

# **LLANO ESTACADO UNDERGROUND WATER CONSERVATION DISTRICT**

101 S. Main, Room B2, Gaines County Courthouse, Seminole, TX 79360 \* 432-758-1127

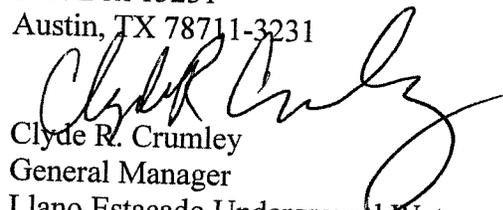
MEMORANDUM TO: Kevin Ward  
Executive Administrator  
Texas Water Development Board  
1700 N. Congress  
P.O. Box 13231  
Austin, TX 78711-3231

**TWDB  
RECEIVED**

JUL 25 2005

ROUTE TO: \_\_\_\_\_

CCTO: \_\_\_\_\_

FROM:   
Clyde R. Crumley  
General Manager  
Llano Estacado Underground Water  
Conservation District (LEUWCD)

SUBJECT: LEUWCD Management Plan

DATE: July 21, 2005

Attached is a copy of the Llano Estacado Underground Water Conservation District's adopted "Groundwater Management Plan" for the Texas Water Development Board certification as mandated by Chapter 36 1072(a) of the Texas Water Code. The Llano Estacado UWCD Board of Directors adopted the plan on July 21, 2005. In addition, the resolution adopting the plan is attached.

This plan replaces our existing Management Plan that was adopted by the District in 2000.

The Llano Estacado Underground Water Conservation District Management Plan was developed during an open meeting of the Board of Directors in accordance with all notice and hearing requirements of the District. Documentation that notice and hearing requirements were followed is presented in a separate attachment. There are no surface water entities within the District. Since notice and hearings are posted within the District, and proper notice of public hearing was in a newspaper of wide circulation, no additional notification is given under Chapter 36.1071(a).

A copy of the District's rules is attached in accordance with Chapter 36.1071(f). The rules were adopted September of 1999.

The Llano Estacado Underground Water Conservation District "Groundwater Management Plan" will be in force for 10 years from the date it was adopted by the Board.

If there should be any additional information that you require, please do not hesitate to call.

CRC/lb

Attachments

Llano Estacado  
Underground  
Water Conservation  
District

Management Plan  
2005-2010

*Effective July 21, 2005*

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## **District Mission Statement**

The Llano Estacado Underground Water Conservation District (the District) will develop, promote, and implement management strategies to provide for the conservation, preservation, protection, recharging, and prevention of waste of the groundwater resources, over which it has jurisdiction, for the benefit of the people that the District serves.

## **Time Period for this Plan**

This plan becomes effective July 21, 2005 upon adoption by the Board of Directors (the Board) of the District and remains in effect until a revised plan is approved or until July 21, 2005, whichever is earlier. The District's groundwater management plan is a 10 year plan and will be in force from the date it was adopted by the board.

## **Guiding Principles**

The District was formed, and has been operated from its inception, with the guiding belief that the ownership and pumpage of groundwater is a private property right. The Board has adopted the principle of "education first" and regulation as a last resort in their effort to encourage conservation of the resource. As a result, the rules of the District were designed to give all landowners a fair and equal opportunity to use the groundwater resource underlying their property for beneficial purposes. If, at the request of the constituents of the District, more stringent management strategies are needed to better manage the resource, these strategies will be put in place after an extensive educational process and with the perceived majority approval of the constituents. The District will continue to monitor groundwater quality and quantity in order to better understand the dynamics of the aquifer systems over which it has jurisdiction.

This document is intended for use as a tool to provide continuity in the management of the District. District staff will use the plan as a guide to insure that all aspects of the goals of the District are accomplished. The Board will refer to it for future planning and as a document to measure performance of the District staff on an annual basis.

Conditions can change over time that may cause the Board to modify this document. The dynamic nature of this plan shall be maintained such that the District will continue to best serve the needs of the constituents. At the very least, the Board will review and readopt this plan every five years, or as specified by Chapter 36, Texas Water Code.

Goals, management objectives, and performance standards must be set at an attainable level in order to be realistic and effective. Lofty ideals penned in an effort to be "all things to all people" can be the first step toward disaster. Unreasonably elevated objectives foster potentially damaging results when the objective cannot be met due to a lack of resources; fiscal or technical. Goals can also be set too low. Simplistic ideals can foster mediocrity. In both cases, the mission of the goal setting entity is thwarted and the benefactors of the same slighted. Although well meaning, when the failure to attain a goal is realized by those measuring performance, the initial response is to assume that those setting the goals were negligent in performing their duties when, in truth, the goals were unattainable from the start.

In the opinion of the Board, the goals, management objectives, and performance standards put forth in this planning document have been set at a reasonable level considering existing and projected fiscal and technical resources. Conditions may change which could cause change in the management objectives defined to reach the stated goals. The following guidelines will be used to insure that the management objectives are set at a sufficient level to be realistic and effective:

- The District's constituency will determine if the District's goals are set at a level that is both meaningful and attainable; through their voting right, the public will appraise the District's overall performance in the process of electing or re-electing Board members.
- The duly elected Board will guide and direct District staff and will gauge the achievement of the goals set forth in this document.
- The interests and needs of the District's constituency shall control the direction of the management of the District.
- The Board will endeavor to maintain local control of the privately owned resource over which the District has authority.
- The Board will evaluate District activities on a fiscal year basis. That is, the District budgets operations on October 1 - September 30 fiscal year. When considering stated goals, management objectives, and performance standards, any reference to the terms annual, annually, or yearly will refer to the fiscal year of the District.

**General Description, Location and Extent**

The District was created on May 24, 1991, when Governor Ann Richards signed HB 530, 72nd Legislature, into law. The District was confirmed, the Initial Board elected, and an ad valorem tax rate cap of \$0.02/\$100 valuation was set in an election held in November 1998. Table 1 lists the current Board of Directors, office held, occupation, and term.

**Table 1: Board of Directors of the Llano Estacado Underground Water Conservation District.**

Office	Name	Occupation	Term Ends
President	Shelby Elam	Active Farmer	May 2008
Vice-President	Judson Chevront	Active Farmer	May 2006
Secretary	Walter Billings	Active Farmer	May 2006
Member	Delmon Ellison, Jr.	Active Farmer	May 2008
Member	Alton Billings	Active Farmer	May 2008

The jurisdictional extent of the District is the same as Gaines County and covers approximately 1525 square miles of the Southern High Plains of Texas (Figure 1). Seminole (pop. 5,910), the county seat, is the largest municipality in the District. Seagraves (pop. 2,334) is the other incorporated community in the District.

The District is bordered on the north by the Sandy Land UWCD (Yoakum County) and South Plains UWCD (Terry and Hockley Counties), on the east by Mesa UWCD (Dawson County), on the south by Andrews County, and on the west by the State of New Mexico.

The economy of the District is supported predominately by row crop agriculture and oil and gas production. The 250,000 plus acres of irrigated cropland (out of total row crop acreage of 640,000) affords economic stability to the area. The major crops cultivated within the District include cotton, peanuts, grain sorghum, wheat and corn; and, to a lesser extent, watermelons, sunflowers, alfalfa, and cucumbers.

Gaines County has long been known as the number one producer of oil and gas in the state. In 2003, companies produced over 34,000,000 barrels of crude oil in the county.

### **Topography and Drainage**

The land surface in the District is a nearly level to very gently undulating plain. Deep, moderately permeable, sandy soils predominate the region.

Land surface elevation drops from 3700 feet above sea level in the northwest corner of the District to 2935 feet above sea level in the southeast corner of the District.

Several relic drainage ways cross the District from northwest to southeast. These “draws” (Sulfur, McKenzie, Wordswell, Seminole, and Monument) are shallow and usually dry, seldom carrying runoff surface water.

Cedar Lake and McKenzie Lake are the largest salt lakes in the District. In periods of normal rainfall, McKenzie Lake occupies approximately 1,500 acres, and Cedar Lake, approximately 3,500 acres. The lakes are bordered by calcareous soils that support various salt – tolerant sedges and grasses. The soils around the lakes and in the lake bottoms are strongly affected by alkali and are not conducive to agricultural activities.

Playas, or shallow wet-weather lakes, are common in areas where fine sandy loam and sandy clay loam soil types prevail. Playas range in size from 2 to 10 acres and are important vectors for local aquifer recharge.

### **Groundwater Resources**

The District has jurisdiction over all groundwater that lies within the District’s boundaries. Three aquifers, the Ogallala, the Cretaceous, and the Dockum occur within the District. The following is a description of geological formations that may be beneficial to District constituents by providing useable quantities of groundwater.

#### **Ogallala Aquifer**

The Ogallala Aquifer is the primary source of groundwater in the District (Fig. 2). Saturated sections range from less than 10 feet to more than 180 feet in the area covered by the District.

The formation consists of heterogeneous sequences of clay, silt, sand and gravel. These sediments are thought to have been deposited by eastward flowing aggrading streams that filled and buried valleys eroded into pre-Ogallala rocks. A resistant layer of calcium carbonate-

cemented caliche known locally as the “caprock” occurs near the surface of much of the area (Ashworth and Hopkins, 1995).

Water levels in the Ogallala Aquifer are primarily influenced by the rate of recharge to and discharge from the aquifer. Recharge to the aquifer occurs primarily by infiltration of precipitation falling on the surface. To a lesser extent, recharge may also occur by upward leakage from underlying Cretaceous units that, in places, have a higher potentiometric surface than the Ogallala. Generally, only a small percentage of water from precipitation actually reaches the water table due to a combination of limited annual precipitation (15.8 inches per year), high evaporation rate (60 – 70 inches per year), and slow infiltration rate.

Groundwater in the aquifer generally flows from northwest to southeast, normally at right angles to water level contours. Velocities of less than one foot per day are typical, but higher velocities may occur along filled erosional valleys where coarser grained deposits have greater permeabilities.

Discharge from the Ogallala aquifer within the District occurs through the pumping of wells; primarily irrigation wells. Groundwater pumpage typically exceeds recharge and results in water-level declines (Ashworth and Hopkins, 1995).

The chemical quality of Ogallala groundwater varies greatly across the District. Electrical conductance (EC) varies from less than 1.0 dS/m to over 4.0 dS/m. Generally, groundwater in the eastern and southeastern parts of the District exhibit the highest EC. Isolated occurrence of high EC values elsewhere in the District may be due to pollution through oil field salt water disposal pits or upward leakage and mixing from the underlying Cretaceous aquifer.

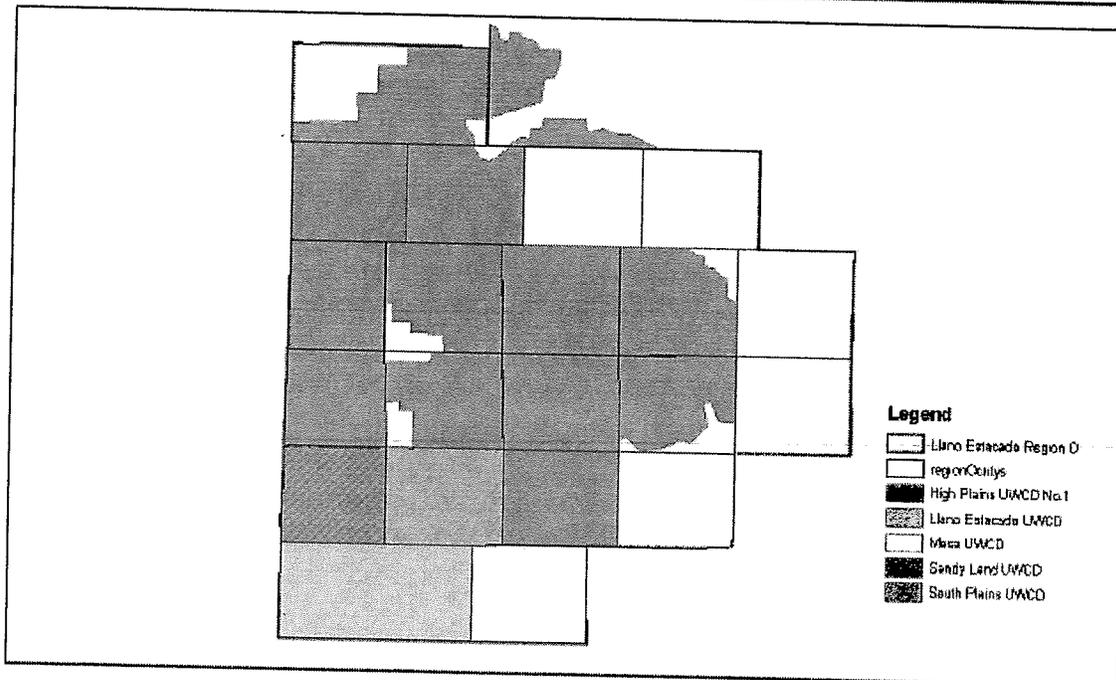
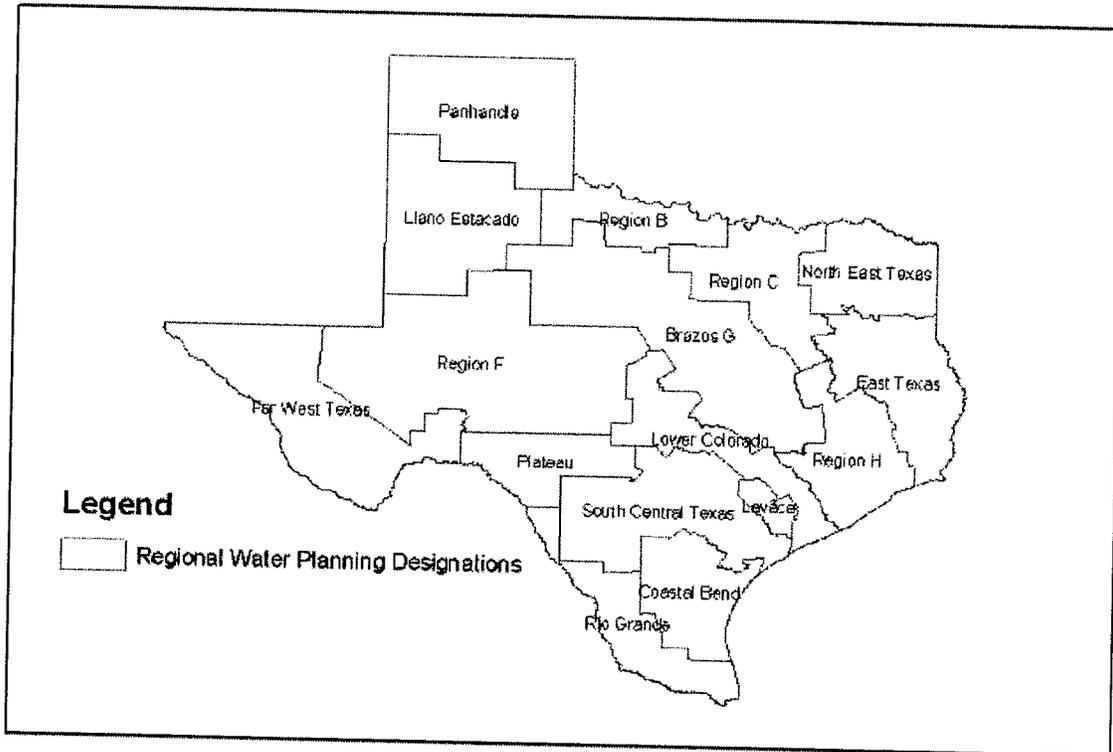
The suitability of groundwater for irrigation purposes is largely dependent on the chemical composition of the water and is determined primarily by the total concentration of soluble salts. Some farm acreage in the District is already limited to certain varieties of salt tolerant crops due to limiting or damaging total salt levels.

### **Cretaceous Aquifer**

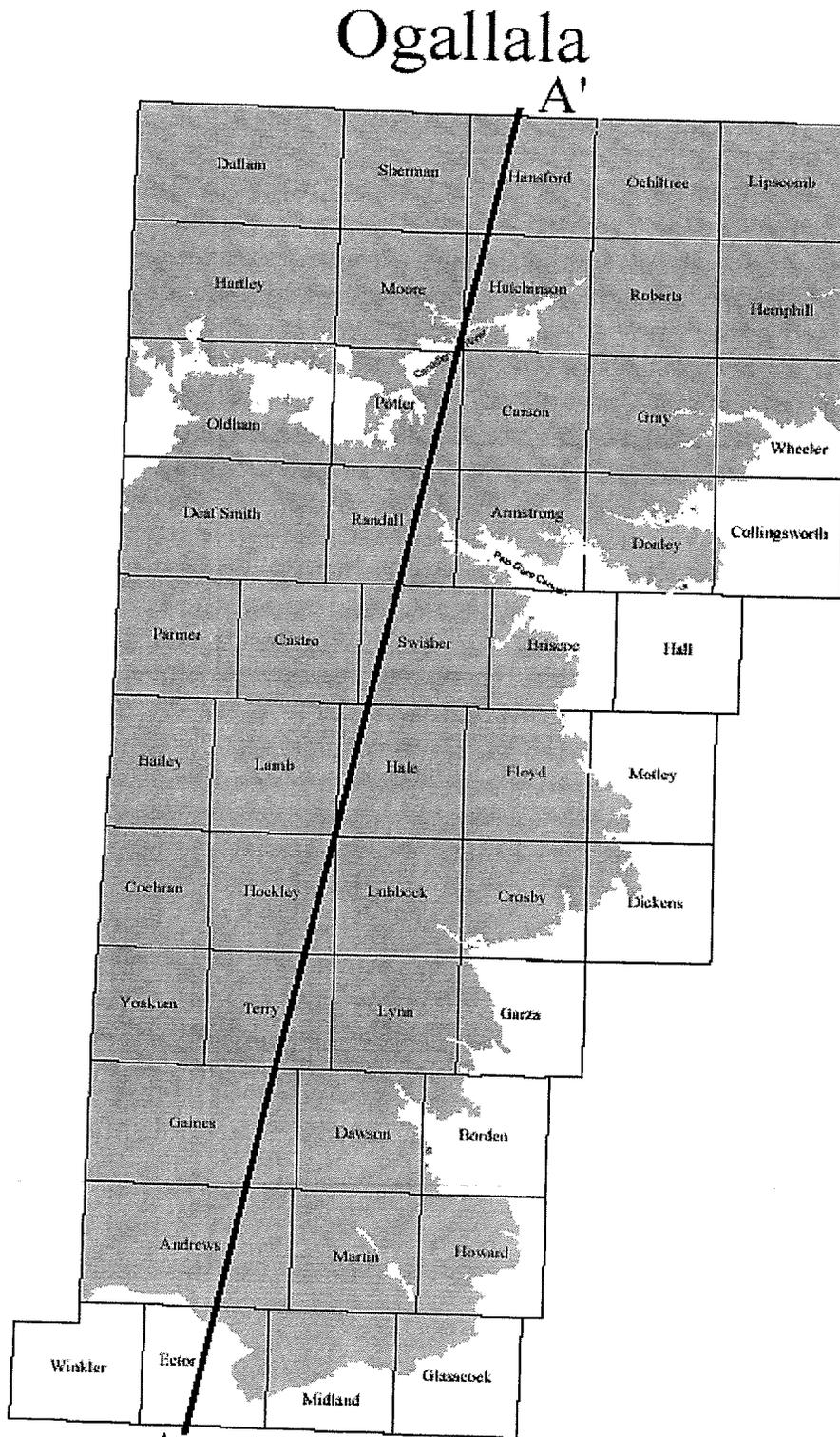
The Edwards-Trinity (High Plains) aquifer, commonly referred to as the Cretaceous Aquifer, underlies the Ogallala Aquifer in the northern half of the District. In some areas of the District, the Cretaceous and Ogallala Aquifers may be hydrologically connected. Groundwater in the Cretaceous is generally fresh to slightly saline. Water quality deteriorates where Cretaceous formations are overlain by saline lakes.

Recharge of the Cretaceous occurs directly from the bounding Ogallala formation. Some upward movement of groundwater from the underlying Triassic Dockum formation may occur (Ashworth and Hopkins, 1995). As mentioned earlier, in many places the potentiometric surface of groundwater in the Cretaceous Aquifer is higher than the Ogallala Aquifer, resulting in the upward leakage from the Cretaceous Aquifer. Movement of water in the Cretaceous is generally east to southeast.

**Figure 1: Location of the Llano Estacado Underground Water Conservation District**



**Figure 2: Aerial extent of the Ogallala Aquifer in Texas**  
 (Adapted from Ashworth and Hopkins, 1995)



### **Dockum Aquifer**

The Dockum Aquifer underlies the Cretaceous and Ogallala formations throughout the District. The primary water-bearing zone in the Dockum group, commonly called the "Santa Rosa", consists of up to 700 feet of sand and conglomerate interbedded with layers of silt and shale (Ashworth and Hopkins, 1995). Aquifer permeability is typically low and well yields normally do not exceed 300 gal/min.

Water quality in the Dockum is the main limiting factor when considering its use within the District (Ashworth and Hopkins, 1995). EC values for Dockum groundwater range from 15.0 dS/m to over 50.0 dS/m. Even the most salt tolerant row crops grown cannot withstand such levels of salinity.

Thus, the only practical use of Dockum groundwater may be for make-up water in secondary recovery operations of crude oil. By using water from this aquifer, oil companies could reduce their use of Ogallala and/or Cretaceous groundwater, thereby relieving some pumpage pressure from the freshwater sources.

### **Surface Water Resources**

The only fresh surface water occurring within the District are playa lakes. The playas play an important role in aquifer recharge and support some wildlife when rainfall events are significant enough to cause runoff to accumulate in these naturally occurring depressions. Playas are rarely, if ever, used to support irrigation activities. As previously mentioned, Cedar Lake and McKenzie Lake are naturally occurring salt lakes within the District. Each of these naturally occurring impoundments support limited wildlife populations, primarily migratory waterfowl and associated opportunistic predators.

### **Total Useable Amount of Groundwater**

The Texas Water Development Board (TWDB) estimated in 1990 that the total recoverable amount of groundwater underlying Gaines County, Texas, was approximately 13.63 million acre-feet (Peckham and Ashworth, 1993). The total useable amount of groundwater underlying the county in 1990 was, of course, dependent on the category of use because of quality limitations. That is, several areas within the county were thought to have had groundwater quality problems severe enough to preclude its use for any purpose. However, for the purposes of this plan, to meet the requirements of 36.1072(e)(3)(A), Texas Water Code, and until more accurate data becomes available, we will assume that all of the groundwater underlying the county was useable in 1990 even though we suspect that not to be the case. Table 2 shows an estimation of the volume of groundwater in storage projected to the year 2050 for Gaines County, Texas. Please note that the information shown should be used only as a guide, and becomes less and less representative of actual conditions the farther one looks into the future.

**Table 2: Projected Quantity of Water in Storage in Gaines County (Llano Estacado Regional Water Plan, 2006).**

County	2000	2010	2020	2030	2040	2050
Gaines	12.495*	10.232	7.998	6.120	4.993	3.651

\*Volume expressed in millions of acre-feet

### Historical Groundwater Use

For the purposes of this plan, the following estimations (Table 3) of the historical quantity of groundwater used in Gaines County will be used as a guide to estimate future demands on the resource in the District. It should be emphasized that the quantities shown are estimates.

**Table 3: 1998-2002 Groundwater Use, by Category of Use, in Gaines County, Texas. (TWBD Water Use Survey Database, 11/04/04).**

Year	Municipal	Irrigation	Mining	Livestock	Other	Total
1998	3,324*	494,859	7,658	859	390	<b>507,090</b>
1999	2,927	471,951	7,658	996	389	<b>483,921</b>
2000	3,138	414,772	8,034	629	0	<b>426,573</b>
2001	3,028	520,267	7,704	639	502	<b>532,140</b>
2002	3,086	470,616	7,704	617	0	<b>482,023</b>

\*Volume expressed in acre-feet

### Recharge of the Aquifer System

Recharge of the aquifer system in the District mainly occurs in two ways: 1) infiltration of precipitation runoff in and around playa lakes and 2) direct infiltration of precipitation into the coarse eolian surficial deposits.

The TWDB estimated that the annual recharge quantity for Gaines County, Texas, was approximately 50,750 acre-feet per year (Knowles, etal, 1984). Another study indicated that recharge rates may be considerably higher on the southern portion of the High Plains (Rainwater,1998). However, the most recent data reveals that recharge is significantly higher than previously noted. Specifically, the Southern Ogallala GAM estimates recharge to be near 92,586 ac-ft/yr from the flow budget during the years 2000-2060. Therefore, the GAM recharge estimates appear to be nearer those indicated from the Rainwater study.

During the next few years there may be additional evidence as more accurate usage estimates become available from the District's Water Level Monitoring. However, the District's Board of Directors recognizes that the aquifer recharge is less than usage, resulting in declining water levels.

## **Projected Groundwater Supply and Demand**

As mentioned earlier, the District's Board of Directors understands that, currently, the usage of groundwater exceeds recharge and water levels are declining. However, the Board also realizes that declining water levels have reduced the ability to produce as much groundwater. Consequently, it is estimated that the projected usage of groundwater is likely to decrease over time. While the cycle of groundwater usage typically has highs and lows, the trend is likely declining. In fact, some previously irrigated farms have been converted to dryland farms during recent years.

**Table 4: Projected Groundwater Supply and Demand (Source: Adapted from Revised Projected Demands Adopted by Region O, July 27, 2004, HDR Engineering, Inc.).**

<b>Year</b>	<b>Supply</b>	<b>Demand</b>
2000	424,778	424,778
2010	384,951	384,951
2020	364,039	364,039
2030	344,232	344,232

During the past year, the Region O Planning Group has revisited the irrigation demand estimates. TWDB estimates of on-farm irrigation water use from 1985-2000 were averaged to develop an intercept point for the year 2000. The slope of the curve for water demand is the same as in the 2001 water plan. Because of expected declining groundwater use, the projected supply is shown equal to demand. The District's information on groundwater use and changing water levels support the conclusion that this methodology allows users to maintain their livelihood while prolonging the available supply.

## **Management of Groundwater Resources**

The District will endeavor to manage groundwater resources over which it has jurisdiction in order to conserve the resource while seeking to maintain the economic viability of the District's constituents. A water level monitoring network has been established in order to track changes in the total volume of groundwater in storage each year. Likewise, a water quality monitoring network will be established in order to track water quality changes each year. The District will employ all technical resources at its disposal to monitor and evaluate the groundwater resource. Programs to encourage conservation of groundwater will be designed and implemented as need dictates.

In October 1999, the Board, after notice and hearing, adopted the rules of the District. The rules address conservation of the groundwater resources of the District through: well permitting, well spacing, well registration, well completion, pumping limitations, open well capping, and standards for plugging wells. As conditions dictate, and with the approval of the constituents of the District, the Board will consider the modification of the rules to further the mission of the District. When considering modification or enforcement of the rules, the Board will base its decisions on the best technical evidence available. All constituents will be treated equally and fairly when applying the rules of the District.

## **Drought Contingency Plan**

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

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

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

## **Regional Water Planning**

The Board of Directors recognizes the regional water plan requirements listed in Ch. 36, TWC, §36.1071. Namely, the District’s management plan must be forwarded to the regional water planning group for their consideration in their planning process, and the plan must address water supply needs such that there is no conflict with the approved regional water plan. It is the Board’s belief that no such conflict exists.

The Board agrees that the regional water plan should include the District’s best data. The Board also recognizes that the regional water planning process provides a necessary overview of the region’s water supply and needs. However, the Board also believes it is the duty of the District to develop the best and most accurate information concerning groundwater within the District.

## **Legislative Activity**

The 75<sup>th</sup> Texas Legislature officially recognized groundwater districts as the preferred method of managing groundwater resources (§36.0015, TWC). Since its inception, the District has attempted to communicate with national and state lawmakers to ensure that the property rights and other groundwater related interests of its residents are protected. The Board will continue to support the District’s participation in the legislative process, to the greatest extent fiscally possible, to ensure that the interests of the District’s residents are represented. The District will attempt to keep the residents informed of legislative activities through news releases, newsletters and public speaking engagements.

## **Weather Modification**

Since 2000, the District has participated in a weather modification program. Beginning 2002, the district is a participant in the Southern Ogallala Aquifer Rainfall Enhancement (SOAR) program, which is administered by the Sandy Land UWCD. Currently, the program contains three groundwater conservation districts: South Plains UWCD, Sandy Land UWCD and the Llano Estacado UWCD.

The Llano Estacado UWCD Board of Directors believes that weather modification is a management tool that can help relieve some pressure from our groundwater resources. Rainfall at crucial points of the growing season may mean significantly less groundwater used for irrigation. Additionally, the Board hopes that the benefits of convective cloud seeding will contribute to enhanced recharge of the groundwater resources.

The Board understands that State funding for weather modification has been cut and hopes that local funding remains sufficient for continued participation.

## **Goals, Management Objectives and Performance Standards**

### **Method for Tracking the District's Progress in Achieving Management Goals**

The District Manager will prepare an annual report of the District's performance with regard to achieving management goals and objectives. The report will be prepared in a format that will be reflective of the performance standards listed following each management objective. The report will be presented to the Board within 60 days of the end of each fiscal year. The report will be maintained on file in the open records of the District.

The District will actively enforce all rules of the District in order to conserve, preserve, protect and prevent the waste of the groundwater resources over which the District has jurisdictional authority. The Board will periodically review the District's rules, and will modify the rules, with public approval, in order to more adequately manage the groundwater resources within the District and to carry out the duties prescribed in Chapter 36, Texas Water Code.

**Goal 1.0**      **Implement management strategies that will protect and enhance the quantity of useable quality groundwater by encouraging the most efficient use.**

#### **Management Objective-Water Level Monitoring**

**1.01**      Annually, measure the depth to water in 80% or more of the wells in the District's water level monitoring network; record all measurements and/or observations; enter all measurements into District's computer data base; file all field notes in District's filing system; maintain a network of measurement wells of 172 or more wells.

#### **Performance Standards**

**1.01a**      Percent of water level monitoring wells for which measurements were recorded each year

- 1.01b Percent of water level monitoring wells for which field notes were written describing reason for inability to attain measurements each year
- 1.01c Number of data records entered into District's data base each year
- 1.01d Number of water level measurement wells for which field notes are filed in District's filing system each year
- 1.01e Number of wells in the water level measurement network each year
- 1.01f Number of wells added to the network, if required, each year

**Management Objective-Technical Field Services**

- 1.02 On an annual basis, at the request of the constituents of the District, provide technical field services including, but not limited to: flow testing, draw down measurement, sprinkler pattern efficiency testing, and water management strategy consultation. District staff will attempt to fulfill 80% of the requests. Record any observations, measurements, etc. in field log. Enter recorded information in District's computer data base.

**Performance Standards**

- 1.02a Percent of field service requests fulfilled, as evidenced by field log, each year
- 1.02b Number of records entered into District's computer data base each year

**Management Objective-Research and Demonstrations**

- 1.03 Considering the District's fiscal resources, participate when practical in opportunities to conduct research or perform demonstrations of methods to protect and enhance the quantity of useable quality groundwater in the District on an annual basis. Record the opportunities to participate and reasons the District did or did not participate in these activities. File notes in the District's filing system.

**Performance Standards**

- 1.03a Percentage of research and demonstration project opportunities in which the District participates each year
- 1.03b Number of records indicating opportunities to participate each year

**Management Objective-Center Pivot Inventories**

- 1.04 Beginning in 2002, and again every three years thereafter, perform a physical inventory of the number and type of all irrigation systems in the District. Note which center pivot irrigation systems have Low Energy Precision Application (LEPA) spaced nozzles as a measure of adoption of more efficient irrigation technology. Enter data in District's data base file by block and section.

**Performance Standards**

- 1.04a Number of irrigation systems recorded each documenting period
- 1.04b Percentage of center pivot irrigation systems with LEPA spaced nozzles each documenting period
- 1.04c Number of data entries into District's data base each documenting period

**Management Objective—Laboratory Services**

- 1.05** On an annual basis, at the request of the constituents of the District, provide basic water quality testing service to those requesting the service. Maintain a record of all tests performed by entering the results of all tests in the District's computer database. Communicate results to constituents requesting tests.

**Performance Standards**

- 1.05a** Number of laboratory service requests fulfilled each year  
**1.05b** Number of records entered into District's computer database each year  
**1.05c** Number of results communicated to constituents requesting tests each year

**Goal 2.0 Implement management strategies that will protect and enhance the quantity of usable quality groundwater by controlling and preventing waste.**

**Management Objective-Well Permitting and Well Completion**

- 2.01** On an annual basis, at the request of the constituents of the District, issue temporary water well drilling permits for the drilling and completion of non-exempt water wells in the District within 20 days of application. Inspect all well sites to be assured that the District's completion and spacing standards are met. Send written notification to the well owner if the well fails to meet standards within 30 days of inspection. The Board will vote on final approval of the permit at the next regularly scheduled meeting after the well site has been inspected and District well completion standards have been met.

**Performance Standards**

- 2.01a** Average number of days taken to issue drilling permit after request each year  
**2.01b** Number of water well drilling permits issued each year  
**2.01c** Number of well sites inspected after well completion each year  
**2.01d** Number of well sites that fail to meet the standards of the District each year  
**2.01e** Average number of days taken to mail notification letters each year

**Management Objective-Open or Uncovered Wells**

- 2.02** Annually, the District will inspect all sites reported of open or uncovered wells to substantiate or refute that an open or uncovered well exists. If an open or uncovered well is found, the District will insure that the open hole is properly closed according to District rules and, in so doing, prevent potential contamination of the groundwater resource. The reports shall be filed on forms provided by the District in order to track the progress of the closure process. The District will contact the party responsible for the open or uncovered well within 30 days of same being reported. The site will be inspected after notification to ensure the well closure process occurs within 60 days of the initial contact with the responsible party. If the well is not closed by the end of the 60 day period, the District will close the well in accordance with the District rules.

### **Performance Standards**

- 2.02a** Number of open or uncovered wells reported to the District each year
- 2.02b** Number of initial inspections accomplished each year
- 2.02c** Average number of days required to make initial contact with responsible party each year
- 2.02d** Average number of days required to complete closure of open or uncovered wells each year
- 2.02e** Percentage of wells remaining open or uncovered after 60 day period that are closed in accordance with District rules each year

### **Management Objective-Maximum Allowable Production**

- 2.03** Annually, the District will investigate all reports filed by District constituents, on forms provided by the District, regarding pumpage of groundwater in excess of the maximum production allowable under the District's rules. Investigation of each occurrence shall occur within 30 days of receiving the report. Each case will be remedied in accordance with District rules.

### **Performance Standards**

- 2.03a** Percent of reports investigated each year
- 2.03b** Average amount of time taken to investigate reports each year
- 2.03c** Percent of incidences where violations occurred and violators were required to change operations to be in compliance with District rules each year

### **Management Objective-Water Quality Monitoring**

- 2.04** Annually, District staff will obtain water quality samples from 100 or more irrigation wells for analysis of total salts and total chlorides, in order to track water quality changes in the District, and will resample 90% of the wells sampled the previous year. The results of the tests will be published in map form, entered in to the District's computer data base, and will be made available to the public.

### **Performance Standards**

- 2.04a** Number of samples collected and analyzed each year
- 2.04b** Percent of previously sampled wells that were sampled in the current testing year.
- 2.04c** Number of maps made available to the public each year
- 2.04d** Number of analyses entered into District's computer data base each year

- Goal 3.0** Implement management strategies that will provide public education and information opportunities that will assist in the accomplishment of Goals 1.0 and 2.0.

### **Management Objective-Newsletter**

- 3.01** Annually, the District will produce a minimum of four newsletter editions. Newsletters will be distributed to District constituents and other interested parties. At a minimum, two articles per year will be included that address methods of enhancing and protecting the quantity of useable quality groundwater within the District.

#### **Performance Standards**

- 3.01a** Number of newsletter editions published each year  
**3.01b** Number of newsletters distributed each year  
**3.01c** Number of articles that address methods of enhancing and protecting the quantity of useable quality groundwater each year

### **Management Objective-News Releases**

- 3.02** Annually, District staff in conjunction with local newspaper publishers will prepare a minimum of four news releases, for publication in local newspapers, detailing methods of protecting and enhancing the quantity of useable quality groundwater within the District.

#### **Performance Standard**

- 3.02** Number of news releases prepared, for publication in local newspapers, detailing methods of protecting and enhancing the quantity of useable quality groundwater within the District each year.

### **Management Objective-Public Speaking Engagements**

- 3.03** Annually, District staff and/or directors shall present a minimum of four programs that address methods to protect and enhance the quantity of useable quality groundwater in the District.

#### **Performance Standard**

- 3.03** Number of programs that address methods to protect and enhance the quantity of useable quality groundwater in the District presented each year

### **Management Objective-Printed Material Resource Center and Technical File**

- 3.04** Annually, maintain a self-service printed material resource center in the District office. Annually inventory items in the center for quantity and currentness. Through the inventory process, determine the number and type of materials procured from the center by the public each year. Maintain a technical filing system of resource materials and annually record the number of copies procured from the technical file by the public.

#### **Performance Standards**

- 3.04a** Number of items by type procured by the public from the resource center each year  
**3.04b** Number of items copied and given to the public from the technical file each year

**Management Objective—Classroom Education**

- 3.05** Annually, the District will sponsor the “*Major Rivers*” (or similar) water conservation education curriculum, for all 4<sup>th</sup> grade schools within the District. Annually, the District will sponsor water conservation education book covers for all public schools within the District.

**Performance Standards**

- 3.05a** Number of 4<sup>th</sup> grade schools where “*Major Rivers*” (or similar) curriculums are distributed each year  
**3.05b** Number of book covers distributed to each school each year

**Goal 4.0 Implement strategies that provide the District’s residents information on the status of drought conditions**

**Management Objective—Rain Gauges**

- 4.01** Maintain a network of rain gauges in the District. Publish monthly and yearly rainfall totals in the local newspaper

**Performance Standards**

- 4.01a** Number of rain gauges in the network  
**4.01b** Number of monthly rain gauge readings

**Goal 5.0 Implement management strategies that educate the District’s residents of water conservation techniques and provide information on the remaining amount of useable quality groundwater**

**Management Objective—Saturated Thickness Maps**

- 5.01** Every 5 years, beginning 2005, provide saturated thickness maps that show the varying thickness of groundwater remaining in storage. Publish the saturated thickness maps in the local newspaper

**Performance Standards**

- 5.01** Number of saturated thickness maps displayed and/or printed at the District office

**Management Objective—Conservation Literature**

- 5.02** Maintain a portion of the District’s material resource center devoted to water conservation. Stock this portion with conservation tips for both home water conservation and farm conservation

**Performance Standards**

- 5.02a** Number of brochures/periodicals dedicated to conservation  
**5.02b** Number of conservation brochures/periodicals obtained by the public

**Goals not Applicable**

The following goals referenced in Chapter 36, Texas Water Code, have been determined not applicable to the District;

- § 36.1071(a)(3) Controlling and preventing subsidence
- § 36.1071(a)(4) Addressing conjunctive surface water management issues
- § 36.1071(a)(5) Addressing natural resource issues

## References

Ashworth, J. B. and Hopkins, J., 1995, Aquifers of Texas: Texas Water Development Board Report 345, 69 p.

HDR Engineering, Inc., 2006, Llano Estacado Regional Water Planning Area, Table 3-1, 3-7 p.

HDR Engineering, Inc., 2004, Projected Region O GAM Run (version 1) (8-12-04) No. 3 xls; GAMRun 04-07.doc

Knowles, T., Nordstrom, P. L., and Klemt, W. B., 1984 Evaluating the Groundwater Resources of the High Plains of Texas: Texas Department of Water Resources Report 288, 4 vol.

Peckham, D. S. and Ashworth, J. B., 1993, The High Plains Aquifer System of Texas, 1980 to 1990 Overview and Projections: Texas Water Development Board Report 341, 34 p.

Rainwater, K., 1998, Personal Communication, Texas Tech University, Lubbock, Texas

Texas Water Development Board; Estimated Groundwater Use (acre feet) Llano Estacado Underground Water Conservation District, Gaines County; TWBD Water Use Survey Database, 11/04/04.

Wilhite, Dr. Donald A, Director, "What is Drought?", 2003 World Wide Web, National Drought Mitigation Center, University of Nebraska.

# ***LLANO ESTACADO UNDERGROUND WATER CONSERVATION DISTRICT***

101 S. Main, Room B2, Gaines County Courthouse, Seminole, TX 79360 \* 432-758-1127

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## **Management Plan 2005-2010**

**WHEREAS**, the Llano Estacado Underground Water Conservation District (the District) was created on May 24, 1991, by authority of HB 530 of the 72<sup>nd</sup> Texas legislature; and

**WHEREAS**, the registered voters of the District confirmed the District's creation in November, 1998; and

**WHEREAS**, the District to adopted a Management Plan effective April 14, 2000 as required by SB 1, 75<sup>th</sup> Texas Legislature;

**WHEREAS**, the current Management Plan is required by Chapter 36.1072, Texas Water Code, to be renewed every five years;

**WHEREAS**, the Board of Directors of the District have determined that a revision of the existing Management Plan is warranted; and

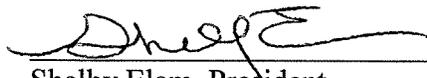
**WHEREAS**, the Board of Directors of the District have determined that the revised Management Plan adequately addresses the requirements of Chapter 36.1071, Texas Water Code; and

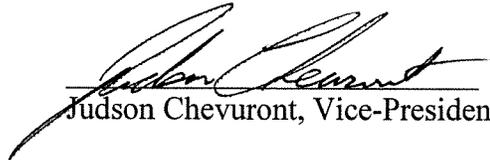
**WHEREAS**, the revised Management Plan shall become effective on July 21, 2005, upon adoption by the Board of Directors of the District and shall remain the effect until July 21, 2010 or until a revised Plan is adopted, whichever occurs first, therefore be it

**RESOLVED**, that the Board of Directors of the Llano Estacado Underground Water Conservation District hereby adopt the revised Management Plan; and further

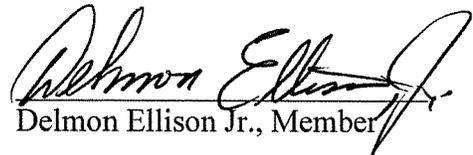
**RESOLVE** that this revised Management Plan shall become effective on July 21, 2005.

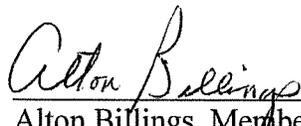
Adopted this 21<sup>th</sup> day of July 2005, by the Board of Directors of the Llano Estacado  
Underground Water Conservation District.

  
\_\_\_\_\_  
Shelby Elam, President

  
\_\_\_\_\_  
Judson Chevrunt, Vice-President

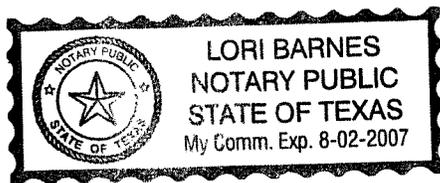
ABSENT  
\_\_\_\_\_  
Walter Billings, Secretary

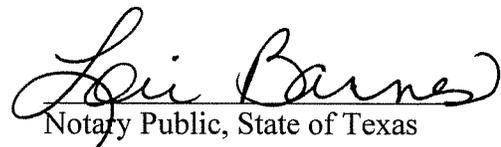
  
\_\_\_\_\_  
Delmon Ellison Jr., Member

  
\_\_\_\_\_  
Alton Billings, Member

STATE OF TEXAS  
COUNTY OF GAINES

This instrument was acknowledged before me on the 21st day of July 2005.



  
\_\_\_\_\_  
Notary Public, State of Texas

Lori Barnes  
\_\_\_\_\_  
Notary's Name Printed:

**LLANO ESTACADO UNDERGROUND  
WATER CONSERVATION DISTRICT**

**AGENDA FOR REGULAR BOARD MEETING**

July 21, 2005

10:00 A.M.

1. Call to order
2. Invocation
3. Consider for approval Minutes of June 9, 2005, Regular Board Meeting
4. Consider for approval Financial Report for period ending June 30, 2005
5. Public Forum
6. The Board will recess
7. The Board will convene a Public Hearing for the presentation of and comment on the District's Management Plan
8. The Board will close the Public Hearing
9. The Board will reconvene
10. Discussion and possible action regarding the District's Management Plan
11. Discussion and possible action regarding review of Bids on District Truck
12. Consider for approval Well Permits for June
13. Monthly Reports
  - (a) Paid bills
  - (b) Permits
  - (c) Non Refundable
  - (d) Region "O" Report
  - (e) Manager Report
14. Any other items pertinent to District Business
15. Adjourn

## **NOTICE OF PUBLIC HEARING**

The Board of Directors of the Llano Estacado Underground Water Conservation District (LEUWCD) will conduct a public hearing, Rule 16.1(b) (1), during the scheduled meeting on Thursday, July 21, 2005, 10:00 a.m. at its office, in the Gaines County Courthouse room B-2, located at 101 S. Main, Seminole, Texas to receive public testimony on the amended LEUWCD Management Plan as per Chapter 36.1071, Texas Water Code, according to the following agenda.

1. Convene Public Hearing
2. Presentation of proposed LEUWCD Management Plan
3. Public testimony on proposed LEUWCD Management Plan
4. Adjournment of Public Hearing

Interested persons are invited to attend. This notice is published in accordance with Chapter 36.1071(g), Texas Water Code.



# The Sentinel CLASSIFIED

## Legals

### REQUEST FOR PROPOSAL

Seminole ISD Department of Food Services will be accepting proposals on Bread/Bakery Products.

Proposal forms and specifications can be obtained from the Food Service Department. All proposals must be delivered to the address listed below by 9:00 a.m., July 29, 2005.

All proposals must be delivered in sealed envelopes identifying the proposal item and number.

Seminole ISD reserves the right to accept or reject any or all proposals.

Linda Wright, Director  
Food Services  
Seminole ISD  
207 SW 6th Street  
Seminole, TX 79360  
432-758-3662

Published in The Seminole Sentinel on July 3 and 10, 2005.

### REQUEST FOR PROPOSAL

Seminole ISD Department of Food Services will be accepting

### Estate of HAROLD JAMES STOCKTON, Deceased

c/o Sterling Harmon  
PO Box 1974  
Seminole, Texas 79360

All persons having claims against this Estate which is currently being administered are required to present them within the time and in the manner prescribed by law.

Dated this 5th day of July, 2005.  
Barbara Wood  
by: Sterling Harmon, Attorney for Applicant  
Published in The Seminole Sentinel on July 10, 2005

### NOTICE OF PUBLIC HEARING

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## Auto

2003 SIERRA pickup, white, chrome tires, low mileage, tool box, good condition,, XM satellite radio. 955-0226 ask for Doug. 6/22-7/17

2004 TAHOE, black, low mileage, sirus satellite radio, loaded. 955-0226 ask for Doug. 6/22-7/17

FOR SALE, Like new 2001 z71 off road Chevy Silverado LT, extended cab pickup, leather, fully loaded, 4-wheel drive. 432-758-2065.

Permian Regional Medical  
ing applications for the fo

**\$75 GAS**

## REGISTERED NURSI LICENSED VOCATIO

- \* 1.5% per years of
  - \* 15% evening shift
  - \* 20% night shift dif
  - \* 20% weekend shift
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Activity Coordinator - I

**Groundwater Management Plan  
Llano Estacado Underground Water Conservation District**

**Purpose:**

To determine potential conflict of district's plan with the Regional Water Plan (RWP)

**Method:**

Total Groundwater Availability Identified in the RWP (2000)	= 369,026 acre-feet
Total Usable Amount of Groundwater Identified in the District Plan (2000)	= 12,495,000 acre-feet

**Conclusion:**

Since the projected groundwater availability in the district's plan is greater than that in the RWP, a conflict with the RWP does not exist.

**Regional Water Planning Area Project Manager Review of  
Groundwater Conservation District Management Plan for  
Conflicts With a TWDB Approved Regional Water Plan**

<p align="center"><b>Review of the Groundwater Conservation District Management Plan for Conflict With TWDB Approved Regional Water Plan(s)</b></p>	<p align="center"><b>Yes</b></p>	<p align="center"><b>No</b></p>
<p>13(a). Did the District provide a letter by certified mail, return receipt requested to all Regional Water Planning Groups formed under authority of TWC §16.053 (c) in which any part of the District is located, asking the Regional Water Planning Group to review the groundwater management plan and specify any areas of conflict with the Texas Water Development Board approved regional water plan? 31TAC §356.6 (a)(5)</p>	<p align="center">OK EJK Per 9/2/03 fax</p>	<p align="center">True [no evidence seen]</p>
<p>13(b). Did any Regional Water Planning Group formed under authority of TWC §16.053 (c) indicate any potential conflict between the groundwater conservation district management plan and a Texas Water Development Board approved regional water plan? 31TAC §356.6 (a)(5)</p>		<p align="center">True [but don't know if they've seen the plan]</p>
<p>13(c). Did reviewer identify any potential conflicts between the management plan and the Texas Water Development Board approved regional water plan? TWC §36.1071 (e)(4), 31TAC §356.6 (a)(5) [If answering Yes, please provide a written explanation]</p>		<p align="center">True</p>
<p>Signify an affirmative response with YES Signify a negative response with NO Signify that a checklist item is not applicable with (N/A)</p>		

**AFFIRMATION OF COMPLETION OF THE GROUNDWATER CONSERVATION DISTRICT  
MANAGEMENT PLAN REVIEW PROCESS BY TEXAS WATER DEVELOPMENT BOARD**

The undersigned does affirm and attest that the management plan submitted by:

**Llano Estacado Underground Water Conservation District**

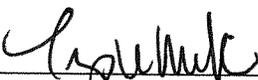
has been reviewed and the contents of which have been found to fulfill the requirements of TWC §36.1071 (e)(4) and 31TAC Ch. 356.6 (a)5, as defined by the TWDB groundwater management plan review checklist.

**Temple McKinnon**

**O**

(Please Print Project Manager's Name)

, Project Manager for Region \_\_\_\_\_

  
\_\_\_\_\_  
(Project Manager's Signature)

Date

7/27/05