

Hays Trinity Groundwater Conservation District: Exempt Well Production Estimation Methodology Report 2020-0819



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The Hays Trinity Groundwater Conservation District (HTGCD) is charged by the State of Texas Legislature and the Texas Water Development Board (TWDB) with the responsibility of accounting for annual water withdrawals from the Trinity Aquifer in the District. Those withdrawal data are used to inform local, regional, and statewide regional planning in order to manage water resources and ensure the supply of water is adequate to meet current and future demand.

All non-exempt (commercial purpose) wells are required to meter and report production and those volumes are accounted for and recorded.

The metering and reporting requirements do not apply to exempt-use wells but all groundwater conservation districts in the state are responsible for including exempt uses when accounting for both aggregate withdrawals and estimates of future demand. Because estimation methodologies are not precise, they are reviewed and approved by the TWDB. Estimated exempt production figures are used to complete District Annual Reports and Management Plans.

History:

HTGCD does not have jurisdiction to regulate exempt uses of groundwater.¹ HTGCD is unusual in that the District's enabling legislation² exempts both domestic, residential use (regardless of the lot size where the well is located) and farming and ranching use (including aquaculture, livestock feedlots, or poultry operations).

To establish a baseline for these unknown, exempt-use production volumes, HTGCD conducted a study to estimate the number of wells used for exempt purposes. That study integrated an aerial photo analysis with the TCEQ well database for the year 2002.³ All buildings within the boundaries of a utility's CCN were eliminated from the count and care was taken to count only habitation dwellings. This survey resulted in a count of 5,391 wells.

¹ § 36.117 [Water Code](#)

² § 8843.104, Special District Local Laws Code

³ [TCEQ Water Well Report Viewer](#)

The District's 2005 Management Plan⁴ documents a collaboration with the Hays County Agricultural Extension Center to estimate exempt agricultural water usage by crop and livestock for 2004.

In 2010, using these previous data, HTGCD estimated 2,403 acre-feet used for domestic production and agricultural production was estimated to be 897 acre-feet for a total of 3,300 acre-feet.⁵

On April 25, 2011, that methodology was approved by the Board of Directors by a 3-0 vote in favor of using 3,300 acre-feet for the year 2010.⁶ Directors voting in favor of the Motion were Jimmy Skipton, Mark Key, and Greg Nesbitt (two directors were absent).

Since that board action, all exempt-use wells registered and drilled within the District have been added to this number. HTGCD estimates 330 gallons per day per well on average (0.37 Acre-foot/year) production volume for each new well regardless of their intended exempt use.

In 2010, a water planning study conducted by HDR Engineering for the Hays County Commissioners Court included an exempt-use production amount by using Pedernales Electric Coop data to count the number of properties with electric connections.⁷ The HDR Study resulted in a 2010 exempt-use production estimate of 3,011 acre-feet.

On March 31, 2011, the HTGCD Board of Directors held a workshop to discuss methodologies and ask representatives from the TWDB and HDR about exempt-use production.⁸ The District's aerial photo study estimates and HDR exempt-use estimates were relatively close giving reliability to both the estimated usage and the methodology used to establish those estimates.

Future research needs:

Irrigated agriculture has seen significant growth in Hays county since 2010. Further research will be required to create a more accurate assessment of estimated well production. Gallons per domestic household figures may also need refinement after the 2020 U.S. Census results are available, which can be used to determine new Hays county household size figures.

⁴ HTGCD, 2005, [Hays Trinity Groundwater Conservation District Groundwater Management Plan](#), Hays Trinity Groundwater Conservation District, 61 p.

⁵ Backus A., 2010, [Groundwater Allocation Doctrines or Strategies](#), Presentation to the Board of Directors on April 15, 2010.

⁶ HTGCD, 2011, [April 25 HTGCD Board Meeting Minutes](#)

⁷ HDR, 2011, [Water and Wastewater Facilities Plan for the Portion of Hays County, Texas West of the IH-35 Corridor](#), HDR Engineering Inc., 313 p.

⁸ HTGCD, 2011, [March 31 HTGCD Board Workshop Minutes](#).