

**Monthly Letter Progress Report #03 – March 2011
Assessment of Groundwater Modeling Approaches to
Brackish Aquifers**

TWDB Contract No. 1100011196

Submitted to:

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1.0 Progress on Tasks

This report summarizes activities on project tasks for the month of March, 2011 and represents the third progress report on this contract.

Task 1 Project Management

There was little work necessary under this task, other than the usual internal meetings and administrative tasks.

Task 2 Technical Tasks

Technical tasks in March continued the February work on the literature review. We shifted focus to the hydrogeologic scenarios that might be encountered in Texas which could be affected by variable density forces.

As a basis for our search of various hydrogeologic scenarios, we looked broadly at all of the major and minor aquifers in Texas with brackish water resources. As a basis, we used the Guyton (2003) "Brackish Groundwater Manual for Texas Regional Water Planning Groups". In reviewing each aquifer, we considered such characteristics as water quality configuration (i.e. the locations of brackish water) and their corresponding variable density conditions (lateral and vertical heterogeneities). We have completed a matrix summary of most of the major aquifers and are working through the minor aquifers.

More locally we reviewed the location of desalination plants in Texas, and used the TWDB desalination database and public water supply records to determine where and from which aquifers brackish water was being produced. We think that these specific locations would be a good starting point, or set of test cases, for the recommendation of codes for modeling brackish water movement and production.

Task 3 Project Report

There was no work under this task in March.

2.0 Planned Activities for the Next Month

Task 1 Project Management

There are no major project management tasks to be completed in April. We will meet with TWDB staff in mid-May to review work to date and discuss progress on the information matrices.

Task 2 Technical Tasks

Technical tasks in April will be focused the code-application matrix, and a continuing literature review.

Task 3 Project Report

We do not anticipate doing work under this task in April.

3.0 Problems/Issues and Actions Required/Taken

None.