



DOMESTIC USE



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AGRICULTURAL USE



CONSERVATION

High Plains Underground Water Conservation District No. 1

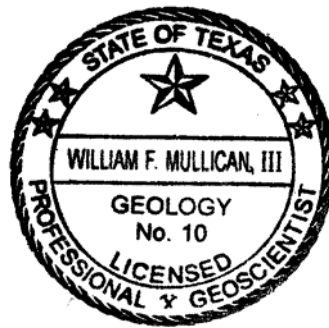
10-Year Amended Management Plan 2011-2021



Original Plan Adopted
Amended and Re-adopted
Amended and Re-adopted

August 11, 1998
January 29, 2004
February 18, 2010

**Hydrologic data contained in this amended 2011-2021 plan
were developed and reviewed under the guidance
of William F. Mullican, III
Licensed Texas Professional Geoscientist # 10**



**This amended plan was re-adopted by the High Plains Underground
Water Conservation District No. 1 Board of Directors
at their regular meeting on July 19, 2011**

TABLE OF CONTENTS

1.0	Introduction	3
1.1	District Creation	3
1.2	District Mission	3
1.3	Groundwater Management Planning	3
1.4	Planning Horizon	5
2.0	Actions, Methodology, Procedure, Performance, and Avoidance	5
	Goal 1 Maintain Hydrologic Data Collection	6
	Goal 2 Provide Efficient Use of Groundwater	7
	Goal 3 Control and Prevent Waste of Groundwater	8
	Goal 4 Control and Prevent Subsidence	9
	Goal 5 Address Conjunctive Surface Water Issues	9
	Goal 6 Address Natural Resource Issues	10
	Goal 7 Address Drought Conditions	10
	Goal 8 Address Conservation, Recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, and Brush Control	11
	Goal 9 Achieve Desired Future Conditions	14
3.0	Historical Use and Future Demand For Water	21
4.0	Groundwater Resources	25
5.0	Surface Water Resources	31
6.0	Water Supply Plans	33
	Appendix A Statutorily-required elements checklist.	
	Appendix B 2007 State Water Plan data.	
	Appendix C 2011 Regional Water Plan data.	
	Appendix D Electronic Copy of HPWD Management Plan.	
	Appendix E District rules.	
	Appendix F Resolution Adopting Management Plan	
	Appendix G Evidence that the Management Plan was adopted after notice and hearing.	
	Appendix H Evidence that the District coordinated development of the Management Plan with surface water entities.	

Figures

Figure 1	Jurisdictional boundaries of the High Plains Underground Water Conservation District No. 1	Page 4
Figure 2	Cross section and map illustrating Ogallala Formation sediment thickness	Page 26

Tables

Table 2.1	Estimates of Total Available Groundwater in the district, by county, for the Ogallala Aquifer (including the Edwards-Trinity (High Plains) Aquifer) based on the 50/50 Management Goal, in AFY, from GAM Run 09-026 MAG (Oliver, 2011) and GAM Task 11-010 (Oliver, 2011)	Page 15
Table 2.2	Estimates of Managed Available Groundwater in the district, by county, for the Ogallala Aquifer (including the Edwards-Trinity (High Plains) Aquifer), in AFY from GAM Run 09-026 MAG (Oliver, 2011) GAM Run 10-030 MAG (Oliver, 2011) and GAM Task 11-010 (Oliver, 2011)	Page 17
Table 2.3	Estimates of Exempt Use for the Ogallala Aquifer (including the Edwards-Trinity (High Plains) Aquifer), in the district by county, in AFY, based primarily on information presented in the 2011 Panhandle Regional Water Plan and the 2011 Llano Estacado Regional Water Plan	Page 18
Table 2.4	Estimates of Managed Available Groundwater for the Dockum Aquifer, by county, in AFY, from GAM Task 11-010 (Oliver, 2011), GAM Run 10-019 MAG and GAM Run 10-035 MAG (Oliver, 2010).	Page 19
Table 3.1	Historical groundwater use in district, in acre-feet (TWDB Water Use Survey)	Page 22
Table 3.2	Historical groundwater use in district by county, in acre-feet (TWDB Water Use Survey)	Page 22
Table 3.3	Projected total water demand by county, in acre feet (TWDB 2011 Regional Water Planning Data)	Page 24
Table 4.1	Summarized information for the Ogallala Aquifer required for the High Plains Underground Water Conservation District No. 1's Groundwater Management Plan.	Page 29
Table 4.2	Summarized information for the Edwards-Trinity (High Plains) Aquifer required for the High Plains Underground Water Conservation District No. 1's Groundwater Management Plan.	Page 30
Table 4.3	Summarized information for the Dockum Aquifer required for the High Plains Underground Water Conservation District No. 1's Groundwater Management Plan.	Page 30
Table 5.1	Projected Surface Water Supplies in district, in acre feet (TWDB 2011 Regional Water Planning Data)	Page 31
Table 6.1	Water supply needs, in acre-feet (TWDB 2011 Regional Water Planning Data)	Page 33
Table 6.2	Results of implementing water management strategies, in acre-feet (TWDB 2011 Regional Water Planning Data)	Page 35

1.0 Introduction

1.1 District Creation

The Texas State Board of Water Engineers delineated the original boundaries of the High Plains Underground Water Conservation District No. 1 (the district) in March 1951. Later that year, voters in 13 Southern High Plains counties created the district in accordance with the Underground Water Conservation Districts Act passed by the Texas Legislature in 1949. After several annexation elections, the district now consists of Bailey, Cochran, Hale, Lamb, Lubbock, Lynn, Parmer and Swisher counties, and portions of Armstrong, Castro, Crosby, Deaf Smith, Floyd, Hockley, Potter and Randall counties (see Figure 1). The district's jurisdictional boundary consists of approximately 11,850 square miles or 7,584,000 acres.

1.2 District's Mission

As defined in statute, the purpose of groundwater conservation districts in Texas is to provide for the conservation, preservation, and protection of the groundwater resources within its jurisdictional boundaries. Therefore, it is the mission of the district is to provide for the conservation, preservation, and protection through effective education and sound management of the groundwater resources within the jurisdictional boundaries of the district in order to make every effort to ensure that an abundant and high quality supply of potable water will be available for future water users.

1.3 Groundwater Management Planning

In developing its management plan, the board of directors of the district considers historical groundwater use, water demand projections, current and projected water supply availability, and water supply needs to establish its policies. Rules promulgated by the board of directors are carefully considered and are adopted only after considerable public input. The rules provide a fair and equal opportunity for all users to use groundwater for beneficial purposes while at the same time meeting the goals of the district.

The board of directors also establishes the processes by which the district will monitor changes in supply and demand which affect the near- and long-term viability of the aquifers. This document is a dynamic management plan meant to be reviewed, evaluated and revised as necessary to ensure that the district's goals are being met. As conditions change throughout time, the board of directors will re-evaluate its policies and rules. Recent changes in Texas law related to groundwater management clearly illustrate the need to routinely review, evaluate, and revise district management plans and rules in order to meet new requirements and changed conditions.

The goals, management objectives, and performance standards set forth in this document are considered by the board of directors to be reasonable and prudent. Whenever the board of directors determines that a change is needed, they will act accordingly after careful consideration of all the facts and after receiving public input.

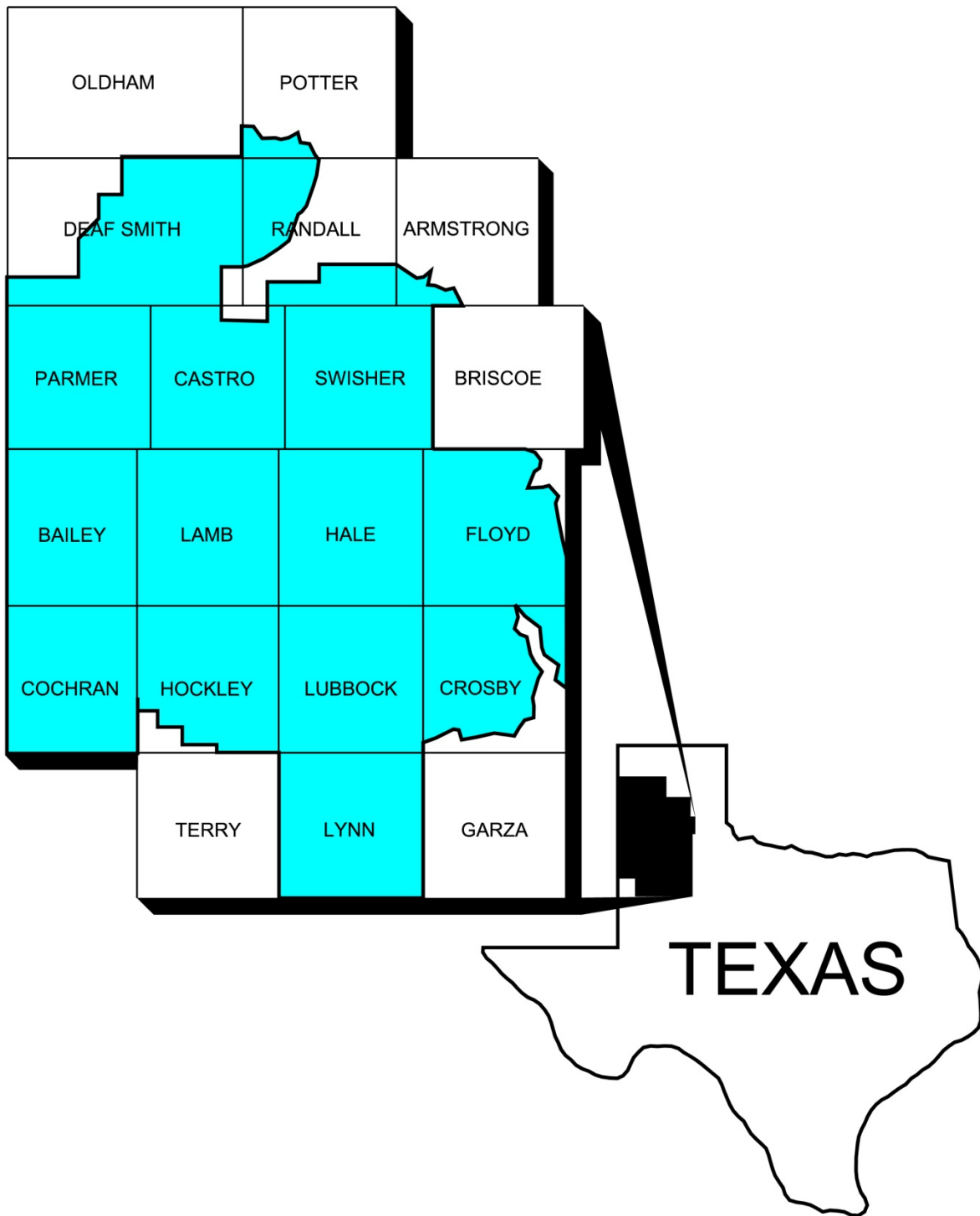


Figure 1 Jurisdictional boundaries of the High Plains Underground Water Conservation District No. 1

1.4 Planning Horizon

This plan is a revision of the management plan adopted by the board of directors on February 23, 2010. The Executive Administrator of the Texas Water Development Board approved that plan as administratively complete on April 7, 2010. This revised plan will remain in effect until an amended plan is adopted and approved, or July 19, 2016, whichever is earlier. The board of directors will review and adopt the management plan at least every five years, as required by Texas Water Code Chapter §36.1072(e).

2.0 Actions, Methodologies, Procedures, Performance, and Avoidance Necessary to Effectuate the Plan

In order to effectuate the district's management plan, the district continually works to develop, maintain, review, and update the district rules and procedures for the various activities contained in the management plan. In order to monitor performance, (a) the General Manager routinely meets with staff to track progress on the various objectives and standards adopted in this management plan and, (b) on an annual basis; staff prepares and submits an annual report documenting progress made towards implementation of the management plan to the board of directors for their review and approval. Also, as needed, and at least annually, staff reviews district rules to ensure that all provisions necessary to implement the plan are contained in the rules. The board of directors will make revisions to the rules as needed to manage and conserve groundwater resources within the district more effectively and to ensure that the duties prescribed in Texas Water Code and other applicable laws are carried out. A copy of the district's rules may be found on the district's website located at www.hpwd.com.

The district will work diligently to ensure that all citizens within the district's jurisdictional boundaries are treated as equitably as possible. The district, as needed, will seek the cooperation of federal, state, regional, and local water management entities in the implementation of this management plan and management of groundwater supplies.

The district will continue to enforce its rules to conserve, preserve, protect, and prevent the waste of groundwater resources within its jurisdiction. Texas Water Code Chapter 36.1071(a)(1-9) requires that all management plans address the following management goals, as applicable:

- providing the most efficient use of groundwater;
- controlling and preventing waste of groundwater;
- controlling and preventing subsidence;
- conjunctive surface water management issues;
- natural resource issues;
- drought conditions;
- conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective; and
- desired future conditions of the groundwater resources in a quantitative manner.

The following management goals, management objectives, and performance standards have been developed and adopted to ensure the management and conservation of groundwater resources within the district's jurisdiction.

Goal 1: Maintain hydrologic data collection programs necessary to make informed decisions for the effective and efficient management and conservation of groundwater resources

A water level observation network was established several decades ago in order to allow the district to monitor trends and changes in water levels in wells in the Ogallala Aquifer located within the district. Data from the observation wells are used (1) to analyze historic and current trends in water level declines, including the volume of water remaining in the Ogallala Aquifer within the district; (2) to quantify annual depletion values for individual producers; (3) by the U.S. Internal Revenue Service to establish annual depreciation amounts for individual properties resulting from use of groundwater resources; and (4) by the board of directors as it contemplates policy decisions regarding desired future conditions and resulting revisions to management plans and rules.

Management Objective 1.1 Monitor water levels

Estimate the volume of available groundwater by maintaining an observation well network of approximately one well per nine (9) square miles, or approximately 1,300 wells within the district.

Performance Standards

1.1a Annually measure the depth-to-water below land surface in each well in the observation well network in which it is possible to measure and record the depth-to-water. Wells which are temporarily not available for measurement will be noted as such by monitoring technicians. Wells which have been permanently abandoned will be removed from the network and replacement wells will be sought.

1.1b For the first five years of this plan, increase the number of wells in the observation well network by a net increase of fifty (50) wells per year. The new wells will primarily be located in areas where a need for greater data density has been documented.

1.1c Annually compare water level measurements to previous measurements and calculate the water level rise/decline in each well for the past year, the past five years and the past ten years, and prepare and disseminate representative hydrographs and depletion maps demonstrating the changes in water levels in the Ogallala Aquifer through the district's newsletter.

1.1d Maintain depth-to-water income tax depletion allowance database and annually supply data to landowners, as requested and to U.S. Internal Revenue Service for approval.

1.1e Maintain a series of continuous recording pressure transducers in at least 10 monitor wells to collect and evaluate water levels throughout the year and to evaluate level of recovery in Ogallala Aquifer water levels between growing seasons.

Management Objective 1.2 Update, publish and distribute hydrologic atlases

On a five-year basis beginning in 2014, construct and publish a hydrologic atlas for each county within the district and make the atlases available to the public. Each atlas will contain four maps and text explaining the maps. The maps will depict the approximate altitude of the base of the Ogallala Aquifer, the approximate altitude of the

Ogallala Aquifer water table, the approximate altitude of land surface, and the approximate saturated thickness of the Ogallala Aquifer.

Performance Standard

1.2a Beginning in 2014 and every five years thereafter, utilizing water level measurements and other necessary topographic and hydrologic data, produce hydrologic atlases for all counties or portions of counties located within the district.

Goal 2: Provide the most efficient use of groundwater

The district maintains a qualified staff to assist water users in protecting, preserving, and conserving groundwater resources. The board of directors has in the past and continues today to base its decisions on the best data available to treat all water users as equitably as possible. The board of directors determines the programs and activities that it will undertake to provide the best possible water conservation and management services to the area. District rules are enforced to protect the quantity and quality of the groundwater and to prevent the waste of groundwater.

Management Objective 2.1 Issue well permits

The district will issue water well permits for all non-exempt water wells in accordance with its rules (see Texas Water Code §36.117 for definition of exempt wells).

Performance Standards

2.1a At each regularly scheduled board of directors meeting, staff will report the number of new permit applications received that are being recommended for approval by the general manager, as well as, any requests for exception to district rules. A summary of permitting activity by county and by aquifer will be included in the district's annual report.

Management Objective 2.2 Measure pre-plant soil moisture

District staff will take soil moisture readings throughout the district each year. Neutron moisture meters, or equivalent technology, will be used to gather data at six-inch intervals to a depth of six feet or to the caliche layer (whichever is first) and the measurements will be entered into the district data base. Contour maps illustrating soil moisture conditions will be produced and published before the next crop growing season and the information from the pre-plant soil moisture survey will be made available through the district's newsletter, website, and print/electronic media. Irrigators are encouraged to use the soil moisture maps as a guide prior to planting.

Performance Standards

2.2a No later than April of each year, publish soil moisture maps that illustrate available soil moisture, soil moisture deficits, and other factors affecting soil moisture in the district's newsletter and on the district's web site. This information will also be made available to print/electronic media.

Goal 3: Control and prevent the waste of groundwater

One of the basic activities that the district has engaged in since its inception in order to conserve groundwater resources of the region is by controlling and preventing the waste of groundwater. Today this effort has expanded beyond waste in agricultural practices to include waste in municipal, industrial, commercial, and institutional settings.

Management Objective 3.1 Maintain an agricultural irrigation tailwater abatement program.

Monitor agricultural practices within the district to prevent and terminate the waste of groundwater that results from the release or loss of irrigation water (tailwater) during the irrigation season. The loss of irrigation water from land on which it is produced is a violation of state law and district rules. District rules, taken from state statute Texas Water Code §36.001(a)(8)(F), defines waste as it relates to irrigation tailwater as *“willfully or negligently causing, suffering, or permitting groundwater to escape into any river, creek, natural watercourse, depression, lake, reservoir, drain, sewer, street, highway, road or road ditch, or onto any land other than that of the owner of the well; or 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.”* If such an agreement is made, the water must move directly onto the neighbor’s property without crossing property belonging to anyone else or public property.

Performance Standards

3.1a Document all irrigation tailwater complaints with photographs and written reports within three days of receipt of complaint.

3.1b Notify the owner and/or operator within seven days of documenting the violation that it is responsible for the tailwater and that a violation has occurred.

3.1c Document in the annual report the number of irrigation tailwater violation letters sent to, and the telephone contacts with the owners and/or operators, any cases resulting in legal action, and their final dispensation.

Management Objective 3.2 Promote efficient agricultural irrigation technologies

Most agricultural producers within the district are making a diligent effort to maximize the benefits of the precipitation they receive and to maximize their irrigation application efficiencies. Most irrigation systems in the Southern High Plains are designed to only supplement precipitation and not to meet the total crop water demand. During drought periods, the crop yield potential declines in proportional amounts to the amount of water lost during the irrigation application. Much of the district’s educational efforts address improved irrigation application efficiencies by producers.

Performance Standards

3.2a Beginning in 2012 and every five years thereafter, inventory and document the number of center pivot sprinkler systems in operation within the district and report in the district's annual report.

3.2b In combination with Objective 3.3a, publish at least six articles related to irrigation application efficiencies each year in the district's newsletter. (Note that this performance standard target of six articles per year is based on the sum of articles addressing agricultural water conservation *and* municipal water conservation strategies.)

Management Objective 3.3 Address urban water waste use

Increasing population, coupled with limited surface and groundwater supplies, make it important for area residents to make more efficient use of the region's water resources. The district supports the efforts of area municipalities to preserve the quality and quantity of their water reserves. The district offers a wide range of technical and educational materials to assist towns and cities in this effort.

Performance Standard

3.3a In combination with Objective 3.2b, the district will publish at least six articles discussing municipal water conservation each year in the district's newsletter. (Note that this performance standard target of six articles per year is based on the sum of articles addressing agricultural water conservation *and* municipal water conservation strategies.)

Goal 4: Control and prevent subsidence

Due to the unconfined nature of the Ogallala Aquifer on the Southern High Plains, problems resulting from water level declines causing subsidence are not technically feasible. Furthermore, subsidence resulting from the dissolution of evaporate deposits underlying the Ogallala Aquifer within the district have not been documented within the historic period, nor are they anticipated. Based on these geologic and hydro-geologic characteristics of the Southern High Plains, the board has determined that this goal is not applicable to the district.

Goal 5: Address conjunctive surface water management issues

Surface water resources play an important role in meeting municipal and industrial water demands within the district. The district coordinates with the surface water management agencies within the region by serving as a member of the Llano Estacado Regional Water Planning Group and through the support of municipal water conservation programs (see Management Objective 3.3).

Management Objective 5.1 Ensure coordination with surface water management agencies

The general manager or his designee will represent groundwater management interests of the district at least 75 percent of the meetings and events of the Llano Estacado Regional Water Planning Group. Participation in the regional water planning process will ensure coordination with surface water management agencies that are also participating in the regional water planning process.

Performance Standard

5.1a The general manager or his designee will report on actions of the Llano Estacado Regional Water Planning Group to the board of directors, and staff will document significant actions of the planning group in the annual report.

Goal 6: Address natural resource issues

Protection, conservation, and management of the quantity and quality of the Ogallala Aquifer are important due to the implications that insufficient or inferior water resources have on our health, economy, and environment. The quantity of groundwater resources is addressed in Goal 1. Goal 6 is primarily focused on the protection of natural resources through the active protection of water quality in the Ogallala Aquifer. The district works to assist residents in protecting the quality of their groundwater resources.

Management Objective 6.1 Enforce district rules regarding illegal operation of wells

Staff will inspect all sites reported as being open and/or uncovered, abandoned, or deteriorating and follow through to ensure proper closure and/or repair in accordance with district rules.

Performance Standards

6.1a Within two working days of locating an open and/or uncovered well, staff will close the well opening with a suitable cap and attempt to notify the owner and/or operator that an open and/or uncovered well exists on the property.

6.1b Within two working days of locating a deteriorating or deteriorated well, staff will take action necessary to safely secure the well site and attempt to notify the owner and/or operator that deteriorating or deteriorated well exists on the property. The time required to complete these actions will be dependent upon the nature of the deteriorated well.

6.1c Within two working days of locating an abandoned well, staff will take action necessary to safely secure the well site and attempt to notify the owner and/or operator that an abandoned well exists on the property. The time required to complete these actions will be dependent upon the nature of the deteriorated well.

6.1d Document in the annual report the number of open and/or uncovered, abandoned and deteriorated wells reported and inspected, the number of notification letters mailed, the number of second notices mailed, the number of wells the district closed, and the number of well caps provided.

Goal 7: Address drought conditions

Drought conditions in recent years have reminded us of how dependent we are on precipitation and underscore the importance of irrigation application efficiency as it relates to crop yields and water conservation for municipal and industrial users.

Droughts occur and reoccur in the area, as do cycles of above average precipitation. The unpredictability of the amounts and timing of precipitation events make it very difficult to determine exactly how much groundwater the irrigator will need to pump to meet his crop water demands.

Management Objective 7.1 Provide ongoing and relevant meteorological information

The district maintains a rain gauge network in order to monitor hydrologic conditions throughout the region. The district will make available through its website and through its newsletter pertinent information to irrigators and municipalities with an emphasis on developing and current drought conditions. Additional drought-related information may be found at the following TWDB web site: <http://www.twdb.state.tx.us/DATA/drought/index.asp>

Performance Standard

7.1a Maintain a rain gauge network located in conjunction with its soil moisture monitoring sites. The rain gauges will be read by staff three times per year and results will be published in the district's newsletter, and during times of drought, will be posted on the district's website.

Management Objective 7.2 Establish by January 1, 2012, a water banking program by rule that may be utilized by producers during times of drought

As a result of the realities of the reoccurrence of drought on the Southern High Plains, the district understands that from time to time, producers will need more groundwater than is allowed by rules governing allowable production rate. To address this reality, while also encouraging producers to conserve during normal and above normal periods of precipitation, the district will establish and maintain a water banking program that allows producers to bank groundwater during normal and above normal precipitation for use during dry years. Groundwater banked by producers may be used as needed at any time for up to three years after the groundwater is banked. The details of this program are contained in the district's rules.

Performance Standard

7.2a By January 1, 2013 the district will establish and maintain an online water banking system whereby groundwater saved during periods of normal and above normal precipitation may be placed in reserve for use at any point in the next three years, as prescribed in district rules. Beginning in 2013, the district will document the number of producers participating in the water banking system during the previous 12 months in the annual report.

Goal 8: Address conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, and brush control

This goal, in its current form, is a relatively new requirement for management plans. Texas Water Code §36.1071(a)(7) requires that a management plan include a goal that addresses conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective.

The district has a long, well established, and widely recognized program promoting water conservation, which utilizes a number of public information strategies to inform the public of the importance of water and water conservation.

This new goal requires that the district also address enhancement of recharge to the Ogallala Aquifer. The district supports best management practices such as rainwater harvesting, through its municipal water conservation programs, and as such, is included in management objectives and performance standards below detailing such activities. The district has historically, and will continue, to support brush control through the activities of Texas State Soil and Water Conservation Board and their various local districts. As a result, the district has determined that it would be duplicative and not cost effective to establish a similar brush control program. Based on significant public input regarding a past precipitation enhancement program, the board of directors has made a determination that this is not an activity that is appropriate or cost effective (therefore not applicable as a goal in this management plan). Therefore, the board of directors has determined that goals addressing brush control and precipitation enhancement are not applicable to the district.

Management Objective 8.1 Prepare, produce and distribute monthly newsletter

Each year, 12 issues of the newsletter will be produced for distribution to district constituents and other interested parties. A minimum of six articles will appear each year discussing methods to conserve and preserve the quantity of usable quality groundwater within the district.

Performance Standards

8.1a Document in the annual report the number and scope of conservation articles published in the district newsletter.

Management Objective 8.2 Provide news releases to print and electronic media within the district

Each year, news releases discussing methods to conserve and preserve the quantity of usable quality groundwater will be prepared and distributed to print and electronic media within the district.

Performance Standard

8.2a Document in the annual report the number of news releases prepared and distributed to local and regional media detailing methods to conserve and preserve the quantity of usable quality groundwater.

Management Objective 8.3 Produce radio public service announcements and distribute them to stations located within the district

Each year, a series of 60-second pre-recorded radio public service announcements discussing methods to conserve and preserve the quantity of usable quality groundwater will be produced and distributed to radio stations.

Performance Standard

8.3a Document in the annual report a summary of the series of public service announcements produced, distributed, and aired on local radio stations.

Management Objective 8.4 Produce TV public service announcements

Each year, a series of 30-second pre-recorded TV public service announcements discussing methods to conserve and preserve the quantity of usable quality groundwater will be produced and distributed to regional television stations.

Performance Standard

8.4a Document in the annual report the number and a summary of the series of public service announcements produced and distributed to regional television stations.

Management Objective 8.5 Make public presentations on water conservation and the HPWD.

Each year, staff will present a minimum of 15 programs addressing conservation and preservation of usable quality groundwater in the district.

Performance Standard

8.5a Document in the annual report the number of public presentations that were given by staff.

Management Objective 8.6 Maintain public information boards at each county office

Each year, staff will make *The Cross Section*, *Water Management Notes*, rainwater harvesting manuals, technical reports, brochures, and other printed information available to the public at each county office.

Performance Standard

8.6a Document in the annual report the locations and the number of publications, including rainwater harvesting manuals, made available to the public via the information boards at each county office.

Management Objective 8.7 Provide public information displays addressing water conservation and management of the Ogallala Aquifer at least 10 times a year.

Informative exhibits about the hydrology of the Ogallala Aquifer and the conservation/preservation of usable quality groundwater will be displayed at suitable venues within the district no less than ten times a year.

Performance Standard

8.7a Document in the annual report the number and a brief description of the displays placed within the district.

Management Objective 8.8 Annually sponsor a water conservation education program and make classroom presentations to public/private schools within the district.

The district will continue to sponsor the *WaterWise*, or equivalent water conservation education program, in public and/or private schools within the district. Also, upon request by teachers, staff will visit area classrooms to present information about groundwater quality, quantity, and water conservation.

Performance Standard

8.8a Document in the annual report the number, names, locations, and feedback from schools receiving educational materials, and the number of classroom presentations made.

Management Objective 8.9 Participate and support the TWDB Ogallala Aquifer Recharge Study

Surface water collected in the thousands of playa lakes on the Southern High Plains is the primary source of recharge to the Ogallala Aquifer. During the 81st Texas Legislature, funding was provided to the Texas Water Development Board to conduct long term, scientific research on potential mechanisms to enhance recharge to the Ogallala Aquifer. While the nature and scope of the Ogallala Aquifer Recharge Study is still very early in its development, the district clearly recognizes the importance of studies such as this with respect to enhancing the economic sustainability of this precious natural resource. Therefore, it is the objective of the district to have an active role throughout the conduct of all aspects of the Ogallala Aquifer Recharge Study and to have district representatives participate in at least 75 percent of all TWDB scheduled meetings that are held in the district for this study. It is noted however, that at the time of adoption of the amended management plan, funding for this research project has been severely reduced by the 82nd Texas Legislature, and thus the level of effort that will proceed at this time is not established. The district is committed to continuing its participation in this effort at whatever level current funding will allow.

Performance Standards

8.9a Document in the annual report the number of TWDB scheduled meetings held in the district and the number of meetings attended by HPWD representatives along with any progress made over the preceding year on the Ogallala Aquifer Recharge Study.

8.9b Beginning in 2012, publish article on the Ogallala Aquifer Recharge Study in the district newsletter at least once a year (if it is determined by the TWDB that this study will continue despite the reduction in funding that occurred in the 82nd Texas Legislature).

Goal 9: Achieve the desired future conditions of the groundwater resources within its jurisdiction

By September 1, 2010, the board of directors, through participation in the joint planning process in Groundwater Management Areas 1 and 2, adopted desired future conditions for all relevant aquifers in the district. For the Ogallala Aquifer, the board of directors adopted the **50/50 Management Goal** which means the district's desired future condition of the Ogallala Aquifer is that 50 percent of the saturated thickness of the Ogallala Aquifer

(including the Edwards-Trinity (High Plains) Aquifer) will still be in the Ogallala Aquifer 50 years later. The first planning interval for the 50/50 Management Goal as contemplated in this management plan is January 1, 2010, through January 1, 2060.

Due to the confined nature of the Dockum Aquifer, also determined to be relevant in the district, a different approach was taken in adopting desired future conditions. The pumping estimates were extracted from the addendum to GAM Run 09-014 Addendum (Oliver, 2010), which Groundwater Management Area 1 used as the basis for developing a desired future condition of an average decline in water levels of “no more than 30 feet from 2010 to 2060.” Within the district in Groundwater Management Area 1, this desired future condition for the Dockum Aquifer applies to Armstrong, Potter, and Randall counties. For the remainder of the Dockum Aquifer in the district, pumping estimates were extracted from GAM Task 10-025 Model Run Report (Oliver, 2010), which Groundwater Management Area 2 used as the basis for developing the desired future condition for the Dockum Aquifer. In Groundwater Management Area 2, it was determined that the Dockum Aquifer was only relevant for the district and the Llano Estacado Groundwater Conservation District. The adopted desired future condition for Groundwater Management Area 2 for the Dockum Aquifer is an average decline in water level elevations of no more than 40 feet between 2010 and 2060.

In order to achieve the adopted desired future conditions for the district, the board of directors has adopted a strategic approach that includes the adoption of this management plan and also amending and adopting rules necessary to achieve the 50/50 Management Goal for the Ogallala Aquifer (including the Edwards-Trinity (High Plains) Aquifer). Due to the scarcity of data regarding the Dockum Aquifer, the district is in the process of identifying data needs and establishing monitoring protocols necessary to manage the Dockum Aquifer in a manner that will achieve the adopted desired future conditions. In addition, the district has recently adopted permitting rules for wells completed in the Dockum Aquifer, which will assist the district in the design and implementation of monitoring programs in the future.

Tables 2.1, 2.2, 2.3, and 2.4 present estimates of total available groundwater and managed available groundwater, for the Ogallala Aquifer (including the Edwards-Trinity (High Plains) Aquifer) based on the 50/50 Management Goal for the Ogallala Aquifer, estimates of exempt use for the Ogallala Aquifer (including the Edwards-Trinity (High Plains) Aquifer), and estimates of managed available groundwater for the Dockum Aquifer, respectively.

Table 2.1 Estimates of Total Available Groundwater in the district, by county, for the Ogallala Aquifer (including the Edwards-Trinity (High Plains) Aquifer) based on the 50/50 Management Goal, in AFY, from GAM Run 09-026 MAG (Oliver, 2011) and GAM Task 11-010 (Oliver, 2011)						
County	2010	2020	2030	2040	2050	2060
Armstrong	8,301	8,301	8,301	8,301	8,241	8,186

Bailey	62,817	41,562	35,186	30,343	24,300	21,708
Castro	127,128	127,009	126,214	125,522	122,986	117,704
Cochran	48,609	36,472	33,905	30,960	28,348	25,635
Crosby	123,807	123,807	123,807	123,807	123,807	123,807
Deaf Smith	119,453	108,489	97,431	87,732	71,395	57,315
Floyd	155,764	150,160	146,155	139,258	130,671	125,205
Hale	134,145	133,339	131,540	129,536	123,660	115,678
Hockley	93,639	90,053	85,960	82,089	74,440	65,451
Lamb	147,532	137,468	125,630	111,673	95,860	85,354
Lubbock	125,209	120,734	116,038	109,389	101,452	91,763
Lynn	104,253	103,990	103,204	100,850	93,195	84,698
Parmer	68,694	63,065	56,584	52,149	45,620	40,981
Potter	5,150	4,071	2,467	1,626	1,607	1,293
Randall	59,381	57,141	55,995	51,410	47,357	39,455
Swisher	110,925	107,406	101,002	84,818	73,848	64,298
Total	1,494,807	1,413,067	1,349,419	1,269,463	1,166,787	1,068,531

Table 2.2 Estimates of Managed Available Groundwater in the district, by county, for the Ogallala Aquifer (including the Edwards-Trinity (High Plains) Aquifer), in AFY from GAM Run 09-026 MAG (Oliver, 2011) , GAM Run 10-030 MAG (Oliver, 2011), and GAM Task 11-010 (Oliver, 2011).

County	2010	2020	2030	2040	2050	2060
Armstrong	8,185	8,182	8,186	8,190	8,131	8,080
Bailey	61,938	40,644	34,239	29,363	23,295	20,682
Castro	126,323	126,124	125,310	124,607	122,069	116,790
Cochran	48,196	35,995	33,423	30,486	27,885	25,183
Crosby	123,373	123,361	123,353	123,346	123,342	123,339
Deaf Smith	116,826	105,591	94,279	84,346	67,870	53,671
Floyd	155,046	149,427	145,413	138,509	129,920	124,454
Hale	132,671	131,814	129,986	127,977	122,110	114,140
Hockley	92,527	88,877	84,780	80,926	73,312	64,357
Lamb	146,318	136,201	124,315	110,320	94,495	83,980
Lubbock	121,941	117,413	112,708	106,194	98,250	88,714
Lynn	103,807	103,537	102,757	100,409	92,764	84,279
Parmer	67,454	61,778	55,261	50,795	44,240	39,579
Potter	5,049	3,936	2,299	1,421	1,361	1,014
Randall	56,312	53,479	51,750	46,498	41,718	33,215

Swisher	110,073	106,539	100,121	83,925	72,944	63,388
Total	1,476,038	1,392,898	1,328,179	1,247,310	1,143,706	1,044,863

Table 2.3 Estimates of Exempt Use for the Ogallala Aquifer (including the Edwards-Trinity (High Plains) Aquifer), in the district by county, in AFY, based primarily on information presented in the 2011 Panhandle Regional Water Plan and the 2011 Llano Estacado Regional Water Plan.

County	2010	2020	2030	2040	2050	2060
Armstrong	116	120	115	111	110	106
Bailey	879	918	948	980	1,005	1,026
Castro	805	885	904	915	917	915
Cochran	413	477	482	474	463	452
Crosby	434	446	454	461	465	468
Deaf Smith	2,627	2,898	3,152	3,386	3,525	3,645
Floyd	719	733	742	750	751	751
Hale	1,474	1,525	1,554	1,560	1,550	1,538
Hockley	1,112	1,177	1,180	1,163	1,128	1,095
Lamb	1,214	1,267	1,315	1,353	1,365	1,375
Lubbock	3,268	3,321	3,331	3,195	3,202	3,049
Lynn	446	453	447	442	431	419

Parmer	1,240	1,287	1,323	1,354	1,380	1,403
Potter	101	135	168	205	246	279
Randall	3,069	3,662	4,245	4,912	5,639	6,240
Swisher	852	867	881	893	904	910
HPWD Total	18,769	20,169	21,240	22,153	23,081	23,668

Table 2.4 Estimates of Managed Available Groundwater for the Dockum Aquifer, by county, in AFY, from GAM Run 10-019 MAG (Oliver, 2011), GAM Run 10-035 MAG, (Oliver, 2011), and GAM Task 11-010 (Oliver, 2011). Note that in the case of the Dockum Aquifer in the district, all exempt use has been assigned to the Ogallala Aquifer (including the Edwards-Trinity (High Plains) Aquifer),, therefore, in the case of the Dockum Aquifer, the estimate of Managed Available Groundwater is the same as the estimate of Total Available Groundwater.

County	2010	2020	2030	2040	2050	2060
Armstrong	82	82	82	82	82	82
Bailey	1	1	1	1	1	1
Castro	1	1	1	1	1	1
Cochran	0	0	0	0	0	0
Crosby	3,798	3,798	3,798	3,798	3,798	3,798
Deaf Smith	2,605	2,605	2,605	2,605	2,605	2,605
Floyd	1,659	1,659	1,659	1,659	1,659	1,659
Hale	738	738	738	738	738	738
Hockley	571	571	571	571	571	571

Lamb	0	0	0	0	0	0
Lubbock	15	15	15	15	15	15
Lynn	5	5	5	5	5	5
Parmer	2	2	2	2	2	2
Potter	226	226	226	226	226	226
Randall	988	988	988	988	988	988
Swisher	697	697	697	697	697	697
Total	11,388	11,388	11,388	11,388	11,388	11,388

Management Objective 9.1

In order to achieve the district’s 50/50 Management Goal for the Ogallala Aquifer, (including the Edwards-Trinity (High Plains) Aquifer), the district has adopted a two-pronged approach. First, all pre-district non-exempt wells and all permitted non-exempt wells (including all non-exempt oil and gas industry water supply wells) will, by rule, be subject to an allowable production rate. This allowable production rate is designed to be implemented during the effective dates of this management plan. Beginning in 2012–2013, the allowable production rate for non-exempt pre-district and permitted wells will be 1.75 feet (21 inches) per contiguous controlled acre. For 2014–2015, the allowable production rate will be 1.5 feet (18 inches) per contiguous controlled acre. Beginning January 1, 2016, the allowable production rate for all non-exempt pre-district and permitted wells will be 1.25 feet (15 inches) per contiguous acre.

In order to monitor and enforce the adopted allowable production rate, all non-exempt pre-district and permitted wells (including all non-exempt and exempt oil and gas water wells) will be required to report water use on an annual basis. From January 1, 2012 – December 31, 2016, water use will be self reported by the producers utilizing either flow meters on wells, flow meters on well systems, or using an alternative method of measuring groundwater production that has been approved by the general manger. After January 1, 2016, all water use from non-exempt pre-district and permitted wells will be measured using flow meters on wells or flow meters on well systems.

Performance Standards

9.1a Establish and operate an online reporting system for the purpose of allowing efficient self-reporting of water use by water users throughout the district. The online reporting system shall be operational by January 1, 2013.

9.1b Implement communications program with water users in the district regarding reporting requirements in the district rules by January 1, 2012.

9.1c Conduct outreach programs, public meetings, and direct communications with identified water users regarding reporting requirements so that by March 1, 2013, and each subsequent year, at least 95 percent of identified water users have reported water use by the reporting deadline stated in the district rules.

9.1d Annually, present results of most recent year's groundwater use in the district newsletter.

Management Objective 9.2

While the primary focus will be directed on achieving the desired future conditions of the Ogallala Aquifer (including the Edwards-Trinity (High Plains) Aquifer), the district also recognizes the need for developing a strategy that will ensure progress towards achieving the adopted desired future conditions for the Dockum Aquifer. The following performance standards are designed to ensure that adequate hydrologic, hydrochemical, and water use information is collected over the next five years so that rules may be developed specifically for management of the Dockum Aquifer. The technical work plan for this effort will be presented to the district within 12 months of the adoption of this management plan.

Performance Standards

9.2a Present to the board of directors a comprehensive technical work plan detailing approach to the collection of necessary hydrologic, hydrochemical, and water use information for the Dockum Aquifer within 12 months of the adoption of this management plan.

9.2b By December 1, 2012, work to identify, secure access, and begin water level measurements in at least 25 Dockum Aquifer wells in order to monitor water levels annually.

9.2c By December 1, 2013, staff will review all collected technical information with the board of directors and make recommendations as to the need to adopt allowable production rates, water use reporting requirements, and any other procedures necessary to manage the Dockum Aquifer.

3.0 Historical Use and Future Demand for Water

One of the primary activities in the development of a water resources management plan is the analysis and development of projections of demands for water supply in the future (for a defined period of time). In Texas, these demand projections are developed on a decadal basis. In order to develop projections for how much water

supply we will need in the future, three questions must be answered: (1) how much water has been used in the recent past, (2) how many people will there be in the future (population projections), and (3) how much water will be required to meet the needs of the projected population and other water use sectors in the future. This analysis to develop water demand projections is primarily conducted in Texas as part of the regional water supply planning process (created by the Texas Legislature through the passage of Senate Bill 1 in 1997). Water demand projections are developed for the following water user categories; municipal, rural (county-other), irrigation, livestock, manufacturing, mining, and steam-electric power generation.

Estimates of historical water use, especially estimates from recent times, are very important during the process of developing water demand projections. This is because changes in the volumes and types of water use, especially on a regional basis, will typically occur relatively slowly. Therefore, if one has a good understanding of recent water use statistics, then the projections of future water demands will be much more reliable. Over the past five years, district-wide estimates of groundwater use for the 16 counties located in whole or in part within the district range from a high of 3,433,403 acre-feet in 2008 to a low of 1,973,844 acre-feet in 2005 (Table 3.1). A summary of groundwater use estimates by county for the 16 counties located in whole or in part within the district for the period from 2004 – 2008 documents that Armstrong and Potter counties have recorded the lowest annual water use while Castro, Hale, Lamb, and Parmer have the highest annual water use (Table 3.2).

Table 3.1 Historical groundwater use in district, in acre-feet (TWDB Water Use Survey)				
2004	2005	2006	2007	2008
3,001,115	1,973,844	2,096,340	3,419,284	3,433,403

Table 3.2 Historical groundwater use in district by county, in acre feet (TWDB Water Use Survey)					
County	2004	2005	2006	2007	2008
Armstrong	391	414	372	312	374
Bailey	154,592	68,141	100,799	165,226	167,994
Castro	384,285	291,497	327,086	491,853	499,956
Cochran	139,525	71,704	88,183	156,743	119,974

Crosby	103,304	55,316	66,136	115,147	126,329
Deaf Smith	142,043	90,661	83,547	153,364	174,855
Floyd	161,110	110,049	119,862	156,288	178,270
Hale	364,683	250,920	287,567	501,172	539,928
Hockley	180,361	86,365	105,048	189,159	124,433
Lamb	399,759	265,761	275,304	494,453	430,066
Lubbock	214,612	123,498	130,824	226,167	271,372
Lynn	88,525	60,631	61,464	106,509	112,559
Parmer	473,828	300,313	278,573	415,180	418,126
Potter	1,169	1,294	1,742	1,582	2,746
Randall	20,979	27,153	14,983	14,449	15,260
Swisher	171,949	170,127	154,850	231,680	251,161
Total	3,001,115	1,973,844	2,096,340	3,419,284	3,433,403

Table 3.3 documents projected water demands by county for all counties in the district. For this management plan, projected water demands for counties where only a portion of the county is within the district have been determined on the basis of the proportional area of the county within the district compared to the area of the entire county. Total water demand for the district ranges from a high of 3,297,260 AFY in 2010 to 2,890,044 AFY in 2060, a decrease of 14 percent.

Table 3.3 Projected total water demand by county, in acre feet (TWDB 2011 Regional Water Planning Data)

County	2010	2020	2030	2040	2050	2060
Armstrong	271	256	249	238	216	194
Bailey	183,203	179,571	175,721	171,998	168,361	164,837
Castro	478,501	462,115	445,727	430,019	414,933	400,561
Cochran	118,459	113,812	109,413	105,101	100,941	96,980
Crosby	82,003	78,764	75,661	72,681	69,802	67,036
Deaf Smith	225,843	220,237	214,510	208,990	203,618	198,492
Floyd	214,761	206,537	198,500	190,781	183,348	176,208
Hale	368,467	357,422	346,557	335,934	325,560	315,630
Hockley	167,207	160,129	153,552	147,020	140,926	135,479
Lamb	388,549	374,849	364,781	355,855	348,137	341,917
Lubbock	294,398	283,258	273,108	262,984	254,145	246,778
Lynn	115,095	108,962	103,132	97,611	92,372	87,405
Parmer	423,847	420,881	417,391	413,955	410,547	407,290
Potter	26,395	28,431	30,269	32,352	34,593	36,604
Randall	34,264	35,340	37,199	39,155	40,847	42,102
Swisher	175,997	169,314	174,762	174,022	173,280	172,531
Total	3,297,260	3,199,878	3,120,532	3,038,696	2,961,626	2,890,044

4.0 Groundwater Resources

The Ogallala Aquifer is the principal source of groundwater in the district. Groundwater flow, water quality, and well yields are mostly controlled by the geologic properties of the Ogallala Formation, which is composed of rock fragments eroded from the Rocky Mountains millions of years ago. This erosional debris occurs in a wide range of particle sizes from coarse-grained gravel and sand to fine-grained silt and clay. Most of the Ogallala Formation is not hard rock but instead is loosely arranged, uncemented sediments. Hard rock layers of caliche (calcium carbonate) are present in the upper part of the Ogallala Formation, forming the “caprock” of the Southern High Plains. The composition of the Ogallala Formation varies greatly both laterally and vertically, but in general the lower part of the formation is composed of sand and gravel and the upper part is clay and sand (Figure 2).

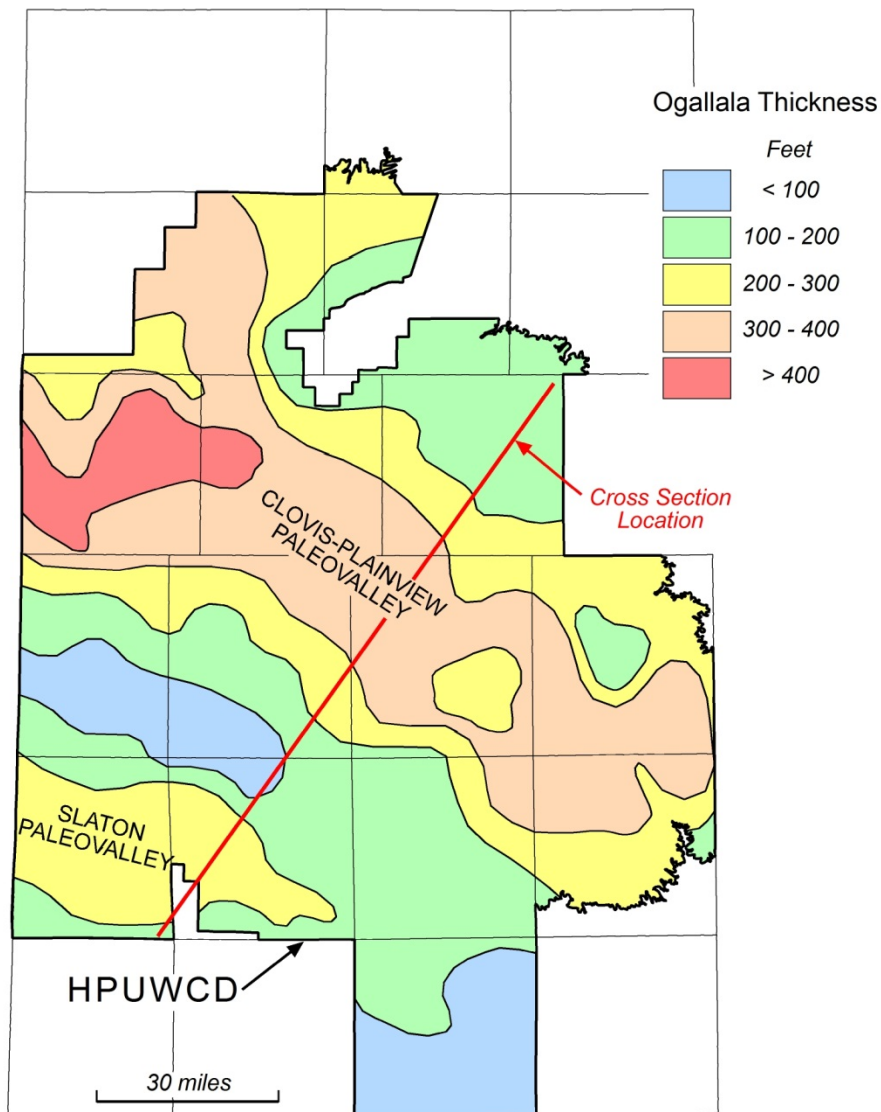
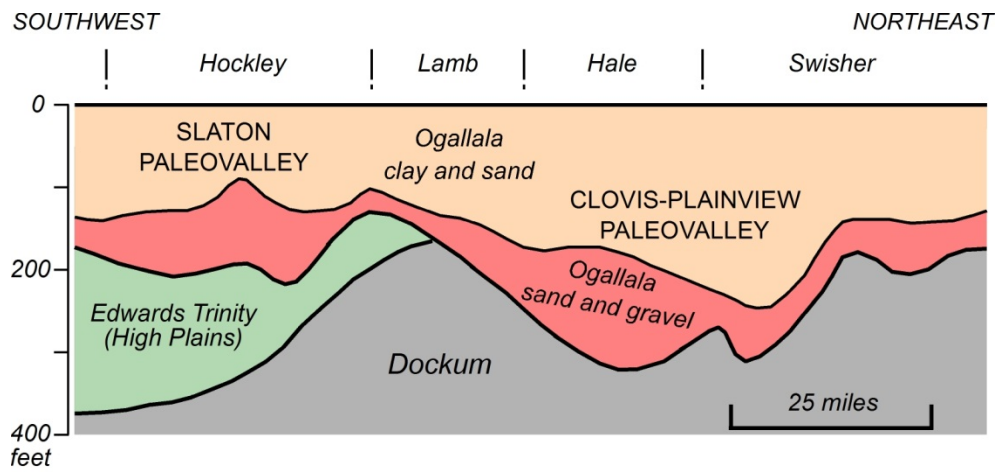


Figure 2. Cross section and map illustrating Ogallala Formation sediment thickness

When the Ogallala Formation was being deposited (or forming), large rivers flowed eastward from the Rocky Mountains and carved deep valleys across what would later become the High Plains. The valleys, now called paleovalleys, eventually filled in with gravel and sand washed down by the rivers, but the areas between the valleys were covered mainly by fine-grained wind-blown sediment. After the valleys were filled, fine-grained sediment continued to cover and build up the land surface, forming the flat-lying High Plains of today. Two Ogallala paleovalleys underlie the district: the larger Clovis-Plainview paleovalley in the northeast and the smaller Slaton paleovalley in the southwest (Figure 2).

The Southern High Plains, underlain by the Ogallala Formation, originally extended westward to the Rocky Mountains, and major Texas rivers, such as the Colorado and the Brazos, had their headwaters in the mountains. Erosion of the Pecos River valley in eastern New Mexico, however, separated the Southern High Plains from the Rocky Mountains and redirected mountain drainage southward. Now the Southern High Plains is an erosional remnant without rivers, surrounded by the Caprock Escarpment.

The portion of the Ogallala Aquifer that is saturated with groundwater occurs mainly in the lower sand and gravel layers, and so groundwater saturation is thickest in the paleovalleys (Figure 2). The upper clay and sand layers are generally above the water table and therefore are not saturated. Other important aquifer properties coincide with thickness and composition in the Ogallala Formation. The coarse-grained sand and gravel layers have the highest flow rates and flow volumes, the highest specific yields (amount of water contained in a given volume of aquifer), and generally the best water quality. Wells completed in the paleovalleys are capable of producing larger volumes of water than are those located in areas between paleovalleys. In the district, irrigated agriculture is largely concentrated over the Clovis-Plainview paleovalley.

Recharge to the Ogallala Aquifer occurs primarily under playa lakes, and rainfall is the only significant source of recharge. Lacking an integrated drainage network of streams and rivers, most surface runoff is captured by the thousands of playa lakes that dot the Southern High Plains. Rainwater ponded in playa lakes percolates downward through the unsaturated zone to the water table. Irrigation return flow, although not considered “new” water, also drains into the playa lakes and then seeps back into the aquifer. Playa-focused recharge is a two-edged sword: replenishment of the aquifer is enhanced, but the potential for aquifer contamination through playa lakes is also increased.

Discharge from the Ogallala Aquifer occurs mainly through pumping wells. Other forms of discharge, such as springs and downward flow into underlying formations, are minor. Water levels have declined in areas where pumpage exceeds recharge but have remained relatively constant where recharge and pumpage are roughly equal. For example, water levels have remained constant or even risen in the south part of the district where pumpage is less than it is in the north, the water table is shallower, and sediments at the surface tend to be coarser, thus allowing for broader and faster rates of recharge..

Within the district the Ogallala Aquifer is underlain by two minor aquifers: the Edwards-Trinity (High Plains) Aquifer in the south and the Dockum Aquifer in the north (Figure 2). The Edwards-Trinity (High Plains) Aquifer

includes several geologic formations composed of shale, limestone, and sandstone. The Ogallala and Edwards-Trinity (High Plains) aquifers are in hydrologic communication throughout the south part of the district, but groundwater exchange between the two aquifers is greatest where permeable limestones and sandstones in the Edwards-Trinity (High Plains) Aquifer are directly in contact with the Ogallala Aquifer. Upward groundwater flow from the Edwards-Trinity (High Plains) Aquifer to the Ogallala Aquifer is greatest in parts of Bailey, Cochran, Hale, Hockley, and Lubbock counties. Downward leakage from the Ogallala Aquifer supplies most of the recharge to the Edwards-Trinity (High Plains) Aquifer. Water quality and water levels are similar in the two aquifers, and wells are commonly completed across both aquifers. Due to this hydrologic connection between the Ogallala Aquifer and the Edwards-Trinity (High Plains) Aquifer, recent groundwater availability modeling efforts have chosen to integrate the two aquifers together so as to best simulate interactions between the two aquifers.

The Dockum Aquifer underlies both the Ogallala and the Edwards-Trinity (High Plains) aquifers (Figure 2). The Dockum Formation is approximately 2,000 feet thick and is composed mainly of fine-grained red beds that yield only small amounts of groundwater. Permeable layers of sandstone within the red beds are the main aquifer units, and these sandstone layers are most abundant in the lower part of the Dockum. In the district groundwater from the Dockum Aquifer is generally of poor quality, typically ranging from brackish water in the north to saline water in the south. However, there are isolated pockets of fresh to slightly brackish water, primarily in Armstrong, Randall, Swisher, and Deaf Smith counties. The Dockum Aquifer is recharged by downward flow from the Ogallala and Edwards-Trinity (High Plains) aquifers and from direct infiltration at the surface from precipitation where the Dockum outcrops at land surface. Discharge from the Dockum occurs from pumping wells, springs, and flow into other formations. Upward flow from the Dockum Aquifer to the Ogallala Aquifer in the district is likely in a few areas in Deaf Smith and Parmer counties and locally along the Caprock Escarpment.

Groundwater modeling has been an important tool in understanding groundwater resources in Texas and especially in the Ogallala Aquifer for over 40 years. With the passage of Senate Bill 2 in 2001, the use of groundwater availability models (GAMs) by groundwater conservation districts in the development of management plans and by regional water planning groups in the development of regional water plans has been elevated to an unprecedented level. The GAM Program has resulted in significant advancement of our understanding of groundwater resources throughout Texas. GAMs are numerical computer models that produce three-dimensional simulations of groundwater systems that track the “water budget” (inflow, storage, outflow) and spatially distribute aquifer properties (flow rates, volumes, and directions). Once the GAM is calibrated using historical water use and aquifer property data (such as water levels through time), it can then be used to test and evaluate future water use scenarios.

The district is divided into two GAMs for the Ogallala Aquifer that were developed and maintained under the direction of the TWDB. Most of the district is located in the Southern Ogallala GAM, but a small portion of the northern area of the district is located in the Northern Ogallala GAM. GAMs for the two minor aquifers in the district, the Edwards-Trinity (High Plains), (which has now been integrated into the Southern Ogallala GAM), and the Dockum aquifers have recently been completed and are now being utilized in the planning processes. In order

to better understand groundwater resources within a groundwater conservation district, statute now requires that estimates of recharge, discharge, and various other aspects of groundwater flow, such as cross-formational flow and flow into and out of the district, be included in the management plan if a groundwater availability model is available for use. The TWDB, in its role of providing technical assistance to the district, conducted groundwater availability modeling runs for the Ogallala, Edwards-Trinity (High Plains) and Dockum aquifers and provided all required estimates for inclusion in the management plan (Tables 4.1–4.3).

The Ogallala Aquifer has been the focus of groundwater scientists and engineers for well over a century, and many investigative reports on Ogallala geology, hydrology, and groundwater resources are available. For further information on the groundwater resources of the Southern High Plains, the following reports are recommended. Johnson (1901) provides a fascinating description of natural resources on the High Plains at the turn of the 20th century. Some of the more notable scientific works describing Ogallala geology are contained in Seni (1980), and Nativ (1988). Hydrogeology and groundwater resources are also covered in White and others (1946), Knowles and others (1984), Gutentag and others (1984), Bradley and Kalaswad (2003), and in the GAM reports (Dutton and others, 2001, 2004; Blandford and others, 2003, 2008; Ewing and others, 2008). Recharge to the Ogallala Aquifer has been extensively studied, and careful quantitative research was needed to document playa-focused recharge (Wood and Osterkamp, 1987; Wood and Sanford, 1995; Mullican and others, 1997; Scanlon and others, 1997 a.b., and McMahon and others, 2006).

Table 4.1 Summarized information for the Ogallala Aquifer required for the High Plains Underground Water Conservation District No. 1's Groundwater Management Plan. All values are reported in acre-feet per year and rounded to the nearest 1 acre-foot. (GAM Run 11-009, Aschenbach, 2011).		
Management Plan Requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Ogallala Aquifer	678,022
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers	Ogallala Aquifer	10,524
Estimated annual volume of flow into the district within each aquifer in the district	Ogallala Aquifer	15,378
Estimated annual volume of flow out of the district within each aquifer in the district	Ogallala Aquifer	20,957
Estimated net annual volume of flow between each aquifer in the district	From the Ogallala Aquifer into the Edwards-Trinity (High Plains) Aquifer and adjacent underlying areas	7,545

Table 4.2 Summarized information for the Edwards-Trinity (High Plains) Aquifer required for the High Plains Underground Water Conservation District No. 1's Groundwater Management Plan. All values are reported in acre-feet per year and rounded to the nearest 1 acre-foot. (GAM Run 11-009, Aschenbach, 2011).

Management Plan Requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Edwards-Trinity (High Plains) Aquifer	0
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers	Edwards-Trinity (High Plains) Aquifer	896
Estimated annual volume of flow into the district within each aquifer in the district	Edwards-Trinity (High Plains) Aquifer	14,574
Estimated annual volume of flow out of the district within each aquifer in the district	Edwards-Trinity (High Plains) Aquifer	9,962
Estimated net annual volume of flow between each aquifer in the district	From the Ogallala Aquifer and overlying units and into the Edwards-Trinity (High Plains) Aquifer	2,577

Table 4.3 Summarized information for the Dockum Aquifer required for the High Plains Underground Water Conservation District No. 1's Groundwater Management Plan. All values are reported in acre-feet per year and rounded to the nearest 1 acre-foot. (GAM Run 11-009, Aschenbach, 2011).

Management Plan Requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Dockum Aquifer	425
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers	Dockum Aquifer	649
Estimated annual volume of flow into the district within each aquifer in the district	Dockum Aquifer	6,637

Estimated annual volume of flow out of the district within each aquifer in the district	Dockum Aquifer	10,142
Estimated net annual volume of flow between each aquifer in the district	From the Edwards-Trinity (High Plains) Aquifer and overlying younger units and into the Dockum Aquifer	5,014

5.0 Surface Water Resources

Surface water resources have supplied a small portion of the total water demands within the district when viewed strictly from a volumetric perspective. However, since the early 1960s, surface water supplies have been a very significant and important component of the High Plains of Texas water supply portfolio utilized to meet municipal and industrial water demands in several communities and cities within the district. In particular, water supplies from Lake Meredith provided by the Canadian River Municipal Water Authority have been vital to meeting municipal water demands over the past 50-year period. However, declining water levels in Lake Meredith have required the Canadian River Municipal Water Authority to diversify its water portfolio by adding significant groundwater supplies from the Ogallala Aquifer in Roberts County, located to the north of the district. In addition, local surface water supplies in the form of surface runoff that collects in the playas throughout the district also serves as an important source of water locally, primarily to meet livestock needs and to supplement irrigation needs.

Locally, surface water supplies from stock tanks and other structures can also be an important source of water supply, especially to meet livestock needs. According to data from the TWDB, projected surface water supplies available to the district range from 26,800 acre-feet per year in 2010 to approximately 37,819 acre-feet per year in 2040 and then dropping back down to 36,764 in 2060 (Table 5.1).

County	2010	2020	2030	2040	2050	2060
Armstrong	6	6	6	6	6	6
Bailey	541	564	587	613	639	667
Castro	323	376	382	386	393	401

Cochran	135	187	190	193	195	198
Crosby	932	936	942	948	635	260
Deaf Smith	1,885	1,966	2,053	2,143	2,240	2,340
Floyd	432	443	456	468	482	496
Hale	1,759	2,140	2,149	2,158	2,000	2,011
Hockley	1,312	1,642	1,648	1,654	1,480	1,488
Lamb	423	440	457	475	496	516
Lubbock	11,083	14,827	14,835	14,844	14,009	14,022
Lynn	417	492	497	501	463	468
Parmer	837	873	910	950	992	1036
Potter	2,831	5,877	5,956	6,108	6,274	6,320
Randall	3,282	5,621	5,642	5,724	5,832	5,852
Swisher	602	616	632	648	664	683
Total	26,800	37,006	37,342	37,819	36,800	36,764

6.0 Water Supply Plans

The Texas model for water supply planning is divided into two separate processes; regional water planning and state water planning. Since 1997 and the inception of the regional water planning process, it has been the responsibility of the individual regional water planning groups to identify and quantify needs for future water supplies and then to recommend water management strategies and projects to meet those water supply needs. A need for additional water supply occurs when the supplies available to an individual water user group for a specified period of time during the planning horizon are less than the projected demand for water supplies for the same time period under drought conditions. For example, a city may have water supplies from an existing well field that are projected to be equal to 1,000 acre-feet per year in 2020. If the water demands for that city are projected to be 1,100 acre-feet per year in 2020, then the city would have a need for an extra 100 acre-feet of water in 2020. During the regional water planning process, needs for additional water supply are quantified, based on an analysis of both projections of water supply availability versus projections of demand for water supply throughout the 50-year planning horizon (Table 6.1). A complete set of regional water planning data tables developed for the district may be found in Appendix C.

One of the more unique characteristics of the Texas model for water supply planning is the final step in the overall process, the recommendation by the planning groups of water management strategies and projects to meet future water supply needs. These recommendations carry very significant weight in law, in that if a water project sponsor will require a surface water permit for the project or financing from the state, then the project must be consistent with the regional and state water plans. There are several different water management strategies and projects recommended in the 2011 Panhandle Regional Water Plan and the 2011 Llano Estacado Regional Water Plan.

A summary of the volume of water resulting if all water management strategies included in the management plan is presented below (Table 6.2). It should be noted that even if all of the projects identified in the 2011 Panhandle Regional Water Plan and the 2011 Llano Estacado Regional Water Plan and the 2011 Panhandle Regional Water Plan were to be successfully implemented as planned, there would still be some identified needs for which there is no technically or economically feasible water management strategy that could be implemented, thus there are some significant unmet needs, primarily in irrigated agriculture.

Table 6.1 Water supply needs, in acre-feet (TWDB 2011 Regional Water Planning Data)						
County	2010	2020	2030	2040	2050	2060
Armstrong	0	0	0	0	0	0
Bailey	81,561	85,721	84,647	84,229	83,647	83,220

Castro	141,326	185,503	256,922	344,085	345,755	340,561
Cochran	39,909	39,156	37,571	36,052	77,166	73,140
Crosby	12,752	12,411	12,267	11,959	11,268	11,322
Deaf Smith	100,591	114,869	131,986	149,742	145,394	142,771
Floyd	84,534	99,124	101,765	101,758	98,190	93,450
Hale	22,218	55,434	154,880	221,438	238,289	235,579
Hockley	60,315	71,982	78,852	83,529	79,731	77,692
Lamb	114,832	158,445	202,028	240,455	251,003	253,931
Lubbock	70,586	102,421	114,446	127,279	123,743	119,870
Lynn	550	576	529	471	466	457
Parmer	161,382	331,231	362,233	359,091	355,713	352,329
Potter	0	6	2,342	5,181	8,041	10,465
Randall	0	424	3,314	6,475	9,618	12,244
Swisher	23,064	60,841	96,292	105,801	108,019	107,950
Total	913,620	1,318,144	1,640,073	1,877,545	1,936,043	1,914,981

Table 6.2 Results of implementing water management strategies, in acre-feet (TWDB 2011 Regional Water Planning Data)

County	2010	2020	2030	2040	2050	2060
Armstrong	0	2,955	2,251	3,182	3,263	3,343
Bailey	18,715	16,853	15,095	13,636	12,271	11,048
Castro	42,343	38,597	22,939	31,623	29,075	26,174
Cochran	20,256	19,104	11,462	15,468	13,920	12,530
Crosby	26,780	24,542	20,727	20,216	18,275	16,527
Deaf Smith	42,548	38,594	34,219	31,407	28,314	25,544
Floyd	44,665	40,198	22,792	32,930	29,637	26,673
Hale	42,769	38,461	33,986	31,268	28,527	25,689
Hockley	28,660	26,264	20,905	21,528	19,377	17,638
Lamb	28,644	25,869	23,050	21,327	19,198	17,290
Lubbock	75,456	99,059	39,616	115,723	112,417	109,261
Lynn	11,660	10,687	9,162	8,657	7,791	7,012
Parmer	19,199	17,306	11,770	14,797	13,467	12,123
Potter	0	8,546	2,500	11,871	14,591	17,590
Randall	700	23,871	18,673	40,371	39,684	50,048
Swisher	53,313	48,044	42,539	38,915	35,024	31,521
Total	455,708	478,950	331,686	452,919	424,831	410,011

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Appendix A Statutorily Required Elements Checklist

As required by Texas Water Code Chapter 36.1071, the High Plains Underground Water Conservation District No. 1 (the district) submits this updated groundwater management plan (the management plan) to the Executive Administrator of the Texas Water Development Board for review and approval. The following table contains a checklist and executive summary data which is included to facilitate the administrative review of the management plan.

Requirement	Rule	Comments on Information Submitted	Location
Paper Copy of Plan	31 TAC §356.6 (a)(1)	NA	Enclosed herein
Electronic Copy of Plan	31 TAC §356.6 (a)(1)	NA	Appendix D
1. Estimate the <u>managed available groundwater</u> 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)	Full text included in plan.	Section 2 Goal 9
2. Estimate the amount of <u>groundwater being used</u> within the district on an annual basis for at least the most recent five years.	31 TAC §356.5 (a)(5)(B) 31 TAC §356.2(2) TWC §36.1071(e)(3)(B)	Over the last five years, according to the TWDB, groundwater use has ranged from a low of 1,973,844 acre-feet in 2005 to a high of 3,433,403 acre-feet in 2008.	Table 3.1 and Table 3.2
3. Estimate the annual <u>amount of recharge, from precipitation</u> , to the groundwater resources within the district.	31 TAC §356.5 (a)(5)(C) TWC §36.1071(e)(3)(C)	The estimated annual amount of recharge from precipitation to the aquifers in the district is: Ogallala Aquifer – 678,022 AFY Edwards-Trinity (High Plains) Aquifer – 0 AFY Dockum Aquifer – 425 AFY	Table 4.1, 4.2, 4.3

<p>4. For each aquifer, estimate the annual volume of <u>water that discharges from the aquifer</u> to springs and surface water bodies.</p>	<p>31 TAC §356.5 (a)(5)(D) TWC §36.1071(e)(3)(D)</p>	<p>The estimated annual volume of water that discharges from the aquifers to springs and any surface water bodies is :</p> <p>Ogallala Aquifer – 10,524 AFY</p> <p>Edwards-Trinity (High Plains) Aquifer – 896 AFY</p> <p>Dockum Aquifer – 649 AFY</p>	<p>Table 4.1, 4.2, 4.3</p>
<p>5. For each aquifer, estimate the annual volume of <u>flow into, out of, and between aquifers</u> in the district.</p>	<p>31 TAC §356.5 (a)(5)(E) TWC §36.1071(e)(3)(E)</p>	<p>The estimated annual volume of flow into :</p> <p>Ogallala Aquifer – 15,378 AFY</p> <p>Edwards-Trinity (High Plains) Aquifer – 14,574 AFY</p> <p>Dockum Aquifer – 6,637 AFY</p> <p>Out of:</p> <p>Ogallala Aquifer – 20,957 AFY</p> <p>Edwards-Trinity (High Plains) Aquifer – 9,962 AFY</p> <p>Dockum Aquifer – 10,142 AFY</p> <p>Between the aquifers:</p> <p>Ogallala Aquifer – 7,545 AFY</p> <p>Edwards-Trinity (High Plains) Aquifer – 2,577 AFY</p> <p>Dockum Aquifer – 5,014 AFY</p>	<p>Tables 4.1, 4.2, 4.3</p>

Requirement	Rule	Comments on Information Submitted	Location
6. Estimate the <u>projected surface water supply</u> within the district according to the most recently adopted state water plan.	31 TAC §356.5 (a)(5)(F) TWC §36.1071(e)(3)(F)	The projected surface water supply ranges from a low of 26,800 in 2010 to a high of 37,819 in 2040.	Appendix B, Table B-1
7. Estimate the <u>projected total demand for water</u> within the district according to the most recently adopted state water plan.	31 TAC §356.5 (a)(5)(G) TWC §36.1071(e)(3)(G)	The projected water demand decreases from 3,296,199 AFY in 2010 to 2,889,247 in 2060.	Appendix B Table B-2
8. Consider the <u>water supply needs</u> that are included in the state water plan.	31 TAC §356.5 (a)(7) TWC §36.1071(e)(4)	The projected water supply needs increases from 994,697 in 2010 to 2,055,758 in 2050.	Appendix B Table B-3
9. Consider the <u>water management strategies</u> that are included in the state water plan.	31 TAC §356.5 (a)(7); TWC §36.1071(e)(4)	If fully implemented, the water management strategies recommended for use in the district could result in additional supplies ranging from 588,060 AFY in 2020 to 391,354 AFY in 2030.	Appendix B Table B-4
10. Develop actions, procedures, performance, and avoidance necessary to effectuate the plan, including specifications and proposed rules.	31 TAC §356.5 (a)(4); §356.6(a)(3); TWC §36.1071(e)(2)		Section 2.0

11. Include a certified copy of the district's resolution adopting the plan.	31 TAC §356.6 (a)(2)	The district's board of directors adopted the attached plan on July 19, 2011.	Appendix F
12. Provide evidence that the plan was adopted after notice and hearing.	31 TAC §356.6 (a)(5); TWC §36.1071(a)	Notice of management plan hearing was posted with the Secretary of State, at the Lubbock County Courthouse, the district's principal office, and each county secretary's office on July 13, 2011. A hearing was held on July 19, 2011 at the district's principal office in Lubbock, Texas.	Appendix G
Requirement	Rule	Comments on Information Submitted	Location
13. Provide evidence that the district coordinated the development of the plan with all surface water management entities.	31 TAC §356.6 (a)(4); TWC §36.1071(a)	A copy of the district's plan was sent to all surface water management entities.	Appendix H
14. Provide any site-specific information used in developing the plan	31 TAC §356.5 (b); TWC §36.1071(h)	All hydrologic and planning data included in this plan was provided by the TWDB.	
Management goals required to be addressed:			
Provide the most efficient use of groundwater	31 TAC §356.5(a)(1)(A); TWC §36.1071(a)(1)	Full text included in plan.	Section 2.0 Goal 2

Control and prevent waste of groundwater	31 TAC §356.5(a)(1)(B); TWC §36.1071(a)(2)	Full text included in plan.	Section 2.0 Goal 3
Control and prevent subsidence	31 TAC §356.5(a)(1)(C); TWC §36.1071(a)(3)	NA - Full text included in plan.	Section 2.0 Goal 4
Address conjunctive surface water management issues	31 TAC §356.5(a)(1)(D); TWC §36.1071(a)(4)	Full text included in plan.	Section 2.0 Goal 5
Address natural resource issues that impact or are impacted by the use and availability of groundwater	31 TAC §356.5(a)(1)(E); TWC §36.1071(a)(5)	Full text included in plan.	Section 2.0 Goal 6
Address drought conditions	31 TAC §356.5(a)(1)(F); TWC §36.1071(a)(6)	Full text included in plan.	Section 2.0 Goal 7
Address conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, and brush control	31 TAC §356.5(a)(1)(G); TWC §36.1071(a)(7)	Full text included in plan.	Section 2.0 Goal 8
Address in a quantitative manner the desired future conditions of the groundwater resources in the district	31 TAC §356.5(a)(1)(H); TWC §36.1071(a)(8)	Full text included in plan.	Section 2.0 Goal 9
Identify the performance standards and management objectives for effecting the plan	31 TAC §356.5(a)(2)&(3); TWC §36.1071(e)(1)	Full text included in plan.	Section 2.0

Appendix B 2007 State Water Plan Data

In order to meet statutory requirements of (§36.1071(e)(3)(F), §36.1071(e)(3)(G), §36.1071(e)(4), and §36.1071(e)(4), the district is including the following tables from the 2007 Texas Water Plan. All of this information, however, has been updated to reflect the 2011 Llano Estacado Regional Water Plan and the 2011 Panhandle Regional Water Plan and is presented in the main body of the management plan.

Table B-1 Projected Surface Water Supplies, acre feet (TWDB, 2007)						
2010	2020	2030	2040	2050	2060	
26,800	37,006	37,342	37,819	36,800	36,764	

Table B-2 Projected total water demand by county, acre feet (TWDB, 2007)						
County	2010	2020	2030	2040	2050	2060
Armstrong	514	504	480	432	384	361
Bailey	182,974	179,809	175,779	171,856	167,998	164,231
Castro	478,154	462,276	445,694	429,773	414,450	399,817
Cochran	118,459	113,812	109,413	105,101	100,941	96,980
Crosby	82,003	78,764	75,661	72,681	69,802	67,036
Deaf Smith	224,277	219,156	213,317	207,673	202,164	196,887
Floyd	214,761	206,537	198,500	190,781	183,348	176,208
Hale	367,443	356,656	345,690	334,956	324,460	314,394
Hockley	166,151	159,073	152,496	145,964	139,870	134,423

Lamb	388,810	375,942	365,728	356,641	348,744	342,327
Lubbock	294,312	283,146	272,984	262,847	253,994	246,611
Lynn	115,095	108,962	103,132	97,611	92,372	87,405
Parmer	423,148	420,744	417,040	413,368	409,700	406,154
Potter	26,488	28,545	30,371	32,425	34,654	36,677
Randall	37,633	39,534	41,229	43,217	45,426	47,205
Swisher	175,977	169,314	174,762	174,022	173,280	172,531
Total	3,296,199	3,202,774	3,122,276	3,039,348	2,961,587	2,889,247

Table B-3 Water supply needs, acre-feet (TWDB, 2007)						
County	2010	2020	2030	2040	2050	2060
Armstrong	0	0	0	0	0	0
Bailey	85,285	92,076	92,835	94,094	94,354	93,597
Castro	146,143	192,522	266,820	357,106	358,866	353,154
Cochran	39,909	39,156	37,571	36,052	77,166	73,140
Crosby	10,888	10,431	10,226	9,804	8,767	8,722
Deaf Smith	168,813	193,978	222,967	253,025	245,379	240,650
Floyd	90,731	106,391	109,207	109,200	105,372	100,285

Hale	20,936	55,962	140,389	207,909	225,835	224,411
Hockley	62,664	75,175	82,557	87,500	83,462	81,286
Lamb	114,256	159,003	202,751	240,887	251,507	254,286
Lubbock	70,563	91,869	104,945	119,462	114,803	112,370
Lynn	550	576	528	471	465	457
Parmer	160,683	331,501	363,206	359,358	355,514	351,794
Potter	0	103	4,309	9,047	14,422	18,220
Randall	0	5	3,674	7,628	11,708	14,634
Swisher	23276	60966	96,417	105,926	108,138	108,065
Total	994,697	1,409,714	1,738,402	1,997,469	2,055,758	2,035,071

Table B-4 Cumulative volume of water projected to result from implementation of water management strategies recommended in the 2006 Llano Estacado Regional Water Plan, 2006 Panhandle Regional Water Plan, and 2007 State Water Plan

County	2010	2020	2030	2040	2050	2060
Armstrong	911	1,150	1,389	1,628	1,867	2,030
Bailey	23,374	21,046	18,936	17,033	15,328	13,799
Castro	57,317	52,510	31,066	42,894	39,412	35,477
Cochran	16,334	15,575	9,106	12,609	11,347	10,214
Crosby	36,966	33,349	28,102	27,350	24,695	22,305

Deaf Smith	57,873	52,386	46,633	42,579	38,368	34,593
Floyd	68,471	61,624	30,451	50,285	45,256	40,731
Hale	56,377	51,255	43,988	42,366	38,585	34,771
Hockley	30,254	27,844	22,213	22,893	20,601	18,734
Lamb	17,411	16,387	13,222	13,828	12,449	11,215
Lubbock	84,888	131,395	42,942	121,164	121,483	117,808
Lynn	18,875	17,187	14,786	13,934	12,546	11,298
Parmer	24,100	22,561	14,713	19,054	17,153	15,455
Potter	1,472	3,071	2,600	18,938	20,794	26,819
Randall	8,143	10,950	11,539	27,182	31,163	37,120
Swisher	77,539	69,770	59,668	56,513	50,862	45,775
Total	580,305	588,060	391,354	530,250	501,909	478,144

APPENDIX C

2011 Regional Water Plan Data

Projected Net Water Demands- District Specific

High Plains Underground Water Conservation District No. 1

TWDB 2011 Regional Water Planning Data

Disclaimer: No claims are made as to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. District personnel must review these data and correct any discrepancies in order to ensure the approval of their management plan. These TWDB 2011 Regional Water Planning Data values are available online at <https://www.twdb.state.tx.us/apps/db12/file.asp?type=xls&db=1>

For questions concerning these data please contact Stephen Allen (stephen.allen@twdb.state.tx.us or 512-463-7317) or Rima Petrossian (rima.petrossian@twdb.state.tx.us or 512-936-2420).

Notes on data values: When only part of a groundwater conservation district covers a county we adjust (reduce) the estimated values presented in the plan by a proportional area percentage. This percentage is calculated by dividing the area of the county that coincides with the district by the total area of the county. This adjustment is performed only on the generic county-wide water user group (WUG) values. These WUGs are: county-other, manufacturing, steam electric power, irrigation, livestock, and mining. In addition, if a WUG occurs in a county but outside a district boundary we exclude that record from the district-specific dataset.

ARMSTRONG COUNTY

Values in records having asterisks are 4.67% of full county values

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
A	* COUNTY-OTHER	RED	5	5	5	5	5	5
A	* IRRIGATION	RED	239	219	212	201	179	156
A	* LIVESTOCK	RED	26	31	31	32	32	32
A	* MINING	RED	1	1	1	1	1	1
Total Projected Water Demands (acre-feet per year) =			271	256	249	238	216	194

BAILEY COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	COUNTY-OTHER	BRAZOS	342	358	364	371	370	363
O	IRRIGATION	BRAZOS	178,478	174,197	170,018	165,939	161,958	158,071
O	LIVESTOCK	BRAZOS	3,053	3,618	3,904	4,216	4,555	4,924
O	MANUFACTURING	BRAZOS	303	316	326	335	343	365
O	MULESHOE	BRAZOS	1,027	1,082	1,109	1,137	1,135	1,114
Total Projected Water Demands (acre-feet per year) =			183,203	179,571	175,721	171,998	168,361	164,837

CASTRO COUNTY

Values in records having asterisks are 96.34% of full county values

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	* COUNTY-OTHER	BRAZOS	214	225	231	234	232	228
O	DIMMITT	BRAZOS	1,041	1,103	1,137	1,159	1,150	1,130
O	HART	BRAZOS	238	251	258	262	260	256
O	* IRRIGATION	BRAZOS	312,718	300,729	289,199	278,111	267,449	257,195
O	* LIVESTOCK	BRAZOS	3,572	4,153	4,443	4,755	5,093	5,456
O	* MANUFACTURING	BRAZOS	1,853	2,006	2,132	2,251	2,356	2,521
O	* COUNTY-OTHER	RED	253	268	275	277	276	271
O	* IRRIGATION	RED	154,026	148,121	142,442	136,980	131,729	126,678

O	* LIVESTOCK	RED	4,479	5,143	5,487	5,857	6,253	6,679
O	* MANUFACTURING	RED	108	117	123	131	137	146

Total Projected Water Demands (acre-feet per year) = **478,501 462,115 445,727 430,019 414,933 400,561**

COCHRAN COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	COUNTY-OTHER	BRAZOS	183	191	192	185	176	167
O	IRRIGATION	BRAZOS	73,825	70,978	68,239	65,604	63,071	60,636
O	LIVESTOCK	BRAZOS	741	901	947	995	1,045	1,097
O	MINING	BRAZOS	14	10	8	6	4	2
O	MORTON	BRAZOS	535	560	565	547	521	496
O	COUNTY-OTHER	COLORADO	98	102	103	99	95	90
O	IRRIGATION	COLORADO	41,527	39,925	38,384	36,902	35,478	34,108
O	LIVESTOCK	COLORADO	88	123	123	124	125	128
O	MINING	COLORADO	1,448	1,022	852	639	426	256

Total Projected Water Demands (acre-feet per year) = **118,459 113,812 109,413 105,101 100,941 96,980**

CROSBY COUNTY

Values in records having asterisks are 74.88% of full county values

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	* COUNTY-OTHER	BRAZOS	157	162	165	166	165	162
O	CROSBYTON	BRAZOS	369	386	394	402	400	394
O	* IRRIGATION	BRAZOS	78,972	75,790	72,737	69,805	66,994	64,296
O	* LIVESTOCK	BRAZOS	223	228	232	238	243	249
O	LORENZO	BRAZOS	275	288	296	302	301	296
O	* MANUFACTURING	BRAZOS	4	4	4	4	4	4
O	* MINING	BRAZOS	53	25	15	6	0	0
O	RALLS	BRAZOS	304	315	322	325	323	318
O	* COUNTY-OTHER	RED	1	1	1	1	1	1
O	* IRRIGATION	RED	1,611	1,547	1,484	1,425	1,367	1,312
O	* LIVESTOCK	RED	2	2	3	2	3	3
O	* MINING	RED	31	15	8	4	0	0

Total Projected Water Demands (acre-feet per year) = **82,003 78,764 75,661 72,681 69,802 67,036**

DEAF SMITH COUNTY

Values in records having asterisks are 58.66% of full county values

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	* COUNTY-OTHER	CANADIAN	1	1	1	1	1	1
O	* LIVESTOCK	CANADIAN	52	58	59	60	60	63
O	* COUNTY-OTHER	RED	436	547	645	729	754	766
O	HEREFORD	RED	3,634	3,694	3,751	3,788	3,801	3,813
O	* IRRIGATION	RED	211,771	205,064	198,566	192,276	186,184	180,286
O	* LIVESTOCK	RED	7,782	8,625	9,171	9,755	10,379	11,044
O	* MANUFACTURING	RED	2,167	2,249	2,317	2,382	2,438	2,519

Total Projected Water Demands (acre-feet per year) = **225,843 220,237 214,510 208,990 203,618 198,492**

FLOYD COUNTY

Values in records having asterisks are 93.17% of full county values

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	* COUNTY-OTHER	BRAZOS	171	172	171	168	160	152
O	FLOYDADA	BRAZOS	680	696	693	685	657	623
O	* IRRIGATION	BRAZOS	116,619	111,975	107,515	103,232	99,121	95,173
O	* LIVESTOCK	BRAZOS	1,245	1,405	1,481	1,561	1,644	1,734
O	LOCKNEY	BRAZOS	242	244	240	234	224	212
O	* COUNTY-OTHER	RED	99	100	99	97	93	89
O	* IRRIGATION	RED	95,416	91,616	87,966	84,462	81,099	77,869
O	* LIVESTOCK	RED	290	329	334	342	350	357

Total Projected Water Demands (acre-feet per year) = **214,761 206,537 198,500 190,781 183,348 176,208**

HALE COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	ABERNATHY	BRAZOS	486	508	526	531	525	514
O	COUNTY-OTHER	BRAZOS	1,144	1,187	1,207	1,203	1,184	1,161
O	HALE CENTER	BRAZOS	470	493	509	513	507	498
O	IRRIGATION	BRAZOS	351,961	340,300	329,026	318,124	307,583	297,392
O	LIVESTOCK	BRAZOS	2,632	2,920	3,129	3,356	3,600	3,866
O	MANUFACTURING	BRAZOS	3,553	3,748	3,899	4,042	4,164	4,400
O	MINING	BRAZOS	88	34	19	0	0	0
O	PETERSBURG	BRAZOS	289	304	313	316	312	306
O	PLAINVIEW	BRAZOS	4,288	4,490	4,605	4,635	4,577	4,488
O	IRRIGATION	RED	3,555	3,437	3,323	3,213	3,107	3,004
O	LIVESTOCK	RED	1	1	1	1	1	1

Total Projected Water Demands (acre-feet per year) = **368,467 357,422 346,557 335,934 325,560 315,630**

HOCKLEY COUNTY

Values in records having asterisks are 94.30% of full county values

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	ANTON	BRAZOS	263	270	272	268	256	243
O	* COUNTY-OTHER	BRAZOS	792	806	804	784	746	710
O	* IRRIGATION	BRAZOS	142,710	137,131	131,770	126,616	121,665	116,907
O	LEVELLAND	BRAZOS	2,310	2,362	2,369	2,322	2,216	2,107
O	* LIVESTOCK	BRAZOS	607	699	733	768	804	842
O	* MANUFACTURING	BRAZOS	1,114	1,117	1,120	1,123	1,125	1,130
O	* MINING	BRAZOS	2,224	1,424	925	356	18	0
O	ROPESVILLE	BRAZOS	89	91	91	89	85	81
O	SMYER	BRAZOS	69	70	70	68	65	62
O	* COUNTY-OTHER	COLORADO	39	40	40	39	37	35
O	* IRRIGATION	COLORADO	15,857	15,237	14,641	14,069	13,518	12,990
O	* LIVESTOCK	COLORADO	42	52	52	53	54	56
O	* MINING	COLORADO	751	480	312	120	6	0
O	SUNDOWN	COLORADO	341	350	353	347	332	316

Total Projected Water Demands (acre-feet per year) = **167,207 160,129 153,552 147,020 140,926 135,479**

LAMB COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	AMHERST	BRAZOS	168	176	182	185	183	181
O	COUNTY-OTHER	BRAZOS	794	830	861	880	872	861
O	EARTH	BRAZOS	257	268	277	283	280	276
O	IRRIGATION	BRAZOS	363,313	349,294	335,816	322,858	310,401	298,425
O	LITTLEFIELD	BRAZOS	1,530	1,602	1,660	1,694	1,676	1,655
O	LIVESTOCK	BRAZOS	3,400	3,724	4,002	4,304	4,632	4,987
O	MANUFACTURING	BRAZOS	490	519	541	562	580	618
O	MINING	BRAZOS	52	25	15	6	0	0
O	OLTON	BRAZOS	492	512	532	542	536	529
O	STEAM ELECTRIC POWER	BRAZOS	17,827	17,663	20,651	24,292	28,731	34,142
O	SUDAN	BRAZOS	226	236	244	249	246	243
Total Projected Water Demands (acre-feet per year) =			388,549	374,849	364,781	355,855	348,137	341,917

LUBBOCK COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	ABERNATHY	BRAZOS	171	182	188	186	190	186
O	COUNTY-OTHER	BRAZOS	3,006	3,051	3,053	2,909	2,907	2,744
O	IDALOU	BRAZOS	289	288	281	274	273	272
O	IRRIGATION	BRAZOS	229,267	216,397	204,248	192,782	181,961	171,747
O	LIVESTOCK	BRAZOS	1,222	1,360	1,440	1,526	1,617	1,715
O	LUBBOCK	BRAZOS	49,824	51,588	52,417	52,602	53,041	54,306
O	MANUFACTURING	BRAZOS	1,881	2,103	2,291	2,472	2,625	2,836
O	MINING	BRAZOS	209	101	59	25	0	0
O	NEW DEAL	BRAZOS	149	165	173	173	178	173
O	RANSOM CANYON	BRAZOS	440	569	698	825	953	1,004
O	SHALLOWATER	BRAZOS	344	367	377	371	379	371
O	SLATON	BRAZOS	907	889	870	849	837	836
O	STEAM ELECTRIC POWER	BRAZOS	5,221	4,440	5,191	6,106	7,222	8,582
O	WOLFFORTH	BRAZOS	1,468	1,758	1,822	1,884	1,962	2,006
Total Projected Water Demands (acre-feet per year) =			294,398	283,258	273,108	262,984	254,145	246,778

LYNN COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	COUNTY-OTHER	BRAZOS	299	301	292	282	267	249
O	IRRIGATION	BRAZOS	112,870	106,796	101,054	95,614	90,473	85,610
O	LIVESTOCK	BRAZOS	132	136	140	144	149	153
O	MINING	BRAZOS	39	19	11	5	0	0
O	O'DONNELL	BRAZOS	144	146	142	138	130	121
O	TAHOKA	BRAZOS	492	504	490	478	453	421
O	WILSON	BRAZOS	67	68	65	63	60	55
O	COUNTY-OTHER	COLORADO	7	7	6	6	6	6
O	IRRIGATION	COLORADO	1,025	970	918	868	822	777

O	LIVESTOCK	COLORADO	11	11	12	12	12	13
O	MINING	COLORADO	9	4	2	1	0	0

Total Projected Water Demands (acre-feet per year) = 115,095 108,962 103,132 97,611 92,372 87,405

PARMER COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	BOVINA	BRAZOS	321	334	335	330	317	300
O	COUNTY-OTHER	BRAZOS	297	305	304	298	286	270
O	FARWELL	BRAZOS	388	405	410	408	393	371
O	IRRIGATION	BRAZOS	291,836	288,738	285,673	282,640	279,639	276,670
O	LIVESTOCK	BRAZOS	5,087	5,775	6,178	6,611	7,079	7,582
O	COUNTY-OTHER	RED	110	113	112	110	106	100
O	FRIONA	RED	835	872	879	870	838	791
O	IRRIGATION	RED	119,201	117,935	116,683	115,444	114,219	113,006
O	LIVESTOCK	RED	3,345	3,787	4,045	4,323	4,619	4,939
O	MANUFACTURING	RED	2,427	2,617	2,772	2,921	3,051	3,261

Total Projected Water Demands (acre-feet per year) = 423,847 420,881 417,391 413,955 410,547 407,290

POTTER COUNTY

Values in records having asterisks are 5.88% of full county values

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
A	AMARILLO	CANADIAN	14,107	15,167	16,158	17,287	18,519	19,529
A	* COUNTY-OTHER	CANADIAN	59	80	99	121	145	165
A	* IRRIGATION	CANADIAN	174	160	155	147	130	114
A	* LIVESTOCK	CANADIAN	27	27	27	27	27	27
A	* MANUFACTURING	CANADIAN	62	68	74	79	83	89
A	* MINING	CANADIAN	12	14	15	16	17	17
A	* STEAM ELECTRIC POWER	CANADIAN	1,319	1,493	1,576	1,670	1,765	2,006
A	AMARILLO	RED	10,055	10,811	11,517	12,322	13,200	13,920
A	* COUNTY-OTHER	RED	41	55	68	83	100	113
A	* IRRIGATION	RED	192	175	170	161	143	125
A	* LIVESTOCK	RED	3	3	3	3	3	3
A	* MANUFACTURING	RED	337	371	399	427	451	484
A	* MINING	RED	7	8	8	9	9	10

Total Projected Water Demands (acre-feet per year) = 26,395 28,431 30,269 32,352 34,593 36,604

RANDALL COUNTY

Values in records having asterisks are 47.25% of full county values

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
A	* COUNTY-OTHER	CANADIAN	4	5	6	7	8	9
A	* IRRIGATION	CANADIAN	0	0	0	0	0	0
A	* LIVESTOCK	CANADIAN	0	0	0	0	0	0
A	* MINING	CANADIAN	1	1	1	1	1	1
A	AMARILLO	RED	18,167	19,839	21,404	23,185	25,129	26,739
A	CANYON	RED	2,438	2,688	2,922	3,188	3,478	3,718
A	* COUNTY-OTHER	RED	1,279	1,578	1,858	2,177	2,525	2,813
A	HAPPY	RED	11	17	22	27	33	38

A	* IRRIGATION	RED	10,620	9,403	9,115	8,635	7,676	6,716
A	LAKE TANGLEWOOD	RED	160	189	217	248	282	310
A	* LIVESTOCK	RED	1,291	1,295	1,302	1,310	1,318	1,327
A	* MANUFACTURING	RED	286	317	343	368	388	421
A	* MINING	RED	8	8	8	9	9	9

Total Projected Water Demands (acre-feet per year) = **34,264** **35,340** **37,199** **39,155** **40,847** **42,102**

SWISHER COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
O	COUNTY-OTHER	BRAZOS	41	42	41	41	40	38
O	IRRIGATION	BRAZOS	73,412	70,333	72,575	72,161	71,749	71,338
O	KRESS	BRAZOS	22	22	22	22	21	20
O	LIVESTOCK	BRAZOS	264	307	304	301	298	297
O	COUNTY-OTHER	RED	211	211	211	207	202	193
O	HAPPY	RED	109	110	111	110	108	103
O	IRRIGATION	RED	97,313	93,233	96,205	95,655	95,108	94,565
O	KRESS	RED	82	82	83	81	79	76
O	LIVESTOCK	RED	3,493	3,909	4,138	4,380	4,637	4,908
O	TULIA	RED	1,050	1,065	1,072	1,064	1,038	993

Total Projected Water Demands (acre-feet per year) = **175.997** **169.314** **174.762** **174.022** **173.280** **172.531**

Source: TWDB 2011 Regional Water Planning Database:
<https://www.twdb.state.tx.us/apps/db12/defaultReadOnly.asp>

Projected Surface Water Supplies- District Specific

High Plains Underground Water Conservation District No. 1

TWDB 2011 Regional Water Planning Data

Disclaimer: No claims are made as to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. District personnel must review these data and correct any discrepancies in order to ensure the approval of their management plan. These TWDB 2011 Regional Water Planning Data values are available online at <https://www.twdb.state.tx.us/apps/db12/file.asp?type=xls&db=1>
For questions concerning these data please contact Stephen Allen (stephen.allen@twdb.state.tx.us or 512-463-7317) or Rima Petrossian (rima.petrossian@twdb.state.tx.us or 512-936-2420).

Notes on data values: When only part of a groundwater conservation district covers a county we adjust (reduce) the estimated values presented in the plan by a proportional area percentage. This percentage is calculated by dividing the area of the county that coincides with the district by the total area of the county. This adjustment is performed only on the generic county-wide water user group (WUG) values. These WUGs are: county-other, manufacturing, steam electric power, irrigation, livestock, and mining. In addition, if a WUG occurs in a county but outside a district boundary we exclude that record from the district-specific dataset.

ARMSTRONG COUNTY

Values in records having asterisks are 4.67% of the full county values

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
A	* LIVESTOCK	RED	LIVESTOCK LOCAL SUPPLY	6	6	6	6	6	6
Total Projected Surface Water Supplies (acre-feet per year) =				6	6	6	6	6	6

BAILEY COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	LIVESTOCK	BRAZOS	LIVESTOCK LOCAL SUPPLY	541	564	587	613	639	667
Total Projected Surface Water Supplies (acre-feet per year) =				541	564	587	613	639	667

CASTRO COUNTY

Values in records having asterisks are 96.34% of the full county values

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	* LIVESTOCK	BRAZOS	LIVESTOCK LOCAL SUPPLY	177	206	210	212	215	220
O	* LIVESTOCK	RED	LIVESTOCK LOCAL SUPPLY	145	170	171	174	178	181
Total Projected Surface Water Supplies (acre-feet per year) =				323	376	382	386	393	401

COCHRAN COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	LIVESTOCK	BRAZOS	LIVESTOCK LOCAL SUPPLY	47	64	67	69	70	70
O	LIVESTOCK	COLORADO	LIVESTOCK LOCAL SUPPLY	88	123	123	124	125	128
Total Projected Surface Water Supplies (acre-feet per year) =				135	187	190	193	195	198

CROSBY COUNTY

Values in records having asterisks are 74.88% of the full county values

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	CROSBYTON	BRAZOS	WHITE RIVER LAKE/RESERVOIR	389	389	389	389	389	8
O	* LIVESTOCK	BRAZOS	LIVESTOCK LOCAL SUPPLY	223	227	232	238	243	249
O	RALLS	BRAZOS	WHITE RIVER LAKE/RESERVOIR	318	318	318	318	0	0
O	* LIVESTOCK	RED	LIVESTOCK LOCAL SUPPLY	2	2	3	3	3	3
Total Projected Surface Water Supplies (acre-feet per year) =				932	936	942	948	635	260

DEAF SMITH COUNTY

Values in records having asterisks are 58.66% of the full county values

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	* LIVESTOCK	CANADIAN	LIVESTOCK LOCAL SUPPLY	52	58	59	60	60	63
O	* LIVESTOCK	RED	LIVESTOCK LOCAL SUPPLY	1,833	1,908	1,994	2,084	2,179	2,277
Total Projected Surface Water Supplies (acre-feet per year) =				1,885	1,966	2,053	2,143	2,240	2,340

FLOYD COUNTY

Values in records having asterisks are 93.17% of the full county values

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	FLOYDADA	BRAZOS	MACKENZIE LAKE/RESERVOIR	0	0	0	0	0	0
O	* LIVESTOCK	BRAZOS	LIVESTOCK LOCAL SUPPLY	191	196	203	208	213	220
O	LOCKNEY	BRAZOS	MACKENZIE LAKE/RESERVOIR	0	0	0	0	0	0
O	* LIVESTOCK	RED	LIVESTOCK LOCAL SUPPLY	241	248	252	260	268	276
Total Projected Surface Water Supplies (acre-feet per year) =				432	443	456	468	482	496

HALE COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	LIVESTOCK	BRAZOS	LIVESTOCK LOCAL SUPPLY	331	340	349	358	368	379
O	PLAINVIEW	BRAZOS	MEREDITH LAKE/RESERVOIR	1,427	1,799	1,799	1,799	1,631	1,631
O	LIVESTOCK	RED	LIVESTOCK LOCAL SUPPLY	1	1	1	1	1	1
Total Projected Surface Water Supplies (acre-feet per year) =				1,759	2,140	2,149	2,158	2,000	2,011

HOCKLEY COUNTY

Values in records having asterisks are 94.30% of the full county values

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	LEVELLAND	BRAZOS	MEREDITH LAKE/RESERVOIR	1,079	1,360	1,360	1,360	1,180	1,180
O	* LIVESTOCK	BRAZOS	LIVESTOCK LOCAL SUPPLY	194	235	241	246	251	257
O	* LIVESTOCK	COLORADO	LIVESTOCK LOCAL SUPPLY	39	47	47	48	49	51
Total Projected Surface Water Supplies (acre-feet per year) =				1,312	1,642	1,648	1,654	1,480	1,488

LAMB COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	* LIVESTOCK	BRAZOS	LIVESTOCK LOCAL SUPPLY	423	440	457	475	496	516
Total Projected Surface Water Supplies (acre-feet per year) =				423	440	457	475	496	516

LUBBOCK COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	LIVESTOCK	BRAZOS	LIVESTOCK LOCAL SUPPLY	266	272	280	289	298	308
O	LUBBOCK	BRAZOS	MEREDITH LAKE/RESERVOIR	9,887	13,377	13,248	13,121	12,149	12,101
O	NEW DEAL	BRAZOS	MEREDITH LAKE/RESERVOIR	153	153	153	153	153	153
O	RANSOM CANYON	BRAZOS	MEREDITH LAKE/RESERVOIR	440	569	698	825	953	1,004
O	SHALLOWATER	BRAZOS	MEREDITH LAKE/RESERVOIR	187	187	187	187	187	187
O	SLATON	BRAZOS	MEREDITH LAKE/RESERVOIR	150	269	269	269	269	269
Total Projected Surface Water Supplies (acre-feet per year) =				11,083	14,827	14,835	14,844	14,009	14,022

LYNN COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	LIVESTOCK	BRAZOS	LIVESTOCK LOCAL SUPPLY	132	136	140	144	149	153
O	O'DONNELL	BRAZOS	MEREDITH LAKE/RESERVOIR	96	121	121	121	109	109
O	TAHOKA	BRAZOS	MEREDITH LAKE/RESERVOIR	178	224	224	224	193	193
O	LIVESTOCK	COLORADO	LIVESTOCK LOCAL SUPPLY	11	11	12	12	12	13
Total Projected Surface Water Supplies (acre-feet per year) =				417	492	497	501	463	468

PARMER COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	LIVESTOCK	BRAZOS	LIVESTOCK LOCAL SUPPLY	551	575	601	626	651	680
O	LIVESTOCK	RED	LIVESTOCK LOCAL SUPPLY	286	298	309	324	341	356
Total Projected Surface Water Supplies (acre-feet per year) =				837	873	910	950	992	1,036

POTTER COUNTY

Values in records having asterisks are 5.88% of the full county values

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
A	AMARILLO	CANADIAN	MEREDITH LAKE/RESERVOIR	1,402	3,167	3,217	3,313	3,420	3,449
A	* IRRIGATION	CANADIAN	CANADIAN RIVER COMBINED RUN-OF-RIVER	0	0	0	0	0	0
A	* LIVESTOCK	CANADIAN	LIVESTOCK LOCAL SUPPLY	28	28	28	28	28	28
A	* MANUFACTURING	CANADIAN	MEREDITH LAKE/RESERVOIR	30	37	37	39	44	53
A	* STEAM ELECTRIC POWER	CANADIAN	MEREDITH LAKE/RESERVOIR	15	0	0	0	0	0
A	AMARILLO	RED	MEREDITH LAKE/RESERVOIR	1,000	2,258	2,293	2,362	2,438	2,458
A	* LIVESTOCK	RED	LIVESTOCK LOCAL SUPPLY	2	2	2	2	2	2
A	* MANUFACTURING	RED	MEREDITH LAKE/RESERVOIR	353	385	379	363	343	329
Total Projected Surface Water Supplies (acre-feet per year) =				2,831	5,877	5,956	6,108	6,274	6,320

RANDALL COUNTY

Values in records having asterisks are 47.25% of the full county values

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
A	* COUNTY-OTHER	CANADIAN	MEREDITH LAKE/RESERVOIR	12	12	10	10	9	8
A	AMARILLO	RED	MEREDITH LAKE/RESERVOIR	1,804	4,143	4,261	4,443	4,640	4,723
A	CANYON	RED	MEREDITH LAKE/RESERVOIR	1,000	1,000	917	829	753	695
A	* IRRIGATION	RED	RED RIVER COMBINED RUN-OF-RIVER IRRIGATION	83	83	83	83	83	83
A	* LIVESTOCK	RED	LIVESTOCK LOCAL SUPPLY	241	241	241	241	241	241
A	* MANUFACTURING	RED	MEREDITH LAKE/RESERVOIR	142	142	130	118	107	103
Total Projected Surface Water Supplies (acre-feet per year) =				3,282	5,621	5,642	5,724	5,832	5,852

SWISHER COUNTY

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG Basin	Source Name	2010	2020	2030	2040	2050	2060
O	LIVESTOCK	BRAZOS	LIVESTOCK LOCAL SUPPLY	167	141	139	136	133	132
O	LIVESTOCK	RED	LIVESTOCK LOCAL SUPPLY	435	475	493	512	531	551
O	TULIA	RED	MACKENZIE LAKE/RESERVOIR	0	0	0	0	0	0
Total Projected Surface Water Supplies (acre-feet per year) =				602	616	632	648	664	683

Source: TWDB 2011 Regional Water Planning Database:
<https://www.twdb.state.tx.us/apps/db12/defaultReadOnly.asp>

Projected Water Needs- District Specific

High Plains Underground Water Conservation District No. 1

TWDB 2011 Regional Water Planning Data

Disclaimer: No claims are made as to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. District personnel must review these data and correct any discrepancies in order to ensure the approval of their management plan. These TWDB 2011 Regional Water Planning Data values are available online at <https://www.twdb.state.tx.us/apps/db12/file.asp?type=xls&db=1>

For questions concerning these data please contact Stephen Allen (stephen.allen@twdb.state.tx.us or 512-463-7317) or Rima Petrossian (rima.petrossian@twdb.state.tx.us or 512-936-2420).

Notes on data values: When only part of a groundwater conservation district covers a county we adjust (reduce) the estimated values presented in the plan by a proportional area percentage. This percentage is calculated by dividing the area of the county that coincides with the district by the total area of the county. This adjustment is performed only on the generic county-wide water user group (WUG) values. These WUGs are: county-other, manufacturing, steam electric power, irrigation, livestock, and mining. In addition, if a WUG occurs in a county but outside a district boundary we exclude that record from the district-specific dataset.

Negative values (in red) reflect a projected water need

ARMSTRONG County

Values in records having asterisks are 4.67% of full county values

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
A *	COUNTY-OTHER	RED	14	13	14	14	14	14
A *	IRRIGATION	RED	0	0	0	0	0	0
A *	LIVESTOCK	RED	10	5	5	4	4	4
A *	MINING	RED	3	2	2	2	2	2
Sum of Projected Water Needs (acre-feet per year) =			0	0	0	0	0	0

BAILEY County

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O	COUNTY-OTHER	BRAZOS	0	0	0	0	0	0
O	IRRIGATION	BRAZOS	-81,561	-85,721	-84,647	-84,229	-83,647	-83,220
O	LIVESTOCK	BRAZOS	0	0	0	0	0	0
O	MANUFACTURING	BRAZOS	0	0	0	0	0	0
O	MULESHOE	BRAZOS	0	0	0	0	0	0
Sum of Projected Water Needs (acre-feet per year) =			-81,561	-85,721	-84,647	-84,229	-83,647	-83,220

CASTRO County

Values in records having asterisks are 96.34% of full county values

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O *	COUNTY-OTHER	BRAZOS	0	0	0	0	0	0
O	DIMMITT	BRAZOS	0	437	-744	-805	-832	-844
O	HART	BRAZOS	193	193	193	193	-67	-82
O *	IRRIGATION	BRAZOS	-88,826	-101,244	-149,780	-221,226	-224,981	-221,262
O *	LIVESTOCK	BRAZOS	0	-732	-1,987	-4,023	-4,572	-4,905
O *	MANUFACTURING	BRAZOS	0	0	0	0	0	0
O *	COUNTY-OTHER	RED	0	0	0	0	0	0

O *	IRRIGATION	RED	-52,500	-83,527	-104,411	-117,210	-114,140	-112,234
O *	LIVESTOCK	RED	0	0	0	-821	-1,163	-1,234
O *	MANUFACTURING	RED	0	0	0	0	0	0

Sum of Projected Water Needs (acre-feet per year) = **-141,326** **-185,503** **-256,922** **-344,085** **-345,755** **-340,561**

COCHRAN County

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O	COUNTY-OTHER	BRAZOS	0	0	0	0	0	0
O	IRRIGATION	BRAZOS	-30,699	-29,184	-33,141	-33,350	-52,456	-49,969
O	LIVESTOCK	BRAZOS	0	0	0	0	0	0
O	MINING	BRAZOS	0	0	0	0	0	0
O	MORTON	BRAZOS	0	-560	-565	-547	-521	-496
O	COUNTY-OTHER	COLORADO	0	0	0	0	0	0
O	IRRIGATION	COLORADO	-9,210	-9,412	-3,865	-2,155	-24,189	-22,675
O	LIVESTOCK	COLORADO	0	0	0	0	0	0
O	MINING	COLORADO	0	0	0	0	0	0

Sum of Projected Water Needs (acre-feet per year) = **-39,909** **-39,156** **-37,571** **-36,052** **-77,166** **-73,140**

CROSBY County

Values in records having asterisks are 74.88% of full county values

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O *	COUNTY-OTHER	BRAZOS	75	75	75	75	75	75
O	CROSBYTON	BRAZOS	70	53	45	37	39	-336
O *	IRRIGATION	BRAZOS	-12,088	-11,788	-11,634	-11,321	-10,309	-10,054
O *	LIVESTOCK	BRAZOS	0	-1	0	0	0	0
O	LORENZO	BRAZOS	0	0	-37	-69	-92	-108
O *	MANUFACTURING	BRAZOS	0	0	0	0	0	0
O *	MINING	BRAZOS	0	0	0	0	0	0
O	RALLS	BRAZOS	14	3	-4	-7	-323	-318
O *	COUNTY-OTHER	RED	0	0	0	0	0	0
O *	IRRIGATION	RED	-664	-622	-592	-562	-544	-505
O *	LIVESTOCK	RED	0	0	0	1	0	0
O *	MINING	RED	0	0	0	0	0	0

Sum of Projected Water Needs (acre-feet per year) = **-12,752** **-12,411** **-12,267** **-11,959** **-11,268** **-11,322**

DEAF SMITH County

Values in records having asterisks are 58.66% of full county values

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O *	COUNTY-OTHER	CANADIAN	0	0	0	0	0	0
O *	LIVESTOCK	CANADIAN	0	0	0	0	0	0
O *	COUNTY-OTHER	RED	0	0	0	0	0	0
O	HEREFORD	RED	360	289	3,751	3,788	3,801	3,789
O *	IRRIGATION	RED	-100,591	-114,869	-131,986	-149,439	-145,072	-142,429
O *	LIVESTOCK	RED	0	0	0	-303	-321	-341
O *	MANUFACTURING	RED	0	0	0	0	0	0

Sum of Projected Water Needs (acre-feet per year) = **-100,591** **-114,869** **-131,986** **-149,742** **-145,394** **-142,771**

FLOYD County

Values in records having asterisks are 93.17% of full county values

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O *	COUNTY-OTHER	BRAZOS	0	0	0	0	0	0
O	FLOYDADA	BRAZOS	0	0	0	0	0	0
O *	IRRIGATION	BRAZOS	-37,889	-37,546	-36,861	-36,538	-35,578	-33,376
O *	LIVESTOCK	BRAZOS	0	0	1	0	1	0
O	LOCKNEY	BRAZOS	0	0	-240	-234	-224	-212
O *	COUNTY-OTHER	RED	0	0	0	0	0	0
O *	IRRIGATION	RED	-46,645	-61,579	-64,664	-64,986	-62,388	-59,862
O *	LIVESTOCK	RED	0	1	0	0	0	1
Sum of Projected Water Needs (acre-feet per year) =			-84,534	-99,124	-101,765	-101,758	-98,190	-93,450

HALE County

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O	ABERNATHY	BRAZOS	0	-122	-178	-217	-243	-260
O	COUNTY-OTHER	BRAZOS	0	0	0	0	0	0
O	HALE CENTER	BRAZOS	0	0	98	227	159	101
O	IRRIGATION	BRAZOS	-21,944	-54,709	-152,692	-218,312	-233,313	-230,238
O	LIVESTOCK	BRAZOS	-1	0	-573	-797	-2,146	-2,518
O	MANUFACTURING	BRAZOS	0	0	0	0	0	0
O	MINING	BRAZOS	0	0	0	0	0	0
O	PETERSBURG	BRAZOS	0	0	0	0	-312	-306
O	PLAINVIEW	BRAZOS	11,342	10,387	9,255	8,305	7,432	6,469
O	IRRIGATION	RED	-273	-603	-1,437	-2,112	-2,275	-2,257
O	LIVESTOCK	RED	0	0	0	0	0	0
Sum of Projected Water Needs (acre-feet per year) =			-22,218	-55,434	-154,880	-221,438	-238,289	-235,579

HOCKLEY County

Values in records having asterisks are 94.30% of full county values

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O	ANTON	BRAZOS	-263	-270	-272	-268	-256	-243
O *	COUNTY-OTHER	BRAZOS	0	0	0	0	0	0
O *	IRRIGATION	BRAZOS	-55,271	-65,439	-71,064	-75,987	-72,464	-70,978
O	LEVELLAND	BRAZOS	926	874	867	914	592	701
O *	LIVESTOCK	BRAZOS	0	0	0	0	0	1
O *	MANUFACTURING	BRAZOS	0	0	0	0	0	0
O *	MINING	BRAZOS	0	0	0	0	0	0
O	ROPESVILLE	BRAZOS	0	0	-91	-89	-85	-81
O	SMYER	BRAZOS	0	0	0	0	0	-62
O *	COUNTY-OTHER	COLORADO	0	0	0	0	0	0
O *	IRRIGATION	COLORADO	-4,781	-5,923	-7,072	-6,838	-6,594	-6,013
O *	LIVESTOCK	COLORADO	0	0	0	0	0	0
O *	MINING	COLORADO	0	0	0	0	0	0
O	SUNDOWN	COLORADO	0	-350	-353	-347	-332	-316
Sum of Projected Water Needs (acre-feet per year) =			-60,315	-71,982	-78,852	-83,529	-79,731	-77,692

LAMB County

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O	AMHERST	BRAZOS	0	215	170	132	102	76
O	COUNTY-OTHER	BRAZOS	0	0	0	0	0	0
O	EARTH	BRAZOS	0	0	0	-283	-280	-276
O	IRRIGATION	BRAZOS	-114,832	-158,445	-201,653	-238,554	-248,375	-250,645
O	LITTLEFIELD	BRAZOS	900	810	729	656	590	531
O	LIVESTOCK	BRAZOS	0	0	-375	-1,618	-2,348	-3,010
O	MANUFACTURING	BRAZOS	0	0	0	0	0	0
O	MINING	BRAZOS	0	0	0	0	0	0
O	OLTON	BRAZOS	837	753	678	810	552	499
O	STEAM ELECTRIC POWER	BRAZOS	0	0	0	0	0	0
O	SUDAN	BRAZOS	0	196	145	101	69	40

Sum of Projected Water Needs (acre-feet per year) = **-114,832** **-158,445** **-202,028** **-240,455** **-251,003** **-253,931**

LUBBOCK County

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O	ABERNATHY	BRAZOS	0	-182	-188	-186	-190	-186
O	COUNTY-OTHER	BRAZOS	0	0	0	0	0	0
O	IDALOU	BRAZOS	0	0	0	-274	-273	-272
O	IRRIGATION	BRAZOS	-61,045	-90,653	-99,575	-109,703	-102,293	-96,846
O	LIVESTOCK	BRAZOS	0	0	0	0	0	0
O	LUBBOCK	BRAZOS	-9,384	-11,406	-14,493	-16,932	-20,630	-21,994
O	MANUFACTURING	BRAZOS	0	0	0	0	0	0
O	MINING	BRAZOS	0	0	0	0	0	0
O	NEW DEAL	BRAZOS	4	181	154	137	116	107
O	RANSOM CANYON	BRAZOS	0	0	0	0	0	0
O	SHALLOWATER	BRAZOS	-157	-180	-190	-184	-192	-184
O	SLATON	BRAZOS	0	0	0	0	0	0
O	STEAM ELECTRIC POWER	BRAZOS	0	0	0	0	0	0
O	WOLFFORTH	BRAZOS	67	708	397	113	-165	-388

Sum of Projected Water Needs (acre-feet per year) = **-70,586** **-102,421** **-114,446** **-127,279** **-123,743** **-119,870**

LYNN County

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O	COUNTY-OTHER	BRAZOS	100	100	100	100	100	100
O	IRRIGATION	BRAZOS	18,052	16,942	21,942	26,948	31,855	36,750
O	LIVESTOCK	BRAZOS	0	0	0	0	0	0
O	MINING	BRAZOS	0	0	0	0	0	0
O	O'DONNELL	BRAZOS	144	142	146	150	129	138
O	TAHOKA	BRAZOS	42	30	44	56	7	39
O	WILSON	BRAZOS	0	-68	-65	-63	-60	-55
O	COUNTY-OTHER	COLORADO	0	0	0	0	0	0
O	IRRIGATION	COLORADO	-550	-508	-464	-408	-406	-402
O	LIVESTOCK	COLORADO	0	0	0	0	0	0
O	MINING	COLORADO	0	0	0	0	0	0

Sum of Projected Water Needs (acre-feet per year) = **-550** **-576** **-529** **-471** **-466** **-457**

PARMER County

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O	BOVINA	BRAZOS	0	0	0	0	0	0
O	COUNTY-OTHER	BRAZOS	0	0	0	0	0	0
O	FARWELL	BRAZOS	0	-1	-46	-80	-99	-106
O	IRRIGATION	BRAZOS	-114,660	-234,207	-259,793	-272,089	-268,876	-262,375
O	LIVESTOCK	BRAZOS	0	0	-180	-1,546	-3,712	-5,092
O	COUNTY-OTHER	RED	0	0	0	0	0	0
O	FRIONA	RED	121	549	-384	-425	-437	-431
O	IRRIGATION	RED	-46,722	-97,023	-101,830	-84,951	-82,589	-84,325
O	LIVESTOCK	RED	0	0	0	0	0	0
O	MANUFACTURING	RED	0	0	0	0	0	0

Sum of Projected Water Needs (acre-feet per year) = **-161,382** **-331,231** **-362,233** **-359,091** **-355,713** **-352,329**

POTTER County

Values in records having asterisks are 5.88% of full county values

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
A	AMARILLO	CANADIAN	9	300	-1,349	-2,961	-4,582	-5,950
A *	COUNTY-OTHER	CANADIAN	44	24	4	-18	-42	-61
A *	IRRIGATION	CANADIAN	60	43	22	13	17	23
A *	LIVESTOCK	CANADIAN	5	5	5	5	5	5
A *	MANUFACTURING	CANADIAN	0	0	-2	-3	-2	-3
A *	MINING	CANADIAN	5	4	3	2	1	0
A *	STEAM ELECTRIC POWER	CANADIAN	0	7	22	39	66	0
A	AMARILLO	RED	7	171	-961	-2,110	-3,266	-4,241
A *	COUNTY-OTHER	RED	8	-6	-19	-34	-51	-64
A *	IRRIGATION	RED	4	4	4	4	5	5
A *	LIVESTOCK	RED	2	2	2	2	2	2
A *	MANUFACTURING	RED	25	23	-11	-54	-98	-146
A *	MINING	RED	2	1	1	0	0	0

Sum of Projected Water Needs (acre-feet per year) = **0** **-6** **-2,342** **-5,181** **-8,041** **-10,465**

RANDALL County

Values in records having asterisks are 47.25% of full county values

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
A *	COUNTY-OTHER	CANADIAN	8	7	4	3	0	-1
A *	IRRIGATION	CANADIAN	0	0	0	0	0	0
A *	LIVESTOCK	CANADIAN	0	0	0	0	0	0
A *	MINING	CANADIAN	0	0	0	0	0	0
A	AMARILLO	RED	8	313	-1,787	-3,971	-6,217	-8,146
A	CANYON	RED	672	-422	-1,245	-1,903	-2,452	-2,859
A *	COUNTY-OTHER	RED	171	-2	-282	-601	-949	-1,237
A	HAPPY	RED	39	33	28	23	17	12
A *	IRRIGATION	RED	0	0	0	0	0	0
A	LAKE TANGLEWOOD	RED	0	0	0	0	0	0
A *	LIVESTOCK	RED	94	95	95	96	97	98

A *	MANUFACTURING	RED	91	52	11	41	23	0
A *	MINING	RED	0	0	0	0	0	0

Sum of Projected Water Needs (acre-feet per year) = **0** **-424** **-3,314** **-6,475** **-9,618** **-12,244**

SWISHER County

No apportioning is necessary; the district covers the entire county

RWPG	WUG	WUG BASIN	2010	2020	2030	2040	2050	2060
O	COUNTY-OTHER	BRAZOS	0	0	0	0	0	0
O	IRRIGATION	BRAZOS	-14,031	-47,142	-70,459	-71,418	-71,555	-71,130
O	KRESS	BRAZOS	100	80	60	46	34	24
O	LIVESTOCK	BRAZOS	0	-1	0	0	0	0
O	COUNTY-OTHER	RED	0	0	0	0	0	0
O	HAPPY	RED	0	0	0	0	0	0
O	IRRIGATION	RED	-8,616	-13,281	-25,416	-33,967	-36,047	-36,403
O	KRESS	RED	0	0	0	0	0	0
O	LIVESTOCK	RED	0	0	-1	0	-1	0
O	TULIA	RED	-417	-417	-416	-416	-416	-417
Sum of Projected Water Needs (acre-feet per year) =			-23,064	-60,841	-96,292	-105,801	-108,019	-107,950

Source: TWDB 2011 Regional Water Planning Database:
<https://www.twdb.state.tx.us/apps/db12/defaultReadOnly.asp>

O	RED	IRRIGATION WATER CONSERVATION	13,948	12,553	11,298	10,168	9,151	8,236
	IRRIGATION	CONSERVATION	CASTRO					

Total Projected Water Strategies (acre-feet per year) = **42,343 38,597 22,939 31,623 29,075 26,174**

COCHRAN COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-	-2010-	-2020-	-2030-	-2040-	-2050-	-2060-
-WUG-		-SOURCE NAME-	-SOURCE COUNTY-					

O	BRAZOS	IRRIGATION WATER CONSERVATION	14,151	12,735	11,462	10,316	9,284	8,356
	IRRIGATION	CONSERVATION	COCHRAN					

O	BRAZOS	LOCAL GROUNDWATER DEVELOPMENT	0	855	770	693	623	561
	MORTON	OGALLALA AQUIFER	COCHRAN					

O	BRAZOS	MUNICIPAL WATER CONSERVATION	41	56	48	38	34	32
	MORTON	CONSERVATION	COCHRAN					

O	COLORADO	IRRIGATION WATER CONSERVATION	6,064	5,458	4,912	4,421	3,979	3,581
	IRRIGATION	CONSERVATION	COCHRAN					

Total Projected Water Strategies (acre-feet per year) = **20,256 19,104 11,462 15,468 13,920 12,530**

CROSBY COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-	-2010-	-2020-	-2030-	-2040-	-2050-	-2060-
-WUG-		-SOURCE NAME-	-SOURCE COUNTY-					

O	BRAZOS	LOCAL GROUNDWATER DEVELOPMENT	0	400	400	400	400	400
	CROSBYTON	OGALLALA AQUIFER	CROSBY					

O	BRAZOS	IRRIGATION WATER CONSERVATION	25,589	23,030	20,727	18,654	16,789	15,110
	IRRIGATION	CONSERVATION	CROSBY					

O	BRAZOS	LOCAL GROUNDWATER DEVELOPMENT	0	0	206	185	167	150
	LORENZO	OGALLALA AQUIFER	CROSBY					

O	BRAZOS	LOCAL GROUNDWATER DEVELOPMENT	400	400	400	400	400	400
	RALLS	OGALLALA AQUIFER	CROSBY					

O	RED	IRRIGATION WATER CONSERVATION	791	712	641	577	519	467
	IRRIGATION	CONSERVATION	CROSBY					

Total Projected Water Strategies (acre-feet per year) = **26,780 24,542 20,727 20,216 18,275 16,527**

DEAF SMITH COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-	-2010-	-2020-	-2030-	-2040-	-2050-	-2060-
-WUG-		-SOURCE NAME-	-SOURCE COUNTY-					

O	RED	MUNICIPAL WATER CONSERVATION	302	572	649	610	596	598
	HEREFORD	CONSERVATION	DEAF SMITH					

O	RED	IRRIGATION WATER CONSERVATION	42,246	38,022	34,219	30,797	27,718	24,946
	IRRIGATION	CONSERVATION	DEAF SMITH					

Total Projected Water Strategies (acre-feet per year) = **42,548 38,594 34,219 31,407 28,314 25,544**

FLOYD COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-	-2010-	-2020-	-2030-	-2040-	-2050-	-2060-
-WUG-		-SOURCE NAME-	-SOURCE COUNTY-					

O	BRAZOS	IRRIGATION WATER CONSERVATION		16,526	14,873	13,386	12,048	10,843	9,758
	IRRIGATION	CONSERVATION	FLOYD						
O	BRAZOS	LOCAL GROUNDWATER DEVELOPMENT		0	0	410	369	332	299
	LOCKNEY	OGALLALA AQUIFER	FLOYD						
O	RED	IRRIGATION WATER CONSERVATION		28,139	25,325	22,792	20,513	18,462	16,616
	IRRIGATION	CONSERVATION	FLOYD						
Total Projected Water Strategies (acre-feet per year) =				44,665	40,198	22,792	32,930	29,637	26,673

HALE COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-		-2010-	-2020-	-2030-	-2040-	-2050-	-2060-
-WUG-		-SOURCE NAME-	-SOURCE COUNTY-						
O	BRAZOS	LOCAL GROUNDWATER DEVELOPMENT		317	258	208	332	276	260
	ABERNATHY	OGALLALA AQUIFER	HALE						
O	BRAZOS	MUNICIPAL WATER CONSERVATION		50	36	32	24	21	20
	ABERNATHY	CONSERVATION	HALE						
O	BRAZOS	IRRIGATION WATER CONSERVATION		41,957	37,762	33,986	30,587	27,528	24,776
	IRRIGATION	CONSERVATION	HALE						
O	BRAZOS	LOCAL GROUNDWATER DEVELOPMENT		0	0	0	0	410	369
	PETERSBURG	OGALLALA AQUIFER	HALE						
O	BRAZOS	MUNICIPAL WATER CONSERVATION		21	24	20	16	14	14
	PETERSBURG	CONSERVATION	HALE						
O	RED	IRRIGATION WATER CONSERVATION		424	381	343	309	278	250
	IRRIGATION	CONSERVATION	HALE						
Total Projected Water Strategies (acre-feet per year) =				42,769	38,461	33,986	31,268	28,527	25,689

HOCKLEY COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-		-2010-	-2020-	-2030-	-2040-	-2050-	-2060-
-WUG-		-SOURCE NAME-	-SOURCE COUNTY-						
O	BRAZOS	MUNICIPAL WATER CONSERVATION		14	11	6	2	0	0
	ANTON	CONSERVATION	HOCKLEY						
O	BRAZOS	LOCAL GROUNDWATER DEVELOPMENT		569	569	512	461	415	373
	ANTON	OGALLALA AQUIFER	HOCKLEY						
O	BRAZOS	IRRIGATION WATER CONSERVATION		25,809	23,227	20,905	18,814	16,933	15,240
	IRRIGATION	CONSERVATION	HOCKLEY						
O	BRAZOS	LOCAL GROUNDWATER DEVELOPMENT		0	0	91	89	85	81
	ROPESVILLE	OGALLALA AQUIFER	HOCKLEY						
O	BRAZOS	LOCAL GROUNDWATER DEVELOPMENT		0	0	0	0	0	193
	SMYER	OGALLALA AQUIFER	HOCKLEY						
O	COLORADO	IRRIGATION WATER CONSERVATION		2,244	2,020	1,818	1,636	1,472	1,325
	IRRIGATION	CONSERVATION	HOCKLEY						
O	COLORADO	MUNICIPAL WATER CONSERVATION		24	25	19	14	11	11
	SUNDOWN	CONSERVATION	HOCKLEY						
O	COLORADO	LOCAL GROUNDWATER DEVELOPMENT		0	412	569	512	461	415
	SUNDOWN	OGALLALA AQUIFER	HOCKLEY						
Total Projected Water Strategies (acre-feet per year) =				28,660	26,264	20,905	21,528	19,377	17,638

LAMB COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-	-2010-	-2020-	-2030-	-2040-	-2050-	-2060-	
-WUG-	-SOURCE NAME-	-SOURCE COUNTY-							
O	BRAZOS AMHERST	MUNICIPAL WATER CONSERVATION CONSERVATION	LAMB	7	5	2	0	0	0
O	BRAZOS EARTH	LOCAL GROUNDWATER DEVELOPMENT OGALLALA AQUIFER	LAMB	0	0	0	393	354	318
O	BRAZOS EARTH	MUNICIPAL WATER CONSERVATION CONSERVATION	LAMB	20	28	25	21	20	17
O	BRAZOS IRRIGATION	IRRIGATION WATER CONSERVATION CONSERVATION	LAMB	28,457	25,611	23,050	20,745	18,670	16,803
O	BRAZOS LITTLEFIELD	MUNICIPAL WATER CONSERVATION CONSERVATION	LAMB	118	196	181	161	151	149
O	BRAZOS OLTON	MUNICIPAL WATER CONSERVATION CONSERVATION	LAMB	27	17	12	3	0	0
O	BRAZOS SUDAN	MUNICIPAL WATER CONSERVATION CONSERVATION	LAMB	15	12	8	4	3	3
Total Projected Water Strategies (acre-feet per year) =				28,644	25,869	23,050	21,327	19,198	17,290

LUBBOCK COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-	-2010-	-2020-	-2030-	-2040-	-2050-	-2060-	
-WUG-	-SOURCE NAME-	-SOURCE COUNTY-							
O	BRAZOS ABERNATHY	MUNICIPAL WATER CONSERVATION CONSERVATION	HALE	0	12	11	8	7	7
O	BRAZOS ABERNATHY	LOCAL GROUNDWATER DEVELOPMENT OGALLALA AQUIFER	HALE	111	170	177	178	183	179
O	BRAZOS IDALOU	LOCAL GROUNDWATER DEVELOPMENT OGALLALA AQUIFER	LUBBOCK	0	0	0	410	369	332
O	BRAZOS IRRIGATION	IRRIGATION WATER CONSERVATION CONSERVATION	LUBBOCK	48,909	44,018	39,616	35,655	32,089	28,880
O	BRAZOS LUBBOCK	POST RESERVOIR- DELIVERED TO LAH PIPELINE POST LAKE/RESERVOIR	RESERVOIR	0	0	25,750	25,750	25,750	25,750
O	BRAZOS LUBBOCK	LUBBOCK NORTH FORK DIVERSION OPERATION (A) BRAZOS RIVER RUN-OF-RIVER	GARZA	0	3,675	3,675	3,675	3,675	3,675
O	BRAZOS LUBBOCK	LUBBOCK JIM BERTRAM LAKE 7 LAKE 7 (JIM BERTRAM LAKE/RESERVOIR SYSTEM)	RESERVOIR	0	17,650	17,650	17,650	17,650	17,650
O	BRAZOS LUBBOCK	LUBBOCK BRACKISH GROUNDWATER DESALINATION EDWARDS-TRINITY-HIGH PLAINS AQUIFER	LUBBOCK	0	3,360	3,360	3,360	3,360	3,360
O	BRAZOS LUBBOCK	LAKE ALAN HENRY PIPELINE FOR THE CITY OF LUBBOCK ALAN HENRY LAKE/RESERVOIR	RESERVOIR	21,880	21,880	21,880	21,880	21,880	21,880
O	BRAZOS LUBBOCK	MUNICIPAL WATER CONSERVATION CONSERVATION	LUBBOCK	4,132	7,662	7,112	6,441	6,256	6,405
O	BRAZOS NEW DEAL	LOCAL GROUNDWATER DEVELOPMENT OGALLALA AQUIFER	LUBBOCK	0	153	153	153	153	153
O	BRAZOS RANSOM CANYON	MUNICIPAL WATER CONSERVATION CONSERVATION	LUBBOCK	35	90	162	248	325	342

O	BRAZOS SHALLOWATER	LOCAL GROUNDWATER DEVELOPMENT OGALLALA AQUIFER	LUBBOCK	389	389	350	315	283	255
O	BRAZOS WOLFFORTH	LOCAL GROUNDWATER DEVELOPMENT OGALLALA AQUIFER	LUBBOCK	0	0	0	0	437	393
Total Projected Water Strategies (acre-feet per year) =				75,456	99,059	39,616	115,723	112,417	109,261

LYNN COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-	-SOURCE COUNTY-	-2010-	-2020-	-2030-	-2040-	-2050-	-2060-
-WUG-		-SOURCE NAME-							
O	BRAZOS IRRIGATION	IRRIGATION WATER CONSERVATION CONSERVATION	LYNN	11,310	10,179	9,162	8,245	7,420	6,678
O	BRAZOS WILSON	LOCAL GROUNDWATER DEVELOPMENT OGALLALA AQUIFER	LYNN	0	193	174	157	141	127
O	COLORADO IRRIGATION	IRRIGATION WATER CONSERVATION CONSERVATION	LYNN	350	315	283	255	230	207
Total Projected Water Strategies (acre-feet per year) =				11,660	10,687	9,162	8,657	7,791	7,012

PARMER COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-	-SOURCE COUNTY-	-2010-	-2020-	-2030-	-2040-	-2050-	-2060-
-WUG-		-SOURCE NAME-							
O	BRAZOS FARWELL	MUNICIPAL WATER CONSERVATION CONSERVATION	PARMER	33	64	94	101	97	91
O	BRAZOS FARWELL	LOCAL GROUNDWATER DEVELOPMENT OGALLALA AQUIFER	PARMER	0	0	0	0	147	132
O	BRAZOS IRRIGATION	IRRIGATION WATER CONSERVATION CONSERVATION	PARMER	14,531	13,078	11,770	10,593	9,534	8,580
O	RED FRIONA	MUNICIPAL WATER CONSERVATION CONSERVATION	PARMER	46	34	20	5	0	0
O	RED FRIONA	LOCAL GROUNDWATER DEVELOPMENT OGALLALA AQUIFER	PARMER	0	0	419	753	678	610
O	RED IRRIGATION	IRRIGATION WATER CONSERVATION CONSERVATION	PARMER	4,589	4,130	3,717	3,345	3,011	2,710
Total Projected Water Strategies (acre-feet per year) =				19,199	17,306	11,770	14,797	13,467	12,123

POTTER COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-	-SOURCE COUNTY-	-2010-	-2020-	-2030-	-2040-	-2050-	-2060-
-WUG-		-SOURCE NAME-							
A	CANADIAN AMARILLO	ROBERTS COUNTY WELL FIELD - AMARILLO OGALLALA AQUIFER	ROBERTS	0	0	0	0	1,200	2,600
A	CANADIAN AMARILLO	MUNICIPAL CONSERVATION CONSERVATION	POTTER	0	455	808	865	925	975
A	CANADIAN AMARILLO	POTTER COUNTY WELL FIELD OGALLALA AQUIFER	POTTER	0	2,500	2,500	2,500	2,500	2,500
A	CANADIAN COUNTY-OTHER	DRILL ADDITIONAL GROUNDWATER WELL OGALLALA AQUIFER	POTTER	0	0	0	1,000	1,000	1,000

A	CANADIAN COUNTY-OTHER	MUNICIPAL CONSERVATION CONSERVATION	POTTER	0	41	85	103	124	140
A	CANADIAN IRRIGATION	PRECIPITATION ENHANCEMENT WEATHER MODIFICATION	POTTER	0	172	172	172	172	172
A	CANADIAN IRRIGATION	IRRIGATION CONSERVATION CONSERVATION	POTTER	0	446	464	496	513	531
A	CANADIAN MANUFACTURING	VOLUNTARY TRANSFER FROM OTHER USERS OGALLALA AQUIFER	POTTER	0	0	200	328	313	225
A	RED AMARILLO	ROBERTS COUNTY WELL FIELD - AMARILLO OGALLALA AQUIFER	ROBERTS	0	0	0	0	0	741
A	RED AMARILLO	POTTER COUNTY WELL FIELD OGALLALA AQUIFER	POTTER	0	800	800	800	800	800
A	RED AMARILLO	POTTER COUNTY WELL FIELD OGALLALA AQUIFER	POTTER	0	2,500	2,500	2,500	2,500	2,500
A	RED AMARILLO	MUNICIPAL CONSERVATION CONSERVATION	POTTER	0	325	575	615	660	700
A	RED COUNTY-OTHER	DRILL ADDITIONAL GROUNDWATER WELL OGALLALA AQUIFER	POTTER	0	600	600	600	1,200	1,200
A	RED COUNTY-OTHER	MUNICIPAL CONSERVATION CONSERVATION	POTTER	0	28	58	71	85	96
A	RED IRRIGATION	PRECIPITATION ENHANCEMENT WEATHER MODIFICATION	POTTER	0	189	189	189	189	189
A	RED IRRIGATION	IRRIGATION CONSERVATION CONSERVATION	POTTER	0	490	510	545	564	583
A	RED MANUFACTURING	VOLUNTARY TRANSFER FROM OTHER USERS OGALLALA AQUIFER	POTTER	0	0	444	1,087	1,846	2,638
Total Projected Water Strategies (acre-feet per year) =				0	8,546	2,500	11,871	14,591	17,590

RANDALL COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-		-2010-	-2020-	-2030-	-2040-	-2050-	-2060-
-WUG-	-SOURCE NAME-		-SOURCE COUNTY-						
A	CANADIAN COUNTY-OTHER	MUNICIPAL CONSERVATION CONSERVATION	RANDALL	0	0	0	0	0	3
A	CANADIAN IRRIGATION	IRRIGATION CONSERVATION CONSERVATION	RANDALL	0	0	0	0	0	0
A	RED AMARILLO	ROBERTS COUNTY WELL FIELD - AMARILLO OGALLALA AQUIFER	ROBERTS	0	0	0	11,210	10,010	19,079
A	RED AMARILLO	POTTER COUNTY WELL FIELD OGALLALA AQUIFER	POTTER	0	3,667	3,740	3,745	2,861	1,780
A	RED AMARILLO	MUNICIPAL CONSERVATION CONSERVATION	RANDALL	0	595	1,070	1,159	1,256	1,337
A	RED CANYON	MUNICIPAL CONSERVATION CONSERVATION	RANDALL	0	80	176	191	208	227
A	RED CANYON	DRILL ADDITIONAL GROUNDWATER WELL DOCKUM AQUIFER	RANDALL	700	1,400	2,100	2,800	2,800	3,800
A	RED COUNTY-OTHER	MUNICIPAL CONSERVATION CONSERVATION	RANDALL	0	101	197	231	268	296

A	RED COUNTY-OTHER	DRILL ADDITIONAL GROUNDWATER WELL OGALLALA AQUIFER	RANDALL	0	0	600	1,200	1,800	2,400
A	RED IRRIGATION	IRRIGATION CONSERVATION CONSERVATION	RANDALL	0	18,028	18,673	19,835	20,481	21,126
Total Projected Water Strategies (acre-feet per year) =				700	23,871	18,673	40,371	39,684	50,048

SWISHER COUNTY

-RWPG-	-RIVER BASIN-	-WATER MANAGEMENT STRATEGY-	-SOURCE COUNTY-	-2010-	-2020-	-2030-	-2040-	-2050-	-2060-
	-WUG-	-SOURCE NAME-							
O	BRAZOS IRRIGATION	IRRIGATION WATER CONSERVATION CONSERVATION	SWISHER	17,856	8,035	0	0	0	0
O	RED IRRIGATION	IRRIGATION WATER CONSERVATION CONSERVATION	SWISHER	34,661	39,231	42,539	38,285	34,457	31,011
O	RED TULIA	LOCAL GROUNDWATER DEVELOPMENT OGALLALA AQUIFER	SWISHER	778	778	700	630	567	510
O	RED TULIA	MUNICIPAL WATER CONSERVATION CONSERVATION	SWISHER	18	0	0	0	0	0
Total Projected Water Strategies (acre-feet per year) =				53,313	48,044	42,539	38,915	35,024	31,521

Source: TWDB 2011 Regional Water Planning Database:
<https://www.twdb.state.tx.us/apps/db12/defaultReadOnly.asp>

APPENDIX D

**Electronic Copy of
High Plains Underground Water Conservation District
Management Plan**

(Provided on CD)

APPENDIX E

Rules of the High Plains Underground Water Conservation District No. 1

As Adopted July 19, 2011

Rules of the High Plains Underground Water Conservation District No. 1



As Adopted July 19, 2011

RULES OF THE HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1

In accordance with Section 59 of Article 16 of the Texas Constitution, with Article 7880-3c, Texas Civil Statutes as amended, and with Acts of the 53rd Legislature (1953), p. 17, Ch. 10, H. B. 56, with Acts of the 57th Legislature (1961), p. 1095, Ch. 493, H. B. 692, and Chapter 36 of the Texas Water Code, the following rules are hereby ratified and adopted as the rules of the District by its Board. All rules or parts of rules in conflict with these rules are hereby repealed. The effective date of these rules is July 19, 2011.

The rules, regulations and modes of procedure herein contained are and have been adopted for the purpose of facilitating the administration of the groundwater laws of the state and the rules of this District. The laws of the state of Texas enable the District to draft rules providing for the conservation, regulation, preservation, protection, recharging, and prevention of waste of groundwater, and of aquifers or their subdivisions. Groundwater conservation districts are the state's preferred method of groundwater management through rules developed, adopted, and promulgated by the district. To the end that these objectives be attained, these rules shall be so construed.

These rules may be used as guides in the exercise of discretion, where discretion is vested. However, under no circumstances and in no particular case shall they, or any of them, be construed as a limitation or restriction upon the exercise of any discretion, where such exists; nor shall they in any event be construed to deprive the Board of an exercise of powers, duties and jurisdiction conferred by law, nor to limit or restrict the amount and character of data or information which may be required for the proper administration of the law.

The ownership and rights of the owners of the land and their lessees and assigns in groundwater are hereby recognized, and nothing in these rules shall be construed as depriving or divesting the owners or their lessees and assigns of the ownership or rights, except as those rights may be limited or altered by state law and District rules. A rule promulgated by a district may not discriminate between owners of land that is irrigated for production and owners of land or their lessees and assigns whose land that was irrigated for production is enrolled or participating in a federal conservation program.

The District incorporates Texas Water Code §36.102, as may be amended, into these rules: (1) A District may enforce its rules by injunction, mandatory injunction, or other appropriate remedy in a court of competent jurisdiction; (2) The Board by rule may set reasonable civil penalties for breach of any rule of the District not to exceed \$10,000 per day per violation, and each day of a continuing violation constitutes a separate violation; (3) A penalty under the District rules is in addition to any other penalty provided by the law of this state and may be enforced by complaints filed in the appropriate court of jurisdiction in the county in which the District's principal office or meeting place is located; (4) If the District prevails in any suit to enforce its rules, the District may seek and the court shall grant, in the same action, recovery for attorney's fees, costs for expert witnesses, and other costs incurred by the District before the court. The amount of the attorney's fees shall be fixed by the court.

TABLE OF CONTENTS

RULE 1	Definitions	4
RULE 2	General Provisions	8
RULE 3	Illegal Drilling and Operation of Wells	10
RULE 4	Regulation of Well Spacing	14
RULE 5	Implementation of 50/50 Management Goal; Production Limitations	18
RULE 6	Construction and Maintenance; Well Log	24
RULE 7	Water Well Permits; Exemptions; Well Registration	25
RULE 8	Permit Hearing Procedures	29
RULE 9	Rulemaking Hearing Procedures	33
RULE 10	Permitting and Regulation of Drilled or Mined Shafts	35

RULE 1: DEFINITIONS

Unless the context hereof indicates a contrary meaning, the words hereinafter defined shall have the following meaning in these rules:

- (a) "50/50 Management Goal" means the District's Desired Future Condition of the Ogallala Aquifer, as set forth in the District's Management Plan, that 50 percent of the saturated thickness of the Ogallala Aquifer will still be in the Ogallala Aquifer 50 years later. The first planning interval for the 50/50 Management Goal as contemplated in these rules is January 1, 2010, through January 1, 2060.
- (b) "Abandoned well" means a well that has been abandoned by the owner by filing an abandoned well form with the District and (1) capped or plugged in compliance with District rules or (2) properly equipped in such a manner that it cannot produce more than 25,000 gallons of water per day or 17.5 gallons of water per minute. Once a well is abandoned its permit and well site are void.
- (c) "Administratively complete application" means an application (1) for which all information requested by the District has been fully and accurately provided; (2) that complies with District rules; (3) for which all applicable fees and deposits have been paid; (4) where the applicant is in compliance with any permits the applicant holds from the District and with District rules; (5) where all necessary field and site visits have been conducted, insofar as applicable, and (6) that has been recommended for approval by the General Manager.
- (d) "Allowable Production Rate" means the amount of groundwater that wells or well systems are authorized to produce from the Ogallala Aquifer during each calendar year beginning on January 1, 2012. The Allowable Production Rate for all wells and well systems in the District is set forth in Rule 5.3.
- (e) "Alternate Measuring Method" means an alternative measuring method approved for use as provided on the District's list of approved alternate measuring methods.
- (f) "Applicant" means a person seeking action by the District such as requesting a permit, an exception, or a hearing.
- (g) "Approved well site" means a site granted by the Board and a permit to drill issued.
- (h) "Aquifer" means all or part of any water bearing stratum or formation underlying the District's boundaries, including the Ogallala Aquifer, Edwards-Trinity (High Plains) Aquifer and the Dockum Aquifer.
- (i) "Board" means the governing body of the District.
- (j) "Beneficial use" or "Beneficial purpose" shall have the same meaning as found in the Texas Water Code §36.001(9), as may be amended: (1) agricultural, gardening, domestic, stock raising, municipal, mining, manufacturing, industrial, commercial, recreational, or pleasure purposes; (2) exploring for, producing, handling, or treating oil, gas, sulphur, or other minerals; or (3) any other purpose that is useful and beneficial to the user.
- (k) "Conservation" means those water saving practices, techniques, and technologies that will reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or

increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.

- (l) "Contiguous Acre" means a surface acre of land overlying the Ogallala Aquifer upon which a well is located, and each additional acre of land overlying the Ogallala Aquifer that is:
- (1) owned in fee by the same person or entity or for which the person or entity has the right to produce groundwater through deed, easement, contract, lease or any other legally recognized conveyance; and
 - (2) either:
 - (A) located within the same continuous boundary or perimeter of the same surface estate plat, deed, section, or other legally recognized surface estate property description filed in the county deed records as the acre on which the well is located, including property that is described in separate plats or deeds;
 - (B) adjacent to acreage described under (1) or (2)(A).

Acreage on separate tracts of land that would otherwise be contiguous under this definition but for the need to cross over to the other side of a public right of way or an easement shall be considered contiguous. The acreage of the public right of way or easement itself shall not be included for purposes of calculating the amount of total contiguous acreage unless the person or entity has the right to produce groundwater from the public right of way or easement. Acreage on two otherwise non-contiguous tracts of land shall not be considered contiguous simply because they are joined by the length of a public right of way or easement.
- (m) "Destroyed well" means a well that has been plugged in compliance with District rules and/or no evidence of the well is visible at the ground surface. A destroyed well shall not be considered a valid well.
- (n) "Deteriorated well" or "Deteriorating well" means a well that, in the discretion of the District, because of its condition, will cause or is likely to cause property damage, personal injury, or risk to health, safety, or life and/or the contamination of groundwater within the District's boundaries.
- (o) "District" means the High Plains Underground Water Conservation District No. 1, having authority to regulate the spacing of wells, the production of wells, or both, maintaining its principal office in Lubbock, Texas. Where applications, reports, and other papers are required to be filed with or sent to "the District" or "District office" means the District's principal office in Lubbock, Texas.
- (p) "District personnel" means any person employed, empowered, or authorized by or contracted to do business for the District.
- (q) "Domestic use" means the use of water by an individual, or by a family unit or household, for drinking washing, culinary purposes, landscape irrigation, irrigation of a family garden and/or orchard when the produce is to be consumed by the family unit, and the watering of animals used in operating a farm or as food for the farm family. Domestic use does not include use by or for a public water system.

- (r) "Domestic well" means a well used solely for domestic use.
- (s) "Exempt well" means a well that is exempt from permitting under Rule 7.1(c).
- (t) "Existing well" means a well that was in existence or for which drilling commenced prior to July 19, 2011.
- (u) "General Manager" means the General Manager or the General Manager's designee.
- (v) "Groundwater" means water percolating below the surface of the earth.
- (w) "Illegal well" means any well drilled, completed, equipped or operated in violation of District rules.
- (x) "Livestock use" means the use of groundwater for the watering of livestock.
- (y) "Management Plan" means the most recently adopted District management plan, as required under Texas Water Code §36.1071.
- (z) "Meter" means a water production measuring device authorized under Rule 5.
- (aa) "New well" means a well that is to be drilled into the aquifer on or after July 19, 2011.
- (bb) "Open or uncovered well" means any artificial excavation drilled or dug for the purpose of exploring for or producing water from the aquifer and is not capped or covered in compliance with District rules.
- (cc) "Owner" means and includes any person, private or public, that has a legal right to capture and produce water from a property, except as those rights may be limited or altered by Texas Water Code Chapter 36, as may be amended, or District rules, either by ownership, contract, lease, easement, or any other estate in the water.
- (dd) "Permit" means authorization granted by the Board to construct, drill, operate, install, equip, complete, or other work designed for the production of groundwater from the aquifer.
- (ee) "Permitted well" means a well completed and operated in compliance with and provided protection under District rules, and for which an abandoned well form has not been filed with the District.
- (ff) "Person" means any legal entity, including but not limited to, individual, partnership, firm, any type of corporation, estate, guardianship, trust or any type of municipality.
- (gg) "Poultry use" means the use of groundwater for the watering of poultry.
- (hh) "Pre-District well" means an unpermitted well drilled and equipped to produce more than 25,000 gallons of water per day or 17.5 gallons per minute prior to the creation of the District or in an area prior to its annexation into the District that, provided there is a record of the exact location of the well on file with the District, shall be afforded spacing protection under District rules as if it had been a permitted well and until such time the well is abandoned by the owner.
- (ii) "Proposed well site" means the location of a proposed well as recorded on an application filed with the District until such application is granted by the Board. A proposed well site is not a permit to drill.
- (jj) "Public water system" means a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, which includes all uses described under the definition for drinking water in 30 Texas Administrative Code, Section 290.38. Such a system must

have at least fifteen service connections or serve at least twenty-five individuals at least 60 days out of the year. This term includes any collection, treatment, storage, and distribution facilities under the control of the operator of such system and used primarily in connection with such system, and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Two or more systems with each having a potential to serve less than fifteen connections or less than twenty-five individuals but owned by the same person, firm, or corporation and located on adjacent land will be considered a public water system when the total potential service connections in the combined systems are fifteen or greater or if the total number of individuals served by the combined systems total twenty-five or greater at least 60 days out of the year. Without excluding other meanings of the terms "individual" or "served," an individual shall be deemed to be served by a water system if he lives in, uses as his place of employment, or works in a place to which drinking water is supplied from the system.

- (kk) "Retail public utility" means any person, corporation, public utility, water supply corporation, municipality, political subdivision or agency operating, maintaining, or controlling in this state facilities for providing potable water service for compensation.
- (ll) "Replacement well" means a well drilled with the purpose of replacing an existing well.
- (mm) "Rule(s)" means the rules and regulations of the District compiled in this document and as may be amended.
- (nn) "Subsidence" means the lowering in elevation of the land surface caused by withdrawal of groundwater.
- (oo) "Valid well" means the location of (1) a permitted well or (2) a pre-District well.
- (pp) "Waste" shall have the same meaning contemplated under Chapter 36 of the Texas Water Code, including without limitation as defined in Texas Water Code §36.001(8), as may be amended: (1) withdrawal of groundwater from the aquifer at a rate and in an amount that causes or threatens to cause intrusion into the aquifer of water unsuitable for municipal, industrial, agricultural, gardening, domestic, or stock raising purposes; (2) the flowing or producing of wells from the aquifer if water produced is not used for a beneficial purpose; (3) escape of groundwater from one aquifer to any other reservoir or geologic strata that do not contain groundwater; (4) pollution or harmful alteration of groundwater in the aquifer by salt water or other deleterious matter admitted from another stratum or from the surface of the ground; (5) willfully or negligently causing, suffering, or allowing groundwater to escape into any river, creek, natural watercourse, depression, lake, reservoir, drain, sewer, street, highway, road or road ditch, or onto any land other than that of the owner; or (6) groundwater that escapes onto land other than that of the owner unless permission has been granted by the occupant of the land receiving the discharge. This permission must be in the form of an agreement signed between the parties on a form acceptable to the District and on file at the District office. The occupant of the land receiving the discharge must otherwise comply with all other District rules.
- (qq) "Water" is used synonymously with groundwater.

- (rr) "Well" means any artificial excavation located within the boundaries of the District dug or drilled for the purpose of exploring for or withdrawing groundwater from the aquifer.
- (ss) "Well operator" means the person who operates a well or well system.
- (tt) "Well owner" means the person who owns a possessory interest in the land upon which a well or well system is located or to be located, the well or well system, or the groundwater withdrawn from a well or well system.
- (uu) "Well system" means a well or group of wells tied to the same center pivot irrigation system(s) or other water distribution system(s).
- (vv) "Year" means a calendar year (January 1 through December 31), except where the usage of the term clearly suggests otherwise.

RULE 2: GENERAL PROVISIONS

2.1 Repeal of Prior Regulations and Notice of Possible Future Changes to Rules

All of the previous rules and regulations of the District have been reviewed and evaluated, and except as they are herein republished, are repealed. Any previous rule or regulation which conflicts with or is contrary to these rules is hereby repealed. District rules may be changed from time to time depending upon changes to applicable laws, rules, regulations, management plans, and other conditions or circumstances dictating change. The District, at its discretion and through appropriate procedure, may amend, suspend, or repeal, in part or in whole, these rules at any time as necessary to accommodate the above-referenced need for change to the rules.

2.2 Savings Clause

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

2.3 Computing Time

In computing any period of time prescribed or allowed by these rules, by order of the Board, or by any applicable statute, the day of the act, event, or default from which the designated period of time begins to run, is not to be included, but the last day of the period so computed is to be included, unless it be a Sunday or legal holiday, in which event the period runs until the end of the next day which is neither a Sunday nor a legal holiday.

2.4 Time Limits

Applications, requests, or other papers or documents required or allowed to be filed under state law or District rules must be received for filing at the District's principal office in Lubbock, Texas within the time limit, if any, for such filing. The date of receipt and not the date of posting is determinative.

2.5 Show Cause Orders and Complaints

The Board, either on its own motion or upon receipt of sufficient written protest or complaint, may at any time, after due notice to all interested parties, cite any person operating within the District to appear before the Board in a public hearing and require that person to show cause why the operating authority or permit should be not suspended, canceled, or otherwise restricted and limited, for failure to comply with the orders or rules of the Board or the relevant statutes of the state, or for failure to abide by the terms and provisions of the permit or operating authority itself. The matter of evidence and all other matters of procedure at any such hearing will be conducted in accordance with these rules of procedures and practice.

2.6 Changed Conditions

The decision of the Board on any matter contained herein may be reconsidered by its own motion or upon motion showing changed conditions, or upon the discovery of new or different conditions or facts after the hearing or decision on such matter. If the Board should decide to reconsider a matter after having announced a ruling or decision and upon a motion showing changed conditions, it shall give notice to persons who were proper parties to the original action, and such persons shall be entitled to a hearing thereon if they file a written request therefore within fifteen days from the date of the mailing of such notice.

2.7 Final Orders of the Board

The orders of the Board in any proceeding other than permit hearings and rulemaking hearings shall become the final order of the Board on the day it is entered by the Board.

2.8 Headings and Captions

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

2.9 Construction

A reference to a title or chapter or code without further identification is a reference to a title of or chapter of the Texas Water Code. A reference to a rule, section, or subsection without further identification is a reference to a rule, section, or subsection in these rules. The singular includes the plural, and the plural includes the singular. The masculine includes the feminine, and the feminine includes the masculine.

2.10 Surveys

The District may make surveys of the aquifer or subdivision and surveys of the facilities in order to determine the quantity of water available for production and use and to determine the improvements, developments, and recharging needed by an aquifer or subdivision.

2.11 Research

The District may carry out any research projects deemed necessary by the Board.

2.12 Collection of Information

The District may collect any information the Board deems necessary, including information regarding groundwater, water conservation, and the practicability of recharging the aquifer or subdivisions.

2.13 Publication of Plans and Information

The District may publish its plans and the information it develops, bring them to the attention of the users of groundwater in the District, and encourage the users to adopt and use them.

2.14 Effective Date

These rules take effect on the date of their original adoption and an amendment to these rules takes effect on the date of its original adoption. It is the District's intention that the rules and amendments thereto be applied retroactively to activities involving the production and use of groundwater resources located in the District.

RULE 3: ILLEGAL DRILLING AND OPERATION OF WELLS

3.1 Drilling or Altering a Well without a Permit Prohibited

- (a) No person may drill a well or alter the size of a well or well pump such that it would bring that well under the jurisdiction of the District without first obtaining a permit from the Board.
- (b) A violation occurs on the first day the drilling or alteration begins and continues each day thereafter until the appropriate permits are approved.

3.2 Wasteful Use of Water Prohibited

- (a) Groundwater produced from the aquifer may only be used for a beneficial purpose. No person may produce or use groundwater from the aquifer in such a manner to constitute waste. Any person producing or using groundwater from the aquifer shall employ all reasonable methods to identify, prevent, and stop the waste of water.
- (b) No person shall operate a well within the District's boundaries at a rate of production higher than the maximum allowable production granted in a permit, District rules, or other applicable law. Beginning on January 1, 2012, no person shall operate a well producing groundwater from the Ogallala Aquifer within the District's boundaries in excess of the Allowable Production Rate set forth under Rule 5. All such unauthorized production is illegal, wasteful per se, and a nuisance.
- (c) All persons shall use reasonable diligence to convey water from the wellhead where produced to the place of use in order to prevent waste. No person shall transport groundwater in an open, unlined ditch or channel.

3.3 Groundwater Contamination Prohibited

- (a) No person shall pollute or harmfully alter the character of the aquifer of the District by means of salt water or other deleterious matter admitted from some other stratum or strata or from the surface of the ground.
- (b) Groundwater contamination issues may be investigated by the District but will be reported to the appropriate regulatory agency.

3.4 Open or Uncovered Wells Prohibited

- (a) Open or uncovered wells are prohibited within the District's boundaries. No owner shall allow an open or uncovered well condition to exist. The District shall require the owner to either close or cap said well according to District policy and procedures.
- (b) If the owner fails or refuses to close or cap the well in compliance with District rules, District personnel may go on the land and close or cap the well safely and securely.
- (c) Reasonable expenses incurred by the District in closing or capping a well constitute a lien upon the land which the well is located. The lien arises and attaches upon recordation in the deed records of the county where the well located an affidavit, executed by District personnel, 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, after notification, to cap or close the well in compliance with District policies and procedures; (5) the closing of the well by the District; and (6) the expenses incurred by the District in closing the well.

3.5 Deteriorated Wells Prohibited

- (a) Deteriorated wells are prohibited within the District boundaries. No owner shall allow a deteriorating well condition to exist. The District shall require the owner to either repair or destroy said well according to District policy and procedures.
- (b) If the owner fails or refuses to repair or destroy the well in compliance with District rules, District personnel may go on the land and close the well safely and securely.
- (c) Reasonable expenses incurred by the District in closing a well constitute a lien on the land which the well is located. The lien arises and attaches upon recordation in the deed records of the county where the well is located an affidavit, executed by District personnel, 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, after notification, to repair or destroy the well in compliance with District policies and procedures; (5) the closing of the well by the District; and (6) the expenses incurred by the District in closing the well.

3.6 Right to Inspect and Test Wells and Gather Information

- (a) District personnel are entitled to enter any public or private property within the District's boundaries at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit, or other order of the District.

(b) Inhibiting or prohibiting access to District personnel attempting to conduct an investigation under District rules constitutes a violation and subjects the person inhibiting or prohibiting access, as well as any other person authorizing or allowing such action, to penalties allowed in Texas Water Code §36.102.

(c) An application for a permit may be suspended or cancelled by the Board if the applicant refuses to grant District personnel access to real property to gather information necessary to complete an application.

(d) The operation of any well may be enjoined by the Board immediately upon the refusal to allow the gathering of information as provided above from such well.

3.7 Well Validation

(a) No person shall drill, equip, or operate an illegal well within the District's boundaries.

(b) The Board may cause to be issued a certificate of validation for wells drilled and equipped within the District for which the owner has not applied for a permit, or for wells not otherwise properly permitted, provided that such wells were not drilled, equipped, and operated in such a manner as to violate any other District rules; and provided that the cost of each well validation is paid to the District as provided by this rule. Nothing in this rule is intended to limit the powers of the Board to any other course of action granted by state law, or District rules, or within the prerogative of the Board.

(c) In order to provide for the validation of existing wells that are subject to District rules, it shall be the policy of the Board that a certification of validation for a well can be issued only after the location of the well and the wellhead equipment of the well has been determined by field survey by District personnel and found to be compliant with all District rules. The cost of such validation shall be borne by the owner and shall be \$1,000 per well validated.

(d) The validation fee may be waived for existing wells drilled in an area prior to its annexation into the District provided the owner submits a request for validation to the District within 120 days after the annexation date of the area in which the well to be validated is located.

(e) The General Manager is hereby directed to establish and administer the District's program for well validation; with appeals to the General Manager's well validating decisions being subject to Board review at any of its regularly called meetings, or at special called meetings.

3.8 Sealing Wells

(a) The District may seal wells that are prohibited from withdrawing groundwater within the District's boundaries by District rules or Board order when the General Manager determines that such action is reasonably necessary to assure that a well is not operated in violation of District rules or Board orders. A well may be sealed when (1) no application has been made for a permit to drill a new well; (2) misrepresentations have been made by the owner, orally or in writing, regarding the well; (3) the owner has violated any provision of the state law or District rules; (4) it is operated at a higher rate of production than the maximum allowable production granted for the well; (5) the well was not drilled within ten yards of the proposed well site specified in the permit; or (6) the Board has denied, cancelled, or revoked a permit.

(b) The well may be sealed by physical means, including plugging or rendering inoperable, and tagged to indicate that the well has been sealed by order of the District. The District may recover costs incurred for

sealing a well under this rule from the owner. Other appropriate action may be taken as necessary to preclude operation of the well or to identify unauthorized operation of the well.

(c) Tampering with, altering, damaging, or removing the seal of a sealed well or in any other way violating the integrity of the seal or pumping groundwater from a well that has been sealed constitutes a violation of District rules and subjects the person performing that action, as well as, any owner who authorizes or allows that action, to such penalties as provided by state law and District rules.

(d) The owner may appeal the decision of the General Manager to seal the well by filing a written request for a hearing before the Board, in which case the Board will hear the owner's appeal at the next regular Board meeting for which notice has not already been published. The owner may also take corrective action to address the cause for which the General Manager sealed the well and thereafter request the General Manager to remove the seal at the General Manager's discretion.

3.9 Illegal Drilling and Operation of Wells; Citizen Suit

(a) Drilling or operating a well or wells without a required permit or producing groundwater in violation of state law or District rules is declared to be illegal, wasteful per se, and a nuisance.

(b) Except as provided by this section, a landowner or other person who has a right to produce groundwater from land that is adjacent to the land on which a well or wells are drilled or operated without a required permit or permits or from which groundwater is produced in violation of state law or District rules, or who owns or otherwise has a right to produce groundwater from land that lies within one-half mile of the well or wells, may sue the well owner in a court of competent jurisdiction to restrain or enjoin the illegal drilling, operation, or both. The suit may be brought with or without the joinder of the District.

(c) Except as provided by this section, the aggrieved party may also sue the well owner for damages for injuries suffered by reason of the illegal operation or production and for other relief to which the party may be entitled. In a suit for damages against the well owner, the existence of a well or wells drilled without a required permit or the operation of a well or wells in violation of state law or District rules is prima facie evidence of illegal drainage.

(d) The suit may be brought in the county where the illegal well is located or in the county where all or part of the affected land is located.

(e) The remedies provided by this section are cumulative of other remedies available to the individual or the District.

(f) A suit brought under this section shall be advanced for trial and determined as expeditiously as possible. The court shall not grant a postponement or continuance, including a first motion, except for reasons considered imperative by the court.

(g) Before filing a suit under Subsection (b) or (c), an aggrieved party must file a written complaint with the District having jurisdiction over the well or wells drilled or operated without a required permit or in violation of a District rule. The District shall investigate the complaint and, after notice and hearing and not later than the 90th day after the date the written complaint was received by the District, the District shall determine, based on the evidence presented at the hearing, whether a District rule has been violated. The aggrieved

party may only file a suit under this section on or after the 91st day after the date the written complaint was received by the District.

(h) Notwithstanding Subsection (g), an aggrieved party under Subsection (b) may sue a well owner or well driller in a court of competent jurisdiction to restrain or enjoin the drilling or completion of an illegal well after filing the written complaint with the District under Subsection (g) and without the need to wait for a hearing on the matter.

3.10 Rules Enforcement

(a) If it appears that a person or entity has violated or is violating any provision of these rules, the Board may institute and conduct a suit in a court of competent jurisdiction in the name of the District for injunctive relief, recovery of a civil penalty in an amount set by these rules per violation, both injunctive relief and a civil penalty, or any other appropriate remedy. Each day that a violation continues shall be considered a separate violation. The civil penalty for a violation of any District rule is hereby set at the lower of:

(1) the \$10,000.00 per violation maximum penalty set forth under Chapter 36, Texas Water Code; or

(2) a lesser amount based on the severity of the violation set forth in a civil penalty schedule which the Board of Directors may adopt from time to time and which is incorporated by reference into these rules and shall constitute a rule of the District for all purposes.

(b) A penalty authorized under this section is in addition to any other penalty provided by law and may be enforced by filing a complaint in a court of competent jurisdiction in the county in which the District's principal office or meeting place is located.

(c) If the District prevails in a suit to enforce its rules, the District may seek and the court shall grant, in the same action, recovery of attorney's fees, costs for expert witnesses, and other costs incurred by the District before the court. The amount of attorney's fees awarded by a court under this rule shall be fixed by the court.

(d) The District shall not impose a penalty against a person for groundwater produced in excess of the Allowable Production Rate if necessary to comply with an order of the Texas Commission on Environmental Quality (TCEQ) that is specific to the person and related to remediating groundwater or soil contamination, supplying public water through an emergency interconnect, or a similar TCEQ order specific to that person that necessitates groundwater production above the Allowable Production Rate where the acquisition of the required number of additional Contiguous Acres is impractical as determined in the sole discretion of the Board.

RULE 4: REGULATION OF WELL SPACING

4.1 Authorization to Regulate Spacing of Wells

(a) In order to minimize as far as practicable the drawdown of the water table, to control subsidence, to prevent interference between wells, to prevent degradation of water quality, or to prevent waste, the District by rule may regulate the spacing of wells by requiring all wells to be spaced a certain distance from property lines or adjoining wells; requiring wells with a certain production capacity, pump size, or other characteristic

related to the construction or operation of and production from a well to be spaced a certain distance from property lines or adjoining wells; or imposing spacing requirements adopted by the Board.

(b) For better management of the groundwater resources located within District boundaries or if a District determines that conditions in or use of an aquifer differ substantially from one geographic region of the District to another, the District may adopt different rules for each aquifer, subdivision of the aquifer, or geologic strata located in whole or in part within the boundaries of the District or each geographic area overlying an aquifer or subdivision of an aquifer located in whole or in part within the District's boundaries.

4.2 Minimum Spacing Requirements

(a) All new wells, including exempt wells, drilled into the Ogallala Aquifer shall be spaced from other valid wells drilled into or proposed well sites located in the Ogallala Aquifer as follows: (1) a well projected to produce 17.5 to 70 gallons per minute shall be located at least 100 yards from the nearest valid well or proposed well site and a minimum distance of 25 yards from the nearest property line; (2) a well projected to produce greater than 70 to 165 gallons per minute shall be located at least 200 yards from the nearest valid well or proposed well site and a minimum distance of 50 yards from the nearest property line; (3) a well projected to produce greater than 165 to 265 gallons per minute shall be located at least 300 yards from the nearest valid well or proposed well site and a minimum distance of 75 yards from the nearest property line; (4) a well projected to produce greater than 265 to 390 gallons per minute shall be located at least 350 yards from the nearest valid well or proposed well site and a minimum distance of 87.5 yards from the nearest property line; (5) a well projected to produce greater than 390 to 560 gallons per minute shall be located at least 400 yards from the nearest valid well or proposed well site and a minimum distance of 100 yards from the nearest property line; (6) a well projected to produce greater than 560 to 1,000 gallons per minute shall be located at least 500 yards from the nearest valid well or proposed well site and a minimum distance of 125 yards from the nearest property line; and (7) a well projected to produce greater than 1,000 gallons per minute shall be located at least 540 yards from the nearest valid well or proposed well site and a minimum distance of 135 yards from the nearest property line. (Table 1)

Table 1. Minimum Spacing of Wells Drilled into the Ogallala Aquifer

Well Production (factor that determines spacing of proposed wells)	Minimum Distance from nearest valid well drilled into or proposed well site located in Ogallala Aquifer	Minimum Distance from nearest property line
17.5 to 70 gpm	100 yards	25 yards
>70 up to 165 gpm	200 yards	50 yards
>165 up to 265 gpm	300 yards	75 yards
>265 up to 390 gpm	350 yards	87.5 yards
>390 up to 560 gpm	400 yards	100 yards
>560 up to 1,000 gpm	500 yards	125 yards
>1,000 gpm	540 yards	135 yards

(b) All new wells drilled into the Dockum Aquifer shall be spaced from other valid wells drilled into or proposed well sites located in the Dockum Aquifer as follows: (1) a well projected to produce 17.5 up to 70 gallons per minute shall be located at least 100 yards from the nearest valid well or proposed well site and a minimum distance of 25 yards from the nearest property line; (2) a well projected to produce greater than 70 up to 165 gallons per minute shall be located at least 200 yards from the nearest valid well or proposed well site and a minimum distance of 50 yards from the nearest property line; (3) a well projected to produce greater than 165 up to 265 gallons per minute shall be located at least 300 yards from the nearest valid well or proposed well site and a minimum distance of 75 yards from the nearest property line; (4) a well projected to produce greater than 265 up to 500 gallons per minute shall be located at least 880 yards from the nearest valid well or proposed well site and a minimum distance of 100 yards from the nearest property line; and (5) a well projected to produce greater than 500 gallons per minute shall be located at least 1760 yards from the nearest valid well or proposed well site and a minimum distance of 135 yards from the nearest property line. (Table 2)

Table 2. Minimum Spacing of Wells Drilled into the Dockum Aquifer

Well Production (factor that determines spacing of proposed wells)	Minimum Distance from nearest valid well drilled into or proposed well site located in Dockum Aquifer	Minimum Distance from nearest property line
17.5 up to 70 gpm	100 yards	25 yards
>70 up to 165 gpm	200 yards	50 yards
>165 up to 265 gpm	300 yards	75 yards
>265 up to 500 gpm	880 yards	100 yards
>500 gpm	1760 yards	135 yards

(c) It shall be considered to be a fraud upon the District and on the adjacent landowners for any applicant to willfully give erroneous information in the application. If any owner willfully produces a permitted well at a higher rate than represented in the application and/or approved in the permit, such action may be enjoined by the Board.

(d) Regardless of a permit applicant's intent in providing information in the application, the Board may require the owner of a well with a production capacity that exceeds the allowable capacity for the minimum well spacing distance applicable to the well to be re-equipped to limit its production capacity to bring it into compliance with the applicable production and minimum distance requirements set forth in this rule.

4.3 Place of Drilling Wells

After an application for a permit has been granted, the well, if drilled, must be drilled within ten yards of the location specified in the permit, and not elsewhere. If the well is drilled more than ten yards from the approved well site granted by the Board, it will be an illegal well. The District may enjoin the drilling or operation of the well pursuant to Texas Water Code §36.119, as may be amended.

4.4 Replacing Wells

- (a) No person may replace a well without first obtaining a permit from the Board.
- (b) A replacement well must be drilled within fifty yards of the well being replaced and not elsewhere.
- (c) A replacement well must comply with the minimum spacing requirements for the maximum allowable production granted for the well being replaced, otherwise the replacement well shall be considered a new well for which application must be made under District rules.
- (d) A replacement well may not be permitted for a capacity greater than the maximum allowable production for which the well being replaced well was permitted.
- (e) A replacement well may not be replaced.
- (f) The location of the well being replaced shall be protected in accordance with minimum spacing requirements for the maximum allowable production for which the well being replaced was permitted until the replacement well is drilled and tested. Within 240 days of the issuance of the permit, the owner must declare in writing to the District which one of these two wells will be produced. If the owner does not notify the District within 240 days, then it will be conclusively presumed that the replacement well is the well the owner desires to retain.
- (g) Immediately after determining which well will be retained for production, the other well shall be abandoned in accordance with District rules. Violation of such article is made punishable by a fine of not less than \$500.00.
- (h) An application to replace an existing well may be granted by the Board without notice or hearing.

4.5 Altering the Size of a Well or Well Pump

- (a) No person may alter the size or actual pumping capacity of a well or well pump to a larger capacity to increase the pumping rate of production above the maximum allowable production for which the well is permitted without a permit from the Board.
- (b) The Board may grant permission to alter the size of a well or well pump only after written notice to adjacent landowners and owners of wells within a distance of the proposed well equal to the minimum spacing requirements for new wells of same or desired capacity.
- (c) If the owners set identified in Subsection (b) indicate to the Board in writing that they have no objection to the proposed change and/or if the well is a sufficient distance from other wells to comply with the minimum spacing requirements for new wells of the desired capacity then the Board may proceed to decide such matter.
- (d) An application to alter the size of a well or well pump may be granted by the Board without notice or hearing.

4.6 Exceptions to Minimum Spacing Requirements

(a) In order to protect property rights and carry out the goals of the District, the Board may from time to time grant exception to minimum spacing requirements. This rule shall not be construed so as to limit the power of the Board, and the powers stated are cumulative only of all other powers possessed by the Board.

(b) Any person requesting an exception to minimum spacing requirements shall submit (1) a request for exception on a form prescribed by the District and (2) a non-refundable fee of \$500 plus any other fees or deposits required by the District.

(c) The request shall contain the name and address of all well owners within a distance of the proposed well equal to the minimum spacing requirements for the projected maximum allowable production for which the well is to be permitted.

(d) The Board may grant a request for exception to minimum spacing requirements if the Board finds that (1) all information requested by the District has been fully and accurately provided; (2) the application complies with all other District rules; (3) the applicant is in compliance with any permits the applicant holds from the District and with District rules; (4) a statement that the person requesting the exception does so with full knowledge of its import and effect; (5) all applicable fees and deposits have been paid; and (6) all necessary field and site visits have been conducted, insofar as applicable.

(e) Notice shall be provided to all affected owners. These landowners and well owners may appear and present evidence at public hearing, at which time the Board in its discretion may grant an exception within ten days of the date of the hearing. Unless the conditions in Subsection (d) have been met, the Board may grant an exception only after written notice and hearing.

(f) An exception may be granted by the Board, without notice and hearing, if all persons notified execute a written waiver stating that they do not object to the granting of such exception.

RULE 5: IMPLEMENTATION OF THE 50/50 MANAGEMENT GOAL; PRODUCTION LIMITATIONS

SUBCHAPTER A: PURPOSE & APPLICABILITY

5.1 Purpose

The purpose of this Rule 5 is to set forth the process for implementing the District's 50/50 Management Goal for the Ogallala Aquifer, as defined in these rules. The provisions of these rules are adopted to allow the District to accomplish the purposes of Chapter 36 of the Texas Water Code, these rules, and to achieve the goals of the District's Management Plan, including the attainment of the 50/50 Management Goal.

SUBCHAPTER B: ALLOWABLE PRODUCTION RATE

5.2 Applicability

The requirements of this Rule 5, Subchapter B, shall apply to all existing, pre-District, and new wells or well systems that withdraw groundwater from the Ogallala Aquifer, whether valid or illegal, except for wells that are exempt from permitting under Rule 7.1(c).

5.3 Allowable Production Rate for Wells

- (a) Beginning on January 1, 2012, and through December 31, 2013, all persons who own or operate an existing, new, or pre-District well or well system that withdraws groundwater from the Ogallala Aquifer are required to limit the total amount of production from the well or well system to the Allowable Production Rate of 1.75 acre feet per Contiguous Acre per year, as that term is defined by these rules.
- (b) Beginning on January 1, 2014, and through December 31, 2015, all persons who own or operate an existing, new, or pre-District well or well system that withdraws groundwater from the Ogallala Aquifer are required to limit the total amount of production from the well or well system to the Allowable Production Rate of 1.5 acre feet per Contiguous Acre per year.
- (c) Beginning on January 1, 2016, and continuing thereafter, all persons who own or operate an existing or new well or well system that withdraws groundwater from the Ogallala Aquifer are required to limit the total amount of production from the well or well system to the Allowable Production Rate of 1.25 acre feet per Contiguous Acre per year.
- (d) A Contiguous Acre shall only be counted one time for purposes of determining the amount of groundwater production authorized under this rule.
- (e) Only those acres that meet the definition of Contiguous Acre in Rule 1 shall be counted for purposes of determining the Allowable Production Rate from a particular tract of land. If an owner or operator has separate tracts of land that together do not meet the definition of Contiguous Acre, the District shall count each tract separately so that each individual tract has a separate Allowable Production Rate based on the number of Contiguous Acres associated with the individual tract. The Allowable Production Rates for separate tracts of land that do not meet the definition of Contiguous Acre shall not be combined and produced from one tract.

5.4 Allowable Production Rate for Municipalities and Public Water Systems

- (a) A municipality or public water system that operates as a retail public utility as of the effective date of this provision shall submit a sworn written certification to the District that includes the following information: (1) the maximum amount of groundwater production from the Ogallala Aquifer from any one year during the previous three calendar years; (2) the location of each well or well system used to provide retail public water service; (3) the number of Contiguous Acres owned or controlled for the right to produce groundwater from the well or well system; and (4) the number of acres within the corporate boundaries or certificated service area of the municipality or public water system. The municipality or public water system shall provide this certification to the District on an application form prescribed by the District no later than March 1, 2012.
- (b) The municipality or public water system shall submit evidence to support the maximum amount of groundwater production claimed under Subsection (a)(1) of this rule.
- (c) The General Manager shall approve or deny such applications, in whole or in part, and may request additional information from the applicant. Appeals of a denial by the General Manager may be made to the Board on written request of the applicant.

(d) Beginning on January 1, 2012, the amount of groundwater production certified to the District under Subsection (a) of this rule and approved by the General Manager or Board shall be the maximum amount of groundwater the municipality or public water system is authorized to produce on an annual basis from the Ogallala Aquifer, except as provided under Subsection (e).

(e) A municipality or public water system that intends to produce more groundwater than the amount authorized under Subsection (d) of this rule shall have the requisite amount of Contiguous Acres necessary to produce the additional amount of groundwater prior to such production. All production over the amount authorized under Subsection (d) of this rule shall follow the Allowable Production Rates specified in Rule 5.3.

(f) All municipalities and public water systems shall follow the metering and reporting requirements in Rule 5, Subchapter C.

(g) A municipality or other public water system may produce its maximum annual groundwater production amount at any rate necessary to comply with applicable minimum water system capacity requirements of the Texas Commission on Environmental Quality. This subsection shall not be construed to exempt a municipality or other public water system from other requirements of these District Rules.

5.5 Authority to Carry Forward Allowable Production Rate

(a) A well owner or operator may set aside all or a portion of the current year's Allowable Production Rate under Rule 5.3 to carry forward for use during any of the following three calendar years. There is no limitation on the amount of water that may be set aside from the current year's Allowable Production Rate under Rule 5.3 and carried forward for future use, but the right to use the water set aside under this rule shall expire at the end of the third calendar year following the year that the water was set aside.

(b) A well owner or operator may only set aside all or a portion of the current year's Allowable Production Rate from the Contiguous Acres that surround a well or well system. Property that is not contiguous to the location of the well or well system under Rule 1 is not eligible to be counted for purposes of this rule.

(c) To be eligible to set aside all or a portion of the current year's Allowable Production Rate, the well or well system must have been permitted for the right to produce groundwater, be a pre-District well, or must be a well registered in accordance with Rule 7.9, as of January 1 of the calendar year for which the set aside is sought.

(d) A well owner or operator is not authorized to borrow from or set aside production from a future year's Allowable Production Rate.

(e) In order to set aside all or a portion of the Allowable Production Rate under this rule, a well owner or operator must apply to the District no later than March 1 following the year for which the set aside is sought. The application must be timely received, and shall not be approved unless the well owner also timely submits a production report in compliance with Rule 5.17 that addresses groundwater production for that year for which the set aside is sought. The application for a set aside shall be prescribed by the District utilizing the mechanisms and procedures set forth under Rule 5.17 and shall indicate the unused amount of acre feet that is being carried forward.

(f) The General Manager shall approve or deny such applications, in whole or in part, and may request additional information from the applicant. Appeals of a denial by the General Manager may be made to the Board on written request of the applicant.

(g) The District shall keep records of the amount of water each owner or operator has been approved by the District to carry forward from the Annual Production Rate under Rule 5.3 for a particular year and the year the amount carried forward is set to expire.

(h) The first calendar year for which a person may submit an application under this rule is for production during calendar year 2012. Thus, the application for that year must be submitted to the District no later than March 1, 2013.

(Rules 5.6 through 5.9 reserved for expansion)

SUBCHAPTER C: METERING AND REPORTING REQUIREMENTS

5.10 Applicability of Metering Requirement

The metering requirements of these rules shall apply to all existing and new wells or well systems, except those wells exempt from permitting under Rule 7.1(c)(1) or 7.1(c)(2).

5.11 Metering Requirements; Ability for Existing Wells to Use Alternate Measuring Method Until 2016

(a) Existing wells: Beginning on January 1, 2012, all existing wells or well systems that are required to be metered must begin recording the use of groundwater through a meter or through the use of an alternate measuring method. All existing wells or well systems that are required to be metered must be equipped with a fully functioning meter that meets the requirements of these rules no later than January 1, 2016.

(b) New wells: Beginning on January 1, 2012, all new wells or well systems that are required to be metered shall be equipped with a fully functioning meter before producing groundwater from the well or well system.

(c) The General Manager shall develop and publish a list of approved alternate measuring methods and shall develop and publish meter specifications that shall include a list of approved meters on the District's internet website no later than September 1, 2011. The Board shall review and approve the list of alternate measuring methods and the meter specifications developed and published by the General Manager.

(d) An owner or operator may apply to the District for approval of any alternate measuring method or additional meters not included in the list developed by the General Manager. The General Manager shall approve or deny such applications. Appeals of a denial by the General Manager may be made to the Board on written request. In no event may an owner or operator of an existing well or well system operate the well on or after January 1, 2012, without either installing a fully functional meter that meets the requirements of these rules or implementing an approved alternate measuring method for the well or well system, regardless of whether a request for approval or appeal is pending before the General Manager or District. In no event may an owner or operator of a new well or well system operate the well on or after January 1, 2012, without installing a fully functioning meter that meets the requirements of these rules, regardless of whether a request for approval or appeal is pending before the General Manager or District.

(e) Replacement wells are considered to be new wells for purposes of the metering requirements of these rules.

5.12 Meter Installation and Sealing

(a) Each approved meter shall be installed, operated, maintained, and repaired in accordance with the General Manager's meter specifications. All owners or operators of wells or well systems shall notify the District in writing on a form prescribed by the District that a meter has been installed on the well or well system. Upon notification, District staff shall inspect the meter installation to ensure that the meter was installed in accordance with the District's meter specifications and shall seal the meter. All well owners or operators shall notify the District in writing on a form prescribed by the District prior to removing the seal.

(b) No person may tamper with any meter or seal installed, or that is required to be installed, on any well or well system within the District's boundaries.

(c) The owner or operator of a well is responsible for the purchase, installation, operation, maintenance, and repair of the meter associated with the well or well system.

(d) Bypasses are prohibited unless they are also metered.

(e) Meter readings shall be recorded and groundwater production reported as required under Rule 5.17.

5.13 Grandfathering of Existing Meters

(a) Wells or well systems that are equipped with fully functioning meters as of the date the District's approved meter list is published are hereby grandfathered, and are recognized by the District as being equipped with meters in compliance with these rules for as long as the grandfathered meters remain fully functional. Owners or operators wells or well systems that are equipped with meters as of the date the District's approved meter list is published shall follow the Allowable Production Rate and reporting requirements of these rules.

(b) In the event a well or well system equipped with a meter that has been grandfathered under Subsection (a) of this rule is replaced under Rule 4.4 or requires the installation of a new meter, the well or well system shall be equipped with a new meter in accordance with the General Manager's meter specifications and shall be from the District's list of approved meters as set forth in Rule 5.11.

5.14 Metering Aggregate Withdrawal

(a) Where wells are part of a well system, one or more water meters may be used for the well system if the water meter or meters are installed so as to measure the total groundwater production from all wells included in the system with no non-metered production. The provisions of Rule 5.12 apply to meters measuring aggregate pumpage from well systems.

(b) Owners or operators of all new wells or replacement wells that are required to be metered and that are drilled to operate as part of a well system shall meter the well system in accordance with Subsection (a) of this rule before producing from the new well or the replacement well and shall report production from the entire well system upon operation of the new well or replacement well as required under this rule.

5.15 Removal of Meter for Repairs

A seal on a meter may be removed for meter repairs and the well or well system may be operated provided that the District is notified prior to removal of the seal and all necessary repairs are completed in a timely manner. The readings on the meter must be recorded immediately prior to removal and at the time of reinstallation of the seal by the District. The record of pumpage must include an estimate of the amount of groundwater withdrawn during the period the meter was not installed and operating. Upon completion of the meter repairs, the District shall be notified and District staff shall inspect the re-installation of the meter and re-install the seal.

5.16 Enforcement

It is a major violation of these Rules to fail to record and report groundwater production through a meter or alternate measuring method in accordance with these rules. After a well or well system is determined to be in violation of these rules for failure to meter, use an alternative measuring method, or maintain and report meter or alternate measurement readings, all enforcement mechanisms provided by law and these rules shall be available to prevent unauthorized use of the well or well system and may be initiated by the General Manager without further authorization from the Board.

5.17 Production Reports

(a) Beginning on January 1, 2012, all owners or operators of wells or well systems that are required to be metered under Rule 5.10 shall begin recording groundwater production through the use of a fully functional meter that meets the requirements of these rules or through the use of an approved alternate measuring method for the well or well system.

(b) All owners or operators of wells or wells systems that are required to be metered must submit annual production reports to the District. All production reports submitted to the District shall include the following information: (1) the total amount of groundwater produced from the well or well system for the previous calendar year; (2) the number of Contiguous Acres owned or controlled for the right to produce groundwater from the well or well system and whether the number of Contiguous Acres has changed from the last production report submitted to the District; (3) the deeds, easements, contracts, leases or other conveyance documents necessary to show proof that the well owner or operator has the right to produce groundwater from the number of Contiguous Acres claimed under Subsection (b)(2) of this rule, if such documentation has not already been submitted to the District; and (4) all other information requested by the District in the reporting form and mechanism described under Subsection (c). For purposes of meeting the requirement in Subsection (b)(3) of this rule, a person may submit a United States Department of Agriculture Farm Services Agency Form 578 showing proof of ownership of property claimed to be Contiguous Acres.

(c) Production reports shall be submitted through a mechanism developed by the District for submission through the District's internet website. If an owner or operator is unable to submit the report through use of the District's internet website, the report may be submitted by fax, regular mail, or electronic mail. The report shall be submitted using a form developed by the District for such purpose. The District shall make the form available in the District office and on the District website.

(d) Meter readings or readings from alternate measuring methods for annual water use must be recorded during the period ranging from December 15 to January 15 of each year and shall be included in the production report submitted to the District. Production reports for the previous calendar year's annual water use must be submitted to the District no later than March 1 of each calendar year. Therefore, the first annual production report required under this rule is for production during calendar year 2012 and must be submitted to the District no later than March 1, 2013.

RULE 6: WELL CONSTRUCTION AND MAINTENANCE; WELL LOG

6.1 Responsibility to Protect Groundwater Quality

All owners shall use reasonable diligence and conform to these rules related to the installation, equipping, operation, maintenance, and closure of their wells in order to prevent the pollution or harmful alteration of the character of the aquifer.

6.2 Responsibility for Well Construction and Management

(a) Owners shall be responsible for the installation, equipping, operation, maintenance, and closure of their wells, and all costs associated with therewith. Each well shall be installed, equipped, operated, maintained, and closed in compliance with the manufacturer's standards, instructions, or recommendation, as may be applicable.

(b) All wells located within the District's boundaries shall be installed, equipped, operated, maintained, and closed consistent with Chapters 1901 and 1902, Texas Occupations Code, and Chapter 66, 16 Texas Administrative Code, as may be amended, relating to the Texas Department of Licensing and Regulation's rules on well drillers and well pump installers, irrespective of whether the well is required to obtain a permit from the District.

(c) Any existing well or pump that is altered, re-worked, re-drilled, re-equipped or replaced must be done so in compliance with the standards in this rule, irrespective of whether the owner is required to obtain a permit from the District.

(d) Well construction and maintenance issues may be investigated by the District but will be reported to the appropriate regulatory agency.

6.3 Requirement of Driller's Log, Casing, and Pump Data

(a) The District requires that complete records be kept and reports be of the drilling, equipping, or completing of wells and the production and use of groundwater. The District requires that accurate drillers' logs be kept of wells; and copies of drillers' logs and electric logs be filed with the District.

(b) No person shall produce water from any well hereafter drilled, equipped, or completed within the District, except that necessary to the drilling and testing of such well and equipment, unless or until the District has been furnished an accurate driller's log, any electric log which shall have been made, and a well log correctly furnishing all available information required on the forms furnished by the District. No application shall be considered administratively complete nor is a well considered valid until the permanent pump has been installed in the well.

RULE 7: WATER WELL PERMITS; EXEMPTIONS; WELL REGISTRATION

7.1 Jurisdiction of the District; Wells Exempt from Permitting

(a) The District has jurisdiction to manage and regulate within its geographic boundaries the production of groundwater from the aquifer; the quantity of groundwater in the aquifer; the quality of groundwater in the aquifer; the use of water produced from wells from the aquifer, to ensure its beneficial use, conservation, avoidance of waste, and management during drought conditions; and recharge of water into the groundwater.

(b) The District may not require a permit for maintenance or repair of a well if the maintenance or repair does not increase the production capabilities of the well to more than it is currently permitted for.

(c) The permitting requirements of these rules do not apply to:

(1) Drilling or operating a well that does not have the capacity, as equipped, to produce more than 17.5 gallons per minute, or 25,000 gallons of water per day, unless the well is part of a well system that has a total aggregated capacity to produce more than 17.5 gallons per minute or 25,000 gallons of water per day;

(2) Drilling or operating any well, regardless of its size or capacity, that is used solely for domestic use;

(3) Drilling a water well used solely to supply water for a rig that is actively engaged in drilling or exploration operations for an oil or gas well permitted by the Railroad Commission of Texas provided that the person holding the permit is responsible for drilling and operating the water well and the water well is located on the same lease or field associated with the drilling rig: or

(4) Drilling a water well authorized under a permit issued by the Railroad Commission of Texas under Chapter 134, Natural Resources Code, or for production from the well to the extent the withdrawals are required for mining activities regardless of any subsequent use of the water.

(d) The owner of a well that is exempt under Subsection (c) 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 shall give written notice to the District of the changed circumstance(s). If the Board determines that the changed circumstance should cause the well to lose its exemption, then the Board will issue an order declaring the loss of exemption and advise the owner that the well is subject to District regulation, including the duty to obtain a permit, or other regulation, as may be applicable.

(e) The owner of a well that is exempt from permitting under this rule shall register the well with the District if required under Rule 7.2.

(f) The owner of any new well, including a well that is exempt from permitting under this rule, shall comply with the well spacing requirements under Rule 4.

(g) For purposes of determining whether the exemption set forth under Subsection (c)(1) of this rule applies, the capacity of a well that is part of a well system shall be determined by taking the sum of each of the individual wells, as equipped, in the well system. If the total sum of the capacities is more than 17.5

gallons per minute, or 25,000 gallons of water per day, the well system and the individual wells that are part of the well system are not considered to be exempt.

7.2 Well Registration

(a) Well owners of the following wells shall be registered with the District:

- (1) all new exempt wells,
- (2) all existing exempt wells, except those existing wells exempt under Rule 7.1(c)(1) or 7.1(c)(2);
- (3) any well that meets all of the following criteria:
 - (A) not exempt under Rule 7.1;
 - (B) not a pre-District well;
 - (C) not a permitted well; and
 - (D) was exempt under a prior version of the District Rules.

(b) Registration applications for new wells shall be filed prior to the drilling of the well. Registration applications for existing wells shall be filed no later than March 1, 2012.

(c) A person seeking to register a well shall provide the District with the following information: (1) name, mailing address, and telephone number of the applicant; (2) name, mailing address, and telephone number of the owner of the land on which the well will be located; (3) property lines; (4) the location of the well; (5) the aquifer from which withdrawals will be made; (6) the estimated rate of withdrawal in gallons per minute; (7) a statement of the nature and purpose of the proposed use of the groundwater; (8) installation and completion date; and (9) all other information as may be required by the Board.

(d) The General Manager shall review and approve well registration applications containing the information in Subsection (c) of this rule.

7.3 Metering and Production Report Requirements

(a) All new and existing exempt wells, except those wells exempt under Rule 7.1(c)(1) or 7.1(c)(2), shall follow the alternate measuring and metering requirements set forth in Rule 5, Subchapter C.

(b) Beginning on January 1, 2012, the owner or operator of a well or well system that is required to be metered under Subsection (a) of this rule shall begin recording groundwater production through the use of a fully functional meter or alternate measuring method meeting the requirements of Rule 5, Subchapter C, and shall submit annual production reports to the District. The report shall be submitted in the manner described under Rule 5.17.

(c) Meter readings for annual water use must be recorded during the period ranging from December 15 to January 15 of each year and shall be included in the production report submitted to the District. Production reports providing the annual water use from the previous calendar year must be submitted to the District no later than March 1 of each calendar year.

7.4 Permit Required

(a) No person may drill a well that is not exempt from permitting under Rule 7.1(c) or alter the size of a well or well pump such that it would bring that well under the jurisdiction of the District without first being granted a permit by the Board.

(b) Any person seeking to perform any of the activities identified in Subsection (a) must file with the District an application on forms prescribed by the District.

(c) If the General Manager recommends the granting of the application and if there is no contest thereon or conflicting application, the applicant may thereupon proceed at his own risk to drill such well. Should the applicant proceed to drill such well prior to the application having been officially granted by the Board, applicant proceeds entirely at his own risk and solely assumes responsibility for potentially losing a well site, all expenses associated with the drilling and equipping of said well, potential expenses of the District associated with any legal proceeding relating to said well, and any and all other risks of any type which might be associated with said well. The application shall not, however, be officially granted until the same shall have been passed upon and granted by the Board.

7.5 Considerations for Granting or Denying a Permit

(a) Before granting or denying a permit, the District shall consider whether: (1) the application conforms to the requirements of state law and District rules and is accompanied by the prescribed fees; (2) the proposed use of water unreasonably affects existing groundwater and surface water resources or existing permit holders; (3) the proposed use of groundwater is dedicated to any beneficial use as defined by state law and District rules; (4) the proposed use of water is consistent with the District's management plan; (5) the applicant has agreed to avoid waste and achieve water conservation; (6) and the applicant has agreed that reasonable diligence will be used to protect groundwater quality and that the applicant will follow well plugging guidelines at the time of well closure.

(b) The District shall consider and act on each administratively complete application for a permit. If an application is not administratively complete, the District shall request the applicant to complete the application. The application will expire if the applicant does not complete the application within 90 days of the date of the District's request.

7.6 Time During Which a Permit is Valid

(a) A permit shall expire and be void and of no force or effect if the well is not completed and the well log is not filed with the District within 240 days from issuance of the permit.

(b) If the applicant makes an application to drill a well, but does not complete the work or file with the District a completed well log within 240 days of the issuance of the permit, the deposit for the permit will be forfeited and will become the property of the District.

7.7 Contents of Permits

(a) The following information must be provided by the applicant to the District on forms prescribed by the District: (1) name, mailing address, and telephone number of the applicant (2) name, mailing address, and

telephone number of the owner of the land on which the well will be located; (3) property lines; (4) the legal description of the property on which the well will be drilled; (5) the location of the well; (6) the aquifer from which withdrawals will be made; (7) the estimated rate of withdrawal in gallons per minute; (8) a statement of the nature and purpose of the proposed use of the groundwater; (9) installation and completion date; (10) the conditions and restrictions, if any, placed on the rate and amount of withdrawal; and (11) all other information as may be required by the Board.

(b) The following information must be provided by the District: (1) the location of the three nearest wells within 540 yards of the proposed well site for wells drilled into the Ogallala Aquifer or the location of the three nearest wells within 1760 yards of the proposed well site for wells drilled into the Dockum Aquifer, as appropriate and (2) the location of the proposed well site as determined by field survey by District personnel.

(c) The applicant's signature on the application shall indicate that the applicant: (1) has legal authority to bind the owner to all obligations imposed by the District, (2) has legal authority to drill or cause to be drilled a well at the proposed well site; (3) has received a copy of the District's rules and agrees to comply with said rules; (4) agrees that all information provided by the applicant is correct and true and in compliance with District rules; (5) will install, equip, operate, maintain, or close the well 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; (6) is solely responsible for the drilling of the well at the approved well site identified in the application; for informing the driller of the approved well site; for ensuring the well is drilled within a ten-yard radius of the approved well site; and to abide by all District rules should it become necessary to drill the proposed well at a location other than the approved well site but within the ten-yard radius noted above; (7) will provide the District with a completed well log on forms prescribed by the District immediately upon installation of the permanent pump and prior to the production of groundwater from the well, except for such production as may be necessary to the drilling and testing of such well; (8) agrees that the application will not be considered administratively complete nor is the well valid until the permanent pump has been installed in the well; (9) agrees that the well may be used as a District observation well as determined by District personnel; and (10) agrees that upon any violation of this agreement, the Board may order that the well may no longer be used until the problem is permanently resolved to the satisfaction of the Board.

(d) A permit confers only the right to use the permit under the provisions of District rules and according to its terms. A permit's terms may be modified pursuant to the provisions of District rules. The Board may revoke or amend a permit in compliance with District rules when reasonably necessary to accomplish the purposes of the District, the rules of the District, the District's Management Plan, regulatory plan, or state law.

(e) An application pursuant to which a permit has been issued is incorporated in the permit, and the permit is granted on the basis of and contingent upon the accuracy of the information supplied in that application. A finding that false information has been supplied in the application may be grounds to refuse or deny the application or for immediate revocation of the permit.

(f) Violation of a permit's terms, conditions, requirements, or special provisions is a violation of District rules and is punishable as provided by state law or District rules.

7.8 Deposits

(a) Each permit application shall be accompanied by a \$250.00 deposit which shall be accepted by the General Manager. Deposit shall be returned to the applicant if: (1) the application is denied; (2) if the application is granted upon receipt of correctly completed well log; or (3) the permit is cancelled without having been drilled, upon return and surrender of said permit marked "cancelled" by the applicant within 240 days after the approval date of the permit.

(b) In the event neither the well log nor the permit marked "cancelled" is returned to the District within 240 days after the approval date of the permit or the extension date thereof, the said deposit shall become the property of the District.

(c) All deposits heretofore made or which shall hereafter be made shall become the property of the District if such well log or permit has not been returned or is not returned to the District within 240 days from the approval date of the permit.

RULE 8: PERMIT HEARING PROCEDURES

8.1 Scheduling of Hearing

(a) The General Manager or Board may schedule a hearing on permit applications received by the District as necessary.

(b) The General Manager or Board may schedule more than one application for consideration at a hearing.

(c) A hearing must be held at the District's principal office unless the Board provides for hearings to be held at a different location.

(d) A hearing may be held in conjunction with a regularly scheduled Board meeting.

8.2 Notice

(a) Not later than the 10th day before the date of the permit hearing, the General Manager or Board shall: (1) post notice in a place readily accessible to the public at the District's principal office; (2) provide notice to the county clerk of each county in the District; and (3) provide notice by (aa) regular mail to the applicant, (bb) regular mail, facsimile, or electronic mail to any person who has requested notice under Subsection (d); and (cc) regular mail to any other person entitled to receive notice under District rules.

(b) The notice provided under Subsection (a) must include: (1) the name of the applicant; (2) the address or approximate location of the well or proposed well; (3) a brief explanation of the proposed permit, including any requested amount of groundwater, the purpose of the proposed use, and any change in use; (4) the time, date, and location of the hearing; and (5) any other information the General Manager or Board considers relevant and appropriate.

(c) Failure to provide notice under Subsection (a)(3)(bb) does not invalidate an action taken by the District at the hearing.

(d) A person may request notice from the District of a hearing on a permit. The request must be in writing and is effective for the remainder of the calendar year in which the request is received by the District.

To receive notice of a hearing in a later year, a person must submit a new request. An affidavit of District personnel establishing attempted service by first class mail, facsimile, or electronic mail to the person in accordance with the information provided by the person is proof that notice was provided by the District.

8.3 Hearing Registration

The District may require each person who participates in a hearing to submit a hearing registration form stating (a) the person's name; (b) the person's address; and (c) whom the person represents, if the person is not there in the person's individual capacity.

8.4 Hearing Procedures

(a) Hearings will be conducted in such manner as the Board deems most suitable to the particular case, and technical rules of legal and court procedure need not be applied. It is the purpose of the Board to obtain all the relevant information and testimony pertaining to the issue before it as conveniently, inexpensively, and expeditiously as possible without prejudicing the rights of either applicants or protestants.

(b) A hearing must be conducted by: (1) a quorum of the Board; or (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.

(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 a director to serve as the presiding officer.

(e) The presiding officer may: (1) convene the hearing at the time and place specified in the notice; (2) set any necessary additional hearing dates, (3) designate the parties regarding a contested application, (4) establish the order for presentation of evidence, (5) administer oaths to all persons presenting testimony, (6) examine persons presenting testimony, (7) ensure that information and testimony are introduced as conveniently and expeditiously as possible without prejudicing the rights of any party, (8) prescribe reasonable time limits for testimony and the presentation of evidence; (9) limit the number of witnesses appearing whose testimony may be merely cumulative, and (10) exercise the procedural rules related to hearings on permit or permit amendment applications.

(f) Any party at interest in a proceeding may appear either in person or by attorney or both in such proceedings. A party at interest is any person owning a groundwater right within the boundaries of the District who is or may be affected by such proceeding.

(g) At the discretion of the Board, anyone not a party to a proceeding may appear. The District may allow any person, including District personnel, to provide comments at a hearing on an uncontested application.

(h) The presiding officer may allow testimony to be submitted in writing and may require sworn written testimony. On the motion of a party to the hearing, the presiding officer may exclude written testimony if the person who submits the testimony is not available for cross-examination by phone, a deposition before the hearing, or other reasonable means.

(i) If the Board has not acted on the application, the presiding officer may allow a person who testifies at the hearing to supplement the testimony given at the hearing by filing additional written materials with the presiding officer not later than the 10th day after the 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 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.

8.5 Evidence

(a) The presiding officer shall admit clear and convincing evidence that is relevant to an issue at the hearing. Evidence will be admitted if it is of that quality upon which reasonable persons are accustomed to rely in the conduct of serious affairs. It is intended that needful and proper evidence shall be conveniently, inexpensively, and expeditiously produced while preserving the substantial rights of the parties to the proceeding.

(b) The presiding officer may exclude evidence that is irrelevant, immaterial, or unduly repetitious.

8.6 Recording

(a) Except as provided by Subsection (b), the presiding officer shall prepare and keep a record of each hearing in the form of an audio or video recording or a court reporter transcription. On the request of a party to a contested 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.

(b) If a hearing is uncontested, the presiding officer may substitute minutes or the report required under section 8.8 for a method of recording the hearing provided by Subsection (a).

8.7 Continuance

The presiding officer may continue a hearing from time to time and from place to place without providing notice under section 8.2. If the presiding officer continues a 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 the parties.

8.8 Report

(a) Except as provided by Subsection (e), the presiding officer shall submit a report to the Board not later than the 30th day after the date a hearing is concluded.

(b) The report must include: (1) a summary of the subject matter of the hearing, (2) a summary of the evidence or public comments received, and (3) the presiding officer's recommendation for Board action on the subject matter of the hearing.

(c) The presiding officer or General Manager shall provide a copy of the report to: (1) the applicant and (2) each person who provided comments or each designated party.

(d) A person who receives a copy of the report under Subsection (c) may submit to the Board written exceptions to the report.

(e) If the hearing was conducted by a quorum of the Board and if the presiding officer prepared a record of the hearing as provided by Rule 8.6(a) the presiding officer shall determine whether to prepare and submit a report to the Board under this section.

8.9 Board Action

The Board shall act on a permit application not later than the 60th day after the date the final hearing on the application is concluded.

8.10 Requests for Rehearing or Findings and Conclusions

(a) An applicant in a contested or uncontested hearing on an application or a party to a contested hearing may administratively appeal a decision of the Board on a permit application by requesting written findings and conclusions or a rehearing before the Board not later than the 20th day after the date of the Board's decision.

(b) On receipt of a timely written request, the Board shall make written findings and conclusions regarding a decision of the Board on a permit application. 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 receives the request. A person who receives a certified copy of the findings and conclusions from the Board may request a rehearing before the Board not later than the 20th day after the date the Board issues the findings and conclusions.

(c) A written request for rehearing must be filed in the District's principal office and must state the grounds for the request. If the original hearing was a contested hearing, the person requesting a rehearing must provide copies of the request to all parties to the hearing.

(d) If the Board grants a request for a rehearing, the Board shall schedule the rehearing not later than the 45th day after the date the request is granted.

(e) The failure of the Board to grant or deny a request for rehearing before the 91st day after the date the request is submitted is a denial of the request.

8.11 Final Decision

(a) A decision by the Board on a permit or permit amendment application is final (1) if a request for rehearing is not filed on time, on the expiration of the period for filing a request for rehearing; or (2) if a request for rehearing is filed on time, on the date (aa) the Board denies the request for rehearing; or (bb) the Board renders a written decision after rehearing.

(b) Except as provided by Subsection (c), an applicant or a party to a contested hearing may file a suit against the District under Section 36.251 to appeal a decision on a permit or permit amendment application not later than the 60th day after the date on which the decision becomes final.

(c) An applicant or a party to a contested hearing may not file suit against the District under Section 36.251 if a request for rehearing was not filed on time.

8.12 Consolidated Hearings

(a) Except as provided by Subsection (b), a District shall process applications from a single applicant under consolidated notice and hearing procedures on written request by the applicant if the District requires a separate permit or permit amendment application for: (1) drilling, equipping, operating, or completing a well or substantially altering the size of a well or well pump under Section 36.113; (2) the spacing of water wells or the production of groundwater under Section 36.116; or (3) transferring groundwater out of a District under Section 36.122.

(b) A District is not required to use consolidated notice and hearing procedures to process separate permit or permit amendment applications from a single applicant if the Board cannot adequately evaluate one application until it has acted on another application.

RULE 9: RULEMAKING HEARING PROCEDURES

9.1 Purpose of Rulemaking Hearings

(a) The District may make and enforce rules, including rules limiting groundwater production based on tract size or the spacing of wells, to provide for conserving, preserving, protecting, and recharging of the groundwater or of a groundwater reservoir or its subdivisions in order to control subsidence, prevent degradation of water quality, or prevent waste of groundwater and to carry out the powers and duties provided by this chapter. During the rulemaking process the Board shall consider all groundwater uses and needs and shall develop rules which are fair and impartial and that do not discriminate between land that is irrigated for production and land that was irrigated for production and enrolled or participating in a federal conservation program. Any rule of the District that discriminates between land that is irrigated for production and land that was irrigated for production and enrolled or participating in a federal conservation program is void.

(b) Except as provided by Texas Water Code §36.1011, after notice and hearing, the Board shall adopt and enforce rules to implement this chapter, including rules governing procedure before the Board.

(c) The Board shall compile its rules and make them available for use and inspection at the District's principal office.

9.2 Notice

(a) Not later than the 20th day before the date of a rulemaking hearing, the General Manager or Board shall (1) post notice in a place readily accessible to the public at the District's principal office, (2) provide notice to the county clerk of each county in the District, (3) publish notice in one or more newspapers of general circulation in the county or counties in which the District is located, (4) provide notice by mail, facsimile, or electronic mail to any person who has requested notice under Subsection (d), and (5) make available a copy of all proposed rules at a place accessible to the public during normal business hours and, if the District has a website, post an electronic copy of a generally accessible internet website.

(b) The notice provided under Subsection (a) must include (1) the time, date, and location of the rulemaking hearing, (2) a brief explanation of the subject of the rulemaking hearing, and (3) a location or Internet site at which a copy of the proposed rules may be reviewed or copied.

(c) Failure to provide notice under Subsection (a)(4) does not invalidate an action taken by the District at a rulemaking hearing.

(d) A person may submit to the District a written request for notice of a rulemaking 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 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 electronic mail to the person in accordance with the information provided by the person is proof that notice was provided by the District.

9.3 Hearing Procedures

(a) The presiding officer shall conduct a rulemaking hearing in the manner the presiding officer determines to be most appropriate to obtain information and comments relating to the proposed rule as conveniently and expeditiously as possible. Comments may be submitted orally at the hearing or in writing at the sole discretion of the presiding officer. The presiding officer may hold the record open for a specified period after the conclusion of the hearing to receive additional written comments.

(b) The District may use an informal conference or consultation to obtain opinions and advice of interested persons about contemplated rules and may appoint advisory committees of experts, interested persons, or public representatives to advise the District about contemplated rules.

(c) The District may require each person who participates in a rulemaking hearing to submit a hearing registration form stating (1) the person's name, (2) the person's address, and (3) whom the person represents, if the person is not at the hearing in the person's individual capacity.

(d) The presiding officer shall prepare and keep a record of each rulemaking hearing in the form of an audio or video recording or a court reporter transcription.

9.4 Emergency Rules

(a) A Board 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 finding under Subsection (a)(1).

(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 Chapter 551, Government Code.

RULE 10: PERMITTING AND REGULATION OF DRILLED OR MINED SHAFTS

10.1 Purpose, Scope, and Applicability

(a) This rule is promulgated under the provisions of Texas Water Code §36.101, for the purpose of conserving, preserving, protecting, recharging, and preventing waste of the underground water within the jurisdiction of the District.

(b) This rule applies to all drilled or mined shafts and associated facilities within the District's jurisdiction, except those listed in Rule 10.4 (b).

10.2 Definitions

The definitions contained in the Texas Water Code §28.001 shall apply to this rule. The following words and terms, when used in this rule, shall have the following meanings, unless the context clearly indicates otherwise.

(a) "Aquifer" means a geologic formation, group of formations, or part of a formation that is water-saturated water-bearing, and yields potable water in sufficient quantities to provide a usable supply within the jurisdiction of the District.

(b) "Area of review" means the surface area and the subsurface area extending horizontally not less than 2,000 feet in all directions from the maximum extension of a proposed or existing shaft.

(c) "Borehole" means a drilled penetration or an artificial opening in the ground where the depth is greater than its largest surface dimension, located within 2,000 feet of a new shaft and penetrating a potable water aquifer.

(d) "Casing" means the material used to seal off strata at and below the earth's surface and to maintain the structural stability of the shaft opening.

(e) "Contaminant" means any physical, biological, chemical, or radioactive material or matter.

(f) "Formation" means a body of soil or rock characterized by a degree of lithologic homogeneity that is prevailing, but is not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.

(g) "Existing shaft" means a shaft constructed before the effective date of this rule (the use of which remains unchanged after the effective date of this rule) or an abandoned shaft.

(h) "Formation fluid" means the fluid present in a formation under natural conditions.

(i) "Ground water" means water below the land surface in a zone of saturation.

(j) "New shaft" means any shaft which has not been constructed as of the effective date of this rule or any existing shaft or abandoned shaft which is modified or converted to a new purpose for which it was not being used on the effective date of this rule.

(k) "Pollution" means the contamination of water or the alteration of the physical, chemical, radioactive, or biological quality of water (1) that makes it harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to public health, safety, or welfare, or (2) that impairs the usefulness of the public enjoyment of the water for any lawful and reasonable purpose.

- (l) "Resident inspector" means the person or persons designated by the General Manager to remain on-site to oversee and inspect the ongoing construction and operation of the drilled or mined shaft.
- (m) "Seismic reflection survey" or "geophysical survey" means any surface-based geophysical method which can accurately measure a response at depth of physical phenomena, artificial and/or natural, directly and/or indirectly, which is related to the underground geological conditions.
- (n) "Shaft" means any vertically oriented excavation, whether constructed by drilling or mining techniques, where the depth of the excavations greater than its diameter and the excavation penetrates into or through the base of a potable water aquifer.
- (o) "Surface facilities" means the structure, equipment, appurtenances, and other fixtures associated with the drilled or mined shaft, used for storage, processing, or operation, that are above the ground, but not including the shaft collar.
- (p) "Stratum or strata" means a bed or layer, regardless of thickness, that consists of generally the same kind of soil, rock, or material.
- (q) "Test hole" means a drilled and/or cored hole used to determine the type, nature, and characteristics of the sub-surface materials and the extent and conditions of the various materials as they exist.
- (r) "Well" means an augered, bored, drilled, or driven penetration or an artificial opening in the ground made by digging, jetting, or some other method, where the depth of the well is greater than its largest surface dimension, but the term does not include any surface pit, surface excavation, drilled or mined shaft, or natural depression.

10.3 Severability

If any provision of this rule, or the application of such provision to any person or circumstance, is held invalid, the remainder of this rule, or the application of such provision to persons or circumstances other than those as to which it is held invalid, shall not be affected thereby.

10.4 Construction and Use Prohibited

- (a) Unless excluded under Rule 10.4(b), the construction, use, or operation of a new shaft is prohibited, unless authorized by permit of the Board.
- (b) The following penetrations are not within the scope of Rule 10.4(a): (1) Penetrations whose primary purpose is the production of groundwater; (2) shafts incident to surface mines for oil and gas, iron ore, lignite, coal, or uranium recovery regulated by the Railroad Commission of Texas; (3) sanitary sewer lift stations and otherwise approved water and sewer collection, storage, and distribution structures; (4) penetrations authorized by the Railroad Commission of Texas of less than 36 inches in diameter whose primary purpose is the ventilation of underground workings or structures; (5) penetrations authorized by the Texas Department of Water Resources or Railroad Commission of Texas whose purpose is the transmission of fuels, concrete slurries, muds, electrical lines, communications, wires, or structures, or other utility transmissions, or bulk materials to or recovery from underground storage facilities of mine workings; (6) penetrations which would otherwise be defined as shafts but which, due to local conditions, do not penetrate into or through a potable water aquifer; and (7) existing shafts.

10.5 Pre-Permit Determination

(a) Prior to submission of an application for permit, persons considering the construction of a new shaft, which may be defined as a shaft subject to this rule, must contact the General Manager and obtain a determination whether or not the proposed activity is subject to this rule.

(b) The following information must be submitted for this determination: (1) the proposed or existing location(s) of the shaft(s); (2) the activity proposed and, if applicable, the existing activity; and (3) the proposed or, if applicable, existing depth of the shaft(s).

(c) An applicant may provide information supporting its position that the new or existing shaft(s), due to local conditions, will not penetrate into or through a potable water aquifer for the purposes of this determination.

10.6 Pre-Application Activities

(a) Persons who desire to propose a new shaft subject to this rule must obtain the General Manager's approval of plans for the drilling of an engineering design test hole on center or offset to the shaft and a proposed seismic reflection survey (geophysical survey) for the purpose of site characterization, shaft and seal design, and shaft decommissioning prior to submitting an application for permit. Plans submitted for approval shall contain specific information which will address the following: (1) test hole – location, drilling, completion, testing, closure, surface cleanup, and mud pits; and (2) seismic survey – location and number of lines, velocity control, and accuracy of resolution.

(b) An applicant may provide results of previous exploratory drilling and geophysical surveys to support its position that the engineering design test hole and seismic reflection survey (geophysical survey) are not necessary.

(c) After an appropriate review of the matters submitted under Subsections (a) and (b), the General Manager (1) may allow the results of previous exploratory drilling and geophysical exploration to be substituted for the engineering design test hole and seismic reflection survey; (2) will determine the requirements of Rule 10.9 of this rule (relating to Procedures for Application) and the area or review; (3) will determine the fee necessary to compensate the District for reviewing the application; and (4) may require mechanical integrity investigations for existing shafts which may be modified or converted to a new purpose.

(d) Persons required to drill an engineering design test hole and/or conduct a seismic reflection survey must first obtain written approval from the General Manager.

10.7 Test Hole and Seismic Reflection Survey

(a) A test hole will not be required to be drilled in conjunction with modification or conversion of use of an existing or abandoned shaft.

(b) Current rules of the District, Texas Commission on Environmental Quality, and Railroad Commission of Texas shall be used to determine requirements for the mud pit construction, surface cleanup, and test hole closure requirements.

(c) A seismic reflection survey (geophysical survey) will not be required in conjunction with modification or conversion of an existing or abandoned shaft.

10.8 Application for Permit

(a) A technical report prepared either by a registered professional engineer or by a qualified person who is competent and experienced in the field to which the application relates or who is thoroughly familiar with the operation or project for which the application is made shall be submitted as part of the application for a new permit.

(b) At a minimum, the technical report shall include the following: (1) a general description and intended purpose of all facilities and systems proposed to be used for, or in connection with, construction and operation of a shaft by mining or drilling; (2) a surveyor's plat showing the exact location from property lines and survey lines, and giving the latitude and longitude of the shaft and a map(s) showing the location of the shaft for which a permit is sought and the applicable area of review. Within the area of review, the map(s) must show the number, name, and location of all boreholes and other pertinent surface features; (3) a tabulation of data of all boreholes within the applicable area of review. Such data shall include a description of each penetration's type, construction, date drilled, location, depth, record of plugging and completion, and any additional information the General Manager may require; (4) maps and cross-sections, as necessary, indicating the general vertical and lateral limits of aquifers within the applicable area of review and their positions relative to the formation, formations or stratigraphic units the shaft is constructed to reach; and (5) the test of the report shall discuss the geology, hydrogeology, and ground-water use and development within the applicable area of review, and with respect to the shaft shall discuss design, construction, sealing, decommissioning, mechanical integrity, operating procedures, and monitoring.

(c) After an appropriate review, the General Manager may modify the requirements for application of this section if he finds that additional information is required to evaluate the shaft, or that information required herein is not reasonably available and is not necessary for a full evaluation of the application.

10.9 Procedures for Application

An application is administratively complete when received with all the information as required by this rule.

(a) Any person who is required to obtain a permit, or who requests an amendment, renewal, revocation or suspension of a permit, shall complete, sign, and submit an application to the General Manager, according to the sections of this rule.

(b) Signatories to Application

(1) All applications shall be signed as follows:

i. for a corporation: by a principal executive officer of at least the level of vice-president or a duly authorized representative if such representative is responsible for the overall operation of the facility. A representative shall submit in writing proof of the authorization;

ii. for a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

iii. for a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official.

(2) A person signing an application shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of civil penalty and criminal fine."

(3) For permit applications involving hazardous solid waste the owner and operator of a facility must sign the application.

(c) Permittees shall keep records of all data used to complete applications and any supplemental information for a period of at least three years from the date the permit is granted. This period may be extended by request of the General Manager.

(d) The General Manager will review each application and accompanying data, information, and materials to determine if the application is complete. If an application is not complete, the General Manager shall notify the applicant and include a list of the information necessary to make the application complete. The application is complete when the listed information is received by the General Manager. After receiving the listed information, the General Manager may request additional information to clarify, modify, or supplement the previously submitted material.

(e) If an applicant does not submit a complete application and fails or refuses to correct deficiencies in the application within 60 days after correction is requested, the General Manager shall withhold further review and return the application to the applicant.

(f) When an application is complete, the General Manager will forward the application to the Board. For the purpose of providing adequate information, the General Manager will identify for the Board the area wherein the application, if granted, would have a potential impact and provide a list of persons who may be affected.

(g) The General Manager will prepare a draft permit consistent with all applicable District rules unless a recommendation is made not to grant an application. The draft will be subject to change during the course of the proceedings on the application. The draft permit will be available for public review. The approved draft permit will be filed with the Board to be included in its consideration of the application for permit.

The General Manager may prepare a technical summary which sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. The General Manager shall send this summary, together with the draft permit, to the applicant and on request, to any other person. The summary shall include the following information, where applicable: (1) a brief description of the type of facility or activity which is the subject of the draft permit; (2) conditions that do or do not appear justified, including references to applicable statutory or regulatory provisions; (3) required

standards that do or do not appear justified; and (4) name and telephone number of a person to contact for additional information.

(h) Certain material submitted to the District may be determined to be confidential and withheld from public review. The application shall identify any material for which confidentiality is requested. Each claim of confidentiality must be made upon submission of the material with the application, or the material will be considered available for public review. Reasons of confidentiality include the concept of trade secrecy and other related legal concepts which give a business the right to preserve confidentiality of business information and to obtain or retain advantages from its right in the information. This includes authorizations under 5 United States Code 552(b)(4), 18 United States Code 1905, and special rules cited in 40 Code of Federal Regulations §§ 2.301–2.309. The General Manager will review each claim of confidentiality. If a claim is not approved, the applicant will be notified and informed whether the material is essential to the application. The applicant may elect to withdraw any material submitted with an application. The name and address of an applicant or permittee will not be considered confidential.

(i) The provisions of this subsection establish the requirements for permits for drilled or mined shafts.

(j) It is the duty of the owner of the land where the shaft will be located to submit an application for permit. This duty may be delegated to the operator of the shaft if the shaft is owned by one person and operated by another.

(k) Forms for permit applications will be made available by the District. Each application for permit shall include the following: (1) the name, mailing address, and location(s) of the shaft(s) for which the application is submitted; (2) the ownership status as federal, state, private, public, or other entity; (3) the operator's name, mailing address, and telephone number; (4) a brief description of the nature of the business; (5) the activities conducted by the applicant which require a permit; (6) the principal products or services provided by the applicant; and (7) a topographic map, ownership map, county highway map, or a map prepared by a registered professional engineer or a registered surveyor which shows the shaft and any other structure or location regarding the regulated shaft and associated activities. Maps must be of material suitable for a permanent record, and shall be on sheets 8½ inches by 14 inches or folded to that size and shall be on a scale of not less than 1 inch equals 1 mile. The map shall depict the approximate boundaries of the tract of land owned or to be used by the applicant and shall extend at least one mile beyond the boundaries sufficient to show the following: (i) each water well, spring, and surface water body or other water in the state within the map area; (ii) the general character of the area adjacent to the facility, including public roads, towns and the nature of development such as residential, commercial, agricultural, recreational, undeveloped and so forth; (iii) the location of any waste disposal activities conducted on the tract not included in the application; (iv) the ownership of tracts of land within a reasonable distance from the proposed point or points of discharge, deposit, injection, or other place of disposal or activity; (v) such other information that may reasonably be requested by the General Manager; (8) a listing of all permits or construction approvals received or applied for from other agencies or boards; (9) the manner in which financial assurance will be attained; (10) a decommissioning and closure plan; (11) a fee, based on estimated cost of application processing and review, of not less than \$10,000, which shall include, but is not limited to, consultants' fees, lab work, personnel

salaries, support services, travel expenses, computer time, and informational services; (12) a letter from the Railroad Commission of Texas stating that a drilling or mining of the proposed shaft and use of the proposed shaft will not endanger or injure any oil or gas formation or significantly limit the potential for future recovery of or exploration for oil or gas; and (13) a statement of the current status of any litigation involving the project or proposed siting of the shaft.

10.10 Permit Required

(a) All shafts subject to this rule shall be specifically authorized by permit. Shafts serving the same underground working, or built as part of a single comprehensive program, may be included in one permit. Additional shafts to be added after the permit is issued may be authorized by permit amendment and shall be constructed in accordance with construction standards as set forth in section 10.11.

(b) A permit shall include terms and conditions reasonably necessary to protect the potable water aquifers from pollution. The permit shall include requirements regarding the construction, operation, and decommissioning of a new shaft and corrective action, if necessary, to prevent pollution resulting from inadequately constructed, completed, and abandoned boreholes within the area of review. In the event that, after construction of a new shaft has commenced, evidence indicates that a shaft might pose a hazard to a potable water aquifer, the General Manager may prescribe a corrective plan and compliance schedule to remedy such hazard as a condition for continued construction, use, or operation.

10.11 Construction Standards for Shafts

(a) The provisions of this rule apply to new shafts within the District's jurisdiction.

(b) All shafts shall be constructed to prevent migration of fluids that may cause or allow the pollution of aquifers. Construction materials used in each shaft shall be designed for the life expectancy of the shaft.

(c) Appropriate surveys, logs, and other tests shall be conducted during the construction of shafts. All surveys, logs, and tests shall be interpreted by qualified persons.

(d) Any proposed change or alteration to construction plans after permit issuance shall be filed with the General Manager and approval obtained before incorporating such changes.

10.12 Resident Inspector

The General Manager may designate a resident inspector to oversee all phases of shaft activities. The resident inspector shall monitor compliance with the terms of the permit for all testing, construction, completion, and operation of the shaft, and report to the General Manager.

10.13 Operating Standards

(a) The construction, use, and operation of a new shaft shall be authorized by the permit. All shafts must have mechanical integrity. A lined shaft or lined portion of a shaft has mechanical integrity if there is no leak or physical deterioration in the casing, liners, and seals, and if there is no fluid movement through vertical fluid channels adjacent to the shaft which could cause pollution of an aquifer. An unlined shaft, or unlined portion of a shaft, has mechanical integrity if there is no deterioration of the wall rock which could cause pollution of an aquifer. In the event that the lined shaft, unlined shaft, or portion of an unlined shaft may have inflows of

ground water, the General Manager may require a shaft and mine water management plan be submitted as part of the shaft permit application. Mechanical integrity of the shaft (wallrock or casing, liners, and seals) must be demonstrated as required by the permit during the life of the shaft, and shall be accomplished by a method approved by the General Manager.

(b) Shafts lacking mechanical integrity shall undertake corrective maintenance actions immediately. The permittee shall notify and obtain the approval of the General Manager before commencing any corrective maintenance that is necessitated by failure to achieve or maintain mechanical integrity. The notification shall be in writing and shall include plans for the proposed work. The General Manager may grant an exception to the requirement for prior written notification when immediate action is required.

10.14 Monitoring and Reporting Standards

(a) The permittee shall submit daily construction chronology reports to the General Manager and to the resident inspector, if applicable, providing data for each day during the drilling, or mining and casing or lining of the shaft. The data shall be presented in tabular form and shall report date, thickness, and lithology penetrated, material settings and volumes, and problems.

(b) Within 90 days after the completion of the shaft, the permittee shall submit an engineering drawing showing the "as built" construction details of the shaft, liners, and seals, including the depth, thickness, and lithology of the rock units penetrated in constructing the shaft.

(c) The permittee shall, prior to commencing construction, provide written notice to the General Manager that a copy of the permit has been filed with the commissioners' court for the county where the shaft is located.

(d) The permittee shall notify the General Manager in writing of the anticipated first date when the shaft will be used or operated or its stated purpose at least 30 days prior to commencing use of the shaft. Compliance with all pre-operation terms of the permit must occur prior to beginning operations.

(e) The permittee shall notify the General Manager within twenty-four hours of the discovery of any leakage or other failure of the shaft or associated chambers.

(f) Within 90 days after the completion of a corrective maintenance action, a report shall be filed with the General Manager providing the reason for the shaft corrective maintenance action and the details of all work performed and results of remedial action.

10.15 Surface Facilities

Surface facilities must be constructed, maintained, and operated in compliance with applicable permits and rules governing that facility.

10.16 Certification of Construction and Completion

Prior to commencing operations, the permittee must certify that the shaft was constructed and completed in compliance with permit requirements.

10.17 Additional Requirements

(a) The permittee shall keep complete and accurate records of (1) all construction records; (2) mechanical integrity testing; (3) geotechnical testing; (4) water level and water quality testing; (5) record of post-construction operations; (6) corrective maintenance actions; and (7) any additional information that the General Manager determines might reasonably affect the construction and operation of the shaft.

(b) All records or copies of all records shall be filed on-site and made available for review upon request by a representative of the District.

(c) The permittee shall retain, for the lifetime of the shaft and for at least five years after decommissioning, records of all information concerning the construction, use, and operation of the shaft.

(d) The permittee may be required, prior to commencing operations, to secure and maintain a performance bond or other equivalent form of financial assurance or guarantee, approved by the General Manager, to assure (1) the costs of the District of monitoring and of on-site, full-time surveillance; and (2) the cost to ensure the safe decommissioning and closure of the shaft.

10.18 Decommissioning

Shaft decommissioning and closure shall be in accordance with plans and specifications approved by the General Manager. Decommissioning seals shall be placed in the shaft so as to prevent the migration of fluids into a potable water aquifer. Shaft seal mix designs shall be based on formulations developed for borehole sealing and shall be compatible with existing lining, if applicable, and adjacent strata.

10.19 Hearings and Permit Term

After the General Manager has submitted to the Board the completed application and a proposed permit (or recommendation to deny the permit), the Board will set a hearing upon the application, which hearing will be held in accordance with District rules. Following such hearing, the Board shall issue a permit upon such conditions and requirements as the Board feels necessary or advisable to conserve, preserve, protect, and prevent the waste of the underground water within the jurisdiction of the District. Alternatively the Board may deny the permit if it finds that a permit would not be advisable or necessary or that the granting of a permit would result in the lack of conservation or protection of the underground water within the jurisdiction of the District. Any permit which is granted shall have a maximum life of ten years. Should the shaft for which the permit is granted not be completed in accordance with the terms of the permit within two years from the date such permit is issued, the permit will automatically be terminated unless, after hearing, the Board grants an extension of such permit.

APPENDIX F

**July 19, 2011 Resolution by the High Plains Underground Water Conservation
District's Board of Directors Adopting 2011-2021 Management Plan**

**RESOLUTION OF THE HIGH PLAINS UNDERGROUND WATER CONSERVATION
DISTRICT NO. 1**

ADOPTING DISTRICT MANAGEMENT PLAN

THE STATE OF TEXAS

§
§
§

HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1

WHEREAS, the High Plains Underground Water Conservation District No. 1 (“District”) was created as a groundwater conservation district under the authority of Section 59, Article XVI of the Texas Constitution, with Article 7880-3c, Texas Civil Statutes as amended, and with Ch. 10, Acts of the 53rd Leg., R.S. (1953) and Ch. 493, Acts of the 57th Leg., R.S. (1961), and operates pursuant to the authority in Chapter 36 of the Texas Water Code;

WHEREAS, Section 36.108(d-2) of the Texas Water Code requires the District to ensure that its Management Plan contains the goals and objectives consistent with achieving the Desired Future Conditions (“DFCs”) adopted through the joint planning process set forth in Chapter 36 of the Texas Water Code;

WHEREAS, Section 36.1071(a) requires the District, after notice and hearing, to develop a comprehensive Management Plan which addresses certain management goals, including a management goal to address in a quantitative manner the DFCs of the groundwater resources in the District;

WHEREAS, under the direction of the Board of Directors of the District (the “Board”), and in accordance with Sections 36.1071, 36.1072, and 36.108 of the Texas Water Code, and 31 Texas Administrative Code Chapter 356, the District has undertaken the amendment of its Management Plan;

WHEREAS, as part of the process of amending its Management Plan, the District requested and received the assistance of the Texas Water Development Board (the “TWDB”) and worked closely with the TWDB staff to obtain staff’s input and comments on the draft Management Plan and its technical and legal sufficiency;

WHEREAS, the Board, District staff, and the District’s geoscientist reviewed and analyzed the District’s best available data, groundwater availability modeling information, and other information and data required by the TWDB;

WHEREAS, the District issued the notice in the manner required by state law and held a public hearing on July 19, 2011 at 9:00 a.m. in Lubbock, Texas to receive public and written comments on the Management Plan and received written comments at the District’s office located at 2930 Avenue Q, Lubbock, Texas;

WHEREAS, the District coordinated its planning efforts on a regional basis with the appropriate surface water management entities during the preparation of the Management Plan;

WHEREAS, the Board finds that the Management Plan meets all of the requirements of Chapter 36, Water Code, and 31 Texas Administrative Code Chapter 356; and

WHEREAS, after the public hearing, the Board of Directors met in a regular board meeting on July 19, 2011, properly noticed in accordance with state law, and considered adoption of the attached Management Plan and approval of this resolution after due consideration of all comments received.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1 THAT:

1. The above recitals are true and correct.
2. The Board of Directors of the District hereby adopts the attached Management Plan as the Management Plan for the District, subject to those amendments necessary to incorporate technical information received from the Texas Water Development Board and/or District geoscientist;
3. The Board President and the General Manager of the District are further authorized to take all steps necessary to implement this resolution and submit the Management Plan to the TWDB for its approval; and
4. The Board President and General Manager of the District are further authorized to take any and all action necessary to coordinate with the TWDB as may be required in furtherance of TWDB's approval pursuant to the provisions of Section 36.1072 of the Texas Water Code.

AND IT IS SO ORDERED.

PASSED AND ADOPTED on this 19th day of July, 2011.

HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1

By: Robert J. Meyer
President

Ernest Rigler
Secretary

APPENDIX G

**Evidence That The Management Plan
Was Adopted After Notice and Hearing**

**NOTICE OF PUBLIC HEARING OF THE
GOVERNING BODY OF THE
HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1**

FILED FOR REGO.
2011 JUL 13 PM 2:54
K. Meyer
COUNTY CLERK
TARRANT COUNTY, TEXAS

Notice is hereby given that a Public Hearing on proposed Management Plan of High Plains Underground Water Conservation District No. 1 will be held on July 19, 2011, at 9:00 A.M. in the A. Wayne Wyatt Board Room located at 2930 Avenue Q, Lubbock, Texas, at which time the following subjects will be discussed, to-wit:

Items to be discussed:

1. The Board President will call the Public Hearing to order.
2. Public Hearing on proposed District Management Plan. At the conclusion of the hearing or any time or date thereafter, the proposed management plan may be adopted in the form presented or as amended based upon comments received from the public, the Texas Water Development Board, District staff, attorneys, geoscientist, or members of the Board of Directors without any additional notice.
3. Adjourn.

No Board action will be taken at the session and any items ultimately warranting Board action will be revisited at a future regularly scheduled Board of Directors meeting.

At any time during the hearing and in compliance with the Chapter 551, Government Code, the District Board may meet in executive session on the above agenda item for consultation concerning attorney-client matters. Any subject discussed in executive secession may be subject to action during an open session of the District Board.

The District is committed to compliance with the Americans with Disabilities Act (ADA). Reasonable accommodations and equal opportunity for effective communications will be provided upon request. Please contact the District office at (806) 762-0181 at least 24 hours in advance if accommodation is needed.

Additionally, I certify that the above Notice of Public Hearing of the governing body of the above named political subdivision was furnished via electronic transmission to the Secretary of State on July 13, 2011.

Dated this the 13th day of July, 2011.

High Plains Underground Water
Conservation District No. 1

By Robert Meyer
Robert Meyer, President
Board of Directors

I, the undersigned authority, do hereby certify that the above Notice of Public Hearing of the governing body of the above named political subdivision, is a true and correct copy of said Notice, and that a true and correct copy of said Notice was posted on the bulletin board, located at a place convenient to the public in its administrative office, at 2930 Avenue Q, Lubbock, Texas, and said

Notice was posted on July 13, 2011 and remained so posted continuously for at least 72 hours immediately preceding the day of said Work Session. A true and correct copy of said Notice has been filed with the Lubbock County Clerk on July 13, 2011, a true and correct copy of said Notice was posted on the bulletin board of the Lubbock County Courthouse on July 13, 2011, and said Notice remained so posted continuously for at least 72 hours immediately preceding the day of said Meeting.

Dated this the 13th day of July, 2011.

High Plains Underground Water
Conservation District No. 1

By



Jim Conkwright, General Manager

**NOTICE OF MEETING OF THE
GOVERNING BODY OF THE
HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1**

Notice is hereby given that a regular meeting of the governing body of the High Plains Underground Water Conservation District No. 1 will be held on July 19, 2011, at 10:00 A.M., or immediately following Public Hearing in the A. Wayne Wyatt Board Room located at 2930 Avenue Q, Lubbock, Texas, at which time the following subjects will be discussed, to-wit:

1. The President will call the meeting to order.
2. Public comment (limited to three (3) minutes per person).
3. The Board will discuss and take possible action on approval of the minutes of the Board of Directors regular meeting of June 21, 2011.
4. The Board will discuss and take possible action on approval of the minutes of the Public Hearing of June 27, 2011 in Dimmitt, Texas.
5. The Board will discuss and take possible action on approval of the minutes of the Public Hearing of June 27, 2011 in Levelland, Texas.
6. The Board will discuss and take possible action on adoption of a report on the financial status of the High Plains Underground Water Conservation District No. 1 (the District) from the manager for the month of June 2011.
7. The Board will discuss and take possible action on approval of the bills incurred by the District for the month of June 2011 and of travel vouchers for the Board members and eligible staff.
8. The Board will discuss and take possible action on approval of applications for water well permits and extensions received for the month of June 2011.
9. The Board will discuss, consider, and act on the adoption of District Management Plan, subject to amendment based upon comments received from the public, the Texas Water Development Board, District staff, attorneys, geoscientist, or members of the Board of Directors without any additional notice.
10. The Board will discuss, consider, and act on the adoption of District rules revisions, as amended based upon comments received from the public, District staff, attorneys, geoscientist, or members of the Board of Directors.
11. The Board will discuss and take possible action on approval of an intergovernmental agreement between Texas Water Development Board and High Plains Underground Water Conservation District No. 1 for preparation, funding and development from TWDB in an amount of \$178,022.00 for Region O Planning.
12. The Board will discuss and take possible action on approval of an agreement between High Plains Underground Water Conservation District No. 1 and INTERA for technical advice, application software, hardware and systems integration related to GIS needs of the District.
13. The Board will hear a report from the general manager on the status of High Plains Water District programs and other items of interest.
 - Legislation
 - Staff reports
 - District calendar
 - Correspondence
 - District current work efforts

14. The Board will recess into Executive Session under the provisions of Vernon's Texas Codes Annotated, Government Code:
 - Section 551.071. Consultation with Attorney; pending or contemplated litigation.
 - Section 551.072. Deliberation Regarding Real Property.
 - Section 551.074. Personnel Matters.
15. The Board will reconvene for possible action on information received during the Executive Session.
16. Adjourn.

NOTE: Agenda items may be considered, deliberated, and/or acted upon in a different order than set forth above.

The District is committed to compliance with the Americans with Disabilities Act (ADA). Reasonable accommodations and equal opportunity for effective communications will be provided upon request. Please contact the District office at (806) 762-0181 at least 24 hours in advance if accommodation is needed.

Additionally, I certify that the above Notice of Meeting of the governing body of the above named political subdivision was furnished via electronic transmission to the Secretary of State on July 13, 2011.

Dated this the 13th day of July, 2011.

High Plains Underground Water
Conservation District No. 1

By Robert Meyer
Robert Meyer, President
Board of Directors

I, the undersigned authority, do hereby certify that the above Notice of Meeting of the governing body of the above named political subdivision, is a true and correct copy of said Notice, and that a true and correct copy of said Notice was posted on the bulletin board, located at a place convenient to the public in its administrative office, at 2930 Avenue Q, Lubbock, Texas, and said Notice was posted on July 13, 2011 and remained so posted continuously for at least 72 hours immediately preceding the day of said Meeting. A true and correct copy of said Notice has been filed with the Lubbock County Clerk on July 13, 2011, a true and correct copy of said Notice was posted on the bulletin board of the Lubbock County Courthouse on July 13, 2011, and said Notice remained so posted continuously for at least 72 hours immediately preceding the day of said Meeting.

Dated this the 13th day of July, 2011.

High Plains Underground Water
Conservation District No. 1

By Jim Conkwright
Jim Conkwright, General Manager

APPENDIX H

**Evidence That The Water District Coordinated
Development of the Management Plan
With Surface Water Entities**



HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1

August 2, 2011

BOARD OF DIRECTORS

PRESIDENT
Robert Meyer
Canyon, TX

VICE PRESIDENT
Carroll Cook
Friona, TX

SECRETARY-TREASURER
Bruce Rigler
Plainview, TX

MEMBER
Jim Copeland
Anton, TX

MEMBER
James Powell
Lubbock, TX

MANAGER
Jim Conkwright

Brazos River Authority
PO Box 7555
Waco TX 76714-7555

Dear Brazos River Authority:

As required by Section 36.1071 of the Texas Water Code, we respectfully submit to you the enclosed review copy of the High Plains Underground Water Conservation District No. 1 management plan as adopted by the Board of Directors on July 19, 2011.

Please note that Appendix G is incomplete. The Water District's Board of Directors have yet to approve minutes from the public hearing on the management plan and the regular Board of Directors meeting in which the plan was adopted. Both meetings were held July 19, 2011. The minutes will be approved at the August 16 regular meeting.

Please contact our office at (806) 762-0181 if you have any questions or comments about this plan.

Sincerely,

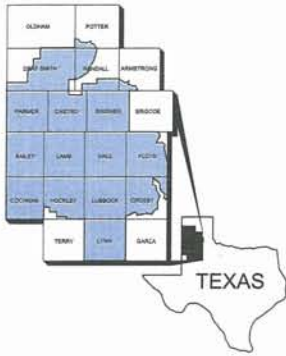
Jim Conkwright
General Manager

JC/cem

2930 Avenue Q
Lubbock, TX
79411-2499

(806) 762-0181
(806) 762-1834 (fax)

www.hpwd.com



HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1

August 2, 2011

BOARD OF DIRECTORS

PRESIDENT
Robert Meyer
Canyon, TX

VICE PRESIDENT
Carroll Cook
Friona, TX

SECRETARY-TREASURER
Bruce Rigler
Plainview, TX

MEMBER
Jim Copeland
Anton, TX

MEMBER
James Powell
Lubbock, TX

MANAGER
Jim Conkwright

Kent Satterwhite, General Manager
Canadian River Municipal Water Authority
PO Box 9
Sanford TX 79078-0009

Dear Mr. Satterwhite:

As required by Section 36.1071 of the Texas Water Code, we respectfully submit to you the enclosed review copy of the High Plains Underground Water Conservation District No. 1 management plan as adopted by the Board of Directors on July 19, 2011.

Please note that Appendix G is incomplete. The Water District's Board of Directors have yet to approve minutes from the public hearing on the management plan and the regular Board of Directors meeting in which the plan was adopted. Both meetings were held July 19, 2011. The minutes will be approved at the August 16 regular meeting.

Please contact our office at (806) 762-0181 if you have any questions or comments about this plan.

Sincerely,

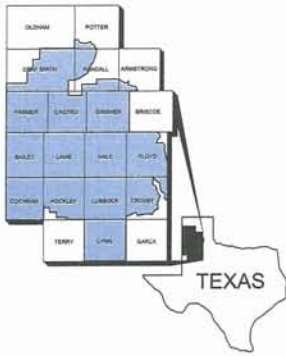
Jim Conkwright
General Manager

JC/cem

2930 Avenue Q
Lubbock, TX
79411-2499

(806) 762-0181
(806) 762-1834 (fax)

www.hpwd.com



HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1

August 2, 2011

BOARD OF DIRECTORS

PRESIDENT
Robert Meyer
Canyon, TX

VICE PRESIDENT
Carroll Cook
Friona, TX

SECRETARY-TREASURER
Bruce Rigler
Plainview, TX

MEMBER
Jim Copeland
Anton, TX

MEMBER
James Powell
Lubbock, TX

MANAGER
Jim Conkwright

City of Lubbock Water Utilities
Lake Alan Henry Water Supply
PO Box 2000
Lubbock TX 79457-2000

Dear City of Lubbock Water Utilities:

As required by Section 36.1071 of the Texas Water Code, we respectfully submit to you the enclosed review copy of the High Plains Underground Water Conservation District No. 1 management plan as adopted by the Board of Directors on July 19, 2011.

Please note that Appendix G is incomplete. The Water District's Board of Directors have yet to approve minutes from the public hearing on the management plan and the regular Board of Directors meeting in which the plan was adopted. Both meetings were held July 19, 2011. The minutes will be approved at the August 16 regular meeting.

Please contact our office at (806) 762-0181 if you have any questions or comments about this plan.

Sincerely,

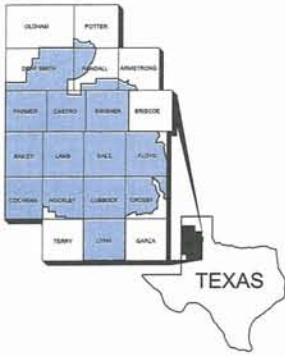
Jim Conkwright
General Manager

2930 Avenue Q
Lubbock, TX
79411-2499

(806) 762-0181
(806) 762-1834 (fax)

www.hpwd.com

JC/cem



HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1

BOARD OF DIRECTORS

PRESIDENT
Robert Meyer
Canyon, TX

VICE PRESIDENT
Carroll Cook
Friona, TX

SECRETARY-TREASURER
Bruce Rigler
Plainview, TX

MEMBER
Jim Copeland
Anton, TX

MEMBER
James Powell
Lubbock, TX

MANAGER
Jim Conkwright

August 2, 2011

Lubbock County Water Control & Improvement District # 1
9999 High Meadow Rd
Lubbock TX 79404-1913

Dear Lubbock County Water Control and Improvement District:

As required by Section 36.1071 of the Texas Water Code, we respectfully submit to you the enclosed review copy of the High Plains Underground Water Conservation District No. 1 management plan as adopted by the Board of Directors on July 19, 2011.

Please note that Appendix G is incomplete. The Water District's Board of Directors have yet to approve minutes from the public hearing on the management plan and the regular Board of Directors meeting in which the plan was adopted. Both meetings were held July 19, 2011. The minutes will be approved at the August 16 regular meeting.

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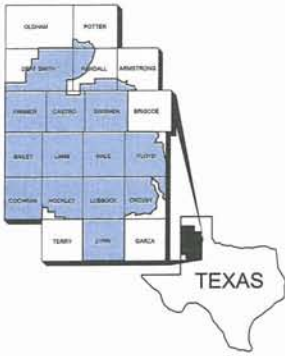
Jim Conkwright
General Manager

2930 Avenue Q
Lubbock, TX
79411-2499

(806) 762-0181
(806) 762-1834 (fax)

www.hpwd.com

JC/cem



HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1

BOARD OF DIRECTORS

PRESIDENT
Robert Meyer
Canyon, TX

VICE PRESIDENT
Carroll Cook
Friona, TX

SECRETARY-TREASURER
Bruce Rigler
Plainview, TX

MEMBER
Jim Copeland
Anton, TX

MEMBER
James Powell
Lubbock, TX

MANAGER
Jim Conkwright

August 2, 2011

MacKenzie Municipal Water Authority
141 South MacKenzie Rd
Silverton TX 79257-5324

Dear MacKenzie Municipal Water Authority:

As required by Section 36.1071 of the Texas Water Code, we respectfully submit to you the enclosed review copy of the High Plains Underground Water Conservation District No. 1 management plan as adopted by the Board of Directors on July 19, 2011.

Please note that Appendix G is incomplete. The Water District's Board of Directors have yet to approve minutes from the public hearing on the management plan and the regular Board of Directors meeting in which the plan was adopted. Both meetings were held July 19, 2011. The minutes will be approved at the August 16 regular meeting.

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Sincerely,

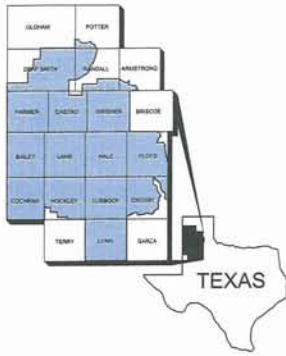
Jim Conkwright
General Manager

2930 Avenue Q
Lubbock, TX
79411-2499

(806) 762-0181
(806) 762-1834 (fax)

www.hpwd.com

JC/cem



HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1

BOARD OF DIRECTORS

PRESIDENT
Robert Meyer
Canyon, TX

VICE PRESIDENT
Carroll Cook
Friona, TX

SECRETARY-TREASURER
Bruce Rigler
Plainview, TX

MEMBER
Jim Copeland
Anton, TX

MEMBER
James Powell
Lubbock, TX

MANAGER
Jim Conkwright

August 2, 2011

Red River Authority of Texas
PO Box 240
Wichita Falls TX 76307-0240

Dear Red River Authority of Texas:

As required by Section 36.1071 of the Texas Water Code, we respectfully submit to you the enclosed review copy of the High Plains Underground Water Conservation District No. 1 management plan as adopted by the Board of Directors on July 19, 2011.

Please note that Appendix G is incomplete. The Water District's Board of Directors have yet to approve minutes from the public hearing on the management plan and the regular Board of Directors meeting in which the plan was adopted. Both meetings were held July 19, 2011. The minutes will be approved at the August 16 regular meeting.

Please contact our office at (806) 762-0181 if you have any questions or comments about this plan.

Sincerely,

Jim Conkwright
General Manager

JC/cem

2930 Avenue Q
Lubbock, TX
79411-2499

(806) 762-0181
(806) 762-1834 (fax)

www.hpwd.com



HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1

BOARD OF DIRECTORS

PRESIDENT
Robert Meyer
Canyon, TX

VICE PRESIDENT
Carroll Cook
Friona, TX

SECRETARY-TREASURER
Bruce Rigler
Plainview, TX

MEMBER
Jim Copeland
Anton, TX

MEMBER
James Powell
Lubbock, TX

MANAGER
Jim Conkwright

August 2, 2011

White River Municipal Water District
2880 FM 2794
Spur TX 79370-5748

Dear White River Municipal Water District:

As required by Section 36.1071 of the Texas Water Code, we respectfully submit to you the enclosed review copy of the High Plains Underground Water Conservation District No. 1 management plan as adopted by the Board of Directors on July 19, 2011.

Please note that Appendix G is incomplete. The Water District's Board of Directors have yet to approve minutes from the public hearing on the management plan and the regular Board of Directors meeting in which the plan was adopted. Both meetings were held July 19, 2011. The minutes will be approved at the August 16 regular meeting.

Please contact our office at (806) 762-0181 if you have any questions or comments about this plan.

Sincerely,

A handwritten signature in blue ink that reads "Jim Conkwright".

Jim Conkwright
General Manager

2930 Avenue Q
Lubbock, TX
79411-2499

(806) 762-0181
(806) 762-1834 (fax)

www.hpwd.com

JC/cem