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Research and Data Center

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## Trinity Aquifer Groundwater Level Recording Monitors

Submitted to

Texas Water Development Board  
Research and Planning Fund Grants Management Division  
Austin, Texas  
and to the  
San Antonio River Authority

By

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## **Purpose**

There is a need for enhanced recording well monitoring within the middle Trinity Aquifer PGMA in Regional Water Planning Regions K and L in Central Texas. According to the Hill Country Groundwater Conservation Districts Alliance (HCA), a network of about 30 non-recording and recording well sites is only nominally adequate to address the technical and societal water-planning issues facing counties within the Trinity aquifer priority groundwater management area (PGMA). The HCA has been advised by the Texas Water Development Board (who completed a MODFLOW model of the aquifer in 1999) and other hydrogeologists, that a network of 2-4 times this number of sites would be advisable.

In order to meet these minimum expectations, an immediate specific need is to place at least 2 recording sites in each county within the PGMA. At present, there are eight sites in the Hill Country PGMA with recording devices, four of these with telemetry. In order to have at least two recording sites in each county, nine additional sites in seven counties are needed:

Region K -- Blanco (2), Hays (2), Gillespie (1), Travis (1)

Region L -- Comal (1), Kendall (1), Bexar (1)

The Hill Country Alliance of Groundwater Conservation Districts (HCA) or local groundwater conservation districts (GCDs) will fund the ongoing operation and maintenance of all monitoring equipment.

## **Approach and Results**

The results of this project are summarized by items in the **project scope of work**:

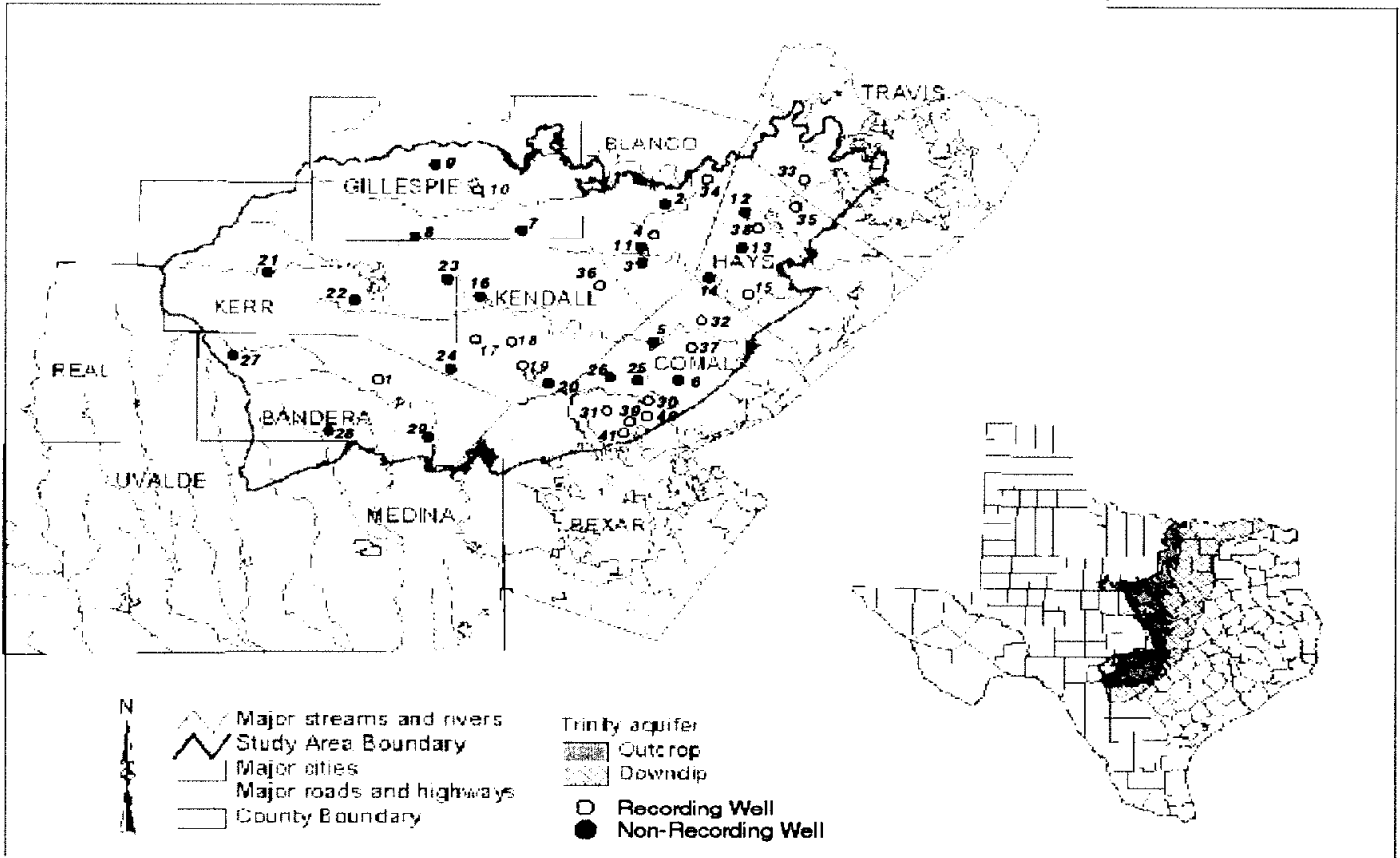
**Perform well inventory to identify sites:** A well inventory of prospective well monitoring well sites was performed by Edwards Aquifer Research and Data Center (EARDC) with staff of Texas Water Development Board (TWDB) and the local groundwater conservation district. Written permission of the landowner was obtained for nine sites in the counties identified above. The selected sites are representative of the middle Trinity aquifer in the various counties. All site data is being placed in the TWDB groundwater database and will meet TWDB standards. TWDB is making daily cell phone calls to each site in order to keep the data current. In late August, 2002, after full operation at all sites was achieved, EARDC and TWDB staff visited all sites and copied all data from each datalogger collected since about April, 2002.

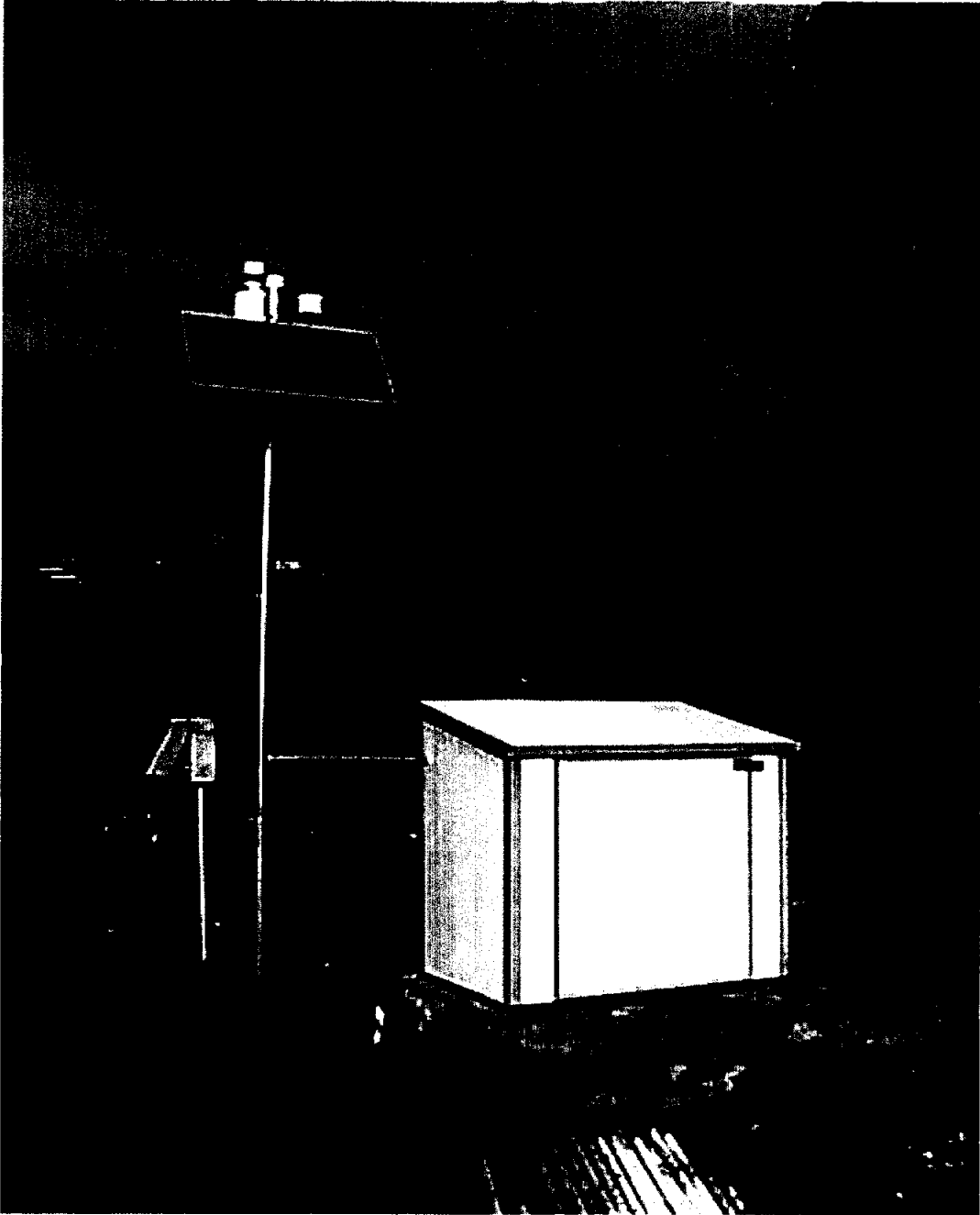
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**Network Design:** Because the nine additional sites will join an existing HCA network, the selection of sites was chosen for local site conditions, good spatial network coverage, adequate phone telemetry signal conditions as well as hardware, software, and website needs. The complete HCA network as of August, 2002 including the nine new sites is shown in the map figure below. Also shown is a photograph of site 37 located in Comal County. Map site number and location, including latitude/longitude and TWDB assigned well number, of the nine new sites are:

<b>Map Site Number</b>	<b>Location</b>
33	Near Bee Cave, TX, Travis County <u>Lat. 30-18-27 Long. 97-58-20 Well No. 58-41-406</u>
35	Big Country Subdivision, Hays County <u>Lat. 30-12-52 Long. 98-00-17 Well No. 57-56-304</u>
38	North of Dripping Springs, Hays County <u>Lat. 30-11-37 Long. 98-09-56 Well No. 57-55-604</u>
37	On Telephone Co. property, Comal County <u>Lat. 29-47-54 Long. 98-21-19 Well No. 68-14-407</u>
36	Kendalia TX, Hwy 473, Kendall, County <u>Lat. 29-58-15 Long. 98-31-31 Well No. 68-04-312</u>
10	Fredericksburg, TX, Gillespie County <u>Lat. 30-15-23 Long. 98-52-01 Well No. 57-42-722</u>
34	Pedernales State Park, Blanco County <u>Lat. 30-16-59 Long. 98-14-44 Well No. 57-47-705</u>
4	South of Johnson City, Blanco County <u>Lat. 30-10-40 Long. 98-23-43 Well No. 57-53-616</u>
40	Hamilton Ranch, Bexar County <u>Lat. 29-43-10 Long. 98-25-20 Well No. 68-21-213</u>

Hill Country Groundwater Conservation Districts Alliance Monitoring Program





All other information about each site is on file with the TWDB and also available from EARDC.

**Equipment Purchase:** EARDC with the assistance of Stevens Inc. and staff of the TWDB, purchased and prepared the hardware and software for field installation. The equipment was programmed and assembled prior to field installation. The state of the art equipment included well level sensor, rain gauge, and air temperature sensor (at seven of the nine sites), with phone telemetry.

**Equipment Installation/Initial Operation:** EARDC worked with the local District and Stevens Inc. to properly install all equipment. The equipment is planned for at least 5 years of continuous daily operation and was equipped with metal, vinyl, and wooden shelters as available. The initial operation and expense of field visits was provided by EARDC until March, 2002. Local Districts and counties provided the cost of operation thereafter.

**Website Development and Maintenance:** Data from all Alliance network sites has been installed on the EARDC web site ([www.eardc.swt.edu](http://www.eardc.swt.edu)). Continuous daily website availability of data from the nine new Stevens sites is pending as of the writing of this report.

**Reports and Meetings:** EARDC provided a completion briefing at a Region L Regional Water Planning Meeting in March, 2002 as requested by SARA.

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