

Desalination for Texas Water Supply  
Briefing Summary  
June 1, 2000

**Part A: Membrane Technologies and Costs**

Sponsors: TWDB, Nueces River Authority, City of Corpus Christi, CP&L, and San Patricio MWD

Purpose: Survey and describe applications and costs for membrane desalination of brackish groundwater, brackish surface water and seawater.

Engineering Team: HDR Engineering Inc.; Malcolm Pirnie; and Water Resources Associates

Scope: Developed a membrane desalination cost model based on engineering analysis and survey of operating membrane treatment plants in Texas, Florida and California.

- Evaluated 2 types of membrane process (RO & EDR); identified best applications of each. - Developed cost curves for both capital and O&M cost components - Reviewed methods of concentrate disposal.

Results: Good information on costs for brackish water desalination; limited information on seawater desalination. Bottom Line: Brackish groundwater desalination will be fairly affordable, particularly when compared to costs of alternatives for smaller systems.

**Part B: Economic Importance of Siting Factors for Seawater Desalination**

Sponsors: TWDB, Nueces River Authority/Coastal Bend RWPG

Purpose: Evaluate the Tampa Bay Water seawater desalination project and "translate" the experience to Texas; assess the relative economic importance of siting factors for a seawater desalination facility.

Engineering Team: HDR Engineering, Inc., PB Water

Scope: Evaluate importance of process and siting factors for the Tampa Bay seawater desalination project; identify and evaluate siting considerations for the Texas Coast; evaluate concentrate disposal options; develop a cost model for potential seawater desalination facilities in Texas; and apply model to several potential sites.

Results: Reviewed the Tampa Bay project with respect to the way project development and siting factors contributed to the final water purchase price; compared Tampa Bay results with potential siting factors in Texas; developed cost curves for several siting factors, including: feedwater salinity, pretreatment requirements, concentrate disposal, and delivery to demand center.

- Price range (25 MGD plant): \$1.38 to \$5.97 per 1000 gals. (Local use vs. delivered to S.A.)
- Major Issue: Concentrate Disposal Alternatives

Bottom Line: If it can be permitted, it will probably run \$2.00 to \$4.00 per thousand, depending on location, plus delivery costs.

**For More Information, Contact:**

James A. Dodson, Nueces River Authority, Coastal Bend Division  
6300 Ocean Drive, NRC 3100 Corpus Christi, Texas 78412  
Phone: 361-825-3193 Fax: 361-825-3195 E-mail: [jdodson@falcon.tamucc.edu](mailto:jdodson@falcon.tamucc.edu)