RESPONSE TO COMMENTS FROM THE GMA-12 STAKEHOLDER MEETING ON OCTOBER 30, 2008

ISSUE: RESPONSE TO AQUA WATER SUPPLY CORP. COMMENTS

Summary: In 2008 Aqua Water Supply ("Aqua") submitted well permit applications for 7 wells in Bastrop County from the Lost Pines Groundwater Conservation District ("LPGCD"). Only three of those applications were granted; the reason for denial of the other 4 was based on excessive drawdowns in LPGCD related to the permitting of 31,000 ac-ft/yr of pumping by Post Oak Savannah Groundwater Conservation District (POSGCD) for the Porter's Branch Well Field. Aqua is concerned about the impacts of permits in POSGCD on groundwater availability in LPGCD, and is concerned about the possibility of an additional 45,000 ac-ft/yr of pumping permitted by POSGCD for BlueWater in Burleson County. Aqua is requesting that GMA12:

- Study the effects of groundwater pumpage within the GMA and not set up any of the GCDs within GMA12 for problems with its DFC determinations
- Reach some agreements on aquifer drawdown numbers that do not negatively impact the area's water providers.

Response: It is the responsibility of GMA-12 to set DFCs that are physically possible. It is up to each district to manage their groundwater within those parameters.

ISSUE: RESPONSE TO LANDOWNER RIGHTS COMMENTS

Summary: Mr. Frankie Limmer, Mr. Russ Johnson, Mr. Ron Freeman, and Mr. Paul Terrell made general comments concerning property rights of land owners related to groundwater. None left any documents for the GMA to review.

Response: The issue of groundwater and property rights is an issue that is still being debated. Absent clarification by either the legislature or the courts, this is not a GMA issue.

ISSUE: DFCS BASED ON AQUIFER STORAGE, ARTESIAN PRESSURE, AND WATER BUDGETS

Summary: To this date GMA-12 member districts have discussed possible DFCs primarily in terms of water level change. Stakeholder comments by Mr. Ridge Kaiser and Mr. Mike Thornhill during the October 30, 2008 meeting suggest that DFCs based on drawdown values in

the confined aquifers should be avoided and that reduction in storage should be used as a DFC metric. Written comments provided by Mr. Ridge Kaiser include the following:

- "…artesian pressure fluctuations have little relationship to total volume of water produced, aquifer water budgets, surface-groundwater interaction issues, or water available for production."
- "…monitoring of artesian pressure changes will likely result in unscientific implementation in addition to inconsistent and arbitrary results"
- "…a decision to manage and focus regulatory criteria on artesian pressure is in effect a decision to manage considerably less than one percent of the resource and has little to do with groundwater management or availability"

Mr. Kaiser suggested a more reasonable method for setting a "DFC and MAG should be based on aquifer parameters and conditions that are better known, understood and/or less dynamic than artesian pressure fluctuations…" including to regulate aquifer storage and other important water budget items and to implement a mitigation plan." In addition, Mr. Kaiser offers the following suggestions:

- "…as opposed to artesian pressure aquifer water budgets are a key to developing sound DFC/MAG criteria. …aquifer water budgets address the important inflows, outflows, and changes of water in storage in the aquifer on a regional scale."
- "…we recommend an appropriate DFC should be based on managing and monitoring the changes in the water table of the primary aquifers within the GMA-12"

Mike Thornhill provided oral arguments to use aquifer storage instead of drawdown values as the primary metric for developing DFCs. Mr. Thornhill provided handouts to illustrate that the proposed pumping in several of the GMA-12 baseline runs accounted for about 1% of the total volume of groundwater in storage. Because of this small percentage, Mr. Thornhill disagreed on the technical approach for basing DFCs strictly on drawdowns.

Response: We agree that there is a large volume of groundwater in storage in the aquifers of GMA-12. The issue is not a matter of scientific disagreement regarding the storage properties of the aquifer, but rather perspectives on how to manage the groundwater in storage. In some cases, the GCD's objectives are simply different from some landowners, stakeholders, and permit applicants.

The GMA-12 member districts are in full agreement that the changes in water levels should be the primary metric for monitoring changes in the aquifer system and for developing DFCs. Among the reasons for using water level change as the primary DFC metric and not aquifer storage and aquifer water budgets are:

- Water level change is an independent variable of the groundwater system that can be directly measured. Water budget components such as storage cannot be directly measured and must be calculated based on a set of assumptions that include an assumed water level change.
- Water level change is a metric that can be readily understood by most stakeholders.

- Water level change is a metric that many stakeholders can monitor in their wells.

In developing a DFC, each member district will consider how changes in water levels will impact multiple issues, including protection of existing users, protection against drought, and regional and local social and economic conditions.

ISSUE: GROUNDWATER-SURFACE WATER INTERACTIONS

Summary: The flow between surface water and groundwater is a key area of concern for several stakeholders with regard to aquifer management. Stakeholders presented information and submitted written comments about this subject. Dr. Dan Opdyke with Texas Parks & Wildlife submitted a letter discussing concerns regarding baseflow contributions to rivers from the aquifers. Mr. Steve Box with Environmental Stewardship recommended the selection of spring flows as well as baseflow to the Colorado and Brazos Rivers as criterion for DFCs. The Environmental Defense Fund, Sierra Club, and National Wildlife Federation jointly submitted comments also requesting "natural aquifer discharges, including both spring flows and baseflows to the area's creeks and rivers," be used as metrics in the DFC process.

Response: The GMA-12 member districts agree that the interaction between groundwater and surface water should be considered as part of the DFC process. Because of limitations of the current GAM to reliably predict changes in spring flow and groundwater contribution to baseflow in rivers, the member districts do not anticipate that a credible DFC based on groundwater-surface interactions will be developed before September 2010.

However, GMA-12 remains open and will continue to investigate options for establishing possible DFC criteria for groundwater-surface water interactions in the future.

ISSUE: ECONOMIC IMPACT OF GROUNDWATER MANAGEMENT

Summary: Mr. David Dunn, on behalf of Bryan, College Station, and Texas A&M University, gave a presentation regarding the economic impacts of large groundwater withdrawals on Brazos and Robertson counties. Mr. Dunn presented that there are negative economic costs to large groundwater withdrawals including increased costs to existing users and costs to the Bryan/College Station area to develop new supplies.

Response: Economic impacts are being considered in the joint planning process by the districts and the GMA as part of the process of setting DFCs.