SJRA TALKING POINTS REGARDING THE CATAHOULA AQUIFER

COMMENT ON EXISTING REPORTS

The accumulated data and reports regarding brackish groundwater in Texas do cite it as a potential future supply, but these reports also identify many questions and problems that must be overcome for a successful, cost-effective brackish project. This is why the successful projects around the state have occurred in areas where brackish aquifers have been thoroughly studied and all other cost-effective alternatives are either non-existent or have been utilized to the maximum. Site-specific studies are critical.

Report 365: Aquifers on the Gulf Coast of Texas, Texas Water Development Board (February 2006)

- "To be usable, brackish groundwater needs to be treated (desalinated)." Without treatment, brackish water can cause scaling and corrosion problems in water wells and piping.."
- "Conclusions ..There are, however, difficulties associated with implementing such projects that can be particularly challenging for smaller communities. Chief among them are managing the desalination waste and predicting the long-term performance of brackish groundwater aquifers."

Guidance Manual for Brackish Groundwater Desalination in Texas, (TWDB, April 2008)

- "Much of the engineering feasibility is dependent on the quality, quantity and reliability of groundwater available for project implementation. Thus the collection, review, and preliminary analysis of existing data are critical."
- "One of the most important aspects of planning a brackish groundwater desalination facility is that of accurately characterizing the groundwater source to be used….Even so, the location, quantity and quality of the brackish groundwater resources in Texas vary widely and must be evaluated individually."

SJRA APPROACH

The use of brackish water is feasible only when a number of critical cost factors align to yield an economically affordable, aesthetically pleasing, and safe result. These factors include location, depth, quantity, quality, temperature, treatability, taste, odor, chemical stability, corrosivity, ease of disposal of resulting wastes, and feasibility of storage and distribution. The bottom line is that the result must be reliable, affordable, safe, and acceptable to consumers.

Because the Catahoula has not been extensively explored and produced in Montgomery County, there are still a number of critical unknowns about the aquifer that would affect a decision to explore, produce, and use the Catahoula as a primary source of supply for drinking water on a large scale.

The SJRA's position has always been that the Catahoula may provide a reasonable solution for small, individual water systems in the northern portions of Montgomery County where the risks are lower and the investment is smaller, but it is not yet feasible or responsible to rely on the Catahoula as a principle source of supply for a large-scale, countywide water system until extensive, additional exploration and data collection occurs.

The SJRA is committed to thoroughly studying the Catahoula Aquifer to determine how it may be incorporated into future phases of the SJRA's GRP program. A significant investment of public funds and an extended period of time will be required to come to any reliable conclusions as to the feasibility of using the Catahoula Aquifer on a broad scale as a principle source of supply in Montgomery County. The SJRA plan already includes steps to explore the Catahoula in a responsible and measured manner:

- The SJRA's GRP Contract includes provisions that allow any Participant to explore for alternative water supplies, including Catahoula water.
- Two proposals from GRP Participants to incorporate the use of groundwater withdrawn from the Catahoula have already been reviewed and approved for incorporation into the GRP Program.
- The SJRA is currently evaluating the potential to utilize groundwater extracted from the Catahoula for industrial use in the Lake Conroe area. Data from this well would be used for ongoing feasibility studies.
- The SJRA is currently evaluating a proposal to construct a pilot test well into the Catahoula aquifer in The Woodlands as part of the construction of a Jasper well.

COST COMPARISONS

Cost comparisons between brackish water projects are of little value when each project has radically different conditions. The ultimate cost to the consumer is dependent upon numerous site-specific criteria. A number of brackish projects have been cited recently with treatment costs of less than $2/1,000 gallons, however these projects are not an apples-to-apples comparison to the circumstances that would exist in Montgomery County, and none of these low-cost projects included costs for distribution or disposal. The following is a summary of brackish projects that have at least some of the major characteristics of a brackish project in Montgomery County.

Project / Description	Capacity	Water Depth	Salinity	Disposal Method	Treatment Cost (per 1000 gal)	Delivery Cost (per 1000 gal)	Total Cost (per 1000 gal)
San Antonio Water System – brackish desalination study	10.5 MGD	1000 feet	1500 ppm	Deep well injection	$4.10	$0.67; Integration to existing distribution	$4.77
El Paso Water Utility – brackish desalination project; project blends fresh water with desalinated water	27.5 MGD	400 to 900 feet	900 to 1800 ppm	Deep well injection	$2.56	Assuming no cost of integration to existing distribution system	$2.56
Aqua WSC, Bastrop – brackish desalination study	2 MGD		1400 ppm	Deep well injection	$3.08	Assuming no cost of integration to existing distribution system	$3.08
Montgomery Co MUD 8&9 – Region H Technical Memo summarizing 2009 brackish desalination study	2 MGD	1700 to 2800 feet (estimated)	1000 to 5000 ppm (estimated)	Not stated in Tech Memo	$2.66*	Assuming no cost of integration to existing distribution system	$2.66*
SJRA preliminary cost analysis for brackish desalination project based on recent Catahoula samples	10 MGD	3000 feet	1000 ppm	Deep well injection	$4.52	$1.00; Assume similar to GRP distribution	$5.52
SJRA Phase 1 GRP Project (surface water)	30 MGD	N/A	N/A	N/A	$1.41	$1.04	$2.45

* The Region H Technical Memo incorrectly cites this cost as $3.60 per 1000 gallons. Region H confirmed that $2.66 is the correct cost.