

USING EM DATA AND BASE OF TREATABLE WATER MAPS TO PROTECT GROUNDWATER

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Oil and Gas wells are required to case wells from the surface to 50' below the base of treatable water (BTW), approximately 10,000 ppm total dissolved solids (TDS), in order to protect fresh water aquifers from oil & gas, saline produced water, and drilling/fracing fluids. During the 1980s the Corporation Commission had a series of BTW maps made, which it used to tell oil & gas drillers how much surface casing needed to be set in each well being drilled. Some of these maps have been found to have inaccuracies due the widely spaced data and the interpolation and mapping techniques then available. These old paper maps could not be made widely available for use.

The Commission is in the process of making new up to date maps. These maps have data picked by an experienced geologist, with many more data points per county used. GIS software, including Spatial Analyst, has been used to contour and present the maps. 30 counties have been re-mapped as of May 2009. The Commission also hopes to make these maps available to drillers, so that they can pre-plan their well drilling.

The Commission is also using its new EM-38 and EM-31 instruments, and its re-furbished EM-34, to map historic and other surface and shallow (down to ~60 meters) groundwater impacts due to salinity. This will allow us to protect groundwater and/or schedule remediation as needed. Several examples of the EM data will be shown.

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