

## METERING PROGRAM UPDATE

The metering program is moving along well with field verifications of the notice and proof forms going on by both DWR and GMD4. The biggest issue thus far in this process have been the security seals, or rather the lack of them. If your meter is missing the wire security seal, it will be deemed "out of compliance" and soon a notice will arrive indicating that a new one needs to be installed by a certified meter dealer - after the meter checks out operationally.

Otherwise the installations have, with only a few exceptions, been quite exceptional. We will begin preparing the listing of NE/4 wells for reminder meter letters soon. **REMEMBER - all meter orders** went out the 1st year - only reminder letters will be sent from now on, and will be sent by GMD 4. We hope to have the listing done and the reminder letters sent by mid-Fall. Questions?

## EQIP IN GMD4

The board designated the new Quick Response Areas (QRA's) for next years EQIP Ground and Surface Water program funding. They are:

Townships: 9-32, 9-33, 9-34 and 10-33 in Thomas Cty; and  
N/2 9-39, 9-40, 9-41, 9-42 and N/2 10-42 in Sherman Cty.

If your water right is in one of these Township areas, enhanced NRCS EQIP funding of \$300 per acre to set it aside for 4 years may be available - if you're eligible. Although NRCS has not set the final eligibility requirements yet, the state technical committee will be approached next month with recommendations that at least 66% of the water right's authorized acres have been irrigated with at least 6" of water per acre for at least 2 of the last 5 years.

The board, depending on area participation, plans on keeping each QRA for 2 consecutive years before designating a new one. This will be the 2nd year for the Thomas QRA and the first for the Sherman QRA. Contact your local NRCS Office for an application and program details. Sign-ups should begin sometime around mid-September for the upcoming year's program.

## Next GMD Board Meeting: August 9

## OGALLALA BOOK PUBLISHED

Several years ago William Ashworth from Oregon ventured through the High Plains doing research and interviews for a book he was writing on the Ogallala Aquifer. His book is now out. Titled "*Ogallala Blue - Water and Life on the High Plains*" (W.W. Norton Press, NY), it's a look at the aquifer from a unique perspective. Mr. Ashworth covers the many Ogallala issues without being too condescending or espousing the typical "know-it-all" comments which in hindsight have become clear to just about everyone - with one exception. Like John Opie and others before him, he also contends that the Ogallala should never have been developed as much as it has and that the day of reckoning is looming - sooner in some places than in others. But, Mr. Ashworth remains less judgmental (except for the one exception) and more philosophical about the entire affair. He tempers his impact statements well by covering the other side of the issue adequately, but in the end, what lingers is the stark simplicity of his impact statements rather than the temperings. This is probably because he is more right than wrong. As he set out to do, he is mostly successful in creating the "spirit" of the aquifer through the thoughtful musings and comments of those he interviewed - including a few cameo comments by myself.

## WEB PAGE STATS

The district's web page during the month of June, 2006 recorded 1565 sessions and 2806 pageviews. It averaged 52 sessions/day and 93 pageviews/day. The average session time was 2 minute and 36 seconds. The top 5 entry pages were: Quotes page (21.28%); the Home Page (13.61%); Formulas page (6.71%); Law page (2.68%) and our December, 2002 Minutes (1.73%). About 74% of our visits are non-referred, meaning direct (bookmarked) visits. Of the rest, most are referred by Google, SearchMSN, Ask.com and SearchYahoo. Non-search engine referrals have mostly come from links on the following pages: KGS, GMD 1, KDHE, GMDA, Academic.evergreen, KWO, GMD 5, and US Water News. Thanks for visiting.

## HIGH PLAINS AQUIFER SPECIAL STUDY

The Bureau of Reclamation (BoR) and the Kansas Water Office (KWO) have contracted for a special study of the High Plains-Ogallala Aquifer in NW Kansas. Also involved are: NW Kansas GMD 4, Division of Water Resources, Kansas State University and the Kansas Geological Survey. Of this \$186,000.00 project, the BoR will be funding \$93,000.00 and the various partners in Kansas will be matching this amount. GMD 4 has agreed to contribute \$2,000.00 cash and \$4,000.00 of in-kind support.

The principal effort will be modeling support for groundwater management decisions necessary to reach the 2010 aquifer objective of slowing the decline rate. Rather than create a new model, the project will adjust the existing model developed just a few years ago for the Republican River Compact Administration. The model will be expanded to cover those areas of alluvial aquifers of the North and South Forks of the Solomon River above Kirwin and Webster Reservoirs which are not already in the model, and will be refined to meet the specific modeling needs of GMD 4 in 3 special areas of the district, which are expected to conform with the high priority sub-unit areas soon to be established. The board has just signed a memorandum of agreement with the KWO and the BoR outlining the process and expectations. The timeframe is expected to be over the next 3 years.

It is also hoped that some degree of economic modeling or analysis can be incorporated. The primary person involved will be the developer of the RRCA model, Steve Larson of S. S. Papadopoulos & Associates, Inc. There will be more information on this study as it develops.

## WaterTAP UPDATE

With passage of HB 2710 last session, the State Conservation Commission (SCC) must now develop regulations for the state's first, pilot water rights transition program. Concepts we want to adhere closely to are: permanent retirements only; granting the most consumptive water use per unit of funding; targeting the program to areas of highest need; compatibility with all other water use reduction programs; sufficient program monitoring; and adequate penalties for violations. The Kansas Water Congress likely will be asked to assist in the regulation process. Through this group the GMDs and others will be able to track the process. If anyone is interested in how it develops, let me know. I'll also try to update the issue via this newsletter as long as it is active. The SCC remains very interested in the program and should be a good sponsor.

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## GROUNDWATER DISTRICTS MET IN WYOMING

The 2006 Summer GMDA conference was held June 2-4 in Jackson, Wyoming at the impressive National Museum of Wildlife Art. Topics covered were: Overview of Wyoming water law; Wyoming TMDL's; Surface and groundwater disagreements in Idaho; Federal forays into groundwater via recent US Supreme court rulings; After hurricane Katrina; Review of the Teton Dam failure; Wyoming and Kansas EQIP; Mississippi well field update, and much more.

All this to encourage your consideration of the January 7-9, 2007 Annual Conference set for Albuquerque, NM. Organizers plan a 30th anniversary (or so) event with a great program and the usual claim of "many extras". The theme will be "Where the Past Meets the Future" and will focus on the technologies of groundwater management. Visit [www.gmdausa.org](http://www.gmdausa.org) for details or call the office.

## FUNDS MADE AVAILABLE

GMD 4 was just approved by the Kansas Water Authority for 50% cost share on two, 300-ft steel tapes for measuring water levels. These tapes have been out of production and hard to get for many years now, but a Texas company (Cooper Tool) has begun manufacturing them again. The cost share funds provided are state water plan funds (up to \$1,000.00) which will support additional water level measurements in GMD 4. The voluntary measurements will be provided to the state water level observation well network and coded as voluntary data. We hope there will be an interest in collecting additional water level measurements in the district.

### The Water Table

Sponsored by the NW Kansas Groundwater Management District No. 4, 1175 S. Range, Colby, KS 67701-0905. Office hours: 8:00 a.m. to 5:00 p.m. Monday through Friday (except the noon hour) - closed during State holidays.

**DIRECTORS:** Roger Zwegardt - St Francis, CN Cty; Monty Biggs - Atwood, RA/DC Cty; Jeff Deeds - Goodland, SH/WA Cty; Dave Rietcheck - Treasurer, Goodland, SH/WA Cty; Jon Friesen - Colby, TH Cty; Lon Frahm - Colby, TH Cty; Mitch Baalman - Vice President, Menlo, SD Cty; Bill Nondorf - Hoxie, SD Cty; Doug David - Hill City, GH Cty; Scott Maurath - President, Oakley, LG Cty; Dave Mann - Secretary, Quinter, GO Cty.

**STAFF:** Wayne Bossert - Manager; Ray Luhman - Assistant Manager; Dan Simmering - Field Technician; Rita Wade - Secretary/Receptionist; Ron Vignery - Attorney.

ADDRESS CORRECTIONS ARE APPRECIATED

## ON THE HORIZON

According to research going on in California, creating artificial seismic waves, similar to those that occur during an earthquake, could help aquifers and other underground formations better transmit their payloads. Shaking somehow increases the rock's permeability - which controls how well fluids move through it. They also discovered that the increase in permeability is directly related to the amplitude of the shaking which means more work is needed to discover the optimum vibration amplitudes for various possible applications. The discovery came from studying 20 years of data of water seeping in and out of wells during seven earthquakes showing that every time an earthquake occurred the permeability of the surrounding rocks increased up to three times, but then returned to normal levels after a few months. There is also some evidence that the hydrological changes may be longer lasting and perhaps even permanent. Part of the work is from: *Permeability Enhancement in the Shallow Crust as a Cause of Earthquake-induced Hydrological Changes* by S. Rojstaczer, S. Wolf & R. Michel, Journal Nature, 373.

And then there's Butanol - a 4-carbon alcohol (related to ethanol) that can be used with gasoline in any blend (even instead of gas) - with reportedly very similar performance results. Butanol is also able to be transported in bulk (pipelines) because the extra carbons don't attract water as readily as ethanol. DuPont is now working with British concerns on a prototype production facility in England. Check out [www.butanol.com](http://www.butanol.com) on the web.

What else is coming down the pike? If you know of interesting water-related research please send it along.

## KU WHEATSTATE TOUR STOPS IN COLBY

The 2006 edition of the annual KU Wheatstate Whirlwind Tour stopped a while in Colby May 23/24. GMD 4 manager Wayne Bossert gave a 30-minute groundwater presentation to this distinguished group of professors and administrators numbering 52. It is always a pleasure to present to this group who are very diverse in their backgrounds and interests. Their mission is to better understand Kansas and the regions of the state from which a majority of their students come. This year's talk covered the basics of the Ogallala Aquifer in NW Kansas and our approach to groundwater management. We hope to see them again next year.

## Pumping the Tailwater

Editorial Comment by Wayne Bossert, GMD 4 Manager

## USGS / KSU STUDY RESULTS RELEASED

Last year differing opinions arose in Kansas as to the effect higher efficiency irrigation systems were having on water use. Is cost sharing for irrigation efficiency upgrades helping achieve the state water plan goal of slowing the groundwater decline rate in the High Plains Aquifer? Since aquifer decline rates in the Ogallala are almost wholly a result of consumptive water use volumes, the water plan goal pretty much means **reduce consumptive water use (CU)**. So, the question then becomes: Do more efficient irrigation systems reduce CU?

With state water plan funding, a study was designed to answer the question and was co-undertaken by the United States Geological Survey (USGS) and Kansas State University (KSU). The USGS study results were released this past May under the press release title: **Irrigation Systems in Kansas High Plains More Efficient But Water Use Not Reduced**. This report, "Effects of Irrigation Practices on Water Use in the Groundwater Management Districts with the Kansas High Plains" - authored by Charles Perry, looked at the macro data and basically concluded that post-conversion water savings were applied either to additional acres, or, used on higher consumptive crops - thus offsetting any water pumpage reductions. They looked closely at reported water use and cropping data over time.

The KSU portion of the study, released in mid June, looked at farmstead level data and concluded: "...evidence from this study is that...cost share programs clearly benefited producers but had a relatively small impact on the rate of aquifer decline." and "While producers...have reduced crop specific water consumption over time, they appear to be using these savings to expand acreage."

It is interesting that both studies seem to imply that IF irrigated acreage and cropping choices had been strictly controlled (no new acres irrigated and no higher consumptive crops grown) the results would have found reduced water use. There is still a big difference between "pumped water" and "consumptive water use", and it is possible to reduce pumped water AND increase CU. Even with the same acres and the same crops under a new, efficient system, CU will increase on every acre that was deficit irrigated under the old, less efficient system but is now more fully irrigated because of its higher application efficiency. Higher efficiencies will also allow these same acres to be irrigated a number of years longer - also increasing (extending) CU over the old system. Anyway, both studies concluded that IF your want to reduce the decline rates, improving water use efficiency of irrigation systems is not a particularly good way to do it, and can even take you in the other direction.

The KSU study did point out another issue of importance. While reducing consumptive water use is the only way to slow the declines, this approach does have an impact on the other stated goal - maintaining local economy levels. We really need to find ways to reduce consumptive water use that yield significantly higher economic returns if we are to address BOTH goals. And if this can't be done by farming, then the change in water use patterns may also result in social/cultural changes to the region that some may object to. Two things are clear: we can't keep everything exactly the way it is now and solve the decline problem and maintain the economic condition, and, deciding what has to change is never an easy, painless and straight-forward process. Both reports are available for review at the district office if you're interested.