Volume 4, Issue 1

SOUTHEAST TEXAS GROUNDWATER CONSERVATION DISTRICT

Spring 2012

The SETGCD Well Monitor

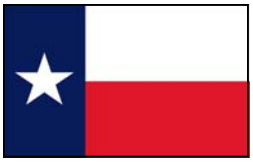
Drought Conditions Disappearing Quickly

The rain has been falling, streams have begun to flow again, and lake levels are rising. Is the drought over? Some areas saw nearly as much rainfall in the four month period between November 2011 and February 2012 as they did for all of 2011. And, the water levels in Lake Sam Rayburn and Toledo Bend Reservoir are up significantly from this time last year (approx. 6 ft.)

That being said, although we are on our way to seeing the drought end we are not out of the woods yet. The National Weather Service's Climate Prediction Center says that La Niñas are often followed by a second La Niña event. And, when a "double dip" La Niña occurs, as has occurred, the following year is not normally neutral. Meaning the possibility of another La Niña event or that of an El Niño.

What's the difference between a La Niña and a El Nino? A La Niña is characterized by unusually cold ocean temperatures in the Equatorial Pacific, compared to El Niño, which is characterized by unusually warm ocean temperatures in the Equatorial Pacific. These ocean temperature trends then tend to affect our local rainfalls. Here in Texas, La Niña means less precipitation than normal and, El Niños tend to provide more precipitation than normal.

(see more drought information on pages 4, 5, and 6)



Legislative Interim Charges

On February 6, Lt. Governor David Dewhurst issued select interim charges to the Senate Committee on Natural Resources. Many of these charges are related to groundwater management practices and could impact groundwater conservation districts across the state.

One charge is to study and make recommendations on the management of groundwater resources, specifically considering the following:

- Consolidation of groundwater conservation districts along major aquifer lines in an effort to increase efficiency and enhance responsible groundwater management;
- Effectiveness of single county and non-contiguous groundwater conservation districts;
- Efficiency and effectiveness of varying groundwater regulations and permitting processes throughout the state, including the adequate planning for withdrawls and the development of Desired Future Conditions (DFCs), as compared to the regulation provided to surface water resources;
- The relationship of local groundwater regulation to the State Water Plan and the regional planning process.

Board of Directors:

Walter Glenn, President
Roger Fussell, Vice Pres.—Hardin
Jerry Shands, Treasurer—Jasper
Tommy Boykin, Director—Jasper
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Charles Maclin, Director—Tyler
M. C. Zimmerman, Director—Tyler

John Martin, General Manager
John Stover, Esq., Counsel

Did you Know?

Roughly speaking, for every glass of water used in a restaurant it takes 2 more to wash and rinse the glass.

Inside this issue:

District News—1 New Director Appointed in 2012

Charles Zimmerman - Mr. Charles Zimmerman is the latest Director to be appointed to the Southeast Texas Groundwater Conservation District Board. Charles is a Trustee of Minnie Thicket Farms, a timber plantation in Tyler County. He has been in the timber industry since 1980 and is a charter member of the Tyler County Landowner Association. Charles has previously served as president of the association and is currently Chairman of the Membership Committee. Charles was appointed to the District in January of 2012 by the Tyler County Commissioner's Court to represent forestry, agricultural and industrial interests in the county.

Is Your Well Registered? Why You Should Consider It

Texas is unique in many ways, including the fact that it is one of the only southwestern states in which the state does not have control of the groundwater. Although the state of Texas does have control over surface water, here in southeast Texas most of us rely on groundwater, the water in our aquifers.

Groundwater Conservation Districts (GCDs) manage the groundwater on a locally controlled basis. In many places around the state water is scarce. GCDs manage groundwater to the extent that the local residents feel necessary. In areas where the water is scarce, rules are usually more stringent; in areas such as the Southeast Texas GCD (Jasper, Newton, Hardin and Tyler Counties) where our rainfalls average 54 inches per year, the rules are much less stringent.

One of the main objectives of a GCD is to help protect exempt wells that are already in existence from new, potentially harmful, high volume wells. The District's Rules require "non-exempt wells" (in most cases, wells that are used in commercial settings) to obtain a permit. One requirement for a "non-exempt" well that intends to use more than 250,000 gallons a day is a hydro-geological report addressing the area that will be affected by the pumping of that well. If the District believes that the new well is going to cause irreparable damage to wells that are already in place, the District can prevent the entity from using some or all of the water it is requesting. And herein lies the reason for registering your well. If the District doesn't know where an existing well is, it can't adequately protect it.

The District does not require wells that were in place prior to its formation to be registered. But, by registering it, the District will be in a better position to protect your well. Registering a well with the District that was drilled prior to November of 2004 is as simple as providing its location and the landowner's contact information. By having this information in the District's database, anytime a new non-exempt well is requesting a permit, landowners with an existing well near the proposed new well are due notice and given the opportunity to participate in a public hearing on the granting of that permit. This not only notifies the landowner of a potential new well in the vicinity, but also allows that landowner to provide input on the requested permit.

The registration process for an exempt domestic household well is very simple and is required for all new wells. It's a one page form that gives the District ba-

Continued on page 3—Register

Texas Supreme Court Decision Issued

On Feb. 24, the Texas Supreme Court issued its long-awaited decision in the case of Edwards Aquifer Authority v. Day.

The Court's decision essentially restates what was added into Chapter 36 of the Texas Water Code by Senate Bill 332 during the 2011 session of the Texas Legislature, which provides that groundwater is owned by the landowner and that the pumping of groundwater is subject to regulation by groundwater conservation districts.

The Court's ruling makes clear that the state can regulate groundwater production, which it has chosen to do through groundwater conservation districts, and provides that such regulation is essential to groundwater conservation and use across the state.

The Court's decision focuses heavily on the Edwards Aquifer Authority's ("EAA's") permitting system and provides that one of the problems with EAA's system is that it focuses entirely on whether water was used during a historic use period.

Under EAA's system, if water was not produced during the historic use period, then EAA would automatically deny a permit application. The Court's decision indicates that all of the permitting factors in Chapter 36, including the proposed use of the water, the effect on the groundwater resources, other permit holders, and a district's management plan, should be considered when making a decision on a permit application.

EAA developed a permitting system based on its enabling act passed by the Texas Legislature, which is much different than what the Texas Legislature devised in Chapter 36 of the Texas Water Code.

While the Court's Feb. 24 decision does provide that the landowners in the EAA v. Day case own the groundwater and can bring a takings claim, the Court does not address the merits of the takings claim.

This means that the landowners in the case will now go through another round of litigation to determine whether a taking occurred under the complex takings analysis test created by the Texas Supreme Court and the U.S. Supreme Court.

The Court's opinion discusses the test that will be used to determine whether an actual taking occurred and added that this review is based on the facts of each case and that all of the circumstances surrounding groundwater regulation must be considered to determine whether the regulation is reasonable.

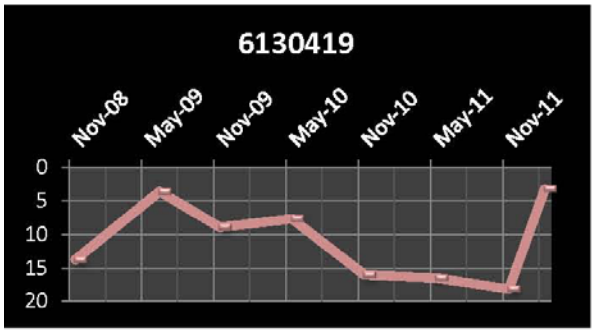
Register—Continued from page 2

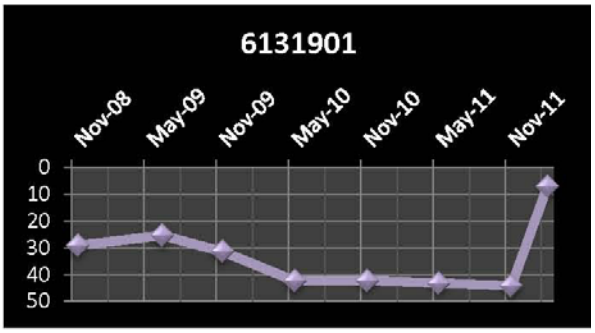
sic information as to the owner, driller and exact location of the well. There are no fees associated with the registration and it must simply be submitted prior to the well being drilled.

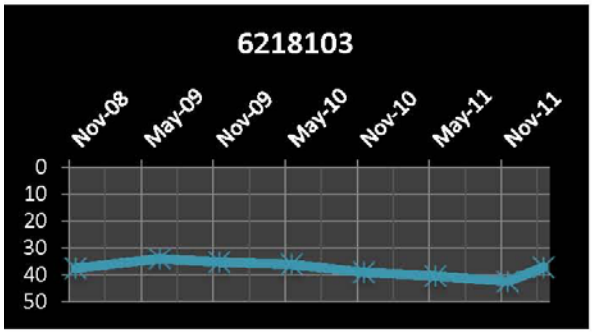
Some people believe that GCDs want to require that a meter be put on all domestic wells; this is simply **not** true. The Southeast Texas GCD has 13 board members representing Jasper, Newton, Hardin and Tyler Counties, and have no interest in metering domestic wells. Many of our board members own domestic wells and they themselves are offended at the thought of meters being required.

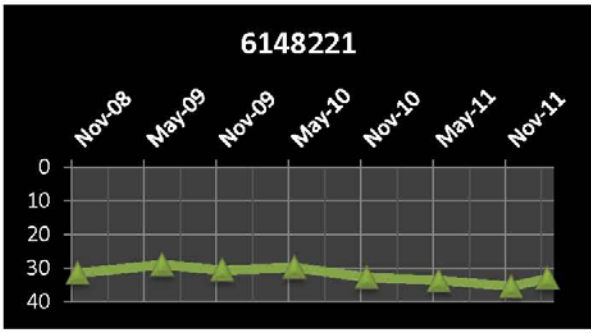
To register your well or for more information about the District, please contact the District at (409) 383-1577 or visit our website at www.setgcd.org. If you do not have access to a GPS to provide the District with an accurate location of your well, John Martin, the District's general manager, will be available to visit your well and take a GPS reading for you.

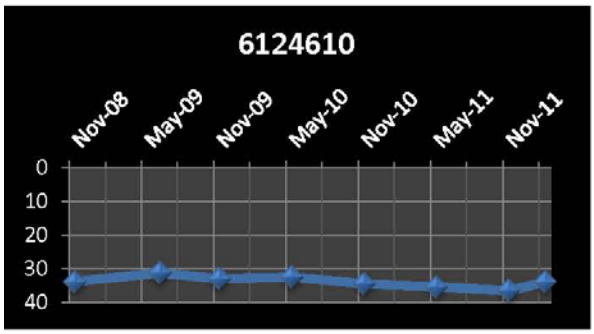
GRAPHS SHOWING WATER LEVELS RESPONDING TO RAINFALL

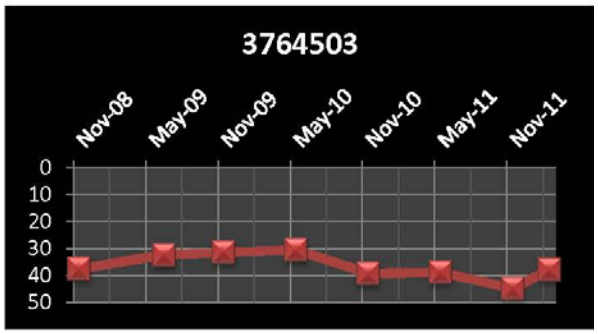


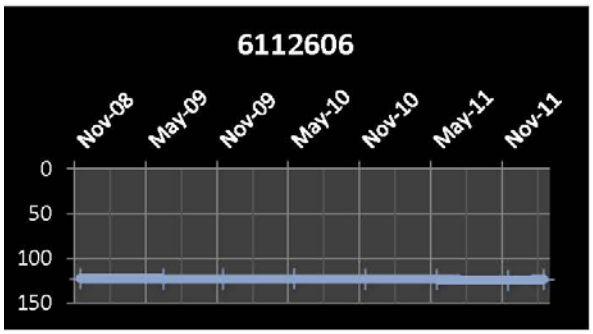


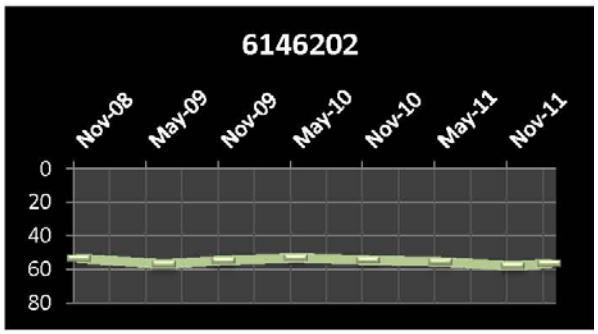


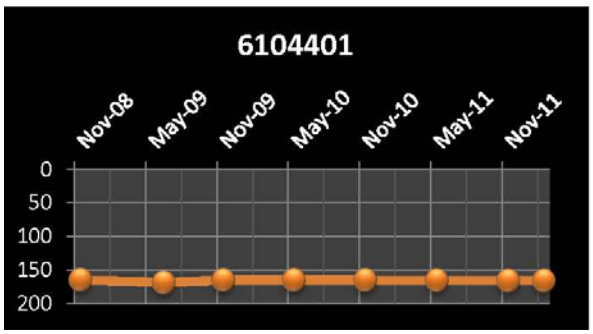


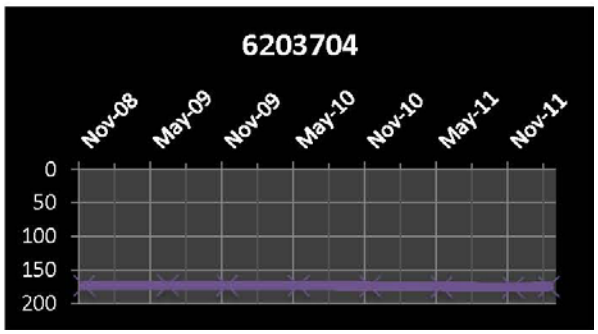








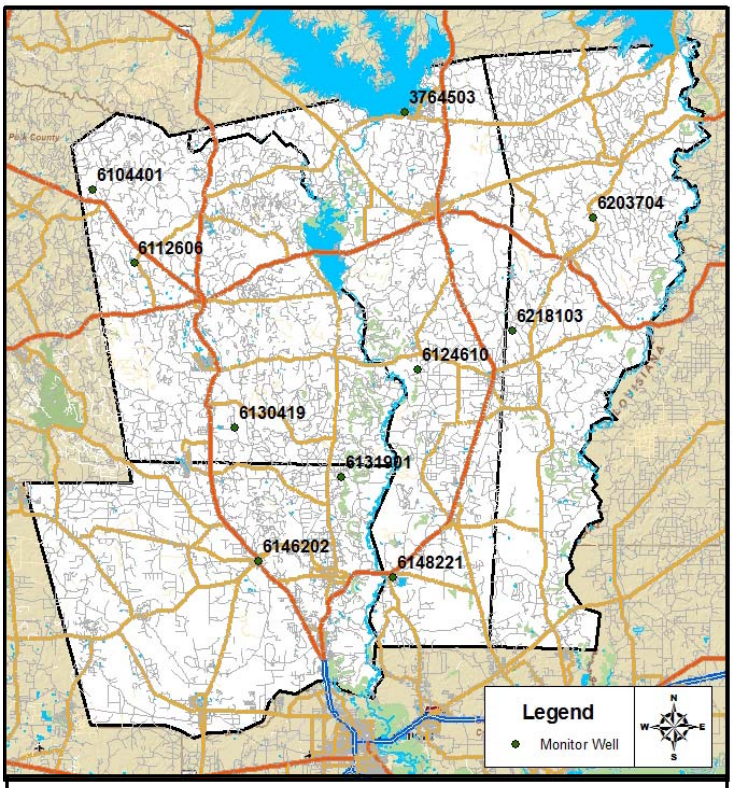




STATIC WATER LEVELS REPONDING TO RECENT RAINFALLS

For the past two years the static water levels throughout the District have been trending downward. This correlates with the "double dip" 2010–2011 La Niña drought that has wreaked havoc on the state. However, the rainfalls over the last four months have already begun to improve the static water levels throughout the District.

The static water level is the primary way in which the condition of the aquifer is monitored. The static water level refers to the level of the water in a well under normal, undisturbed, no pumping conditions. This reading is usually read as a negative relative to the land surface. For example, if you were to read the most recent static water level (Feb.) for well No. 6124610 (see table below), it is –34 feet. That means that the static water level is 34 feet below the land surface. Some wells, such as an artesian well, are actually under pressure and are read with a pressure gauge, reading as a positive number above the land surface.



Locations of selected monitor wells

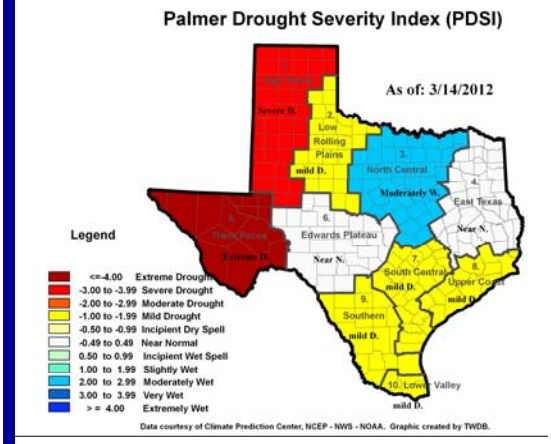
Typically, the District takes static water levels from its 51 monitor wells in May and November each year; the times of the year that the static water levels are thought to provide a better picture of the aquifer because less water is being pumped at these times.

The table below and graphs on the previous page relate to ten of the District's monitor wells as indicated in the map above. As you can see from the table and graphs, the static water levels are responding to this winter's rainfalls. Wells 6130419 and 6131901 are shallow wells and they have responded in a dramatic way. The static water level in well 6130419 rose almost 15 feet, and well 6131901 rose over 37 feet. This is typical of shallow wells and springs; they are the first to be affected by drought but are also the first to respond to rainfall.

Moderate depth wells are also responding nicely. Of the five recently visited, the static water levels rose between 1.37 ft. and 7 ft. for an average rise in water levels of 3.71 ft.

Deep wells withstood the more severe effects of the drought and lost only a minimal amount of their pre-drought water levels. Of the three recently visited deep wells, 6203704, 6104401, and 6112606, the average drop in water levels through the drought was 2.43 ft. These wells have already recovered, on average, nearly three quarters of a foot.

DATE	STATE WELL ID NO.									
	6124610	3764503	6148221	6203704	6218103	6104401	6112606	6130419	6146202	6131901
Nov-08	-33.82	-37.55	-31.45	-173.62	-37.52	-164.72	-122.8	-13.77	-53.5	-29.05
Jun-09	-31.25	-32.33	-28.92	-172.78	-33.99	-168.71	-123.15	-3.62	-56.86	-25.35
Nov-09	-32.94	-31.38	-30.63	-172.83	-35.25	-165.17	-123.5	-8.9	-54.8	-31.38
May-10	-32.45	-30.43	-29.8	-173.38	-36.09	-164.96	-122.88	-7.65	-53.15	-42.25
Nov-10	-34.46	-39.27	-32.73	-174.12	-39.04	-165.26	-123.48	-15.99	-54.55	-42.1
May-11	-35.41	-38.82	-33.67	-174.93	-40.39	-165.3	-123.7	-16.48	-55.55	-43.06
Nov-11	-36.57	-44.84	-35.4	-175.85	-42.5	-166.07	-124.73	-18.15	-57.87	-44.17
Feb-12	-34	-37.84	-33.14	-174.84	-37.15	-165.8	-123.72	-3.22	-56.5	-7.05

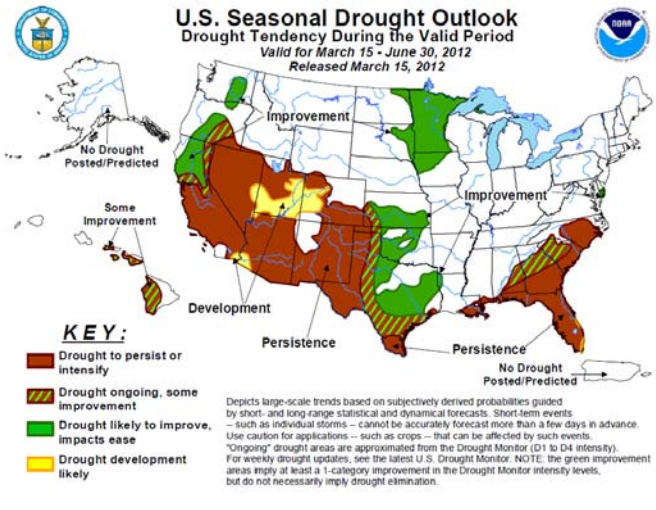


DROUGHT CONDITIONS

As you can see by the March 14, 2012 Texas Palmer Drought Severity Index (left), east Texas soil moisture levels are near normal. However, as you can see, a large portion of Texas is still considered to be in a "mild drought" and the High Plains and Trans Pecos sections areas still considered to be in a "severe" or "extreme" drought. Consider this, the Southeast Texas GCD has averaged over 24 inches of rain between November 1, 2011 and February 29, 2012. Amarillo received only 2.88 inches of rainfall and El Paso only 1.65 inches of rainfall in the same four month time period.

SEASONAL DROUGHT OUTLOOK

The March 15—June 30 U.S. Seasonal Drought Outlook map (below), for the first time in months, is showing that a good portion of Texas should continue to see the drought conditions improve. Unfortunately, the forecast for far west Texas does not show signs of improvement. El Paso, in a normally year, receives less than 10 inches of rainfall!



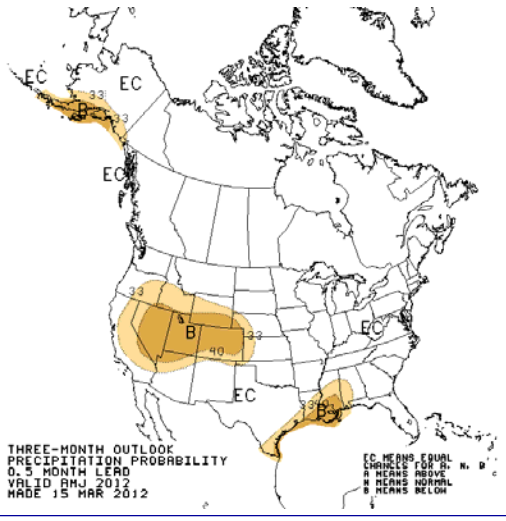
RAINFALL TOTALS

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
Jasper	1.72	0.94	2.81	.095	3.59	9.60	2.10	9.01
Lumberton	5.64	1.38	2.85	2.40	5.10	7.31	6.40	6.80
Newton	1.28	1.85	3.41	1.11	4.71	5.37	5.51	5.30
Silsbee	4.65	0.75	3.90	2.00	5.05	7.60	6.45	9.13
Woodville	1.57	2.05	1.22	1.32	3.33	6.64	4.97	7.76
Kountze	7.80	1.75	4.00	2.52	5.42	3.22	6.30	7.90

PRECIPITATION

Average rainfalls around the District ranged from as little as 26.09 inches in northern Tyler County to 36.89 in southern Hardin County for a District wide average of 33.48 inches. Normal rainfalls average approximately 54 inches annually. Combine the 20 inch shortage of 2011 with the 15 inch shortage of 2010 and you can see why the drought impacts were so severe.

Even though we have been in a normal to wet precipitation pattern as of the last four to five months, the latest NOAA precipitation probability maps show that the mid range (8—30 day predictions) show that our area is expected to receive below average rainfalls again. The NOAA prediction map to the right, however, is the 3 month predictive map which shows that we will have an equal chance of above normal rainfall as below normal rainfall for the period between March 15 through June 15.



DRIP IRRIGATION - THE MOST EFFICIENT WAY TO WATER

Conservation Corner

Its that time again. Spring is here, summer is just around the corner, and that means more water being used outdoors. If this summer is anything like the last, we'll all soon be spending many hours (and gallons) watering our lawns and gardens. One way to more efficiently provide the needed water is the use of a drip irrigation system.

Drip irrigation is a method of applying slow, steady, and precise amounts of water and nutrients to specific areas rather than broadcasting water. At a slow application rate, water seeps into the soil and moves laterally by capillary action beneath the soil's surface. An adequate section of the root zone of the plant is maintained with moisture levels close to the soil capacity, providing a soil to water to plant relationship which is conducive to better plant growth.

Of all the irrigation methods in use, drip irrigation is by far the most efficient. Sprinklers broadcast water into the air where much of the water is lost to evaporation, never even reaching the plant. It is estimated that 25% of the water coming from a sprinkler head is lost to evaporation.

Benefits of drip irrigation include:

- Conservation of water. A drip irrigation system waters only the area around a plant's root zone.
- The Texas Agricultural Extension Service notes that drip irrigation can reduce water loss in the garden by up to 60% over hand or sprinkler irrigation.
- Consistent moisture improves plant growth, and fertilizers can be added directly to the system.
- Drip irrigation systems are typically installed for considerably less cost than underground sprinkler systems.
- The amount of water applied can be varied to meet the specific needs of a particular plant.

When designing a drip irrigation system, prepare a sketch of your plant locations and water source to determine the amount of tubing you will need, as well as the number of other parts, such as the emitters. There are several basic elements to any drip system. The head or valve assembly can consist of several components. First, it is recommended that you install a backflow prevention device, especially if you will be using the system to fertilize as well as water your plants. Next, depending on water pressure, you may need to install a pressure regulator. If the water pressure in your system is over 40 psi, using a pressure regulator will prevent the emitters and connectors from leaking or bursting apart. Typical pressure regulators reduce the water pressure to between 10 and 25 psi. Then, you will need to install a filter to screen out small particles. This will help keep the water lines and emitters from clogging.

Finally, install the tubing and emitters. The emitters will regulate the amount of water that drips from the system to the plants. Most garden vegetable plants need only a 1 to 1½ gallon per hour drip rate to be applied to the plants every other day.

Water wisely – every drop you save counts!

Southeast Texas Groundwater Conservation District

P.O. Box 1407, Jasper, TX 75951

(409) 383-1577, www.setgcd.org

«Suffix» «FIRST NAME» «LAST NAME»
«ADDRESS 1»
«CITY», «STATE» «ZIP»

"Water is the basis of life and the blue arteries of the earth! Everything in the non-marine environment depends on fresh water to survive."
- Sandra Postel

CALENDAR OF EVENTS

April 6, 2012	Good Friday — District office closed
April 12, 2012	SETGCD — Regular meeting of the Board, in Kirbyville, TX
May 10, 2012	SETGCD — Regular meeting of the Board, in Kirbyville, TX
May 28, 2012	Memorial Day — District office closed
June 14, 2012	SETGCD — Regular meeting of the Board, in Kirbyville, TX
July 4, 2012	Independence Day —District office closed
July 12, 2012	SETGCD — Regular meeting of the Board, in Kirbyville, TX

TEXAS DROUGHT FACTS

- In 2011, Texas experienced the most severe 1 year drought on record.
- In 2011, Texas experienced the warmest summer for any state, averaging 86.8°.
- August 2011 was the hottest month in Texas history.
- June—August 2011 was the driest summer on record for Texas, with an average rainfall of only 2.44 inches.
- Due to the 2011 drought, 6 of the 10 largest wildfires in Texas history occurred.
- Damage from the 2011 wildfires is estimated to be more than 7 billion dollars.