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TO: Board Members

THROUGH: Robert E. Mace, Deputy Executive Administrator, Water Science & Conservation

FROM: William R. Hutchison, Director, Groundwater Resources Division
Kenneth L. Petersen, General Counsel

DATE: May 12, 2010

SUBJECT: Briefing and discussion on the status of joint planning in groundwater management areas and the consideration of exempt use in managed available groundwater numbers

ACTION REQUESTED

No action requested; this is a discussion item.

BACKGROUND

Key background points are:

- Groundwater management areas are required to submit desired future conditions to the Texas Water Development Board (TWDB) by September 1, 2010.
- Once desired future conditions are submitted, Groundwater Resources Division staff develops values of managed available groundwater based on the desired future condition.
- Groundwater conservation districts are required to include the desired future condition and managed available groundwater number in their groundwater management plans and permitting.
- Regional water planning groups are required to use the managed available groundwater values in their regional water plans if they are received in a timely manner.
- Once adopted, desired future conditions can be challenged by petitioning the TWDB.
- If the Board finds that the desired future condition is reasonable, TWDB staff issues written findings to the petitioner and the groundwater conservation districts, and the petition process ends.
- If the Board finds that the desired future condition is not reasonable, TWDB forwards written findings to the petitioner and the groundwater conservation districts which include recommended changes to the desired future condition.

Our Mission

To provide leadership, planning, financial assistance, information, and education for the conservation and responsible development of water for Texas.

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- The groundwater conservation districts then consider TWDB's recommended changes and public testimony at a meeting of the groundwater management area (GMA) and then finally determines the desired future condition and provides to the TWDB.
- TWDB will then provide public notice of the revised desired future condition and may provide a public response to the districts' revised conditions, at which point the petition process is concluded.

KEY ISSUES

Background

Following the Board's Special Meeting in January on petitions challenging the reasonableness of the desired future condition (DFC) determined by Groundwater Management Area 9 for the Edwards Group of the Edwards-Trinity (Plateau) Aquifer, Chairman Herring requested some clarification of staff's position on an issue raised by the Upper Guadalupe River Authority (UGRA).

Specifically, Tony Corbett, attorney for the Upper Guadalupe River Authority, requested that the Board provide clarification of the managed available groundwater (MAG) that would be derived from the "reasonable" desired future conditions, recommended by the Board. As he summarized in a subsequent email to TWDB General Counsel Ken Petersen, Mr. Corbett's argument is

"based on Section 36.001(25) of the Water Code, which defines 'Managed available groundwater' as 'the amount of water that may be permitted by a district for beneficial use in accordance with the desired future condition of the aquifer as determined under Section 36.108.' In other words, the MAG is defined by statute to include the amount of water that may be permitted to achieve the DFC. By definition, exempt well production is exempt from permitting. Since the alternative DFC recommended by staff was established based on the assumption that there would be no permitted production (and only exempt well production), then the MAG would have to be zero. The issuance of a MAG of 4,000 acre-feet per year could result in a legal obligation by the local groundwater conservation districts to issue permits authorizing up to 4,000 acre-feet of production, which would significantly impact the aquifer (and cause much more drawdown than just exempt well production)".

Mr. Corbett's conclusion that a managed available groundwater of 4,000 acre-feet per year "could result in a legal obligation by the local groundwater conservation districts to issue permits authorizing up to 4,000 acre-feet of production" is based on his reading of Section 36.1132, Texas Water Code, which requires that a groundwater conservation district, "to the extent possible, shall issue permits up to the point that the total volume of groundwater permitted equals the managed available groundwater, if administratively complete applications are submitted to the district."

The desired future condition recommended by staff is intended only to accommodate the anticipated increase in exempt domestic and livestock wells: “This DFC allows for a 2060 pumping rate of about 4,000 acre-feet per year from the Edwards-Trinity (Plateau) Aquifer in Kerr County, enough to accommodate the probable growth of exempt pumping in the county.” Initially, staff did not intend that this managed available groundwater number be treated as a quantity of groundwater that is available for permitting, but rather a quantity of additional use that would be consistent with the desired future condition as revised to allow for the anticipated increase in domestic and livestock wells. The apparent disconnect between staff’s view and Tony Corbett’s view under his reading of the definition of managed available groundwater in Chapter 36 of the Water Code is explained by staff’s interpretation of the phrase “to the extent possible” in Section 36.1132: if the managed available groundwater number does not include any groundwater that is available for permitting without violating the desired future condition, then the limitation on permitting “to the extent possible” would not allow the districts to issue any permits. Whether permits could be issued given the managed available groundwater number would be determined by the districts.

Staff Finding

Following the Board’s special meeting on the desired future condition for the Edwards Group of the Edwards-Trinity (Plateau) Aquifer in Groundwater Management Area 9, staff has closely examined the statutory definition of managed available groundwater and the statutory language at Section 36.1132 requiring the districts to permit up to the amount of the managed available groundwater and we now agree that the managed available groundwater should not include any exempt use.

Exempt Use Definition and Application at District Level

Exempt use is covered in Section 36.117 of the Texas Water Code. However, the enabling legislation and rules of individual districts has resulted in a variety of definitions. Section 36.117(b)(1) provides that a district may not require any permit for “a well used solely for domestic use or for livestock or poultry on a tract of land larger than 10 acres that is either drilled, completed, or equipped so that it is incapable of producing more than 25,000 gallons of groundwater a day”. This translates to a well that is capable of producing about 17 gallons per minute. Some districts, by enabling legislation or by rule, have modified the 25,000 gallons per day limit. Some districts have enabling legislation that lowered the limit to 10,000 gallons per day (e.g., Barton Springs/Edwards Aquifer Conservation District), and there is at least one example of a raised limit of 50,000 gallons per day (Brazos Valley Groundwater Conservation District). Some districts have relaxed the limitation to allow supply to more than one dwelling on a parcel (e.g., Culberson County Groundwater Conservation District, Real-Edwards Conservation and Reclamation District and Barton Springs/Edwards Aquifer Conservation District). At least one has enabling legislation that extends the exempt status to any historic use (Hays Trinity Groundwater Conservation District).

Some believe that it is appropriate to assume that exempt use should be calculated by assuming the full 25,000 gallons per day production limitation, thus assuming that the well is producing at its full capacity 24 hours per day, 365 days a year. However, staff believes that evaluating exempt domestic use to recognize that a reasonable estimate of domestic use is approximately 100 gallons per person per day. Under this use rate, a household of four would use less than 2 percent of the capacity of the exempt well, assuming it was equipped to produce 17 gallons per minute (equivalent to 25,000 gallons per day).

Other exempt uses defined by statute include groundwater use for oil and gas development and certain municipal wells. Section 36.117 of the Texas Water Code also exempts water used in oil and gas development. However, at least one district (North Texas Groundwater Conservation District) is authorized to regulate and permit groundwater use for oil and gas development. Finally, Section 36.121 of the Texas Water Code, exempts certain municipal wells in counties with a population of 14,000 or less that supply water to a municipality that has a population of 121,000 or less (under certain conditions) or a municipality that has a population of 100,000 or less (under certain other conditions). This provision has been formally adopted into at least one district's rules (Hemphill County Underground Water Conservation District).

Staff's Approach to Estimating Exempt Use

In most cases, the largest categories of exempt use are rural domestic and livestock. Staff has developed estimates of these categories for all 254 counties based on census data and water planning data maintained by TWDB. Staff has also developed a method to further subdivide these estimates by aquifer within each county using the water well database.

Decadal estimates of rural domestic use from 2010 to 2060 were developed by TWDB staff and are based on census block utility service area boundaries, the number of single-family connections reported in the annual Water Use Survey, and the "County-Other" population in the 2007 State Water Plan.

- The census block utility service area data provided a means to estimate population served by "exempt wells"
- The Water Use Survey data provided information to estimate per capita use for rural domestic areas. The statewide per capita use estimate using this approach for 2006 was 87 gallons per capita per day, and was 105 gallons per capita per day in 2007.
- The County-Other data were used to estimate decadal growth rates in population.

This approach resulted in two sets of decadal estimates of rural domestic use (one based on 2006 per capita use, and one based on 2007 per capita use) for each county in Texas. For purposes of using this method, an average of these two estimates will be used.

Decadal estimates of livestock use will be taken directly from the estimates in the 2007 State Water Plan. These estimates exist for each county in Texas.

Subdividing these estimates by aquifers within each county will be completed by using the water well database. The database contains codes for well use and for aquifer completion. Although not every well in the state is represented in the database, this method assumes that the percentage of domestic and livestock wells in each aquifer in a given county is representative of all domestic and livestock wells. Thus, the total exempt use (sum of rural domestic and livestock) can be allocated to each aquifer.

An example for Angelina County is shown below. At the April Board meeting, staff presented preliminary managed available groundwater numbers for Groundwater Management Area 11. These numbers represent the total pumping that is consistent with meeting the goal articulated in the desired future conditions established by the groundwater conservation districts in Groundwater Management Area 11.

Summary of Managed Available Groundwater Calculation in Angelina County
 (located in Groundwater Management Area 11)

Aquifer	Total Pumping (acre-feet per year)	2060 Exempt Use in acre-feet per year (Entire County)	Percentage of Wells in Aquifer	2060 Exempt Use Estimate by Aquifer (acre-feet per year)	Proposed Managed Available Groundwater (acre-feet per year)
Yegua-Jackson	16,507	918	74	679	15,828
Sparta	689		15	138	551
Queen City	1,093		0	0	1,093
Carrizo-Wilcox	26,414		1	9	26,405
Total	44,703		90	826	43,877
Other	N/A		10	92	N/A

Note that the total pumping consistent with the desired future condition in Angelina County is 44,703 acre-feet per year, and the exempt use estimate for rural domestic and livestock is 918 acre-feet per year, which provides a managed available groundwater of 43,785 acre-feet per year. Extending the analysis further, based on the water well database, 74 percent of the domestic and livestock wells in Angelina County are completed in the Yegua-Jackson Aquifer. Therefore, staff estimates that 679 acre-feet per of exempt use is from the Yegua-Jackson Aquifer. Thus, the managed available groundwater associated in the Yegua-Jackson Aquifer in Angelina County is 15,828 acre-feet per year out of a total pumping of 16,507 acre-feet per year.

Also note that 10 percent of the domestic and livestock wells are located in aquifers other than those for which desired future conditions have been established. Based on this analysis, only 826

(90 percent) of the total exempt use estimate is considered in making the managed available groundwater calculation.

It is recognized that this method will not accurately estimate exempt use in all cases. These estimates do not account for:

- Vacation homes
- Hunting camps
- Small scale commercial establishments in rural areas
- Small public water systems that are not included in the Water Use Survey
- Groundwater use associated with oil and gas production
- Historic uses that are exempt from regulation
- Municipal uses that are exempt from regulation

Staff plans to solicit input from districts regarding groundwater use for oil and gas production. Staff proposes to develop exempt use estimates with the method described above (along with estimates for groundwater use for oil and gas production), document the estimates in draft managed available groundwater reports to the districts, and solicit comments regarding those estimates. If a district can document a more accurate estimate of exempt use given their particular set of circumstances, staff would then make a decision on whether to modify the estimate (based on information and documentation of the alternative estimate) or maintain the original estimate. If no response is received from the districts on the exempt use estimate, it will be considered accurate, and the draft document will be finalized.

Staff's Approach on Previously Delivered Managed Available Groundwater Estimates

As a result of the change in position regarding the need to subtract the exempt use from the total pumping to achieve the desired future condition in order to calculate the managed available groundwater, previously issued managed available groundwater numbers will be revised and reissued using the approach described above.

Status of Joint Planning in Groundwater Management Areas

The latest status of joint planning in groundwater management areas is shown in the attachment.

Status of Desired Future Conditions, Managed Available Groundwater Determinations, and Active Petitions

Status of Desired Future Condition Submittals

Statute requires that groundwater conservation districts submit desired future conditions to the TWDB by September 1, 2010. To date, districts in six groundwater management areas have submitted desired future conditions. Districts in two areas (Groundwater Management Area 8 and Groundwater Management Area 11) have submitted desired future conditions for all of its aquifers. Desired future conditions submitted thus far are:

Groundwater Management Area 1

- Ogallala Aquifer
- Rita Blanca Aquifer

Groundwater Management Area 8

- Blossom Aquifer
- Brazos River Alluvium Aquifer
- Edwards (Balcones Fault Zone) Aquifer
- Ellenberger-San Saba Aquifer
- Hickory Aquifer
- Marble Falls Aquifer
- Nacatoch Aquifer
- Trinity Aquifer
- Woodbine Aquifer

Groundwater Management Area 9

- Edwards Group of the Edwards-Trinity (Plateau) Aquifer
- Ellenberger Aquifer
- Hickory Aquifer
- Marble Falls Aquifer

Groundwater Management Area 10

- San Antonio Segment (excluding Kinney County) of the Edwards (Balcones Fault Zone) Aquifer

Groundwater Management Area 11

- Yegua-Jackson Aquifer
- Sparta Aquifer
- Queen City Aquifer
- Carrizo-Wilcox Aquifer

Groundwater Management Area 13

- Sparta Aquifer
- Queen City Aquifer
- Carrizo-Wilcox Aquifer

Status of Managed Available Groundwater Determinations

Statute requires that the TWDB provide managed available groundwater numbers based on the adopted desired future conditions to groundwater conservation districts and regional water planning groups. Final managed available groundwater numbers provided thus far are:

Groundwater Management Area 8

- Blossom Aquifer
- Brazos River Alluvium Aquifer
- Edwards (Balcones Fault Zone) Aquifer
- Ellenburger-San Saba Aquifer
- Hickory Aquifer
- Marble Falls Aquifer
- Trinity Aquifer
- Woodbine Aquifer

Groundwater Management Area 9

- Edwards Group of the Edwards-Trinity (Plateau) Aquifer

Groundwater Resources Division staff sends draft managed available groundwater numbers to the districts in the groundwater management area for review. Once comments are addressed and received from the districts, Groundwater Resources Division staff brings the numbers to the Board for review. As requested by the Board, this review will include a side-by-side comparison of managed available groundwater numbers with current state water plan and water use numbers as well as estimates of drainable water in place and a maximum sustained pumping level.

As a result of the change in position regarding the need to subtract the exempt use from the total pumping to achieve the desired future condition in order to calculate the managed available groundwater, previously issued managed available groundwater numbers will be revised and reissued using the approach described in the memorandum.

Status of Active Petitions

To date, TWDB has received two administratively complete petitions challenging the desired future conditions for the Ogallala Aquifer adopted by the districts in Groundwater Management Area 1. TWDB has also received three administratively complete petitions concerning desired future conditions in Groundwater Management Area 9.

The process for Groundwater Management Area 1 is complete because the Board found the desired future conditions to be reasonable during a special meeting on February 17, 2010. On March 16, both petitioners (Mesa Water, L.P. and G&J Ranch, Inc.) filed a lawsuit in Travis County District Court. The lawsuit requests that the Court set aside the Board's decision and find that the desired future conditions in GMA 1 are not reasonable. The Attorney General's office will be handling the case on behalf of TWDB.

The process for Groundwater Management Area 9 is ongoing after the Board's finding that the desired future conditions were not reasonable on January 21, 2010. The Board's recommended desired future condition was discussed at a Groundwater Management Area 9 meeting on February 22, 2010, and a public hearing was held during that same meeting. The groundwater conservation districts in Groundwater Management Area 9 have taken no action on the recommendation to date.