Clearwater Underground Water Conservation District

Become a Fan at Facebook

facebook

follow us on twitter

Volume 6, Issue 1 (rev)

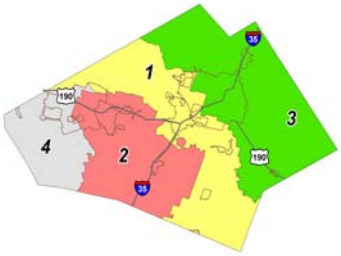
September 2010

THE CLEARWATER SOURCE

2010 Annual Newsletter

INSIDE THIS ISSUE:

Clearwater Precincts



CUWCD Directors & Terms:

Leland Gersbach—Precinct 1
2008-2012 (Director)

Horace Grace—Precinct 2
2006-2010 (President)

Wallace Biskup—Precinct 3
2008-2012 (Vice President)

Judy Parker—Precinct 4
2006-2010 (Secretary)

John Mayer—At large
2006-2010 (Director)

UPCOMING EVENTS

- *Bell County Water Symposium*
  October 21, 2010
  CTCOG Building
  2180 N. Main, Belton
- *Clearwater Elections*
  November 2, 2010
  Pct. 2, 4 & At Large

CLEARWATER PLANS STAND-ALONE FACILITY

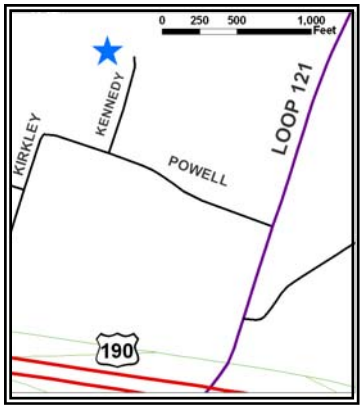
Next year this time, Clearwater will have a new home! Clearwater has purchased property in the Belton Business Park near the intersection of Hwy 190 and Loop 121. The 2.11 acre site is "shovel-ready" with roads and utilities already in place.

The District has employed Architectural Edge to develop a floor plan and design a building that meets the District's needs. Clearwater's goal is to construct a "sustainable" building that incorporates energy and water saving features.

Information from the US Green Building Council estimates energy savings in the line of 30—50% for a sustainable building vs. standard construction.

Fort Hood, leader of the Sustainable Communities Program, has been providing Clearwater with "tips" on how to design the building to minimize negative impact to the environment and save energy as well.

The decision to construct a new building did not come lightly for the Clearwater Board. Clearwater has contracted with the Central Texas Council of Governments (CTCOG) for planning and administrative services since 2001. This has included use of CTCOG staff, office space, and equipment and has proven beneficial for both parties over the years.



During this period, Clearwater has anticipated becoming a stand-alone entity with its own facility and staffing and has been setting aside funds for this purpose. A cost analysis was done to determine the feasibility of breaking from CTCOG.

Although there will be initial "start-up" costs, Clearwater believes in the long run that cost savings will average about $50,000/year. This includes savings resulting from ownership vs. leasing, as well as savings in employing staff directly rather than through a third party.

The new building will feature an education center where the public and students may learn more about the aquifers, water wells, rainwater harvesting, non-point source pollution, and other water topics. The building is anticipated to be completed mid-2011.

CLEARWATER ACTIVITIES

System Upgrade—Website

Clearwater prioritized an upgrade of the district's server system and website during FY2010. These upgrades provide improvements in the dissemination of district data by automating reports created by the district and utilized in the District's drought management plan (DMP). The system upgrades also enable the District to become a stand-alone entity, separated from Central Texas Council of Governments.

The Clearwater DMP is triggered by lack of rainfall over one or both aquifers (Trinity and Edwards BFZ aquifers) and/or low spring discharge in Salado creek (Edwards BFZ aquifer only). This data will now be published on the District's new website for easy access by the public and local media.

Check out our new look at www.clearwaterdistrict.org

Edwards Aquifer Recharge Zone Studies

The Edwards Aquifer Recharge Zone Studies enhance the district's ability to understand the Edwards aquifer recharge zone and locate recharge features as well as seek support from local stakeholders.

Clearwater staff has diligently sought participants in the Edwards Aquifer Recharge Zone Studies to help identify geologic structures in the recharge zone and transition zones, select wells for water level meas-

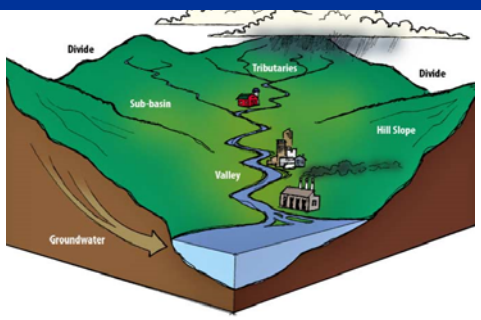
Continued on Page 5

Water Quality Protection

What is a watershed?

A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place. On a large scale the whole earth is one interconnected watershed with all water draining to its largest surface and groundwater storage. Watersheds come in all shapes and sizes. They cross county, state, and national boundaries. In the continental US, there are 2,110 watersheds. There are six watersheds that cross the Bell County boundaries. They are the Lower-Brazos-Little Brazos, Leon, Cowhouse, Lampasas, Little, and San Gabriel watersheds.

"...nonpoint source pollution is the leading cause of water quality problems."



Non-point source pollution is a term frequently used when discussing storm water run-off. According to the Environmental Protection Agency (EPA) nonpoint source pollution is the leading cause of water quality problems. It is a challenge to prevent because, as its name implies, it is difficult to identify the source. Point source pollution comes from one point of origin that is easy to identify, whereas, non-point source may come from various sources that cannot specifically be pointed out (e.g. excess fertilizers and pesticides from residential and agricultural areas, oil and grease on roads, litter in parking lots, sediment from improperly managed construction sites).

Other groundwater threats include leaking petroleum storage tanks and abandoned water wells. Abandoned wells in particular pose a hazard to groundwater quality even in areas that are not recharge zones because the well provides a direct conduit for surface contaminants to enter a groundwater system, regardless of the depth.

So, what...

The earth can break down most of these components and filter water over a period of time, right? The answer to that question is two-fold. Yes, the earth can break down chemicals and biodegrade some pollutants over time. However, the amount of pollutants we contribute is more than the earth can process. Therefore, non-point source prevention is crucial and it's your responsibility.

The Environmental Protection Agency website (www.epa.gov/owow/nps/whatudo.html) has ways you can prevent non-point source pollution. Visit the Texas Watershed Steward website at http://tws.tamu.edu for more information on watershed protection planning groups and get involved in developing a watershed protection plan (WPP). Both the Lampasas and Leon Rivers currently have active watershed protection planning groups. Information about their WPPs is available at www.tsswcb.state.tx.us/wpp. The Clearwater website also provides links to these sites.

Well Registration and Production Report

State Law requires that all wells within a groundwater district be registered with the district.

Well Registration: Since the District's opening in 2002, a total of 4,674 wells have been registered through December 2009. 131 of these wells were non-exempt and 4,543 exempt.

Well registration for 2010 through July is reported at 47.

Non-exempt wells are capable of producing a large volume of groundwater (over 17 gallons per minute), located on less than 10 acres, or are used for purposes other than Domestic, Livestock, or Poultry. All other wells are "exempt".

What is an acre-foot of water? The amount of *water* needed to cover an acre, one foot deep in *water*. (325,851.43 gallons)

Well Registration Summary 2002 through 2009

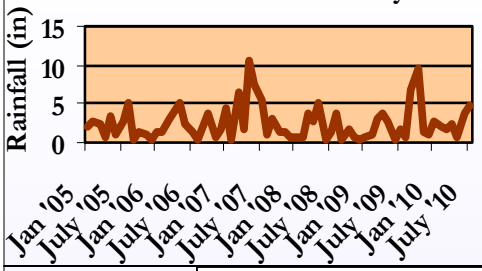
Period	*Exempts Wells*		*Non-Exempt Wells*		*Total*
	Existing	New	Existing	New	
2002-2008	3,986	502	102	22	4,612
2009	15	40	1	6	62
Total	**4,001**	**542**	**103**	**28**	**4,674**

2009 Non-Exempt & Exempt Well Production

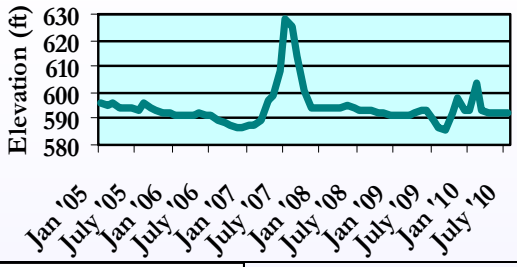
Aquifer	Non-Exempt Well Production (ac-ft/yr)	Number of Non-Exempt Wells	Estimated Exempt Well Production (ac-ft/yr)	Number of Exempt Wells	Total Production (ac-ft/yr)
Edwards BFZ	1,834	40	451	671	**2,285**
Trinity	914	44	1,236	1,858	**2,150**
Other Aquifers	198	14	1,281	1,918	**1,479**
Total	**2,946**	**98**	**2,968**	**4,447**	**5,914**

Rainfall and General Data

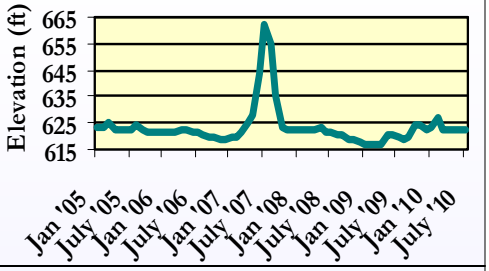
Rainfall in Bell County



Belton Lake Levels



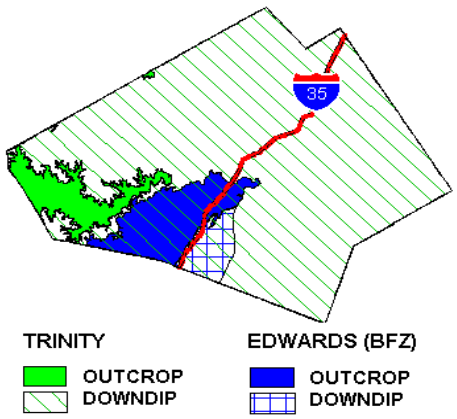
Stillhouse Hollow Lake Levels



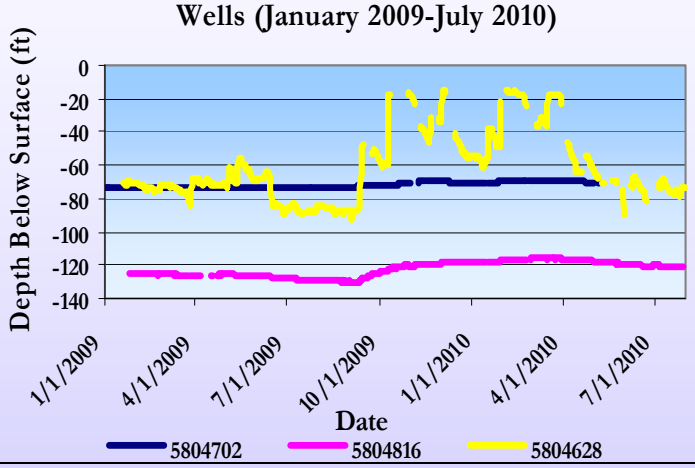
Outcrop *is the part of the aquifer that appears at the land surface and where recharge occurs.*

Downdip *is the part of the aquifer that dips below other rock layers.*

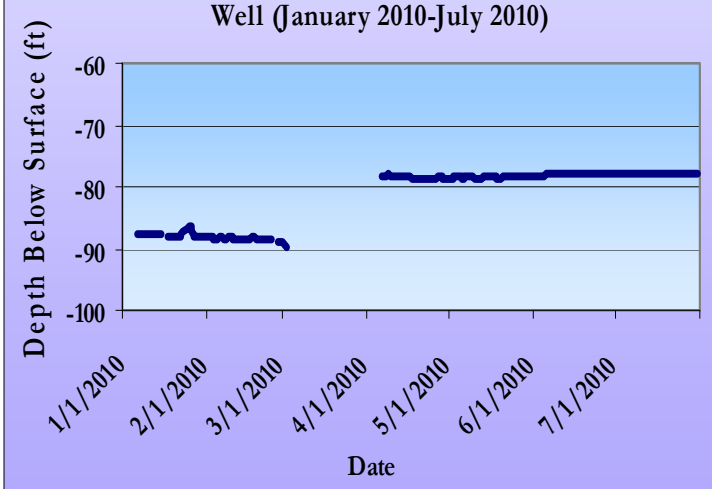
Bell County Major Aquifers



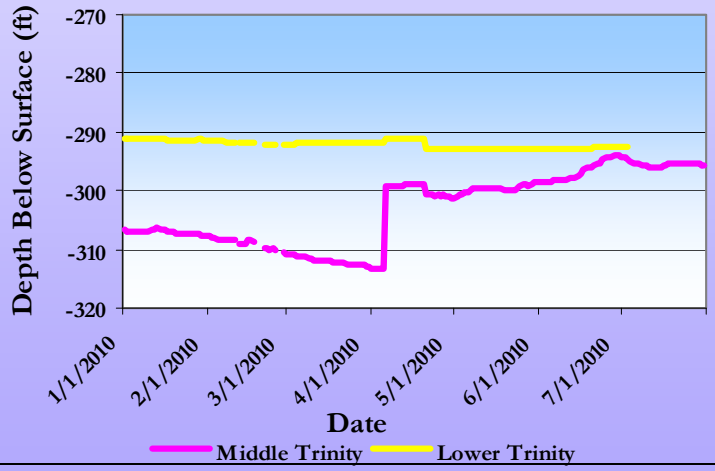
Edwards BFZ Aquifer Continuous Monitoring Wells (January 2009-July 2010)



Upper Trinity Aquifer Continuous Monitoring Well (January 2010-July 2010)



Middle & Lower Trinity Continuous Monitoring Wells (January 2010-July 2010)



Salado Creek Average Estimated Spring Discharge (ac-ft/month)

Month	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
Avg. Estimated Discharge (ac-ft)	777	742	744	783	806	820	807	732	666	512	443	490	950	>1,000	>1,000	>1,000	>1,000	>1,000	>1,000	>1,000	>1,000	>1,000
Drought Stage	1	1	1	1	1	1	1	1	2	2	2	2	0	0	0	0	0	0	0	0	0	0

** Land elevation at site of well not included in continuous monitoring well graphs.*

** Continuous monitoring well information maintained and provided by Texas Water Development Board.*

Drought Stage	Description	Reduction
1	Awareness	10%
2	Concern	20%
3	Serious	30%
4	Critical	40%

Your Water, Your District

Clearwater Underground Water Conservation District: Local Resources with Local Control.

All across Texas, water from underground aquifers enables cities and towns, farmers and ranchers, industries and businesses to grow and prosper. More than half of the state's water supplies come from these underground resources.

The way groundwater is used and the issues that develop in communities vary widely across the Lone Star State.

Texas law specifies that "groundwater conservation districts... are the state's preferred method of groundwater management."

Local groundwater conservation districts make sure groundwater is managed responsibly for the communities they serve.

In 1999, the Bell County residents voted for local control of water resources and confirmed the Clearwater Underground Water Conservation District. The District has been serving the residents of Bell County since the opening of its doors in February of 2002.

What has your District done for you?

- Registered over 4,600 wells in Bell County.
- Developed and adopted District Rules to establish water protection for registered well owners.
- Increased groundwater availability figures from approximately 3,500 ac-ft. to 15,000 ac-ft. for planning and permitting purposes through aquifer studies.
- Collects aquifer data through water quality sampling and semi-annual measurement and continuous monitoring equipment.
- Conducted over 100 public outreach events including but not limited to District annual water symposiums, classroom presentations, essay/poster contests, Earth Day events, Major Rivers programs, well plugging demos and newspaper articles.
- Collects data from District installed stream flow gauges in Salado Creek .
- Developed drought management plans for the Edwards BFZ and Trinity aquifers.

Join us for the 10th Annual

Bell County Water Symposium

Central Texas Council of Governments Building
2180 N. Main Street (old Walmart)
Belton, Texas

October 21, 2010 8:15 a.m.—4:00 p.m.

Where do you get YOUR water?

There are two types of water sources: **groundwater** (water that is found below ground level) and **surface water** (water that appears above the ground). Bell County has two main surface water reservoirs—Lakes Belton and Stillhouse Hollow, and two main groundwater resources—Edwards BFZ and Trinity aquifers. The source of water supply is shown below for local cities and water supply corporations (WSC).

Belton Lake—Cities: Belton, Copperas Cove, Ft. Hood, Harker Heights, Killeen, Moffat, Morgan's Point Resort, Nolanville, Pendleton*, Temple, and Troy*; WSC: Bell County WCID #2**

Lake Stillhouse Hollow—Cities: Buckholts, Holland, Kempner, Lampasas, Lott, Rogers, and Rosebud; WSCs: Armstrong, Bell-Milam-Falls*, Bell County WCID #5*, Dog Ridge, East Bell*, Jarrell-Schwertner*, Little Elm Valley*, Oenaville & Belfalls*, Salem-Elm Ridge, West Bell, and Westphalia.*

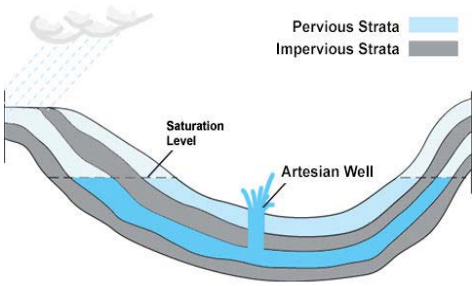
Edwards BFZ Aquifer—WSCs: Salado and Jarrell-Schwertner.*

Trinity Aquifer—Cities: Moffat, Pendleton*, and Troy*: WSCs: Armstrong*, Bell County WCID #2* & #5*, Bell-Milam-Falls*, East Bell*, Little Elm Valley*, Oenaville & Belfalls*.*

**Indicates a mixture of groundwater and surface water.*

NOTE: Use of groundwater for areas outside of Bell Co. was not determined.

What is an ARTESIAN well?



Groundwater in aquifers between layers of impervious rock, such as clay or shale, may be confined under pressure. If such a confined aquifer is tapped by a well, water will rise above the top of the aquifer and may even flow from the well onto the land surface. Water confined in this way is said to be under artesian pressure, and the aquifer is called an artesian aquifer. Both the Middle and Lower Trinity aquifers are artesian aquifers.

The Middle and Lower Trinity aquifer continuous monitoring well graph on page 3 reflects water levels for the Lower Trinity well to be closer to the land surface than the water level measurements for the Middle Trinity well due to artesian pressure at the well site.

Why do we sometimes boil our water?

Boil water orders or advisories are public announcements advising the public that they should boil their tap water for drinking and other human consumption uses like cooking, hand washing, brushing teeth, etc. Boil water orders are **preventative** measures issued to protect public health from waterborne infectious agents that **could be** or are known to be present in drinking water.

How long should I boil my water?

Boiling water is the surest and most effective method of destroying microorganisms including disease causing bacteria, viruses, protozoan's, and parasites. The correct amount of time to boil water is 0 minutes....That's right, **zero** minutes.

*"According to the Wilderness Medical Society.. the time it takes for the water to reach the boiling point (212° F or 100° C) all pathogens will be killed, **even at high altitude**."*

Water Conservation

Clearwater and its board members are passionate about protecting our water. A person's quality of life depends on their water resources.

Whether you invest in a home, business, agriculture, or family the success of your investment relies on many variables. But at the very core of all its needs is water. When water is used and abused, it can vanish and the life around it evaporates.

Conserving water and harnessing the full potential of this resource should be at the forefront of every stakeholder's (that's you) priorities. We all take time to analyze our other investments' (i.e. business, family, retirement) options to ensure that our vision is achieved. In that same perspective, take an occasional moment to analyze your personal and business water use. Are you making the most of your investments? Below are some general cost effective tips for saving water. Visit the Clearwater website for additional ideas. Also, stop by the Clearwater office to obtain various water conservation items that are free to the public.

- When the kids want to cool off, use the sprinkler in an area where your lawn needs it the most.
- Check for and fix leaky faucets and toilet leaks.
- Install water-saving showerheads.
- Replace older toilets with low volume flush toilets, or install a displacement devise in the tank.
- Adjust water level in washing machine to match load size; only run dishwasher when full.
- When replacing appliances, buy water and energy efficient appliances…*Energy Star*.
- Water lawns in the early morning or evening hours…not in the heat of the day or on windy days.
- Water thoroughly but less frequently…apply one inch of water every 5 days or more (and don't forget to account for rainfall in your calculations).
- If using an automatic sprinkler system, use rain shut-off device or moisture sensor.
- Use mulch to retain moisture in the soil (it also helps control weeds).
- Allow grass to grow 3" in height; taller grass holds in moisture and reduces evaporation.
- Plant water-wise and/or native shrubs, trees and grasses and harvest rainfall.

Continued from Page 1

Clearwater Activities

urements, pumping tests, and target wells near the eastern aquifer boundary for water quality testing.

The information obtained from the water level measurements, water quality testing and pumping tests are under evaluation.

We would like to thank all those who participated in these studies. Findings will be posted on the District website as they become available.

Continuous Monitoring Wells

Monitoring wells provide the District with crucial information about the status of the aquifers. Equipping these wells with a continuous monitoring system (data collected 24/7) provides data on a continuous basis to enable the district to evaluate the data and determine related patterns.

There are currently three wells in the Edwards BFZ aquifer and three wells in the Trinity aquifer (one in each subdivision—Upper, Middle, and Lower) that are equipped with a continuous monitoring system. All six wells are specifically and solely used for monitoring purposes. Data from the monitoring wells is collected through the Texas Water Development Board (TWDB) system and published on their website. A link to all the TWDB monitoring well system data is available on the Clearwater website at www.clearwaterdistrict.org under the "District Data" tab.

In addition to the continuous monitoring sites, Clearwater also measures water levels in selected wells twice a year, January and July. Please contact the District if you would like to include your well in this program.

Well plugging demonstrations

Clearwater and the Texas AgriLife Extension Service collaboratively provide well plugging demonstrations throughout the year. The most recent well plugging demonstration was held just Southeast of Salado on Atkins Rd. on July 21, 2010. Both hand-dug and drilled wells that have less than 100' of standing water may be plugged by the well owner. These demonstrations show well owners how to properly plug their well. Please contact the District office if you have a well that you would like to offer for use for the plugging demonstrations.

Well plugging demo event held July 21, 2010 at 4950 Atkins Rd., Salado, TX

Texas State Youth Water Camp held July 11—15, 2010 at Monahans, TX

Texas State Youth Water Camp

Each year Clearwater offers sponsorship for up to three high school youths to attend the state water camp in Monahans, TX held in July. This year two Bell County students attended this camp. The camp's objective is to help make Texas high school youth aware of current water issues and to develop an appreciation of how agriculture, industry, municipalities and home water use impact water quality and quantity.

Contact the Clearwater office if you have students interested in attending next summer.

Clearwater Underground Water Conservation District

join our facebook fan page

follow us on twitter

Clearwater Mission Statement

To implement an efficient, economical, and environmentally sound groundwater management program to protect and enhance the water resources of the District.

CUWCD Public Advisory Committee:

***Tom Madden**—Precinct 1*

***Henry Bunke**—Precinct 2*

***Marvin Green**—Precinct 3 (Committee chair)*

***Bradley Ware**—Precinct 4*

***David Cole**—At Large*

Water Quality Testing

The District's in house lab offers registered well owners free testing for common constituents and bacteria. Testing bottles are available in our office. Annual testing is recommended.

E-mail Contact List

Contact the District office if you would like to be included in our e-mail list for agendas and press releases.

Clearwater District
2180 N. Main Street
Central TX Council of Gov. Bldg.
P.O. Box 729
Belton TX 76513

Ph: 254-933-0120/254-770-2370
Fax: 254-770-2360
E-mail: cmaxwell@ctcog.org or
cmaxwell@clearwaterdistrict.org
www.clearwaterdistrict.org

Clearwater Underground Water Conservation District
Every drop counts!

A Message From the President

President Horace Grace

Dear Bell County Friends,

Over the past 10 years, I have had the honor of serving as president of the Clearwater Underground Water Conservation District and leading our Board in protecting and managing the groundwater resources of Bell County. Through various studies, we have been able to convince the State of Texas that we actually have 15,000 ac-ft of water available for use per year rather than 3,500 ac-ft/year. This means more water for the residents of Bell County.

Clearwater, working with the Board and an outstanding staff provided by Central Texas Council of Governments, has been recognized as one of the best managed groundwater districts in Texas. Clearwater was selected by its "peers" to be the lead district in managing Groundwater Management Area 8 (GMA8). GMA8 is responsible for determining the future conditions and amount of water available for use for 9 aquifers covering 46 counties. I have been fortunate to be asked to be the presiding officer for the majority of the GMA8 meetings. I have also been fortunate to represent Clearwater by serving on the conference faculty for the University of Texas Water Law Institute and the Texas A&M University Graduate Water Program, as well as providing testimony to the State Legislature on water issues.

Education has always been an important goal of Clearwater. Over the past 10 years, Clearwater has provided educational material and given numerous presentations to schools and civic groups promoting water conservation and water quality protection. It is estimated that over 80,000 students have been "touched" by Clearwater. Clearwater's educational resources also include data acquired from studies, monitoring wells, and stream flow gauges in Salado Creek. Data from the stream flow gauges is being used to assist the Village of Salado in their efforts to provide an early warning system of rising flood waters in Salado Creek.

Population growth and climate change create uncertainly with regard to our future water supply.....water may not be available when and where it is needed. The best way to ensure our future water supply is to adopt a lifestyle that daily incorporates water conservation practices. We all need to act responsibly and set an example for others. As such, the new office building that Clearwater is constructing is intended to be a "sustainable" building that incorporates energy and water efficient features with minimal construction waste. Clearwater has saved money over the years to construct an office building; therefore, no loan is necessary and no tax increase will be needed for the building project. The tax rate will remain the lowest in the county at $.004/$100 value, or approximately $4 for property valued at $100,000.

One of the features of the new building will be an education center. This is a way of "giving back" to you, the taxpayers, by providing an opportunity for you to learn more about your water resources. We are excited about the upcoming years and look forward to doing our part to provide educational opportunities to our constituents. We hope these efforts will encourage all to leave future generations a world that is better than, or at the very least, as good as, what we inherited. I look forward to working with you to achieve this goal.

Horace Grace

(POSTAGE STAMP)

(NAME)
(STREET)
(CITY)