# Recharge: Your Groundwater Resource

*Post Oak Savannah Groundwater Conservation District Newsletter*

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**Water Links**

Texas Alliance of Groundwater Districts - www.texasgroundwater.org

Texas Water Development Board - www.twdb.state.tx.us

National Groundwater Association—www.ngwa.org

Texas Ground Water Association - www.tgwa.org

## General Manager Updates

### District offers workshops for Water Professionals

As part of the Post Oak Savannah Groundwater Conservation District education programs, this Fall the District offered workshops to managers, operators, and decision makers, such as board members and city council members, of all local water utilities in Milam and Burleson Counties. These workshops are designed to assist the governing boards and councils and managers of these entities, which include Water Supply Corporations, Municipalities and Cities, Municipal Utility Districts, and Special Utility Districts, in planning for needs in the future. The workshops which were offered this Fall focused on considerations and deliberations of setting rates and fees for funding those future needs. These workshops were held in Caldwell on September 21, and in Milano on September 23. Over 50 participants, representing 25 local water utilities in the District were in attendance at the two meetings.

**Inside This Issue**



### GCDs in GMA 12 adopt DFCs in advance of deadline

Groundwater Management Area 12 (GMA 12), which is composed of five Groundwater Conservation Districts (GCDs) which overly the central segment of the Carrizo-Wilcox Aquifers, adopted Desired Future Conditions (DFCs) for all of the aquifers and formations in the GMA at a GMA 12 meeting in Milano on August 11, 2010. The DFCs which were adopted were the result of the first round of joint planning between the GCDs within this GMA toward an approach of joint management of the aquifers in these formations. All GMAs in the state were required by law to adopt DFCs for their aquifers by September 1, 2010. This is all a result of the passage of HB1763, authored by then State Representative Robby Cook, near the end of the state legislative session in 2005, which was designed to provide a vehicle for joint management of shared groundwater resources by GCDs in a GMA. All GMAs in the state did succeed in adopting DFCs by the September 1, 2010 deadline. For a list of the DFCs adopted for POSGCD and what these DFCs actually mean, please see pages 2 and 3 of this publication.

**What do the DFCs adopted for POSGCD really mean?**

Understanding the Desired Future Conditions (DFCs) adopted for all of the GCDs in GMA 12 requires an understanding of the aquifers in our area. Except for the Alluvium formations, which are shallow and located along the Brazos and Little Rivers, all of the aquifers in the District are similar. These aquifers have an unconfined portion (generally the shallow area where the formation comes to the land surface) and a confined portion (generally the portion of the formation beneath other formations that continually gets deeper as it runs towards the Texas Gulf Coast). One can see these differing areas by looking at the schematic cross section of the Carrizo-Wilcox formation, including both the Carrizo and Simsboro aquifers, on the next page. Please note that there is a formation of mostly clay (Calvert Bluff) between these two aquifers that prevents any appreciable amount of water from migrating between these aquifers. In other words, production of water from one of these aquifers does not affect drawdown of water levels in the other. Also, please note that the Simsboro formation actually comes to the surface (the shallow portion), in the NW of the schematic, which is in Milam County, and that this portion of the aquifer contains many production wells which are depended on by many of the citizens of the District.

The Board of the District considered many factors when adopting its current Management Plan and Rules in 2005, including rules which would protect the water levels in wells in shallow parts of these aquifers. Then, in deliberations leading up to the adoption of the current DFCs, the Board expanded upon that protection, ensuring management strategies which would provide even more protection of water levels in these shallow wells, while allowing property owners across the District to exercise their rights to produce groundwater from under their lands. Should production of groundwater lead to a decline which would threaten the water levels in wells in shallow areas, production would be curtailed to a point which would ensure protection of these water levels in the shallow wells.

The DFCs which were recently adopted for all of the districts in GMA 12, including Post Oak Savannah GCD, are expressed in number of feet of average drawdown across the entire District for a specific aquifer when comparing water levels in monitor wells in the year 2000, denoted by the dotted line labeled Simsboro Potentiometric Surface in the schematic, to water levels in wells in those same areas in 2060, denoted by the dotted line labeled Simsboro Drawdown. Please note the presence of monitor wells across the Simsboro in the schematic, as well as production wells. Water levels from production wells can also be considered in calculating average drawdowns of water levels in an aquifer.

It is very important to note that drawdowns of water levels measured in wells in the shallow unconfined portions of the aquifer are actually drawdowns of the water table, caused by an exit of a volume of water known as desaturation, or dewatering. Drawdowns in the deeper confined portion are due to a decrease in pressure upon the water at the depth of the well screen and are not due to desaturation. Before production, this pressure would force the water up the well to a level similar to the water levels in wells in the shallow areas. Production reduces this pressure, which causes drawdown. Also, this drawdown would not be representative of changes in water levels in the aquifers above and especially near the surface.

The DFC for the Simsboro aquifer in POSGCD is 300 feet of average drawdown by the year 2060. What does this really mean? It **does not** mean that there will be a decline in water levels in that formation in all areas across the District of 300 feet. It does mean the **average** of drawdowns measured in the Simsboro aquifer across the District by the year 2060 may reach 300 feet. This average of 300 feet, depicted in the schematic, may mean that in the deeper parts of the aquifer, where there is much more land area than in the shallow areas, drawdowns may average 400 feet, while drawdowns in wells in the shallow, more sensitive areas, may average only 15 feet. Within the shallow, unconfined area of the Simsboro, most of the wells have 200 to 250 feet of water in them so a 15 foot decrease over a 60 year period should have a minimal affect on the production of groundwater.

These deeper wells may penetrate the Simsboro at an average depth of 2000 to 2600 feet, so even a water level decline due to depressurization of the formation of 400 feet, which seems like a large number, still leaves over 1600 feet of water available in those wells. If production were to cease in these deeper wells, the water levels would rapidly begin to return towards pre-production levels. Although this example has been of the Simsboro, similar strategies will be employed for protection of water levels in other aquifers in the District. For questions or clarifications about this article, please contact the District General Manager at posgcd@tconline.net.

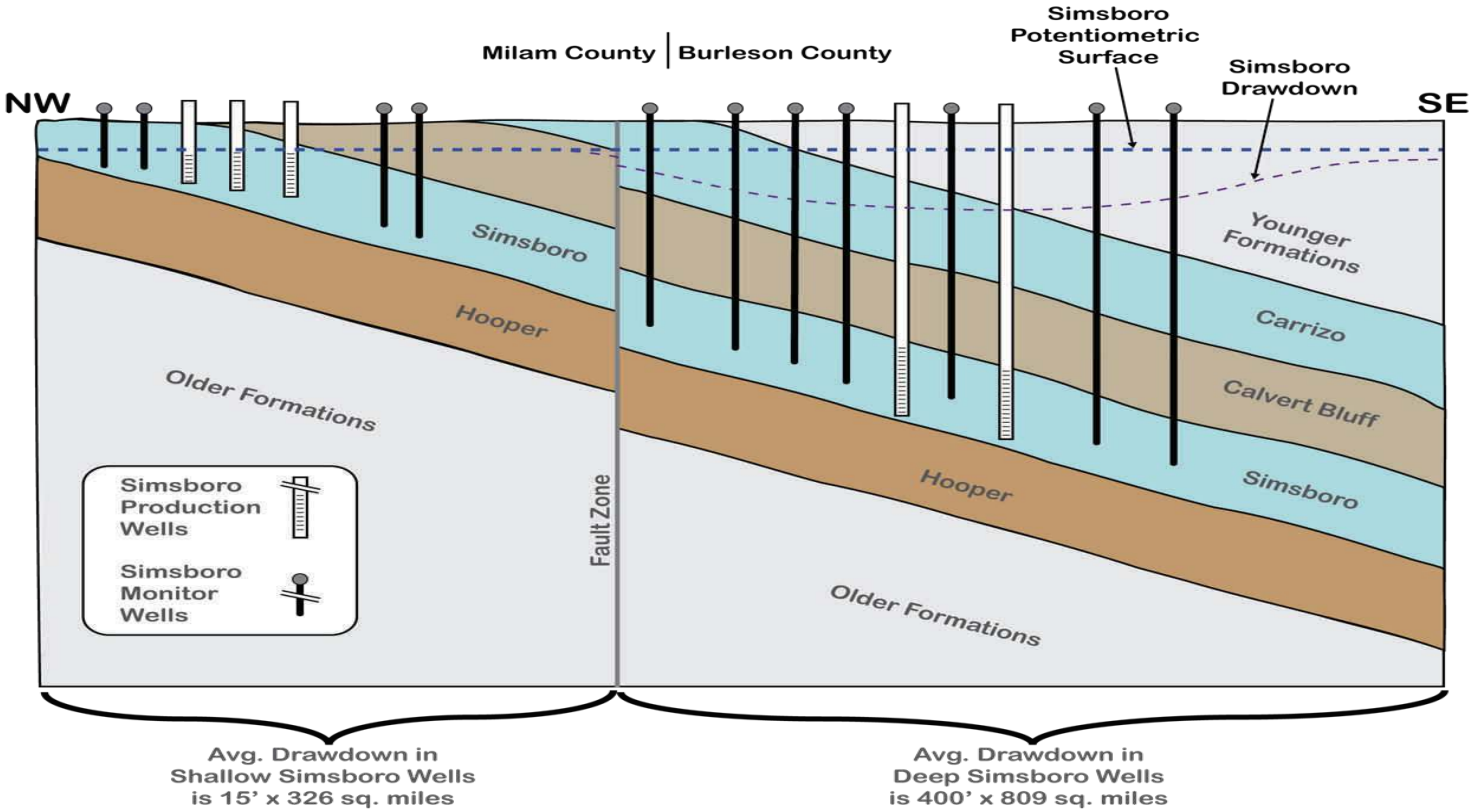
**Please note– The District is actively seeking abandoned oil and gas wells to convert to monitor wells in the District, with the District usually paying for most of the cost to convert wells. In most cases these wells can be permitted for production and use by the property owner of the well.**

## POSGCD Desired Future Conditions

| Aquifer | Avg. Drawdown |
|---|---|
| Sparta | 30 |
| Queen City | 30 |
| Carrizo | 65 |
| Calvert Bluff | 140 |
| Simsboro | 300 |
| Hooper | 180 |

** Drawdowns are expressed as averages in a formation across the entire District for a 60 year period from 2000 to 2060.

## Schematic Cross Section Simsboro Drawdown




**POSGCD Mission Statement**—Our mission is to strategically manage the groundwater resources of Burleson and Milam counties in order to protect against aquifer depletion and pollution and to ensure an adequate water supply for future generations. Through responsible management, we will accomplish this undertaking of preservation by collecting data, monitoring groundwater levels, regulating excessive production, permitting, educating the public and coordinating with neighboring districts for mutual benefit.

## Upcoming Calendar of Events

**December**

**24** - Post Oak Savannah GCD Offices closed– Merry Christmas!

**January 2011**

**11**- Post Oak Savannah GCD Board of Directors Meeting at POSGCD offices in Milano, TX

**February**

**8** - Post Oak Savannah GCD Board of Directors Meeting at POSGCD offices in Milano, TX

**ARE WE PROVIDING INFORMATION YOU NEED?**

The District Staff would like to know what information you would like to see in this newsletter. Contact us at the District offices or email us at posgcd@tconline.net with your suggestions.

Groundwater conservation districts are the state's preferred method of groundwater management through rules developed, adopted, and promulgated by a district.
Texas Water Code, Sec. 36.0015

## 2010 Water Conservation District Grant Awards

POSGCD again in 2010 approved grant awards, which are listed below, for 9 separate local water utilities in Burleson and Milam counties which totaled one million dollars for projects in the District to enhance groundwater conservation.

| Recipient | Amount |
|---|---|
| Lyons WSC | $208,834 |
| City of Somerville | $215,812 |
| City of Rockdale | $73,796 |
| Cade Lakes WSC | $53,000 |
| Southwest Milam WSC | $115,000 |
| Gause WSC | $19,012 |
| Clay WSC | $236,546 |
| Marlow WSC | $39,000 |
| Minerva WSC | $39,000 |
| Total Awarded | $1,000,000 |

POSGCD was created to conserve and regulate the use of groundwater through monitoring of aquifer levels and production and encourage conservation rules which limit pumping, thereby extending the quantity and quality of the water available in all of the aquifers in Milam and Burleson counties. POSGCD is a member of the Texas Alliance of Groundwater Districts (TAGD).

**Look for our next issue in Spring 2011**

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