's permit records to reflect the lease.

§ 5.241 Non-Historic Use Production Permit Transfers and Amendments; Applications

(a) A Non-Historic Use Production Permit may be amended as follows:

(1) purpose of use;

(2) place of use;

(3) the total volume of groundwater authorized to be withdrawn in acre-feet per annum; or

(4) rate of production in gpm.

(b) Any person seeking to amend their permit as provided in Subsection (a) must first file with the District an application to amend on a form prescribed by the District.

(c) No permit transfer or amendment is effective until the transfer or amendment has been approved by the Board.

§ 5.243 Basis for Granting Applications to Amend Non-Historic Use Production Permits

The Board shall grant an application to amend a Non-Historic Use Production Permit if it finds that:

(a) the elements provided for in § 5.229 are established; and

(b) during the term of the permit, the applicant, transferor, or transferee, as may be appropriate, demonstrates a positive compliance history with the permit's terms and conditions, and the District's rules.

Subchapter D. Groundwater Exportation Permits

§ 5.401 Applicability

(a) Except as provided in Subsection (b), this subchapter applies to any person who seeks to export groundwater that is produced from a well within the District's boundaries to a place of use outside the District's boundaries.

(b) This subchapter does not apply to:

(1) a groundwater export arrangement in effect prior to January 7, 2010, and continuing thereafter, so long as there is no increase in the annual amount exported after January 7, 2010;

(2) groundwater that is incorporated into a finished, manufactured product within the District and then exported for sale outside of the District;

(3) groundwater that is produced from a well located within the District, where the well is situated on a contiguous tract of land that straddles the District's boundaries and the groundwater is placed to use solely on that tract, but including portions outside the District's boundaries; or

(4) groundwater that is produced from a non-exempt well located within the District and delivered by the permittee to end users pursuant to a certificate of convenience and necessity (CCN), where: the CCN boundaries straddle the District boundaries.

§ 5.403 Groundwater Exportation Permit Required

(a) Exporting groundwater from the District without a required groundwater exportation permit is illegal, wasteful per se, and a nuisance.

(b) Any person seeking to export groundwater to a place of use outside of the District's boundaries is required to first file with the District an application to export groundwater on a form prescribed by the District and obtain a groundwater exportation permit from the District.

(c) An application filed to comply with this section shall be considered and processed under the same procedures as other applications for other permits and may be combined with applications filed to obtain a permit for in-District water use from the same applicant, if any.

(d) The District may not deny a permit under this subchapter based on the fact that the applicant seeks to export groundwater outside of the boundaries of the District, but may restrict a groundwater exportation permit to the annual production of groundwater and the purpose of use allowed under the associated groundwater production permit.

§ 5.405 Applications for Groundwater Exportation Permits

In addition to the information specified in § 9.107, an application for a groundwater exportation permit shall contain information reasonably related to the information to be contained in a groundwater exportation permit under §§ 5.413 and 5.417 and the elements to be considered by the Board in determining whether to grant or deny the application under § 5.407. The application shall be submitted on the form developed and prescribed by the District.

§ 5.407 Basis for Action on Groundwater Exportation Permit Applications

The Board shall grant an application for a groundwater exportation permit if the Board finds that:

(a) the application is complete;

(b) the application complies with the rules of the District;

(c) all applicable fees and deposits have been paid;

(d) the water to be exported is proposed to be placed to a Beneficial Use;

(e) the place of use is identified specifically and located outside the District's boundaries;

(f) the well to be used for the proposed exportation project is identified specifically and located within the District's boundaries;

(g) the applicant is in compliance with any permits the applicant holds from the District and with the District's rules;

(h) the applicant owns a groundwater production permit issued by the District to produce the groundwater necessary for the proposed exportation project, or has a contract to purchase the groundwater from a third party who holds such permit or other authorization;

(i) there is insufficient water available in the proposed receiving area to substantially meet the actual or projected demand during the proposed term of the groundwater exportation permit;

(j) there is sufficient water available within the District to substantially meet the actual or projected demand during the proposed term of the groundwater exportation permit;

(k) the proposed exportation will not have an unreasonably adverse effect on aquifer conditions, depletion, or water quality within the District;

(l) the proposed exportation will not have an unreasonably adverse effect on existing permittees, or other groundwater users within the District;

(m) the proposed exportation is consistent with the applicable Regional Water Plans approved by the Texas Water Development Board; and

(n) the proposed exportation is consistent with the District's certified Groundwater Management Plan, as may be amended.

§ 5.411 Groundwater Exportation Permit Term; Renewal

(a) The permit term for an exportation permit shall be set by the Board, consistent with the following criteria:

(1) the permit term shall be three years, if construction of a conveyance system in the District's boundaries has not been initiated prior to the issuance of the permit; or

(2) the permit term shall be 30 years, if construction of a conveyance system has been initiated in the District's boundaries prior to the issuance of the permit.

(b) The three-year term specified in Subsection (a)(1) shall automatically be extended to thirty years if construction of a conveyance system is begun before the expiration of the three-year period. For the purposes of this section, construction of a conveyance system shall be considered to have been initiated when the permittee has completed construction of at least 10% of the portion of the conveyance facilities located within the District that will be used to convey the maximum annual quantity of groundwater permitted for transfer outside of the boundaries of the District. Such portion of the conveyance facilities does not include any existing or previously constructed facilities that were not constructed specifically for use in exporting the groundwater considered under the permittee's groundwater exportation permit application.

(c) An exportation permit may be renewed. Any person seeking the renewal of a groundwater exportation permit must file with the District an application to renew on a form prescribed by the District. The application must be filed with the District no later than one year prior to the expiration of the permit term.

§ 5.413 Contents of Groundwater Exportation Permits

A groundwater exportation permit shall include the following terms and conditions:

(a) the name, address, and telephone number of the permittee;

(b) the groundwater production permit number to be tied to the groundwater exportation permit;

(c) if the permittee does not own the well(s) from which the production for exportation is made, then the name, address and telephone number of the well owner;

(d) if not the permittee, the name, address and telephone number of the owner of the

land on which the well(s) is located;

(e) the permit term, including dates of issuance, effectiveness, and termination;

(f) the purpose of use for which the water produced from the well(s) is to be used;

(g) a requirement that the water produced under the permit be put to Beneficial Use without waste;

(h) the location of the place of use outside the District's boundaries;

(i) the maximum amount of production in acre-feet per annum that may be exported from the District, which will be limited to the amount that could be produced by the well(s) for in-district use pursuant to the production limitations set forth in these rules, and any conditions or restrictions relative thereto;

(j) the metering and reporting requirements; and

(k) other terms and conditions as may be required by the Board.

§ 5.417 Standard Permit Conditions for Groundwater Exportation Permits

All groundwater exportation permits shall be issued with and subject to the following conditions:

(a) the duty to beneficially use water and avoid waste;

(b) the duty to conserve water in accordance with applicable law and comply with either the District's water conservation plan, as may be amended;

(c) the duty to file all applicable reports with the District and other appropriate federal, state, or local governments;

(d) the duty to reduce water consumption during times of drought in accordance with applicable law, and comply with either the District's drought management plan, as may be amended from time to time, or the permittee's plan approved by the District, as appropriate;

(e) the District's certified groundwater management plan, as may be amended from time to time;

(f) the duty to use all reasonable diligence to protect the groundwater quality of the aquifer;

(g) the duty to comply with the District's rules as may be amended from time to time;

(h) permit review, renewal, or extension conditions;

(i) the continuing right of the District to supervise the depletion of the aquifer;

(j) installation, equipping, operation, and maintenance of all meters in accordance with the District's rules;

(k) the duty to comply with the District's rules relating to transfers and amendments of permits as may be amended from time to time;

(l) the duty to pay and be current in the payment of all applicable fees;

(m) the duty to record the permit;

(n) the duty to give notice to the District of any changes in name, address, or telephone number of the permittee, or the authorized representative, or the landowner, as may be appropriate;

(o) the duty to comply with all of the terms and conditions of the permit;

(p) the duty to ensure that the well site is accessible to District representatives for inspection, and to cooperate fully in any reasonable inspection of the well and well site by District representatives;

(q) the right of the District to enter land under § 36.123, TEXAS WATER CODE, as may be amended; and

(r) any other conditions as the Board may deem appropriate.

§ 5.419 Groundwater Production in Violation of Permit Prohibited

No holder of a groundwater exportation permit may export groundwater in a manner inconsistent with the terms of the permit, and any such production is illegal, wasteful per se, and a nuisance.

§ 5.421 Transfer of Ownership or Lease; Notice

(a) The ownership of a groundwater exportation permit may be transferred separately from the ownership of the place of use. The owner of a groundwater exportation permit may authorize a person other than the permittee to export groundwater under the permit.

(b) Within 30 days after transfer of the ownership of a groundwater exportation permit, or lease of the right to export thereunder, the transferee shall file with the District a notice on a form prescribed by the District. For transfers of ownership, if the notice is complete, and the transfer is otherwise in compliance with this subchapter, the general manager shall reflect the new ownership and issue an amended permit to the transferor, transferee, or both, as may be appropriate. For leases, the general manager will update the District's permit records to

reflect the lease.

§ 5.423 Permit Transfers and Amendments; Applications

(a) A groundwater exportation permit may be amended as follows:

(1) purpose of use;

(2) place of use;

(3) the total volume of groundwater exported in acre-feet per annum; or

(4) rate of production in gpm.

(b) Any person seeking to amend their permit as provided in Subsection (a) must first file with the District an application to amend on a form prescribed by the District.

(c) No permit transfer or amendment is effective until the transfer or amendment has been approved by the Board.

§ 5.425 Basis for Granting Applications to Amend Groundwater Exportation Permits

The Board shall grant an application to amend a groundwater exportation permit if it finds that:

(a) the elements provided for in § 5.407 are established; and

(b) during the term of the permit, the applicant, transferor, or transferee, as may be appropriate, demonstrates a positive compliance history with the permit's terms and conditions, and the District's rules.

Subchapter E. Wells Exempt from Permits

§ 5.501 Exempt Wells

(a) The owner and/or operator of any of the following types of wells is exempt from the duty to obtain a drilling permit, groundwater withdrawal permit, or interim production status for the well:

(1) a well that was in use prior to the effective date of these rules, that is used solely for domestic use, and that was drilled, completed, or equipped so that it is incapable of producing more than 25,000 gallons of groundwater per day;

(2) a well on a tract of land larger than 10 acres if the well is drilled, completed, or equipped so that it is incapable of producing more than 25,000 gallons of groundwater a day and if the water produced or to be produced from the well is used or to be used solely for domestic use or to provide water for livestock or poultry;

(3) a well to supply water solely for a drilling rig that is actively engaged in drilling or exploration operations permitted by the Railroad Commission of Texas if:

(A) the person holding the Commission permit is responsible for the water well; and

(B) the water well is located:

(i) on the lease on which the drilling rig is located;

(ii) within the boundaries of the field in which the drilling rig is located; or

(iii) in close proximity to the drilling rig; or

(4) a well authorized under a permit issued by the Railroad Commission of Texas under Chapter 134, Natural Resources Code.

(b) Notwithstanding Subsection (a), the District may require a well to be permitted pursuant to these rules if any of the applicable criteria in Section 36.117(d), Texas Water Code, are satisfied.

(c) A person holding a permit issued by the Railroad Commission of Texas under Chapter 134 of the Texas Natural Resource Code that authorizes the drilling of a water well shall report monthly to the District the total amount of water withdrawn from the well, the quantity of water necessary for mining purposes, and the quantity of water withdrawn for other purposes.

(d) All wells qualifying as exempt wells pursuant to Subsection (a) of this Section, shall be registered with the District in accordance with these rules.

(e) All exempt wells shall be equipped and maintained so as to conform to the District's Rules requiring installation of casing, pipe, and fittings to prevent the escape of groundwater from a groundwater reservoir to any reservoir not containing groundwater and to prevent the pollution or harmful alteration of the character of the water in any groundwater reservoir.

(f) All exempt wells shall comply with the spacing requirements set forth in these rules.

(g) The driller of an exempt well shall file the drilling log for the well with the District within 60 days of completion of the exempt well.

(h) An exemption under this section does not affect the District's authority to impose fees under Texas Water Code, Section 36.122 or Texas Water Code, Chapter 36, Subchapter G. Groundwater withdrawn from an exempt well and subsequently transported outside the boundaries of the District shall be subject to any applicable production and exportation fees.

(i) An exempt well will lose its exempt status if the well is subsequently altered, equipped, or used for a purpose or in a manner that is not exempt.

(j) The owner and/or operator of an exempt well must ensure that the well site is accessible to District representatives for inspection, and must cooperate fully in any reasonable inspection of the well and well site by District representatives.

§ 5.503 Loss of Exemption; Notice of Changed Circumstances

The owner and/or operator of a well that is exempt under this subchapter loses the exemption if the nature of the well changes such that the well no longer qualifies for the exemption. Within 30 days of the occurrence of any facts that may cause a well to lose its exemption, the owner and/or operator of the well shall give written notice to the District of the changed circumstances. If the board determines that the changed circumstances have caused the well to lose its exemption, then the board will issue an order declaring the loss of exemption and advising the well owner and/or operator that the well is subject to District regulation, including the duty to obtain a permit, or other regulation, as may be applicable.

§ 5.505 Well Conversions

(a) If the owner and/or operator of a well for which a groundwater withdrawal permit has been issued or interim production status has been obtained desires to convert the well to one exempt from the duty to obtain a groundwater withdrawal permit or interim production status, the owner and/or operator must claim the exemption by abandoning the groundwater withdrawal permit or interim production status and registering the well as provided for in Section 5.601.

(b) If the owner and/or operator of a well exempt from the duty to obtain a groundwater withdrawal permit or interim production status desires to convert the well to one for

which a groundwater withdrawal permit or interim production status is required, then the owner and/or operator must apply for and obtain a groundwater withdrawal permit or interim production status.

Subchapter F. Registration of Wells

§ 5.601 Registration of Exempt Wells

(a) No person may drill or operate an exempt well within the boundaries of the District without first registering the well with the District using a registration form approved by the District, and obtaining written District approval of the registration and agreement that the well qualifies as exempt. All registrations for existing exempt wells shall be filed with the District on or before January 1, 2009.

(b) In addition to the information specified in Section 9.107 of these rules (Contents of and Requirements for All Applications; Registrations and Notices of Transfer of Ownership), a well registration shall contain the following, as applicable:

(1) the name, address and phone number of the registrant and the owner of the land on which the well is or will be located;

(2) if the registrant is other than the owner of the property, documentation establishing the applicable authority to construct and operate a well for the proposed use;

(3) a statement of the nature and purpose of the existing or proposed use and the annual amount of water used or to be used for each purpose;

(4) the location of the well and the estimated rate at which water is or will be withdrawn;

(5) the physical address of the property upon which the well is located;

(6) the location where the water from the well will be used;

(7) information relating to the size, source of power, and estimated production rate (in gallons per minute, "gpm") of the pump used or to be used in the well;

(8) the depth or proposed depth of the well and the depth of the casing;

(9) the internal diameter of the well casing.

(10) the approximate date that the well was or will be constructed;

(11) the name, address, and telephone number of the well driller who constructed or will construct the well, and related information;

(12) a copy of any well drilling and completion report, drillers logs, geophysical logs, or well equipping report which pertain to the well;

(13) the size of the tract of land on which the well site is located, including the total number of acres owned by the registrant upon which the well is or will be located;

(14) a legal description of the location of the well, including: the county, section, block and survey, and the number of feet to the two nearest public streets or highways; or other adequate legal description approved by the District;

(15) if requested by the District:

(A) a city or county map with the location of the property on which the well is located highlighted and the location of the well pinpointed; and

(B) a map or plat of the property on which the well is located, drawn to scale, not greater than 1000 feet to an inch (1" = 1000') that shows the pinpoint location of the well;

(16) the maximum amount of groundwater that the well is or will be capable of withdrawing per day stated in gallons;

(17) where applicable, a copy of any permit issued by the Railroad Commission of Texas relevant to the well; and

(18) any other information deemed necessary by the board in order to determine whether the well qualifies for exempt well status.

(c) The general manager may approve a well registration if the general manager finds that:

(1) the well is eligible to be registered;

(2) the registration is complete;

(3) the registration complies with the rules of the District;

(4) all applicable fees have been paid;

(5) the registration identifies a proposed or an existing well;

(6) the wellhead is or will be physically located within the boundaries of the District;

(7) the production from the well is proposed to be placed to a beneficial use;

(8) the registrant has a legal right to make withdrawals from the well;

(9) for new wells, the proposed well location complies with the spacing rules;

(10) the registrant is in compliance with any permits the registrant holds from the District and with District rules;

(11) the well will be installed, equipped, operated, maintained, or closed, as appropriate, to preserve, protect, prevent the pollution, degradation, or harmful alteration of, control and prevent the waste of, prevent the escape of, and achieve the conservation of groundwater in the aquifer;

(12) the registrant intends to install, equip, operate, maintain, and close the well, as appropriate, in accordance with the manufacturer's standards, instructions, or recommendations, as may be applicable; and

(13) the well meets the criteria for exempt well status pursuant to Section 5.501 of these Rules.

(d) If the general manager makes a preliminary determination that the well is ineligible to be registered, then the matter shall be referred to the board for its consideration. If the board determines that the well is ineligible to be registered, then the owner and/or operator of the well shall file an application for, as applicable, interim production status, a groundwater withdrawal permit, and/or a well drilling permit, under these rules.

Subchapter G. Interim Production Status

§ 5.701 Purpose of Interim Production Status

As of December 7, 2007, the District was newly created and in its initial start-up phase. This subchapter sets out a temporary process whereby, prior to the District's adoption and implementation of its groundwater production permit rules, non-exempt well owners and/or operators could pump and beneficially use groundwater from their wells provided that they comply with the requirements of this subchapter and other applicable provisions of these rules.

The fact that a non-exempt well owner and/or operator may qualify for interim production status pursuant to this subchapter shall have no relevance in any future proceedings on any groundwater production permit application proceedings by the well owner and/or operator and shall not in any way bind either the District or the well owner and/or operator with respect to any issue of fact or law that may arise in any pending or subsequent application for a groundwater production permit.

§ 5.703 Eligibility for Interim Production Status

(a) In order to qualify for interim production status, an owner and/or operator of a non-exempt well must, by February 1, 2008 or prior to withdrawing any groundwater from the well, file with the District a complete application for interim production status, using the form provided by the District. If the well owner and/or operator fails to timely apply for interim production status, then withdrawals may not be made from the well during the interim production status period, until such time as the owner or operator files a complete application for interim production status with the District. The District may pursue enforcement action against the owner or operator of a non-exempt well for the period of time during which the well was not in compliance with the requirements of this section.

(b) In addition to the information specified in Section 9.107 of these rules (Contents of and Requirements for All Applications; Registrations and Notices of Transfer of Ownership), an application for interim production status shall include the following, as applicable:

(1) the name, address and phone number of the applicant and the owner of the land on which the well is or will be located;

(2) if the applicant is other than the owner of the property, documentation establishing the applicable authority of the applicant to operate a well for the proposed use;

(3) a statement of the nature and purpose of the proposed use of groundwater and the annual amount of water to be used for each purpose during interim production status;

(4) the location of the well and the estimated rate at which water is or will be withdrawn during interim production status;

(5) the physical address of the property upon which the well is located; and

(6) any other information deemed necessary by the board in order to determine whether the well qualifies for interim production status.

(c) The District may approve an application for interim production status if it finds that:

(1) the well is eligible for interim production status;

(2) the application is administratively complete;

(3) the application complies with the rules of the District;

(4) all applicable fees have been paid;

(5) the applicant owns the well;

(6) the application identifies an existing or proposed non-exempt well;

(7) the production from the well during interim production status is proposed to be placed to a beneficial use; and

(8) a meter is or, prior to initiating production under interim production status, will be installed on the well in compliance with Chapter 8 of these Rules.

(d) A well owner and/or operator who qualifies for interim production status must annually file an application to renew the status by no later than February 1 of each year. An application to renew interim production status must include the same contents as set forth in Subpart (a), above. The criteria for renewal shall be the same as set forth in Subpart (b), above. If the well owner and/or operator fails to timely apply to renew interim production status, then further withdrawals may not be made from the well pursuant to interim production status. The well owner and/or operator shall not be obligated to apply to renew his or her interim production status if he or she obtains a groundwater production permit for the well.

§ 5.705 Effect of the Interim Production Status Period

If the District approves a well owner or operator's application or renewal application for interim production status, the well owner or operator may, during the period that interim production status remains in effect, withdraw and beneficially use that quantity of groundwater identified in the application which the District finds can be beneficially used without waste. The District shall consider a public water system's application for interim production status for 15% more than the system's "maximum daily demand" under 30 TEX. ADMIN. CODE § 290.45 to be beneficial use without waste.

§ 5.707 Duration of Interim Production Status

(a) A non-exempt well may be operated pursuant to interim production status beginning on the effective date of this subchapter.

(b) Interim production status for a non-exempt well shall cease, and no further withdrawals may be made from the well pursuant to interim production status, as follows:

(1) if the person owning the well fails to file a complete application for interim production status for the well on or before February 1, 2008 or prior to withdrawing groundwater from the well, then interim production status for that well shall cease on that date;

(2) if the person owning the well files an application for interim production status for the well on or before February 1, 2008 or prior to withdrawing groundwater from the well, and the District ultimately denies the application, then interim production status for that well shall cease on the date the District issues its denial; or

(3) if the person owning or operating the well files an application for interim production status for the well on or before February 1, 2008 or prior to withdrawing groundwater from the well, the District grants the application, and the well owner or operator timely and properly files for annual renewals of the status by each February 1 thereafter, then interim production status for that well shall cease on February 1 following the date the District issues a final order acting on the subsequent application for a groundwater production permit for the well.

§ 5.709 Interim Production Groundwater Withdrawal Conditions

Withdrawals of groundwater during interim production status are conditioned upon the well being in compliance with all applicable rules of the District, including the following:

(a) well construction;

(b) payment of groundwater production fees;

(c) well spacing; and

(d) well operation.

CHAPTER 6. WELL MANAGEMENT

Subchapter A. General Provisions

§ 6.1 Responsibility for Well Management

Well owners and/or operators shall be responsible for the installation, equipping, operation, maintenance, and closure of their wells, and all costs associated therewith.

§ 6.3 Well Construction and Pump Installation Standards

(a) All new wells located within the District's boundaries shall be installed, equipped, operated, maintained, and closed in accordance with Chapters 1901 and 1902, TEXAS OCCUPATIONS CODE, and Chapter 76, 16 TEXAS ADMINISTRATIVE CODE, as may be amended, the Texas Department of Licensing and Regulation's rules on water well drillers and water well pump installers, irrespective of whether the well is required to obtain a drilling permit from the District. In addition, all new wells located within the District's boundaries that are completed so as to be capable of producing groundwater from the Trinity Aquifer shall be located, drilled, equipped, and operated in accordance with 30 Texas Administrative Code § 290.41(c)(1)(A)-(D), (c)(2), (c)(3)(B) – (F)(i), (c)(3)(H) – (Q). To the extent that any of the applicable requirements cited in this section conflict, the well owner and/or operator, driller and/or pump installer shall comply with the requirement that is more protective of groundwater and the environment.

(b) Any existing well or pump that is altered, reworked, redrilled, reequipped or replaced must be done in accordance with the standards in Subsection (a), irrespective of whether the well owner and/or operator is required to obtain a drilling permit from the District.

§ 6.7 Re-completions

(a) The landowner, well owner and/or operator shall have the continuing responsibility of insuring that a well does not allow commingling of undesirable water and fresh water or the 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 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, well owner and/or operator to take steps to prevent the commingling of undesirable water and fresh water, or the loss of water.

Subchapter B. Well Spacing and Location Requirements

§ 6.101 Location of Wells

(a) All new wells must comply with the location requirements set forth in the Texas Department of Licensing and Regulation's rules in Chapter 76, 16 TEXAS ADMINISTRATIVE CODE, as may be amended.

(b) All new wells must be located a minimum horizontal distance of 50 feet from any property line.

(c) No new 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.

§ 6.103 Required Well Spacing

(a) Except for replacement wells, all new wells drilled into the Hensel Formation or the Hosston Formation of the Trinity Aquifer with a maximum production capacity of 50 gallons per minute or less shall be located a minimum distance of one thousand (1,000) feet from any other well, other than an abandoned well, drilled into the Hensel Formation or the Hosston Formation of the Trinity Aquifer.

(b) Except for replacement wells, all new wells drilled into the Hensel Formation or the Hosston Formation of the Trinity Aquifer with a maximum production capacity of more than 50 gallons per minute shall be located a minimum distance of one thousand (1,000) feet plus 20 additional feet for each additional gallon per minute of capacity over 50 gallons per minute from any other well drilled into the Hensel Formation or the Hosston Formation of the Trinity Aquifer.

(c) The spacing requirements set forth in Subsections (a) and (b) of this Section are not applicable to any well that was completed on or before February 28, 2008. However, any well exempt from the spacing requirements because it was completed on or before February 28, 2008 will lose its exemption and become subject to the spacing requirements if, after February 28, 2008, the well is modified in a manner that substantially increases the capacity of the well.

§ 6.105 Applications for Variance from Well Spacing Limitations

In addition to the information specified in Section 9.107 (Contents of and Requirements for All Applications and Registrations), an application for variance from well spacing limitations shall contain the following:

(a) Name and Address of Owner. The full name, address, telephone number, and e-mail address of the owner of the proposed well.

(b) Name and Address of Operator. The full name, address, telephone number, and e-

mail address of the operator of the proposed well if not operated by the well owner.

(c) Drilling Application Number. The drilling permit application number for the proposed well.

(d) The names and addresses of owners of wells located within the applicable minimum well spacing distance mandated in § 6.103 from the proposed well.

(e) Information about why the applicable well spacing requirements mandated in § 6.103 cannot be complied with, if applicable.

(f) Information demonstrating that the operation of the proposed well will not substantially interfere with the use and enjoyment of wells located within the minimum well spacing distance mandated in § 6.103, if applicable.

(g) Signed waivers from all owners of wells located within the applicable minimum well spacing distance mandated in § 6.103 from the proposed well stating that they have no objection to the District granting the requested variance, if applicable.

(h) Any other information as may be required by the District.

§ 6.107 Variances from Well Spacing Limitations; Protesting Variance Applications

(a) The board may grant a variance from the well spacing limitations set forth in § 6.103 if the board finds that:

(1) an administratively complete application for variance from well spacing limitations has been filed;

(2) the application complies with the rules of the District;

(3) all applicable fees have been paid;

(4) the applicant has shown good cause why the applicable well spacing limitations mandated in § 6.103 cannot be complied with; and

(5) the applicant has demonstrated that the operation of the proposed well will not substantially interfere with the use and enjoyment of wells located within the minimum well spacing distance mandated in § 6.103.

(b) The board may also grant a variance from the well spacing limitations set forth in § 6.103 if the board finds that:

(1) an administratively complete application for a variance from the well spacing limitations has been filed;

(2) the application complies with the rules of the District;

(3) all applicable fees have been paid; and

(4) the applicant presents signed waivers from all owners of wells located within the applicable minimum well spacing distance mandated in § 6.103 from the proposed well stating that they have no objection to the District granting the requested variance.

(c) A well owner with a well located within the applicable minimum well spacing distance mandated in § 6.103 from the proposed well may protest the application for variance from spacing limitations pursuant to the procedures set forth in Subchapter D of Chapter 9. If timely protested, the issue of spacing limitations will be decided utilizing the contested case process set out in Subchapter D of Chapter 9. If the board chooses to grant a variance to drill a well that does not meet the spacing limitations mandated in § 6.103, the board may limit the production of the well to ensure that the well will not substantially interfere with the use and enjoyment of wells located within the minimum well spacing distance mandated in § 6.103.

(d) The board, on its own motion, may enter special orders or add special permit conditions increasing or decreasing spacing requirements if site-specific conditions warrant.

Subchapter C. Well Drilling Permits

§ 6.201 Well Drilling Permits Required; Applications; Exception for Exempt Wells

(a) Drilling, equipping or completing any non-exempt well or substantially altering the size of a non-exempt well or well pump without a well drilling permit required by this subchapter is illegal, waste, and a nuisance per se.

(b) The owner and/or operator of a well or proposed well must apply for and obtain from the District a well drilling permit before drilling, equipping or completing any non-exempt well or substantially altering the size of a well or well pump.

(c) Any person seeking to perform any of the activities identified in Subsection (b) must file with the District an application for a well drilling permit on a form prescribed by the District.

(d) A drilling permit is not required for well maintenance or repair that does not increase the production capabilities of the well to more than its authorized production rate.

§ 6.203 Applications for Well Drilling Permits

In addition to the information specified in Section 9.107 (Contents of and Requirements for All Applications and Registrations), an application for a well drilling permit shall contain the following:

(a) Name and Address of Owner. The full name, address, telephone number, and e-mail address of the owner of the well or proposed well.

(b) Name and Address of Operator. The full name, address, telephone number, and e-mail address of the operator of the well or proposed well if not operated by the well owner.

(c) Description of Proposed Activity. A description of the activity for which a well drilling permit is being sought (e.g., drilling a new well, altering an existing well, installing a larger pump).

(d) Well Address. The physical address of the property upon which the well or proposed well will or is to be located.

(e) Well Location. A description of the actual or proposed location of the well, including: the county; section, block and survey and the number of feet to the two nearest non-parallel property lines (legal survey lines), and the latitude and longitude for the well based on readings from a global positioning satellite (GPS) accurate to within 50 feet .

(f) Map. A city or county map with the location of the property on which the well is or will be located highlighted and the location of the well pinpointed.

(g) Purpose of Use. The proposed purpose of use for the water stated in definite terms.

(h) Amount of Annual Withdrawal. The total amount of groundwater proposed to be withdrawn from the aquifer and beneficially used on an annual basis, stated in number of acre-feet or gallons.

(i) Rate of Withdrawal. The maximum rate of withdrawal that the well will be capable of, in gallons per minute.

(j) Depth. The proposed depth of the well and proposed depth of cement casing.

(k) Casing. The proposed depth of the cemented casing and cementing methodology.

(l) Depth of Strata. The predicted depth to the top of targeted water-bearing strata.

(m) Pump. The size of the proposed pump and pumping method.

(n) Proposed Construction Date. The approximate date that well construction operations are proposed to begin.

(o) Identity of Well Driller. The name, address, telephone number and driller's license number of the well driller.

(p) Water source. The applicant shall identify the intended source or sources of water for the well.

(q) Legal Basis of Right to Withdraw Groundwater. The applicant shall identify the legal basis under which groundwater will be withdrawn from the well (groundwater withdrawal permit or interim production status) and which the applicant either owns or is seeking to obtain.

(r) Any other information as may be required by the District.

§ 6.205 Basis for Action on Well Drilling Permit Applications

The board shall grant an application for a well drilling permit if the board finds that:

(a) the application is complete;

(b) the application complies with the rules of the District;

(c) all applicable fees have been paid;

(d) the applicant owns the well;

(e) the application identifies a proposed or an existing well;

(f) the wellhead is or will be physically located within the boundaries of the District;

(g) the well is designed to produce groundwater from a groundwater source within the District;

(h) the withdrawals are proposed to be placed to a beneficial use;

(i) the applicant has a legal right to make withdrawals from the well;

(j) the well location complies with the spacing rules;

(k) the applicant is in compliance with any permits the applicant holds from the District and with District rules;

(l) the well will be installed, equipped, operated, maintained, or closed, as appropriate, to preserve, protect, prevent the pollution, degradation, or harmful alteration of, control and prevent the waste of, prevent the escape of, and achieve the conservation of groundwater;

(m) the applicant intends to install, equip, operate, maintain, and close the well, as appropriate, in accordance with the manufacturer's standards, instructions, or recommendations, as may be applicable; and

(n) the well will be installed, equipped, operated, maintained, or closed, as appropriate, consistent with applicable local, state, and federal law.

§ 6.207 Well Drilling Permit Does Not Authorize Withdrawals

No water may be withdrawn or produced from a well for which the District has solely issued a well drilling permit, except for the purposes of drilling or testing the well during the time the well drilling permit is valid, and the well shall not be placed into operation without the owner or operator of such well first obtaining a groundwater withdrawal permit or interim production status.

§ 6.209 Well Drilling Permit Terms; Extensions; Applications

A well drilling permit shall expire and be void and of no force or effect 120 days from the date of issuance of the permit, or upon the expiration of any permit extension. The board, for good cause, may extend the term of a drilling permit for up to two additional 120-day periods. In order to extend the period, the permittee must file with the District an application to extend the term. The application must be filed with the District during the original 120-day term, or the first extension period, as appropriate.

§ 6.211 Multiple Test Wells Authorized

A well drilling permit authorizes the completion of a single well. However, a holder of a well drilling permit may, within a radius of 200 yards from the authorized well location specified in a well drilling permit, drill multiple test wells in order to identify the best location for the completed well. The coordinates of the location ultimately chosen must be provided to the District and the well drilling permit will be modified as necessary to reflect the chosen location. The chosen location must comply with all applicable spacing and location requirements. All test wells must, within 60 days, be completely plugged in compliance with applicable well plugging standards.

§ 6.213 Basis for Action on Applications to Extend Well Drilling Permit Term

The board shall grant an application to extend a drilling permit term if the board finds that:

(a) the application is complete;

(b) the application complies with the rules of the District;

(c) all applicable fees have been paid;

(d) the applicant filed the original drilling permit application;

(e) the applicant is in compliance with any permits the applicant holds from the District and with District rules; and

(f) a reasonable basis for the need for the extension is established and demonstrates that the failure to complete the well is not due to the permittee's own lack of due diligence.

§ 6.215 Contents of Well Drilling Permits

Well drilling permits shall contain the following:

(a) name, address and telephone number of the permittee;

(b) name, address and telephone number of an authorized representative, if any, of the permittee;

(c) permit term;

(d) purpose of use of the well;

(e) maximum rate of withdrawal in gallons per minute;

(f) legal description of the location of the well, including, county, section, block and

survey, and the latitude and longitude for the well based on readings from a global positioning satellite (GPS) accurate to within 50 feet;

(g) identification of the legal authority to produce groundwater from the well (groundwater withdrawal permit or interim production status) which the applicant either owns or is seeking to obtain;

(h) the groundwater source;

(i) size of the pump, pumping rate, and pumping method;

(j) meter specifications, if any;

(k) borehole diameter; external and internal diameter of casing; total depth of casing; depth of grout; total well depth; screen, perforation, and filter pack intervals; and other well installation specifications, as appropriate;

(l) any conservation-oriented methods of drilling prescribed by the District;

(m) all applicable reporting requirements;

(n) installation and completion schedule;

(o) a requirement that the permittee must file all applicable reports with the District prior to the production of water from the well, except for such production necessary to the drilling and testing of the well;

(p) a requirement that the permittee use reasonable diligence to protect groundwater quality and that all well plugging laws will be followed at the time of well closure;

(q) a copy of the approved water well closure plan, if any, or a requirement that the permittee will comply with well plugging law and report closure to the TDLR and the District; and

(r) any other appropriate conditions as determined by the board.

§ 6.217 Standard Permit Conditions

All well drilling permits shall be issued with and subject to the following conditions:

(a) the duty to properly close (cap or plug) all wells in accordance with applicable law, and comply with either the District's well closure plan, if any, as may be amended from time to time, or the permittee's plan approved by the District, as appropriate;

(b) the duty to file all applicable reports with the District, and other appropriate federal, state, or local governments;

(c) the duty to use diligence to protect the groundwater quality of the aquifer;

(d) the duty to comply with the District's Rules as may be amended;

(e) permit review, or extension conditions;

(f) the duty to locate all wells, and confirm the actual location with the proposed location in the application or as provided for in the permit, consistent with the District's well spacing rules, prior to the production from any wells identified in the permit or application;

(g) the continuing right of the District to supervise and manage groundwater production and the depletion of the aquifer;

(h) installation, equipping, operation, maintenance, and closure of all wells in accordance with the District's Rules, and other applicable federal, state, and local law;

(i) installation, equipping, operation, and maintenance of all meters in accordance with the District's Rules;

(j) the duty to pay and be current in the payment of all applicable fees;

(k) the duty to give notice to District of any changes in name, address, or telephone number of the permittee, or the authorized representative, the landowner, well owner, or well operator, as may be appropriate;

(l) the duty to comply with all of the terms and conditions of the permit;

(m) the duty to ensure that the well site is accessible to District representatives for inspection, and to cooperate fully in any reasonable inspection of the well and well site by District representatives;

(n) the right of the District to enter land under Section 36.123, TEXAS WATER CODE, as may be amended; and

(o) any other conditions as the board may deem appropriate.

§ 6.219 Notice of Condition Affecting Groundwater Quality; Corrective Action

If at any time a well owner or operator has reason to believe that a well condition may exist that may cause the pollution, degradation, or harmful alteration of the character of the groundwater in the aquifer, then the owner and/or operator shall, within forty-eight (48) hours of learning of the fact(s), notify the District in writing of the well condition. The District may conduct an investigation and, if facts warrant, direct the owner and/or operator of the well, at the owner's or operator cost, to evaluate and test the well conditions and take appropriate corrective action, including replacement, to bring the well into proper working condition in conformance

with this chapter.

§ 6.221 Notice of Commencement of Well Installation

No later than 3 days prior to commencement of the activities authorized in a well drilling permit, the permittee shall give notice to the District of the intent to commence, so that a representative of the District may attend and observe the activities, at the District's discretion.

§ 6.223 Replacement of Wells

(a) A well owner or operator may rework, re-equip, re-drill or replace an existing permitted or registered well by filing an application to amend such permit or registration, and providing such information as may be required by the General Manager, without notice and hearing under the following conditions:

(1) The replacement well must be drilled within 50 feet of the original permitted location;

(2) The replacement well shall not be located any closer to any other permitted well or authorized well site than the well being replaced, unless the new location complies with the minimum spacing requirements set out in Subchapter B of Chapter 6 of these rules;

(3) The replacement well or pump shall not be changed to a larger size or capacity so as to increase the rate of production authorized in such permit; and

(4) If a replacement well is drilled, the well owner or operator shall cease production from the existing permitted or registered well and ensure that the replaced well is, within 90 days:

(A) plugged;

(B) capped; or

(C) re-equipped to meet the eligibility requirements applicable to an exempt well and registered under Subchapters E and F of Chapter 5 of these rules or applicable to a monitoring well under these rules.

§ 6.225 Transfer of Well Drilling Permit Prohibited

No person may transfer the ownership of a well drilling permit issued by the District.

§ 6.227 Additional Logging Requirements for Trinity Wells

Within 60 days after drilling any well completed so as to be capable of producing water from the Trinity Aquifer, the well owner and/or operator shall have prepared and delivered to the

District an electric or geophysical log showing for the well, at a minimum, electrical conductance, spontaneous potential, and natural gamma.

Subchapter D. Well Drillers

§ 6.301 Unlicensed or Unregistered Well Drillers or Pump Installers Prohibited

(a) Except as otherwise provided in Subsection (b) of this section, within the District's boundaries no person may drill or construct a water well unless the person first holds a well driller's license issued by the Texas Department of Licensing and Regulation ("TDLR") under Chapter 1901, TEXAS OCCUPATIONS CODE; and Chapter 76, 16 TEXAS ADMINISTRATIVE CODE, as may be amended.

(b) The requirement to hold a well driller's license pursuant to Subsection (a) of this Section does not apply to any person who personally drills, constructs or alters a water well on his own property for his own use.

(c) Except as otherwise provided in Subsection (d) of this section, within the District's boundaries, no person may install or repair a water well pump unless the person first holds a pump installer's license issued by the TDLR under Chapter 1902, TEXAS OCCUPATIONS CODE; and Chapter 76, 16 TEXAS ADMINISTRATIVE CODE, as may be amended.

(d) The requirement to hold a pump installer's license issued by the TDLR pursuant to Subsection (c) of this Section does not apply to:

(1) any person who personally installs or repairs a water well pump on his own property, or on property that he has leased or rented, for his own use; or

(2) any person who is a ranch or farm employee whose general duties include personally installing or repairing a water well pump or equipment on his employer's property for his employer's use, but who is not employed or otherwise in the business of installation or repair of water pumps or equipment.

(e) Regardless of whether a license is required, all persons engaging in well drilling or pump installation or repair must comply with the applicable standards set forth in 16 TEXAS ADMINISTRATIVE CODE §§ 76.701, 76.702, 76.1000, 76.1001, 76.1003, and 76.1004, as may be amended (the "TDLR's Rules"), and the District's Rules. In the event that a specific provision in the District's Rules conflicts with a specific provision in the TDLR's Rules, the more stringent provision will govern.

§ 6.303 Notice of Commencement of Well Installation

Not less than 3 days prior to the commencement of the activities authorized in a well drilling permit, the well driller shall give notice to the District of the intent to commence, so that a representative of the District may attend and observe the activities, at the District's discretion.

§ 6.305 Confirmation and Posting of Drilling Permits and Registrations

Any well driller engaged to drill or otherwise construct a well within the District shall,

before undertaking any drilling or construction operations, confirm with the District that any required well drilling permit or other permit or registration has been issued for the well and is in effect. In addition, at all times during well drilling or construction operations, the driller shall post a copy of any permit or registration for the well at a location at the well site that can be easily seen by visitors to the well site.

§ 6.307 Well Records, Reports, and Logs

The driller of any well within the District, regardless of whether the well qualifies or does not qualify as an exempt well, shall keep and maintain for at least three years an accurate driller's log for each such well. The driller shall file a copy of each driller's log, a report detailing the drilling, equipping, and completing of the well and, if performed, any electric or geophysical log, pump test results, water quality sampling results, and well video surveys with the District within 60 days after the date the well is completed. The report shall include copies of all information about the well submitted to any agency of the State of Texas. Within 60 days after capping or plugging any well, the well driller shall submit a copy of the state plugging report to the District.

Subchapter E. Capping of Wells

§ 6.401 Capping Requirements

(a) Every owner or operator of any land within the District upon which is located any open or uncovered well shall be required to cap or close the well with a covering capable of preventing the entrance of surface pollutants into the well and of sustaining a weight of at least four-hundred (400) pounds, except when said well is in actual use by the owner or operator thereof.

(b) In addition, every owner or operator of any land within the District upon which is located a flowing artesian water well shall be required to cap or close the well with a covering capable of preventing any flow and therefore preventing waste, except when the well is in actual use by the owner or operator thereof.

(c) If the owner or operator fails or refuses to close or cap the well in compliance with this section, the District, or its employees or agents, may go on the land and close or cap the well safely and securely. Reasonable expenses incurred by the District in closing or capping a well constitute a lien on the land on which the well is located. The lien arises and attaches upon recordation of an affidavit in the deed records of the county where the well is located, executed by any person conversant with the facts, stating the following:

(1) the existence of the well;

(2) the legal description of the property on which the well is located;

(3) the approximate location of the well on the property;

(4) the failure or refusal of the owner or operator, after notification, to close the well within 10 days after the notification;

(5) the closing of the well by the District, or by an authorized agent, representative, or employee of the District; and

(6) the expense incurred by the District in closing the well.

Subchapter F. Plugging of Abandoned or Deteriorated Wells

§ 6.501 Responsibility

It is the responsibility of the well owner and/or operator to plug or have plugged any well that is deteriorated or abandoned, in accordance with Chapter 1901, TEXAS OCCUPATIONS CODE and Title 16, Chapter 76, TEXAS ADMINISTRATIVE CODE, as may be amended.

§ 6.503 Report on Plugging of Wells

The person that plugs a well shall, within thirty (30) days after plugging is complete, submit a copy of the plugging report (on forms furnished by the Texas Department of Licensing and Regulation) to the District.

Subchapter G. Reworking and Replacing a Well

§ 6.601 Procedures

(a) An existing well may be reworked, re-drilled, or re-equipped in a manner that will not change the existing well's status.

(b) A permit must be applied for and the board will consider approving the permit, if a party wishes to increase the rate of production of an existing well to the point of increasing the size of the column pipe and gpm rate by 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 with a replacement well.

(d) A replacement well, in order to be considered such, must be drilled within ten yards (30 feet) of the existing well and shall not be drilled nearer to the property line than the original well.

CHAPTER 7. FEES

§ 7.1 Registration Fees

(a) For exempt wells completed so as, in the opinion of the District, to be capable of producing water from the Trinity Aquifer, Paluxy Aquifer, Woodbine Aquifer, or Brazos River Alluvium Aquifer, the District shall assess a $100 non-refundable fee per well to file a well registration with the District. For all other exempt wells, the District shall assess a $5 non-refundable fee per well to file a well registration with the District.

(b) The applicable registration fee must accompany the registration form and be paid at the time of filing. If the registrant fails to pay the fee at the time of filing, the District may refuse to accept the registration for filing and/or commence any other action to enforce payment as authorized by law.

§ 7.3 Application Fees

(a) The District shall assess a $1,000 non-refundable application fee. The application fee shall be assessed for the purpose of compensating the District for the administrative functions associated with the following applications:

(1) a new, annual renewal, or amended groundwater withdrawal permit application;

(2) a new, annual renewal, or amended groundwater exportation permit application;

(3) a well drilling application; and

(4) a new, annual renewal, or amended interim production status application.

(b) All required fees must accompany the application form and be paid at the time of filing. If the applicant fails to pay the fee at the time of filing, the District may refuse to accept the application for filing, or otherwise cease processing the application.

(c) If an application fee is determined by the District to be insufficient to cover the anticipated costs of processing the application, the District shall require the applicant to post additional funds in an amount determined to be sufficient to cover anticipated costs. The costs for which the District may seek additional fees include, but are not limited to, the cost for public notices, legal fees, expert fees, hearing facility rental fees, and other expenses. If the applicant fails to pay the additional amounts, then the District may suspend processing the application, and may return the application. As application processing costs are incurred by the District, at the District's discretion, the District may incur costs itself and seek reimbursement from the additional deposited funds, or may expend deposited funds directly to pay for additional application processing costs. The applicant shall be provided periodic accountings of billings against the deposit. If the additional deposit is determined by the District to be insufficient to

cover the application processing costs, then the applicant may be required to pay additional fee deposits. Any unexpended and unobligated fee deposits will be promptly returned to the applicant after the board issues a final order disposing of the application.

§ 7.4 Annual Well Fees

Annually, the District shall assess a $250 non-refundable well fee per well on all non-exempt wells in the District.

§ 7.5 Groundwater Production Fees

(a) The District shall assess groundwater production fees as set forth in this chapter.

(b) Except for withdrawals of groundwater made from an exempt well as defined under Section 5.501, groundwater production fees shall be assessed by the District against all withdrawals of groundwater from within the boundaries of the District.

(c) Annual, the groundwater production fees for agricultural use and non-agricultural uses for the fiscal year shall be calculated and assessed by resolution and order based on the District's adoption of a budget reflecting annual operating revenue requirements for the fiscal year. The groundwater production fee for agricultural use shall not exceed 20% of the fee for non-agricultural uses. The District shall calculate the groundwater production fee for non-agricultural uses on a per acre-foot basis as follows: the District's estimated net annual operating revenue requirements minus an estimate of the amount of other fees to be collected divided by the amount of groundwater estimated to be withdrawn in acre-feet by non-agricultural users. The groundwater production fee shall be assessed against the amount of groundwater actually produced.

(d) All persons making withdrawals of groundwater from a non-exempt well within the boundaries of the District are required to pay to the District the groundwater production fee as assessed pursuant to this section. At the end of each month, each non-exempt well owner and/or operator shall complete a groundwater use report, using the District's form, reporting the total amount of groundwater withdrawn during the immediately preceding month, and return the completed form, along with payment of the applicable initial groundwater production fees, to the District by no later than the 15th day after the end of the month for which the fees are assessed. The amount due becomes delinquent if payment in full is not received by the District by the 30th day after the end of the month for which the fees were assessed.

(e) For any groundwater production fee that is delinquent, the District may assess, for every month thereafter that the invoice remains delinquent, a penalty equivalent to the maximum amount allowed by law. Each day that any initial groundwater production fee is delinquent constitutes a separate violation of the rules.

§ 7.7 Limitation on Amount of Assessments

The District may not assess a total amount of groundwater production fees that is more

than is reasonably necessary for the annual operating revenue requirements for the administration of the District as reflected in its adopted annual fiscal year budget.

§ 7.9 Enforcement for Nonpayment

If the District determines that a fee is delinquent, enforcement for nonpayment may be as follows:

(1) by suspending the processing of any application that the person owing the fee, or his successor in interest, may have pending before the District;

(2) by suspending interim production status, if any; or

(3) by commencing any action to enforce payment and collection of the delinquent fee as may be authorized by law.

§ 7.11 Prohibitions

No person may withdraw groundwater from within the boundaries of the District if the person, or his predecessor in interest, is delinquent in the payment of a groundwater production fee that is due and payable to the District.

§ 7.13 Unauthorized Withdrawals

(a) Any person who withdraws groundwater from within the boundaries of the District without legal authority shall pay to the District the groundwater production fees in force and effect for the period of time during which the unauthorized withdrawals were made.

(b) If a person makes withdrawals of groundwater that are not being metered in accordance with Chapter 8 of these rules, the board may assess groundwater production fees based on the amount of water the permittee is authorized to withdraw under a groundwater withdrawal permit or interim production status.

§ 7.15 Groundwater Export Fees

(a) The District shall assess, and all persons exporting groundwater produced from a well within the District's boundaries to a place of use outside of the District's boundaries shall pay, a groundwater export fee on the metered volume of groundwater produced for export. The groundwater export fee will be in addition to any production fees assessed by the District. The groundwater export fee applies to and will be assessed on all groundwater produced as follows:

(1) water actually exported from the District's boundaries to a place of use outside the District's boundaries;

(2) operational water that is lost in the operation and maintenance of the export project and not actually exported from the District's boundaries; and

(3) reject water processed in order to produce water of a suitable quality for export and not actually exported from the District's boundaries.

(b) The groundwater export fee shall be calculated and assessed as follows: 50% of the groundwater production fee assessed under Section 7.5 for that use

(c) The District will bill and collect the groundwater export fee. The monthly groundwater exportation report shall constitute the groundwater export fee invoice. At the end of each month, the holder of a groundwater export permit shall complete a groundwater exportation report, using the District's form , reporting the total amount of groundwater exported during the immediately preceding month, and return the completed form, along with payment of the applicable groundwater export fees, to the District by no later than the 15th day after the end of the month for which the fees are assessed. The amount due becomes delinquent if payment in full is not received by the District by the 30th day after the end of the month for which the fees were assessed.

(d) For any export fee that is delinquent, if payment in full is not received on or before 10 days after the date the amount becomes delinquent, then the District shall assess, for every month thereafter that the invoice remains delinquent, an administrative penalty of 10%. Additionally, each day that an export fee is delinquent constitutes a separate violation of the District's rules.

(e) No person may export groundwater outside the District's boundaries if the owner and/or operator of the well from which the exported groundwater is produced is delinquent in the payment of any fee that is due and payable to the District.

(f) Any person who, without any legal authority, exports groundwater outside the District's boundaries shall pay to the District the export fee then in force and effect for the period of time during which the unauthorized exports were made.

(g) Any person who exports groundwater outside the District's boundaries without metering in accordance with Chapter 8 of these rules, shall pay to the District the export fee then in force and effect based on the maximum amount of water the person is authorized to export under a groundwater exportation permit.

(h) A groundwater export fee shall not be assessed against:

(1) groundwater produced from within the District that is incorporated into a finished, manufactured product within the District and then exported for sale outside of the District;

(2) groundwater produced from within the District, where the well is situated on a contiguous tract of land that straddles the District boundary and the groundwater is placed to use solely on that tract, but including portions outside the District's boundaries; and

(3) groundwater produced from within the District and supplied by a public water system to customers within the public water system's retail service area where that retail service area straddles the District boundaries. This exception does not apply to any water produced within the District's boundaries by a public water system that is conveyed outside the District's boundaries for any use other than retail service to the public water system's own customers.

§ 7.17 Inspection and Plan Review Fees

The board may, by rule, establish fees for the inspection of wells, meters, or other inspection activities; plan reviews; special inspection services requested by other entities; or other similar services that require involvement of District personnel or its agents. Fees may be based on the amount of the District's time and involvement, out-of-pocket costs, number of wells, well production, well bore, casing size, size of transporting facilities, or amounts of water transported.

CHAPTER 8. METERS

§ 8.1 Meters Required

(a) Duty to Install: The owner and/or operator of a non-exempt well located within the District shall equip the well with a meter meeting the specifications of these Rules and shall operate and maintain the meter to measure the instantaneous flow rate and cumulative amount of groundwater withdrawn from the well. For an existing, non-exempt well, a meter shall be installed by the owner and/or operator no later than February 1, 2008. For a new, non-exempt well, a meter shall be installed before any groundwater is withdrawn from the well.

(b) Approved Meters: Meters must be mechanically driven, digital, totalizing water meters. 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 a permit term. Battery operated registers must have a minimum five-year life expectancy and must be permanently hermetically sealed. Battery operated registers must visibly display the expiration date of the battery. All meters must meet the requirements for registration accuracy set forth in the American Water Works Association standards for cold-water meters.

(c) Installation and maintenance: Meters must be installed, operated, maintained, and repaired according to the manufacturer's published specifications, and shall ensure an accuracy of not greater than plus or minus five percent. If no specifications are published, there must be a minimum length of five pipe diameters of straight pipe upstream of the meter and one pipe diameter of straight pipe downstream of the 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 straight pipe to the meter. The pipe must be completely full of water throughout the area of the meter. All installed meters must measure only groundwater.

(d) Bypasses: All bypasses must be metered. A bypass is any pipe of any size connected to the discharge pipe between the well and the meter.

(e) Meter accuracy to be tested: The District may require the permittee, at the permittee's expense, to test the accuracy of the meter and submit a certificate of the test results. The certificate must be on a form provided by the District. The District may further require that the test be performed by a third party qualified to perform meter tests. 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 95% - 105% of the actual flow, then appropriate steps must be undertaken by the permittee to repair or replace the meter within 90 calendar days from the date of the test. The District, at its own expense, may undertake further random tests and other investigations for the purpose of verifying meter readings. If the District's tests or investigations reveal that a meter is not registering within an accuracy of 95% - 105% of actual flow, or is not properly recording the total flow of groundwater withdrawn from the well, or well system, the permittee must reimburse the District for the costs of those tests and investigations, and the permittee must 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 meter within 90 calendar days from the date the problem is discovered and reported to the permittee.

§ 8.3 Pre-existing Meters and Alternative Measuring Methods

(a) By no later than February 1, 2008, the owner and/or operator of an existing, non-exempt well shall register with the District any meter or alternative measurement(s) method installed and in use on the well as of the effective date of these rules.

(b) All meters existing on the effective date of these Rules and registered in accordance with Subsection (a) of this section 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 District shall approve the meter in writing and advise the owner or operator of the approval. If the meter does not comply with these specifications, the District will issue a notice of deficiency and direct the owner and/or operator of the meter to install a new meter or modify the existing meter in compliance with these Rules within 45 days.

(c) If at any time the well owner or operator has reason to believe that a condition, of any kind whatsoever, may exist that affects the accuracy of a meter, then the well owner and/or operator shall, within seven days of learning of the fact(s), notify the District that the accuracy of the meter may be in question. Such notification shall be in writing.

(d) The District may conduct an investigation and, if facts warrant, direct the well owner and/or operator, at the well owner and/or operator'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 in conformance with the requirements of these Rules.

§ 8.5 Removal and Disabling of Meters

(a) A meter may not be removed or otherwise disabled, including for routine maintenance, unless the well owner or operator gives the District prior notice, in writing, of the intent to remove or disable the meter. Except in cases of routine maintenance, such notice must be approved in writing by the District before the meter is removed or disabled.

(b) A meter may be removed or otherwise disabled, only by the well owner or operator or his or her authorized representative.

(c) During a period that a meter is removed or otherwise disabled, groundwater may not be withdrawn from the well, unless the District has approved an alternative measuring method.

§ 8.7 Meter Reading and Groundwater Use Reporting

The well owner and/or operator must read the meter associated with the well and record the meter readings and the actual amount of pumpage in a log at least monthly. The logs containing the recordings shall be available for inspection by the District during reasonable business hours. Before January 31st of each year, each non-exempt well owner and/or operator must submit to the District an annual groundwater use report, on a form provided by the District. The report shall provide the following: (1) name of the well owner and/or operator; (2) the well number; (3) the total amount of groundwater produced by the well or aggregate system during the immediately preceding calendar year (January 1 through December 31); (4) the total amount of groundwater produced by the well or aggregate system during each separate month of the immediately preceding calendar year; (5) the purpose for which the groundwater was used; and (6) any other information requested by the District as indicated on the report form.

CHAPTER 9. PROCEDURES BEFORE THE DISTRICT

Subchapter A. General

§ 9.1 Purpose

The purpose of this chapter is to provide for the procedures to be followed in the processing of applications and registrations, and other types of approvals or actions that may be taken by the District. These rules should be interpreted to simplify procedure, avoid delay, save expense, and facilitate the administration and enforcement of the District's Rules, policies, and objectives.

§ 9.3 Applicability

This chapter applies to the processing of all applications or registrations filed with the District, and to the adoption of rules and management plans by the District.

§ 9.5 Service of Documents

(a) Except as otherwise provided in these rules, all documents filed, served, or delivered under this chapter or these rules, must be served as follows:

(1) by delivering a copy to the person to be served, or the person's duly authorized agent or attorney of record, either in person or by agent or by carrier-receipted delivery or by United States mail, to the person's last known address;

(2) by facsimile to the recipient's current facsimile number; or

(3) by email to the recipient's email address.

(b) Service by mail shall be complete upon deposit of the document, enclosed in a postage-paid, properly addressed wrapper, in a post office or official depository under the care and custody of the United States Postal Service. Service by facsimile or email is complete upon transfer and shall be accomplished by 5:00 p.m. (as shown by the clock of the local time of the recipient) of the date on which it is due. Any transfer after 5:00 p.m. shall be deemed served on the following day. Service by facsimile or email must be followed by serving the original document in person, by mail or by carrier-receipted delivery within three days. Where service by the methods listed in Subsection (a) has proved unsuccessful, the service shall be complete upon publication of notice in a newspaper.

(c) Whenever a person has the right or is required to do some act within a prescribed period after the service of a document upon the person, and the document is served by mail or by facsimile, three days shall be added to the prescribed period. This subsection does not apply when documents are filed for consideration at a board meeting.

(d) A document served under this rule must contain a certificate of service indicating

the date and manner of service and the name and address of each person served. The person or the person's attorney of record shall certify compliance with this rule in writing by signature on the filed document. A certificate by a person or the person's attorney of record, or the return of an officer, or the affidavit of any person showing service of a document, shall be prima facie evidence of service.

(e) Nothing herein shall preclude any person from offering proof that the notice or instrument was not received or, if service was by mail, that it was not received within three days from the date of deposit in a post office or official depository under the care and custody of the United States Postal Service, and upon so finding, the District may extend the time for taking the action required of such party or grant such other relief as it deems just. The provisions herein relating to the method of service of notice are in addition to all other methods of service prescribed by these rules.

(f) In contested case hearings, copies of all documents filed with the presiding officer shall be served on all parties, including the District, no later than the day of filing.

Subchapter B. Requirements for Applications and Registrations

§ 9.101 Purpose

The purpose of this subchapter is to provide for the procedures to be followed for applications and registrations that may be filed with the District.

§ 9.103 Applicability

This subchapter applies to any application or registration filed with the District.

§ 9.105 Proper Applicant or Registrant

If a well or a proposed well has one owner or operator, that owner or operator shall file the application or registration required to be filed by the District. If there is more than one owner or operator, a joint application or registration shall be filed by those owners or operators. In such an instance, the owners or operators shall select one among them to act for and represent the others in filing the application or registration. Written documentation of such a selection satisfactory to the District shall be filed with the application or registration.

§ 9.107 Contents of and Requirements for All Applications and Registrations

All applications and registrations filed with the District shall be typewritten or printed legibly in ink and shall include:

(a) The full name, physical and mailing addresses, and telephone number of the applicant or registrant. If the applicant or registrant is a partnership, the name of the partnership shall be followed by the words "a partnership." If the applicant or registrant is acting as trustee for another, the trustee's name shall be followed by the word "trustee." If one other than the named applicant or registrant executes the application or registration, the person executing the application or registration shall provide their name, position, physical address, mailing address and telephone number.

(b) Signature of Applicant or Registrant. The application or registration shall be signed as follows:

(1) If the applicant or registrant is an individual, the application or registration shall be signed by the applicant, registrant or a duly appointed agent. An agent shall provide written evidence of his or her authority to represent the applicant or registrant. If the applicant or registrant is an individual doing business under an assumed name, the applicant or registrant shall attach to the application or registration an assumed name certificate filed with the county clerk of the county in which the principal place of business is located or the Secretary of State.

(2) Joint applications and registrations. A joint application or registration shall be signed by each applicant or registrant or each applicant's or registrant's duly authorized agent with written evidence of such agency submitted with the application or registration. If a well or

proposed well is owned by both husband and wife, each person shall sign the application or registration. Joint applicants or registrants shall select one among them to act for and represent the others in pursuing the application or registration with the District with written evidence of such representation to be submitted with the application or registration.

(3) If the application or registration is by a partnership, the application or registration shall be signed by one of the general partners. If the applicant or registrant is a partnership doing business under an assumed name, the applicant or registrant shall attach to the application or registration an assumed name certificate filed with the county clerk of the county in which the principal place of business is located or with the Secretary of State.

(4) If the applicant or registrant is an estate or guardianship, the application or registration shall be signed by the duly appointed guardian or representative of the estate and a current copy of the letters testamentary issued or order appointing guardian by the court shall be attached to the application or registration.

(5) If the applicant or registrant is a corporation, public district, county, municipality or other corporate entity, the application or registration shall be signed by a duly authorized official. Written evidence specifying the authority of the official to take such action shall be submitted along with the application or registration, including in the form of bylaws, charters, or resolutions. A corporation may file a corporate affidavit as evidence of the official's authority to sign.

(6) If the applicant or registrant is acting as trustee for another, the applicant or registrant shall sign as trustee and in the application or registration shall disclose the nature of the trust agreement and give the name and current address of each trust beneficiary.

(c) Attestation. Each applicant or registrant shall subscribe and swear or affirm under oath that the facts set out in the application or registration are accurate before any person entitled to administer oaths who shall also sign his or her name and affix his or her seal of office to the application, registration or notice.

Subchapter C. Application and Registration Processing by the District

§ 9.201 Purpose

The purpose of this subchapter is to provide the procedures to be followed in the processing of applications and registrations filed with the District.

§ 9.203 Applicability

This subchapter applies to the processing of all applications or registrations filed with the District.

§ 9.205 Initial Action on Applications and Registrations

All applications and registrations received by the District shall be stamped or marked "received" with the date of receipt clearly indicated.

§ 9.207 Review for Administrative Completeness

(a) The District will promptly conduct an initial review of each application or registration for administrative completeness.

(b) In reviewing an application or registration for administrative completeness, the District will assess whether the application or registration contains the necessary information in legible form to allow:

(1) the District staff to conduct a technical review, if appropriate; and

(2) the District to take or recommend action on the application or registration, as appropriate.

(c) Upon determining that an application or registration is administratively complete, the District will notify the applicant or registrant by mail.

§ 9.209 Return of Applications and Registrations Deemed Not Administratively Complete

(a) If the District determines that an application or registration is not administratively complete, the District will notify the applicant or registrant of any such deficiencies by letter. Illegible applications or registrations will be returned to the filer.

(b) The applicant or registrant may submit any additional necessary information in response to a letter sent by the District pursuant to Subsection (a) of this section, within 30 days of receipt of the letter noting the deficiencies.

(c) If the additional necessary information is not forthcoming within 30 days of the

date of receipt of the letter noting the deficiencies, the District will return the incomplete application or registration to the applicant or registrant.

§ 9.211 Technical Review

(a) After an application or registration is determined by the District to be administratively complete, District staff will commence a technical review of the application or registration as necessary and appropriate.

(b) The applicant or registrant shall be notified in writing of any additional material necessary for a complete technical review. If the applicant or registrant provides the information within 30 days of the date it is requested, District staff will complete the technical review of the application or registration. If the necessary additional information is not received by the District within 30 days of the date the information is requested and the information is considered essential by the District, the District may return the application to the applicant or registration to the registrant. Decisions to return an application to the applicant or registration to the registrant during the technical review will be made on a case-by-case basis.

(c) The general manager or his or her designee is entitled to enter public or private property at any reasonable time and upon reasonable notice for the purpose of inspecting, investigating or verifying conditions or information submitted in connection with an application or a registration.

§ 9.213 General Manager's Proposed Action on Applications and Technical Summary

(a) Following completion of technical review, the general manager will determine whether to recommend granting or denying the application and will prepare a written statement summarizing the recommendation and the reasons for that recommendation. If the general manager recommends full or partial granting of a permit or permit amendment application, the general manager shall also prepare a draft permit. The general manager's recommendation and any draft permits are subject to change by the general manager or board during the course of the proceedings on the application. The statement and proposed permit shall be available for public review and inspection.

(b) In conjunction with the proposed permit or denial, the general manager will prepare a technical summary that will include the following, as appropriate:

(1) the applicant's name and address;

(2) a summary of the application;

(3) the location of each point of withdrawal;

(4) the reasons and technical basis for the recommended action;

(5) if applicable, a summary of the proposed permit;

(6) the proposed purpose(s) of use;

(7) notice that the general manager may modify his or her recommendation, or seek additional information from the applicant, in the course of the District's proceeding on the application;

(8) as may be authorized by this chapter, a statement that the applicant, or other affected persons may file a request for a contested case hearing on the application on or before the deadline set forth in Section 9.307; and

(9) any other information that the general manager determines to be appropriate.

(c) The general manager will provide the applicant with a copy of the general manager's statement, any proposed permit (or denial) and the technical summary.

§ 9.215 Action by Board on Applications or Registrations Where There is No Right to a Contested Case Hearing

(a) Applicability. This section applies to all registrations and applications *other than* applications for groundwater withdrawal permits, groundwater exportation permits, and applications for a variance from well spacing limitations.

(b) Scheduling the Board Meeting. Following technical review and the referral of the proposed action to the board, the general manager will schedule the presentation of the application or registration and the proposed permit, approval, authorization or denial to the board. The board may reschedule the presentation of the application or registration and the proposed permit, approval, authorization or denial.

(c) Notice of Board Meeting. At least 10 days prior to the board meeting, the District will notify the applicant or registrant of the date of the board meeting referred to above. If rescheduled by the board, the District will send notice of the rescheduled meeting date to the applicant or registrant no later than ten days before the rescheduled meeting. In addition, the District will provide public notice that the application or registration and the permit, approval, authorization or denial will be considered by the board by including an item on the board's agenda pursuant to the Open Meetings Act. Except to the extent that such items contain information excepted from public disclosure under the Public Information Act, copies of the application or registration and the proposed permit, approval, authorization or denial will be made available to the public for inspection and copying at the offices of the District during regular business hours.

(d) Consolidation or Severance of Matters. Consistent with notices required by law, the board may consolidate related matters if the consolidation will not injure any party and may save time and expense or otherwise benefit the public interest and welfare. The board may sever

issues in a proceeding or hold special hearings on separate issues if doing so will not injure any party and may save time and expense or benefit the public interest and welfare.

(e) Oral Presentation Before the Board. The applicant or registrant and the general manager or his or her designee may make an oral presentation at the board meeting at which the application or registration and the proposed permit, approval, authorization or denial are presented to the board. Oral presentations before the board will be limited to 15 minutes each, excluding time for answering questions, unless the president establishes other limitations. Before the board meeting, the president may allot time for oral presentations. Oral presentations and responses to questions will be directed to the board.

(f) Public Comment. In addition, public comment on the application or registration and the proposed permit, approval, authorization or denial will be accepted.

(g) Upon consideration of the application or registration and the proposed permit, approval, authorization or denial at its meeting, the board may issue an order granting or denying an application or registration in whole or in part, dismissing proceedings, amending or modifying a proposed permit, or taking any other appropriate action.

§ 9.217 Action by Board on Applications Where There is a Right to a Contested Case Hearing But None Was Requested or Requests Were Withdrawn

(a) Applicability. This section applies only to all applications for groundwater withdrawal permits, groundwater exportation permits, and applications for a variance from well spacing limitations where, after the time for the filing of a hearing request provided in Section 9.307:

(1) no timely hearing request has been received;

(2) all timely hearing requests have been withdrawn; or

(3) the judge has remanded the application because of settlement.

(b) Scheduling the Board Meeting. Following the expiration of the time to file a hearing request pursuant to Section 9.307 of this chapter, and if all of the conditions stated in Subsection (a)(1)-(3) of this section have been met, the District will schedule the presentation of the application and the proposed permit, approval, authorization or denial to the board. The board may reschedule the presentation of the application and the proposed permit, approval, authorization or denial.

(c) Notice of Board Meeting. At least 10 days prior to the board meeting, the District will notify the applicant of the date of the board meeting referred to above via certified mail/return-receipt requested. If rescheduled by the board, the District will send notice of the rescheduled meeting date to the parties no later than ten days before the rescheduled meeting. In addition, the District will provide public notice that the application and the proposed permit, approval, authorization or denial will be considered by the board by including an item on the

board's agenda pursuant to the Open Meetings Act. Copies of the application and the proposed permit, approval, authorization or denial will be made available to the public for inspection and copying at the offices of the District during regular business hours.

(d) Consolidation or Severance of Matters. Consistent with notices required by law, the board may consolidate related matters if the consolidation will not injure any party and may save time and expense or otherwise benefit the public interest and welfare. The board may sever issues in a proceeding or hold special hearings on separate issues if doing so will not injure any party and may save time and expense or benefit the public interest and welfare.

(e) Oral Presentation Before the Board. The applicant and the general manager or his or her designee may make an oral presentation at the board meeting in which the application and the proposed permit, approval, authorization or denial are presented to the board. Oral presentations before the board will be limited to 15 minutes each, excluding time for answering questions, unless the president establishes other limitations. Before the board meeting, the president may allot time for oral presentations. Oral presentations and responses to questions will be directed to the board.

(f) Public Comment. In addition, public comment on the application and the proposed permit, approval, authorization or denial will be accepted.

(g) Upon consideration of the application and the proposed permit, approval, authorization or denial at its meeting, the board may issue an order granting or denying an application in whole or in part, dismissing proceedings, amending or modifying a proposed permit, or taking any other appropriate action.

§ 9.219 Notice of Permit Hearing Where There is a Right to a Contested Case Hearing

(a) Applicability. This section applies only to applications for groundwater withdrawal permits, groundwater exportation permits, and applications for a variance from well spacing limitations.

(b) A notice of hearing on an application for a permit shall be prepared by the District. At a minimum, the notice shall state the following information:

(1) the name and address of the applicant;

(2) the name or names of the owner or owners of the land or well, if different from the applicant;

(3) the name or names of the operator or operators of the land or well, if different from the applicant;

(4) the date the application was filed and the number assigned to it;

(5) the time, date and location of the hearing;

(6) the address or approximate location of the well or proposed well;

(7) a brief explanation of the permit or permit amendment sought, including any requested amount of groundwater, the purpose of the proposed use, and any change in use;

(8) a summary of the action on the application recommended by the general manager pursuant to Section 9.213 of these rules;

(9) a statement of the legal authority and jurisdiction under which the hearing is to be held;

(10) a brief description of the technical summary;

(11) a statement that a copy of the proposed action, technical summary, and application are available for inspection by the public at the offices of the District;

(12) a statement that the application will be presented to the board for action at the hearing unless a request for a contested case hearing is submitted at least five days prior to the date of the hearing pursuant to Section 9.307; and

(13) a statement that the applicant or another affected person may request a contested case hearing on the application by filing a request with the District, at least five days before the date of the hearing, in accordance with 9.307.

(14) any other information the board or general manager considers relevant and appropriate.

(c) The District shall, not less than 10 days before the date of the hearing:

(1) Post the notice in a place readily accessible to the public at the District's office;

(2) Provide the notice for posting at the county courthouse to the county clerk of each county in which the District is located;

(3) Provide the notice:

(A) By regular mail to the applicant; and

(B) By regular mail, facsimile, or electronic mail to any person who has requested notice under Subsection (d) below; and

(4) Publish the notice at least once in a newspaper of general circulation in the District.

(d) Any person may request to receive written notice of permit hearings by submitting a request to the District in writing. The request must identify with as much specificity as possible the types of permit hearings for which written notice is requested. The request remains valid for the remainder of the calendar year in which the request is received by the District, after which time a new request must be submitted. An affidavit of an officer or employee of the District establishing attempted service of notice by first class mail, facsimile, or email to a person required pursuant to Subsection (c)(3)(B), above, in accordance with the information provided by that person is proof that notice was provided by the District. Failure to provide notice under Subsection (c)(3)(B) does not invalidate an action taken by the District at the hearing.

(e) The applicant, at the applicant's expense, shall give the notification by first class mail to landowners, well owners and well operators within one-half mile of the proposed well, not less than ten (10) days before the hearing. The applicant will provide the District with proof of service including a list of names and addresses of the landowners, well owners and well operators.

§ 9.221 Scheduling of Permit Hearings Where There is a Right to a Contested Case Hearing

(a) Applicability. This section applies only to applications for groundwater withdrawal permits, groundwater exportation permits, and applications for variance from well spacing limitations.

(b) Hearings on applications for permits may be scheduled during the District's regular business hours, Monday through Friday of each week, except District holidays and may be held in conjunction with a regularly scheduled board meeting. All permit hearings will be held at the District Office, unless the board directs otherwise. The district may from time to time schedule additional dates, times, and places for permit hearings by resolution adopted at a regular board meeting. The District may schedule as many applications for consideration at one hearing as deemed desirable and feasible.

Subchapter D. Contested Case Hearing Procedures

§ 9.301 Purpose

The purpose of this subchapter is to provide for the procedures to be applied to contested case hearings before the District.

§ 9.303 Applicability

This subchapter applies to matters subject to a contested case hearing under Section 9.219 for which a timely request for contested case hearing is pending before the District and the request has not been withdrawn because of settlement or for some other reason.

§ 9.305 Persons Entitled to Request a Contested Case Hearing

The following persons may request a contested case hearing on an application subject to this subchapter:

(a) the applicant; and

(b) any other affected person.

§ 9.307 Timing, Form and Contents of Requests for Contested Case Hearing

(a) A request for a contested case hearing may only be made for applications for groundwater withdrawal permits, groundwater exportation permits, and applications for a variance from well spacing limitations.

(b) A request for a contested case hearing must be in writing and be filed by United States mail, facsimile, or hand delivery to the District by no later than five days before the date of the hearing specified in the notice made pursuant to Section 9.219.

(c) A hearing request must substantially include the following:

(1) the name, address, daytime telephone number, fax number, and email address of the person filing the request. If the request is made by a corporation, partnership, or other business entity, the request must identify the entity and one person by name, physical and mailing address, daytime telephone number, fax number, and email address, who shall be responsible for receiving all documents on behalf of the entity;

(2) the basis for the contention that the person will be injured and has a personal justiciable interest in the matter such that a contested case hearing is appropriate;

(3) request a contested case hearing;

(4) provide any other information requested in the notice of hearing; and

(5) the person filing the request shall subscribe and swear or affirm under oath that the facts set out in the request are true and correct before any person entitled to administer oaths who shall also sign his or her name and affix his or her seal of office to the request.

(d) Where a request for a contested case hearing is filed by a person other than the applicant, a copy of that request must be served on the applicant at or before the time that the request is filed with the District. The request shall include a certificate indicating the date and manner of service and the name and address of all persons served.

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

§ 9.309 Processing of Hearing Requests

(a) Except as provided in Subsection (d), the general manager shall schedule any timely filed contested case hearing request for board consideration. At least three days prior to the board hearing, the general manager shall provide notice to the applicant and other persons making a timely hearing request of the hearing. The board may receive relevant oral testimony or documentary evidence at a board hearing during which the contested case hearing request is evaluated.

(b) The hearing request will be the initial matter considered at the hearing on the permit application.

(c) Persons may submit a written response to the hearing request. Responses shall be filed with the District, the applicant and any persons filing a hearing request in connection with that matter. The response should address the question of whether the person requesting the contested case hearing has a personal justiciable interest related to the application at issue.

(d) The board shall evaluate the hearing request and any written responses thereto at the scheduled board hearing and shall determine that the person requesting the hearing:

(1) does not have a personal justiciable interest related to the application and deny the hearing request and not admit the person as a party to the hearing; or

(2) has a personal justiciable interest relating to the application, refer the application to a contested case hearing, and admit the person as a party to the hearing.

(e) The board may delegate to a presiding officer the processing of requests for contested case hearing.

(f) The determination of whether a hearing request should be granted is not itself a contested case hearing.

§ 9.311 General Hearing Procedures in Contested Cases

(a) Except for a hearing referred to SOAH, the procedures provided in this subchapter apply to contested case hearings. If the board refers a contested case hearing to SOAH, then the hearing shall be conducted as provided by Subchapters C, D, and F, Chapter 2001, Government Code, and the applicable rules of practice and procedure of SOAH (Title 1, Chapter 155, TEX. ADMIN. CODE, as may be amended) govern any contested case hearing of the District conducted by SOAH, as supplemented by this subchapter.

(b) A contested case hearing of the District must be conducted by either:

(1) a quorum of the board;

(2) an individual to whom the board has delegated in writing the responsibility to preside as a hearings examiner over the hearing or matters related to the hearing; or

(3) a SOAH administrative law judge.

(c) Except as provided by Subsection (d), the board president or the hearings examiner shall serve as the presiding officer at the hearing.

(d) If the hearing is conducted by a quorum of the board and the board president is not present, the directors conducting the hearing may select another director to serve as the presiding officer.

(e) Authority of presiding officer: The presiding officer may conduct the hearing in the manner the presiding officer deems most appropriate for the particular proceeding. The presiding officer has the authority to:

(1) convene the hearing at the time and place specified in the notice for public hearing;

(2) set hearing dates;

(3) designate the parties;

(4) establish the order for presentation of evidence;

(5) administer oaths to all persons presenting testimony;

(6) examine persons presenting testimony or comments;

(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) prescribe reasonable time limits for testimony and the presentation of evidence;

(9) exercise the procedural rules of the District;

(10) issue subpoenas when required to compel the attendance of witnesses or the production of papers and documents;

(11) require the taking of depositions and compel other forms of discovery under these rules;

(12) reopen the record of a hearing for additional evidence when necessary to make the record more complete;

(13) establish the jurisdiction of the District concerning the subject matter under consideration;

(14) rule on motions and on the admissibility of evidence and amendments to pleadings;

(15) conduct public hearings in an orderly manner in accordance with these rules;

(16) recess any hearing from time to time and place to place; and

(17) exercise any other appropriate powers necessary or convenient to effectively carry out the responsibilities of the presiding officer.

(f) Alignment of Parties in a Contested Case Hearing; Number of Representatives Heard: Parties in a contested case hearing may be aligned according to the nature of the hearing and their relationship to it. The presiding officer may require the participants of an aligned class to select one or more persons to represent them in the hearing or on any particular matter or ruling and may limit the number of representatives heard, but must allow at least one representative of an aligned class to be heard in the proceeding or on any particular matter or ruling.

(g) Appearance by Applicant or Movant: The applicant, movant or party requesting the hearing or other proceeding or a representative should be present at the hearing or other proceeding. Failure to so appear may be grounds for withholding consideration of a matter and dismissal without prejudice or may require the rescheduling or continuance of the hearing or other proceeding if the presiding officer deems it necessary in order to fully develop the record.

(h) Reporting: Contested case hearings will be recorded by audio or video recording or, at the discretion of the presiding officer, may be recorded by a certified court reporter transcription. The District does not prepare transcripts of hearings or other proceedings recorded on audio cassette tape on District equipment for the public, but the District will arrange access to

the recording. On the request of a party to a contested case hearing, the presiding officer shall have the hearing transcribed by a court reporter. The presiding officer may assess any court reporter transcription costs against the party that requested the transcription or among the parties to the hearing. Except as provided by this subsection, the presiding officer may exclude a party from further participation in a hearing for failure to pay in a timely manner costs assessed against that party under this subsection. The presiding officer may not exclude a party from further participation in a hearing as provided by this subsection if the parties have agreed that the costs assessed against that party will be paid by another party. If a proceeding other than a contested case hearing is recorded by a reporter, and a copy of the transcript of testimony is ordered by any person, the testimony will be transcribed and the original of any transcript will be filed with the District and placed in the papers of the proceeding at the expense of the person requesting the transcript of testimony. Copies of the transcript of testimony of any hearing or other proceeding thus reported may be purchased from the reporter.

(i) Continuance: The presiding officer may continue hearings in a contested case hearing from time to time and from place to place without the necessity of publishing, serving, mailing or otherwise issuing a new notice under Section 9.219. If the presiding officer continues a contested case hearing without announcing at the hearing the time, date and location of the continued hearing, the presiding officer must provide notice of the continued hearing by regular mail to all parties.

§ 9.313 Conduct and Decorum

Every person participating in or observing a contested case hearing, or other associated proceeding, must conform to ethical standards of conduct and exhibit courtesy and respect for all other participants or observers. 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 shall 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.

§ 9.315 Hearing Registration Forms

Each individual attending who provides comments or testimony in a contested case hearing shall submit a hearing registration form providing the following information: name, address, who the person represents, if the person is not there in person's individual capacity, whether the person plans to testify or provide comments, and any other information relevant to the hearing.

§ 9.317 Opportunity for Hearing and Participation; Notice of Hearing

In a contested case, each party is entitled to an opportunity:

(a) for hearing; and

(b) to respond and to present evidence and argument on each issue involved in the case.

§ 9.319 Pre-Hearing Conferences

(a) The presiding officer may hold one or more pre-hearing conferences at which the presiding officer may consider any matter which may expedite the hearing or otherwise facilitate the hearing process.

(b) Matters Considered. Matters which may be considered at a pre-hearing conference include, but are not limited to:

(1) the withdrawal of protest;

(2) the designation of parties;

(3) the formulation and simplification of issues;

(4) the necessity or desirability of amending applications or other pleadings;

(5) the possibility of making admissions or stipulations;

(6) the scheduling of discovery;

(7) the identification of and specification of the number of witnesses;

(8) the filing and exchange of prepared testimony and exhibits; and

(9) the procedure at the hearing.

(c) Conference Action. Action taken at a pre-hearing conference may be reduced to writing and made a part of the record or may be stated on the record at the close of the conference.

§ 9.321 Designation of Parties

The following persons shall be designated as parties in a contested case hearing:

(a) The general manager of the District is a party in all contested case hearings;

(b) The applicant is a party in a contested case hearing on its application; and

(c) Any person who timely requested a contested case hearing pursuant to Section 9.307, and who has been determined by the presiding officer to be a person entitled to a contested case hearing under the standard set forth in Section 9.309.

§ 9.323 Right to Counsel

(a) Each party to a contested case hearing may have the assistance of legal counsel before the District.

(b) A party to a contested case hearing may choose not to have the assistance of legal counsel.

§ 9.325 Interpreters for Deaf or Hearing Impaired Parties and Witnesses

(a) In a contested case hearing, the District shall provide an interpreter whose qualifications are approved by the Texas Office for Deaf and Hard of Hearing Services to interpret the proceedings for a party or subpoenaed witness who is deaf or hearing impaired.

(b) In this section, "deaf or hearing impaired" means having a hearing impairment, whether or not accompanied by a speech impairment, that inhibits comprehension of the proceedings or communication with others.

§ 9.327 Informal Disposition of Contested Case Hearing

An informal disposition may be made of a contested case hearing by:

(a) stipulation;

(b) agreed settlement;

(c) consent order; or

(d) default.

§ 9.329 Hearing Conducted by Hearings Examiner

(a) This section applies only to contested case hearings presided over by a hearings examiner.

(b) A hearings examiner who conducts a contested case hearing shall consider applicable District rules or policies in conducting the hearing.

(c) The District shall provide the hearings examiner with the District rules or policies applicable to the matter under consideration in the hearing.

(d) The District may not attempt to influence the findings of fact or the hearings examiner's application of law in a contested case hearing except by proper evidence and legal argument.

(e) The District may change a finding of fact or conclusion of law made by the

hearings examiner, or may vacate or modify an order issued by the hearings examiner, only if the District determines:

(1) that the hearings examiner did not properly apply or interpret applicable law, District rules or policies provided under Subsection (c), or prior administrative decisions;

(2) that a prior administrative decision on which the hearings examiner relied is incorrect or should be changed; or

(3) that a technical error in a finding of fact should be changed.

The District shall state in writing the specific reason and legal basis for a change made under this subsection.

§ 9.331 Certified Questions

(a) At any time during a contested case hearing presided over by a hearings examiner, on a motion by a party or on the hearings examiner's own motion, the hearings examiner may certify a question to the District.

(b) Issues regarding District policy, jurisdiction or the imposition of any sanction by the hearings examiner that would substantially impair a party's ability to present its case are among the types of issues appropriate for certification. Policy questions for certification purposes include, but are not limited to:

(1) the District's interpretation of its rules and applicable statutes;

(2) which rules or statutes are applicable to a proceeding; or

(3) whether District policy should be established or clarified as to a substantive or procedural issue of significance to the proceeding.

(c) If a question is certified, the hearings examiner shall submit the certified issue to the general manager. The general manager will place the certified issue on the agenda of the earliest possible meeting of the board, in compliance with the Open Meetings Act and other applicable law. The general manager will give the hearings examiner and parties notice of the meeting at which the certified question will be considered. The parties to the proceeding may file with the District briefs on the certified question. Briefs shall be filed with the parties with a copy served on the hearings examiner. The general manager will provide copies of the certified question and any briefs to the board. The hearings examiner may abate the hearing until the District answers the certified question, or continue with the hearing if the hearings examiner determines that no party will be substantially harmed.

(d) The District will issue a written decision on the certified issue within 30 days following the meeting at which the certified issue is considered. A decision on a certified issue is not subject to a motion for rehearing, appeal or judicial review prior to the issuance of the

District's final decision in the proceeding.

§ 9.333 Service of Documents filed in a Contested Case Hearing

(a) Service of all Documents Required. For any document filed with the District or the judge in a contested case hearing, the person filing that document must serve a copy on all parties to the contested case including the general manager at or before the time that the request is filed.

(b) Certificate of Service. A document presented for filing must contain a certificate of service indicating the date and manner of service and the name and address of each person served. The docket clerk may permit a document to be filed without a certificate of service but will require the certificate to be filed promptly thereafter.

§ 9.335 Privilege

In a contested case hearing, the District shall give effect to the rules of privilege recognized by law.

§ 9.337 Objections to Evidence

An objection to an evidentiary offer in a contested hearing may be made and shall be noted in the record.

§ 9.339 Burden of Proof

The burden of proof is on the applicant to establish, by a preponderance of the evidence, that the applicant is entitled to have the application granted.

§ 9.341 Assessing Costs

Upon the timely request of any party, or at the discretion of the presiding officer, the presiding officer may make a recommendation to the board regarding the assessment of the costs incurred by the District for the hearing, including the District's expenditures for attorney's fees and technical experts, and any reporting and transcription costs to one or more of the parties. If the hearing is conducted by the board, a hearing report with recommendations need not be filed, and the board may directly assess the District's hearing costs and reporting and transcription costs to one or more of the parties. The presiding officer must consider the following factors in assessing the District's hearing costs and the reporting and transcription costs:

(a) the party who requested the transcript;

(b) the financial ability of the party to pay the costs;

(c) the extent to which the party participated in the hearing;

(d) the relative benefits to the various parties of having a transcript;

(e) the budgetary constraints of a governmental entity participating in the proceeding; and

(f) any other factor that is relevant to a just and reasonable assessment of costs.

In any proceeding where the assessment of the District's hearing costs and reporting or transcription costs is an issue, the presiding officer must provide the parties an opportunity to present evidence and argument on the issue. A recommendation regarding the assessment of costs must be included in the hearing presiding officer's report to the board.

§ 9.343 Rights of Designated Parties

Subject to the direction and orders of the presiding officer, parties have the right to conduct discovery; present a direct case; cross-examine witnesses; make oral and written arguments; obtain copies of all documents filed in the proceeding; receive copies of all notices issued by the District concerning the proceeding; and otherwise fully participate in the proceeding.

§ 9.345 Persons Not Designated Parties

At the discretion of the presiding officer, a person not designated as a party to a proceeding may submit a comment or statement, orally or in writing. Comments or statements submitted by non-parties may be included in the record, but may not be considered by the presiding officer.

§ 9.347 Ex Parte Communications

Except as otherwise provided below, the presiding officer or a member of the board assigned to render a decision or to make findings of fact or conclusions of law on a contested permit application may not communicate, directly or indirectly, about any issue of fact or law during the pendency of the contested case with any representative of the District or other designated party to the contested case, except on notice and opportunity for all parties to participate. This rule does not apply to a board member who abstains from voting on any matter in which he or she engaged in ex parte communications. A member of the board may communicate ex parte with other members of the board consistent with the requirements of other law, such as the Open Meetings Act. A member of the board or the presiding officer may communicate ex parte with a District employee who has not participated in any hearing in the contested case for the purpose of using the special skills or knowledge of the District employee in evaluating the evidence.

§ 9.349 Evidence

The presiding officer shall admit evidence that is relevant to an issue at the hearing. The presiding officer may exclude evidence that is irrelevant, immaterial, or unduly repetitious. The

Texas Rules of Evidence may be referred to in order to determine the admissibility and introduction of evidence in contested case hearings. However, evidence not admissible under the Texas Rules of Evidence may be admitted if the evidence is:

(a) necessary to ascertain facts not reasonably susceptible of proof under those rules;

(b) not precluded by statute; and

(c) of a type on which a reasonably prudent person commonly relies in the conduct of the person's affairs.

In addition, evidence may be stipulated to by agreement of all parties.

§ 9.351 Written Testimony

(a) When a proceeding will be expedited and the interests of the parties will not be prejudiced substantially thereby, the presiding officer may allow testimony in a contested case hearing to be received in written form.

(b) The written testimony of a witness, either in narrative or question and answer form, must be sworn to by the witness and 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. The witness must be available, in person, by phone, or by other reasonable means, for clarifying questions and cross-examination, and the prepared testimony will be subject to objection. On the motion of a party, the presiding officer may exclude written testimony if the person who submits the testimony is unavailable for cross-examination by phone, a deposition before the hearing, or other reasonable means.

§ 9.353 Requirements for Exhibits

(a) Exhibits of a documentary character must be sized to not unduly encumber the files and records of the District. All exhibits must be numbered and, except for maps and drawings, may not exceed 8-1/2 by 11 inches in size.

(b) Abstracts of Documents. When documents are numerous, the presiding officer may receive in evidence only those which are representative and may require the abstracting of relevant data from the documents and the presentation of the abstracts in the form of an exhibit. Parties have the right to examine the documents from which the abstracts are made.

(c) Introduction and Copies of Exhibits. Each exhibit offered must be tendered for identification and placed in the record. Copies must be furnished to the presiding officer and to each of the parties, unless the presiding officer rules otherwise.

(d) Excluding Exhibits. In the event an exhibit has been identified, objected to, and excluded, it may be withdrawn by the offering party. If withdrawn, the exhibit will be returned and the offering party waives all objections to the exclusion of the exhibit. If not withdrawn, the

exhibit will be included in the record for the purpose of preserving the objection to excluding the exhibit.

§ 9.355 Official Notice; District Evaluation of Evidence

(a) In connection with a contested case hearing, the presiding officer may take official notice of:

(1) all facts that are judicially cognizable; and

(2) generally recognized facts within the area of the District's specialized knowledge.

(b) Each party shall be notified, either before or during the hearing, or by reference in a preliminary report or otherwise, of the material officially noticed, including staff memoranda or information.

(c) Each party is entitled to be given an opportunity to object to material that is officially noticed.

§ 9.357 Agreement of Parties; Remand to Board

(a) No agreement between parties or their representatives affecting any pending matter shall be considered by the presiding officer unless it is in writing, signed, and filed as part of the record, or unless it is announced at the prehearing conference or the hearing and entered of record.

(b) An agreed disposition of a contested case may be made by stipulation, settlement, consent order, or the withdrawal of all requests for a contested case hearing so that no facts or issues remain controverted. Upon settlement of a matter, the presiding officer shall remand the matter to the board. If the person requesting the contested case hearing defaults, then the presiding officer may also deem the request for a contested case hearing to have been withdrawn by the person and remand the case to the board. Applications remanded under this section shall be considered to be uncontested and shall be considered under Section 9.215. The presiding officer shall summarize the evidence, including findings of fact and conclusions of law based on the existing record and any other evidence submitted by the parties at the hearing. Any stipulations, settlements, consent orders, withdrawals of requests for contested case hearing, orders, findings of default, presiding officer summary of the proceedings, and other relevant documents shall be presented to the board for its consideration.

§ 9.359 Discovery

Discovery may be conducted upon such terms and conditions, and at such times and places, as directed by the presiding officer. Unless specifically modified by this subchapter or by order of the presiding officer, discovery shall be governed by, and subject to the limitations set forth in, the Texas Rules of Civil Procedure. In addition to the forms of discovery authorized

under the Texas Rules of Civil Procedure, the parties may exchange informal requests for information, either by agreement or by order of the presiding officer.

§ 9.361 Documents in District Files

Extrinsic evidence of authenticity is not required as a condition precedent to admissibility of documents maintained in the files and records of the District.

§ 9.363 Oral Argument

At the discretion of the presiding officer, oral arguments may be heard at the conclusion of the presentation of evidence. Reasonable time limits may be prescribed. The presiding officer may require or accept written briefs in lieu of, or in addition to, oral arguments. When the matter is presented to the board for final decision, further oral arguments may be heard by the board if the board did not preside over the hearing.

§ 9.365 Closing the Record

At the conclusion of the presentation of evidence and any oral argument, the presiding officer may close the record or, if the board has not taken final action on the application, keep it open and allow the submission of additional testimony by a person who testified at the hearing, or exhibits, briefs, or proposed findings and conclusions from one or more of the parties. Any supplementation of the record must be filed not later than the 10th day after the date of the final hearing. A person who files additional written material with the presiding officer under this section must also provide the material, not later than the 10th day after the date of the hearing, to any person who provided comments on an uncontested application or any party to a contested case hearing. A person who receives additional written material under this section may file a response to the material with the presiding officer not later than the 10th day after the date the material was received. No additional evidence, exhibits, briefs, or proposed findings and conclusions may be filed unless permitted or requested by the presiding officer.

§ 9.367 Proposal for Decision

Except for contested cases presided over by a quorum of the board, no later than 30 days following the completion of the contested case hearing, the presiding officer shall submit a proposal for decision to the District and serve a copy on the applicant and each designated party to the contested case. A proposal for decision shall include a summary of the subject matter of the hearing, a summary of the evidence or public comments received, and the presiding officer's recommendations for board action on the subject matter of the hearing. The presiding officer, when submitting the proposal for decision, shall notify the parties of the deadlines for the filing of exceptions and replies.

§ 9.368 Exceptions to the Proposal for Decision

Prior to board action, any party in a contested case may file written exceptions to the proposal for decision. Upon review of the exceptions, the hearing examiner may reopen the

record for the purpose of developing additional evidence, or may deny the exceptions and submit the proposal for decision and exceptions to the board. The board may, at any time and in any case, remand the matter to the hearing examiner for further proceedings.

§ 9.369 Scheduling a Meeting of the Board

(a) After receiving the proposal for decision or proposed order, the general manager shall schedule the presentation of the proposal for decision or proposed order to the board. The general manager shall provide at least 10 days' prior notice to the parties of the date of the board meeting at which the proposal for decision or proposed order will be presented and considered. The board may reschedule the presentation of the proposal for decision or proposed order. The general manager shall send notice of the rescheduled meeting date to the parties no later than 10 days before the rescheduled meeting.

(b) Consistent with notices required by law, the board may consolidate related matters if the consolidation will not injure any party and may save time and expense or otherwise benefit the public interest and welfare.

(c) The board may sever issues in a proceeding or hold special hearings on separate issues if doing so will not injure any party and may save time and expense or benefit the public interest and welfare.

§ 9.371 Oral Presentation Before the Board

(a) Any party to the contested case hearing may make an oral presentation at the board meeting in which the proposal for decision in that case is presented to the board.

(b) Any party to the contested case hearing may make an oral presentation at the board meeting in which the proposed order in that case is considered by the board.

(c) Oral presentations before the board shall be limited to 5 minutes each, excluding time for answering questions, unless the president establishes other limitations. Before the board meeting, the president may allot time for oral presentations. Oral presentations and responses to questions shall be directed to the board.

§ 9.373 Reopening the Record

The board, on the motion of any party to a contested case or on its own motion, may order the presiding officer to reopen the record for further proceedings on specific issues in dispute. The order shall include instructions as to the subject matter of further proceedings and the presiding officer's duties in preparing supplemental materials or revised proposals based upon those proceedings for the board's adoption.

§ 9.375 Decision

(a) No later than 60 days after the date of the final hearing on the application is

concluded, the board shall render its decision. The decision, if adverse to any party, must be in writing or stated in the record. If a written request is filed with the District not later than the 20th day after the date of the board's decision, then the board's decision must be in writing and shall include findings of fact and conclusions of law separately stated regarding the decision of the board. The board shall provide certified copies of the findings and conclusions to the person who requested them, and to each person who provided comments or each designated party, not later than the 35th day after the date the board received the request.

(b) The board's decision shall be rendered no later than 60 days after the date the final hearing on the application is concluded, unless the board determines that there is good cause for continuing the proceeding.

(c) The board may change a finding of fact or conclusion of law made by the presiding officer, or may vacate or modify an order issued by the presiding officer, only if the board determines:

(1) that the presiding officer did not properly apply or interpret applicable law, District rules, written policies provided to the presiding officer by the District, or prior administrative decisions:

(2) that a prior administrative decision on which the presiding officer relied is incorrect or should be changed; or

(3) that a technical error in a finding of fact should be changed.

§ 9.377 Notification of Decisions and Orders

(a) The District shall notify all parties in a contested case either personally or by certified mail, return-receipt requested, of any decision or order.

(b) The District shall send a copy of the decision or order in a contested case by first-class mail to attorneys of record and shall keep an appropriate record of the mailing. If a party is not represented by an attorney, the District shall send a copy of the decision or order by first-class mail to the party and shall keep an appropriate record of the mailing.

(c) A party or attorney of record notified by mail under Subsection (b) is presumed to have been notified on the third day after the date on which the notice is mailed.

§ 9.379 Motion for Rehearing

(a) Filing motion. Only a party to the contested case may file a motion for rehearing. The motion shall be filed with the general manager within 20 days after the date the party or his or her attorney of record is notified of the decision or order. On or before the date of filing of a motion for rehearing, a copy of the motion shall be mailed or delivered to all parties with certification of service furnished to the District. The motion shall contain:

(1) the name and representative capacity of the person filing the motion;

(2) the style and official docket number assigned by the District;

(3) the date of the decision or order; and

(4) a concise statement of each allegation of error.

(b) Reply to motion for rehearing. Only a party to the contested case proceeding may reply to a motion for rehearing. A reply to a motion for rehearing must be filed with the general manager within 20 days after the date the motion for rehearing is filed.

(c) Ruling on motion for rehearing.

(1) Upon the request of a board member, the motion for rehearing shall be scheduled for consideration during a board meeting. Unless the board rules on the motion for rehearing, the failure of the board to grant or deny a request for rehearing before the 91st day after the date the request is submitted constitutes a denial of the request by operation of law.

(2) A motion for rehearing may be granted in whole or in part. When a motion for rehearing is granted, the decision or order is nullified. The board may reopen the hearing to the extent it deems necessary. If the board grants a request for rehearing, the board shall schedule the rehearing not later than the 45th day after the date the request is granted. Thereafter, the board shall render a decision or order as required by this subchapter.

§ 9.381 Decision Final and Appealable

In the absence of a timely filed motion for rehearing, a decision or order of the board is final and appealable on the expiration of the period for filing a motion for rehearing. If a party files a timely motion for rehearing, a decision or order of the board is final and appealable on the date: (1) the board denies the motion for rehearing; (2) the motion is denied by operation of law; or (3) the board renders a written decision after rehearing.

§ 9.383 Appeal of Final Decision

(a) A filing of a timely motion for rehearing is a prerequisite to appeal.

(b) Not later than the 60th day after the date on which the decision of the board becomes final, an applicant or a party to a contested case hearing may appeal the District's decision by filing suit under Section 36.251, Texas Water Code. An applicant or a party to a contested case hearing may not file suit against the District under Section 36.251 if a request for rehearing was not filed on time.

(c) The record. The record in a contested case shall include the following:

(1) all pleadings, motions and intermediate rulings;

(2) evidence received or considered;

(3) a statement of matters officially noticed;

(4) questions and offers of proof, objections and rulings on them;

(5) summaries of the results of any conferences held before or during the hearing;

(6) proposed findings, exceptions and briefs;

(7) any decision, opinion or report issued by the presiding officer;

(8) pre-filed testimony;

(9) all memoranda or data submitted to or considered by the presiding officer; and

(10) the final order and all interlocutory orders.

§ 9.385 Costs of Record on Appeal

A party who appeals a final decision in a contested case shall pay all costs of preparation of the record of the proceeding that is required to be transmitted to the reviewing court. A charge imposed as provided by this section is considered to be a court cost and may be assessed by the court in accordance with the Texas Rules of Civil Procedure.

Subchapter E. Procedures for Adoption of Rules and Management Plan

§ 9.401 Rulemaking and Management Plan Hearing Procedures

(a) The District shall adopt rules and its management plan following the notice and hearing procedures set forth in this subchapter.

(b) Not later than the 20th day before the date of a rulemaking or management plan hearing, the general manager shall provide notice of the public hearing as follows:

(1) post a notice in a place readily accessible to the public at the District office;

(2) provide a copy of the notice to the county clerk of each county in which the District is located, to be posted at the County courthouse;

(3) publish the notice in one or more newspapers of general circulation in the District;

(4) provide the notice by mail, facsimile, or email to any person who has requested the notice pursuant to Subsection (g); and

(5) make available a copy of the proposed rule or management plan at a place accessible to the public during normal business hours and, if the District has a website, post an electronic copy on its website.

(c) The notice shall include the following information:

(1) the time, date, and location of the rulemaking or management plan hearing;

(2) a brief explanation of the subject of the rulemaking or management plan hearing; and

(3) the procedures for submitting oral or written comments, and a location or internet site at which a copy of the proposed rules or management plan may be reviewed or copied, if any.

(d) The general manager may designate a person to be the presiding officer to conduct the public hearing. The presiding officer shall conduct a rulemaking or management plan hearing in the manner the presiding officer determines to be most appropriate to obtain information and comments relating to the proposed rule or management plan as conveniently and expeditiously as possible. Comments may be submitted orally at the hearing or in writing. The presiding officer may hold the record open for a specified period after the conclusion of the hearing to receive additional written comments. The District shall allow at least 20 days for submission of written public comments on a proposed rule or management plan before adopting

the proposed rule or plan.

(e) Any person participating in a rulemaking hearing must submit to the District a registration form indicating the person's name, address, and who the person represents, if not in attendance or his or her behalf.

(f) The presiding officer shall prepare and keep a record of each rulemaking or management plan hearing in the form of an audio or video recording or a court reporter transcription.

(g) A person may submit to the District a written request for notice of a rulemaking or management plan hearing. A request is effective for the remainder of the calendar year in which the request is received by the District. To receive notice of a rulemaking or management plan hearing in a later year, a person must submit a new request. An affidavit of an officer or employee of the District establishing attempted service by first class mail, facsimile, or email to the person in accordance with the information provided by the person is proof that notice was provided by the District.

(h) The District may use an informal conference or consultation to obtain the opinions and advice of interested persons about a contemplated rule or management plan provision and may appoint an advisory committee of experts, interested persons, or public representatives to advise the District about a contemplated rule or management plan provision.

(i) Failure to provide notice under Subsection (b)(4) does not invalidate an action taken by the District at a rulemaking or management plan hearing.

(j) 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 may establish 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.

(k) Adoption of Proposed Rules or Management Plan. After the conclusion of the hearing and the time period for submission of written comments, the board shall consider all timely written comments and shall, in the order adopting the rule or plan, state the District's responses to the written comments.

(l) A proposed rule becomes final and effective on the day it is adopted by the board, unless otherwise specified by the board.

§ 9.403 Emergency Rulemaking

(a) The District may adopt an emergency rule without prior notice or hearing, or with an abbreviated notice and hearing, if the board:

(1) finds that a substantial likelihood of imminent peril to the public health,

safety, or welfare, or a requirement of state or federal law, requires adoption of a rule on less than 20 days' notice; and

(2) prepares a written statement of the reasons for its findings under Subsection (a).

(b) Except as provided by Subsection (c), a rule adopted under this section may not be effective for longer than 90 days.

(c) If notice of a hearing on the final rule is given not later than the 90th day after the date the rule is adopted, the rule is effective for an additional 90 days.

(d) A rule adopted under this section must be adopted at a meeting held as provided by the Open Meetings Law.

CHAPTER 10. WATER QUALITY

§ 10.1 Prohibition on Pollution of Groundwater

A person may not pollute or contribute to the pollution of groundwater in the District.

CHAPTER 11. INVESTIGATIONS AND ENFORCEMENT

§ 11.1 Right to Enter Land

Any District board member or District employee, agent or representative is entitled to enter any public or private property within the boundaries of the District at any reasonable time for the purpose of inspecting or investigating conditions relating to the quality or quantity of groundwater or in regard to the compliance with the District Act, Chapter 36 of the Texas Water Code, or any rule, permit, or order of the District. Such persons acting under this authority who enter private property shall, prior to entry, give notice in writing or in person or by telephone to the owner, lessee, or operator, agent, or employee of the property, as determined by information contained in the application or other information on file with the District, if any.

§ 11.3 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 property.

§ 11.5 Judicial Civil Enforcement

(a) The District may enforce the District Act or its rules by injunction, mandatory injunction, or other appropriate remedy in a court of competent jurisdiction.

(b) If the District prevails in any suit to enforce its rules, the District may seek and the court shall grant, in the same action, civil penalties, recovery for attorney's fees, costs for expert witnesses, and other costs incurred by the District before the court.

(c) Civil penalties for breach of any rule of the District shall be not less than $100 per day per violation and not more than $10,000 per day per violation.

(d) A penalty under this section is in addition to any other penalty provided by the law of this state and may be enforced by complaint filed in an appropriate court of jurisdiction in the District.

§ 11.7 Enforcement Action by the General Manager

If the general manager determines that a person, or his predecessor in interest, is in violation of the District Act, these Rules, or the terms or conditions of a permit or interim production status, he may suspend the processing of any application or authorization that the person has pending before the District.

§ 11.9 Enforcement Action by the Board

If the board determines that a person, or his predecessor in interest, violated, is violating, or is threatening to violate the District Act, these Rules, or the terms or conditions of a permit or interim production status, it may, after providing a 10-day written notice to the person and an opportunity for the person to appear and be heard at a meeting of the board:

(a) suspend the processing of any application or authorization that the person has pending before the District, until the violation is remedied;

(b) suspend any interim production status, permit or authorization issued by the District, which is held by that person, until the violation is remedied;

(c) commence any action authorized by law to address the violation, including filing a civil suit in state district court seeking an injunction, a mandatory injunction, civil penalties, and attorney's fees and other costs associated with bringing a suit; or

(d) enter into, or authorize the general manager to enter into, a settlement agreement with the person.