

# GAM run 03-05

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Texas Water Development Board  
Groundwater Availability Modeling Section  
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## **REQUESTOR:**

Lynne Fahlquist, United States Geological Survey

## **DESCRIPTION OF REQUEST:**

What are the estimated water levels at 14 specified locations for July 1996 in the Hill County Trinity model?

## **METHOD:**

Ran Hill County Trinity model and extracted simulated July 1996 water levels into a GIS model grid coverage containing aquifer layer elevations. The GIS model grid coverage was then intersected with a GIS point coverage developed from 14 well locations provided by Lynne Fahlquist.

## **PARAMETERS AND ASSUMPTIONS:**

Hill County Trinity model was calibrated to Middle Trinity aquifer, which lumps Lower Glen Rose, Hensel Sand, and Cow Creek together. Calibration RMS error was 56 feet. Caution should be used for water levels of the Upper Trinity aquifer since calibration for this aquifer was not emphasized.

## **RESULTS:**

See associated Excel file. Includes structural elevations as well as water levels. Note that two well locations were shown to be dry for the Upper Trinity aquifer, two well locations were shown to be outside of the model extent, and one well location was on a boundary cell.

## **REFERENCES:**

Mace, R. E., Chowdhury, A. H., Anaya, R., and Way, S.-C., 2000, Groundwater availability of the Middle Trinity aquifer, Hill Country area, Texas- Numerical simulations through 2050: Texas Water Development Board Report 353, 117 p.

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STATE_WELL_ID	COUNTY	Comment	DEM	Edwards_top	Edwards_bot	UpperTrinity_top	UpperTrinity_bot	MiddleTrinity_top	MiddleTrinity_bot	UpperTrinity_WL	MiddleTrinity_WL	D_LATITUDE	D_LONGITUDE
DX-68-13-402	Comal		1257					1257	878		999	29.795278	-98.488333
AZ-57-54-806	Comal	dry cell for upper trinity aquifer	1398			1398	1314	1314	807		1180	30.142500	-98.314444
DX-68-13-809	Comal		1311	1311	1262	1262	1159	1159	786	1222	929	29.780833	-98.453056
DX-68-21-210	Comal		1050			1050	906	880	579	676	823	29.728889	-98.427500
RB-68-02-910	Kendall		1446			1446	1435	1435	1127	1641	1303	29.889722	-98.787500
RB-68-03-110	Kendall	dry cell for upper trinity aquifer	1348			1348	1310	1310	1052		1281	29.974167	-98.712222
RB-68-11-728	Kendall		1419			1419	1354	1354	953	1586	1205	29.788333	-98.741944
RB-57-58-901	Kendall		1627			1627	1411	1411	1106	1710	1388	30.012500	-98.788611
AS-68-18-202	Bandera		1562			1562	1268	1268	896	1566	1182	29.740833	-98.831944
AS-69-24-304	Bandera		1198					1198	843		1184	29.719722	-99.033056
AS-69-24-802	Bandera		1490	1490	1461	1461	1020	1020	603	1334	1136	29.626389	-99.065000
TD-69-30-501	Medina	no data due to well being on very edge of model boundary										29.558889	-99.317500
AS-69-12-501	Bandera	no data due to well being outside of model boundary										29.811111	-99.574444
YP-69-28-302	Uvalde	no data due to well being outside of model boundary										29.620278	-99.535278

**NOTE:**

Water level estimates are for July 1996 and calibrated primarily for Middle Trinity aquifer which lumps Lower Glen Rose, Hensel Sand, and Cow Creek together.

Calibration RMS error for Middle Trinity water levels is 56 feet.

Calibration of the Upper Glen Rose Aquifer was not emphasized for the Trinity model. Caution should be used when using UpperTrinity water levels.