

# **The Texas Groundwater Trifecta: Rule of Capture, Groundwater Conservation Districts, and Groundwater Management Areas**

**Edward S. Angle P.G.**

presented at :

Texas Springs

Protection, Preservation and Stewardship

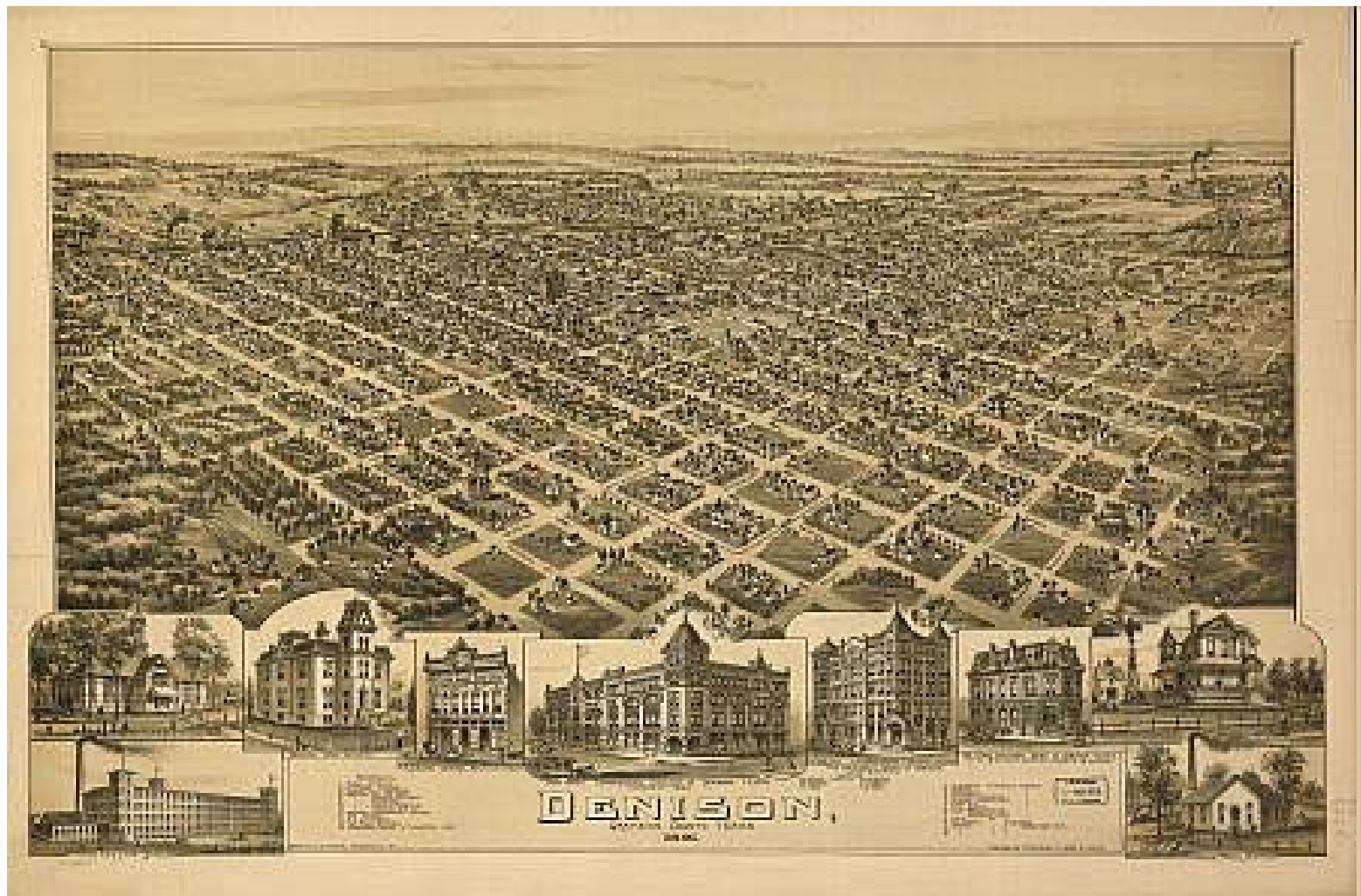


March 30, 2007

# Texas Water Development Board

*Mission:*

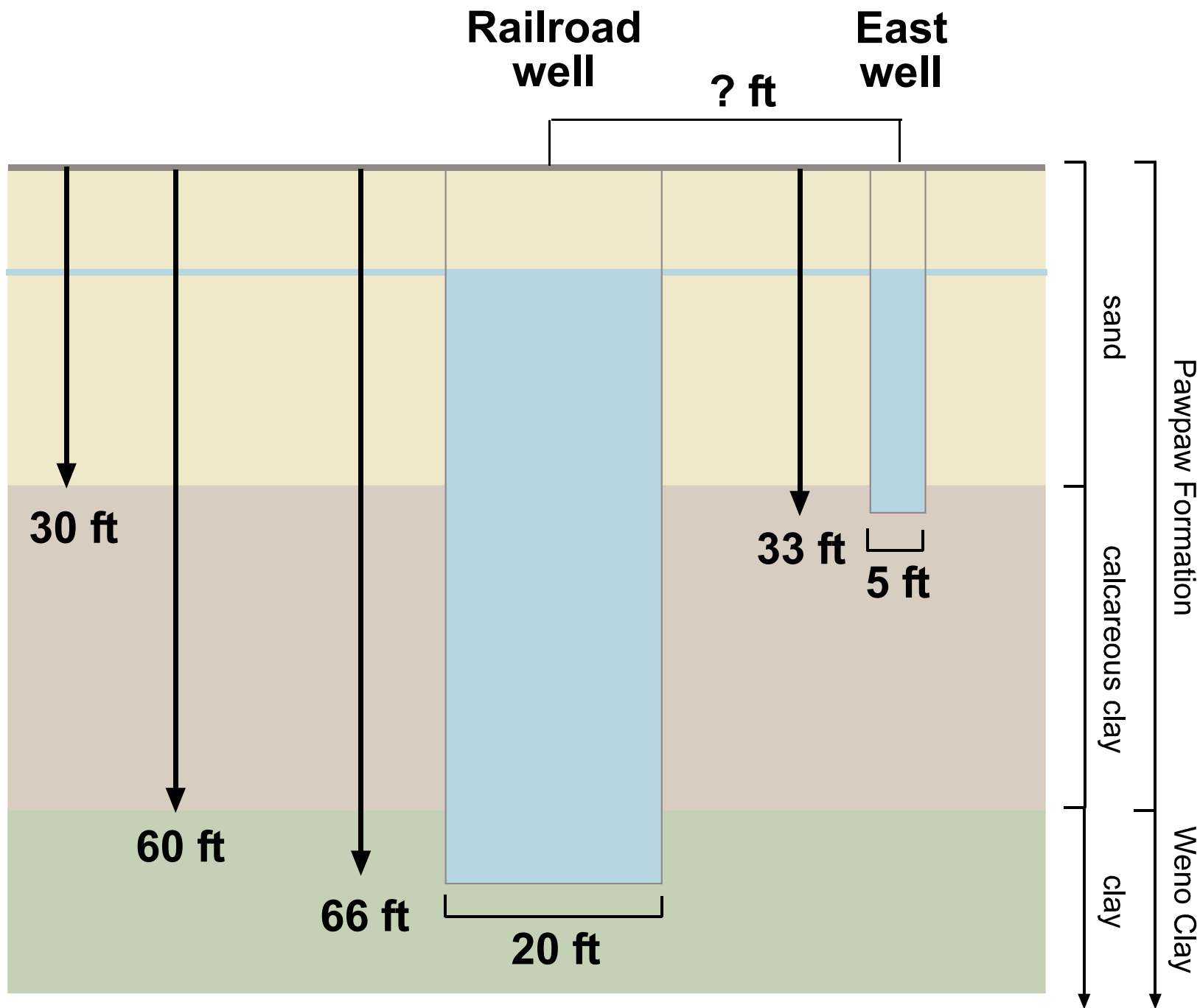
“Sustainable, affordable,  
quality water for Texans, our  
economy, and our  
environment.”



**Denison, Texas**



# Denison, Texas



No. 4018

No. 1333, 5th Dist

No. 1333

W. A. East

Appellant's Plaintiff in Error.

vs.

H. I. C. R. R. Co.

Appellee's Defendants in Error.

From the District Court of Grayson Co.

Applied for by Masley & Epstein Attorneys  
for Appellant on the 12<sup>th</sup> day of Jan'y  
1903 and delivered to Masley & Epstein  
on the 20<sup>th</sup> day of January 1903

C. L. Arnold  
Clerk District Court Grayson County.

Filed in Court of Civil Appeals, at Dallas  
the 2<sup>nd</sup> day of April 1904

George Blair Clerk.  
Court of Civil Appeals—5th Supreme District of Texas.

Attorneys for Appellant.

P. O. Address.

Attorneys for Appellee.

P. O. Address.

5th Dist

No. 1333

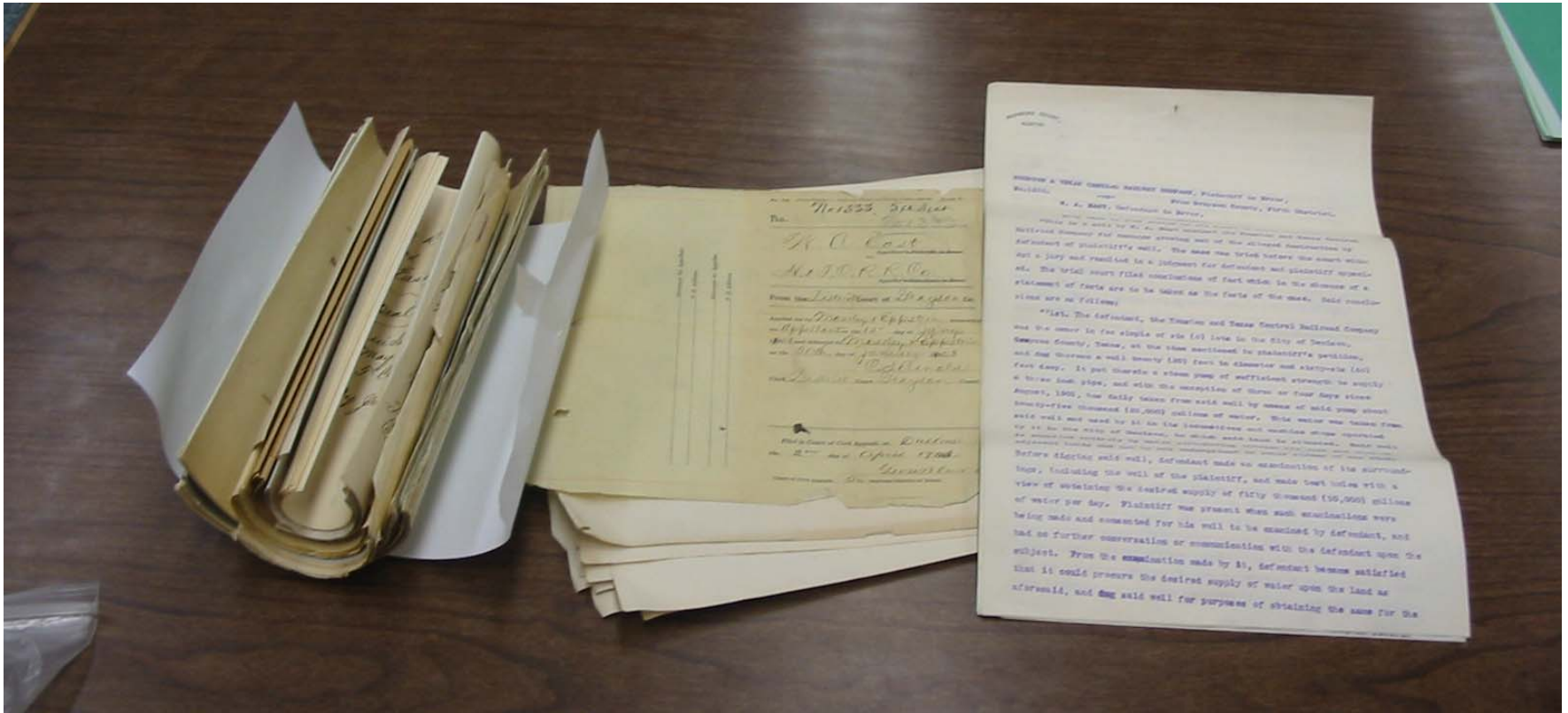
Filed in Supreme Court  
May 18 1904

J. J. Edwards Clerk

By J. J. Edwards Deputy

Appeal reversed  
District Court affirmed  
June 13 1904

# Rule of Capture



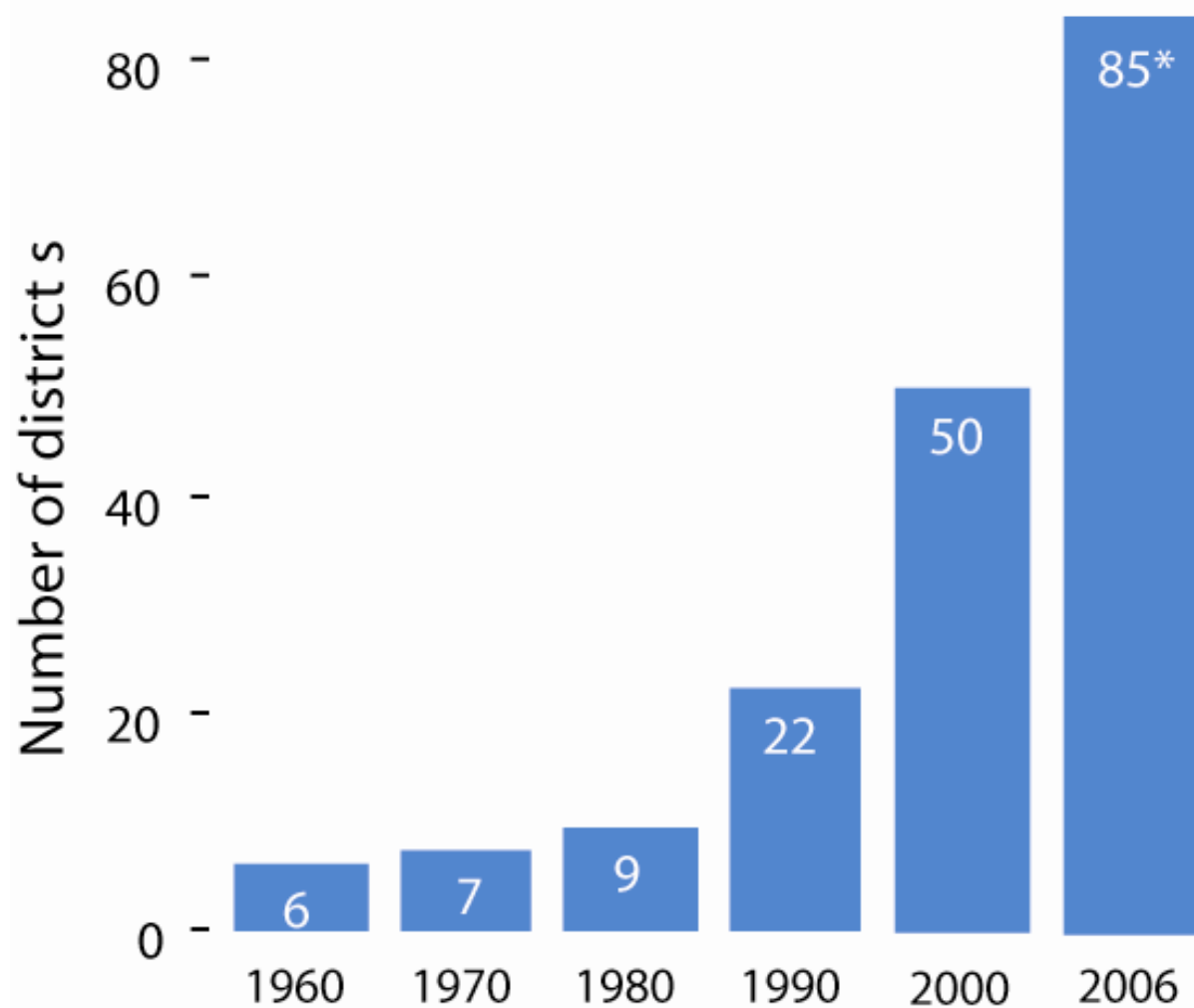
...so secret, occult and concealed...

# Comanche Springs





## Number of Confirmed Groundwater Conservation Districts

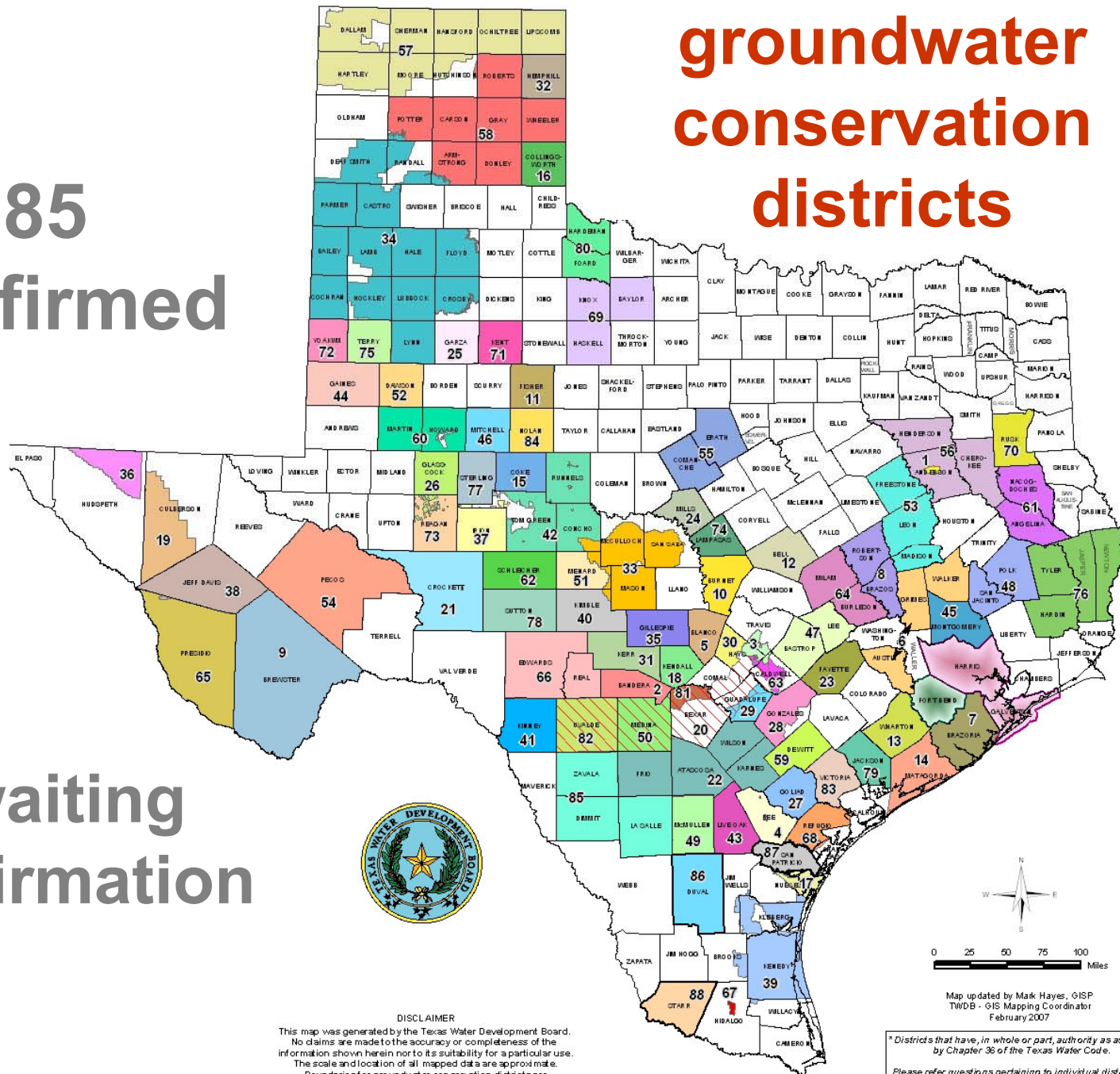


\* 3 additional districts waiting  
for confirmation as of 2/07

# groundwater conservation districts

85  
confirmed

3 waiting  
confirmation



#### DISCLAIMER

This map was generated by the Texas Water Development Board.  
No claims are made to the accuracy or completeness of the  
information shown herein nor to its suitability for a particular use.  
The scale and location of all mapped data are approximate.  
Boundaries for groundwater conservation districts are  
approximate and may not accurately depict legal descriptions.

Map updated by Mark Hayes, GISP  
TWDB - GIS Mapping Coordinator  
February 2007

\* Districts that have, in whole or part, authority as assigned  
by Chapter 36 of the Texas Water Code.

Please refer questions pertaining to individual districts to  
the district themselves.

# EAA

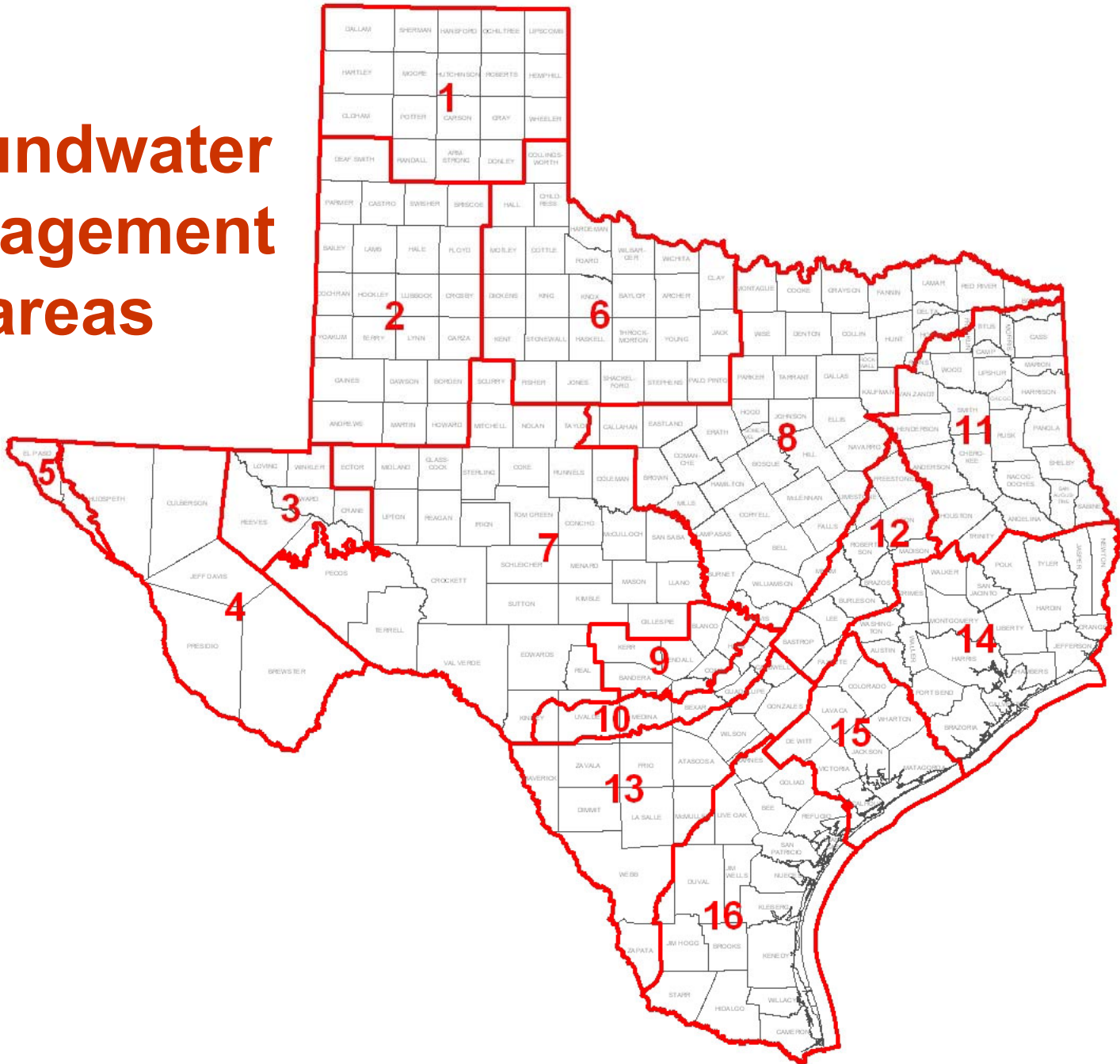
U. S. GEOLOGICAL SURVEY

WATER-SUPPLY PAPER NO. 13 PL. I.



RUN-OFF OF SAN MARCOS SPRING.

# Groundwater Management Areas





## Two new terms



Desired Future Conditions



Managed Available  
Groundwater



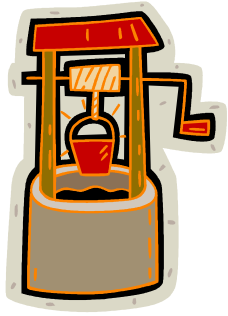
# Desired Future Conditions

- The desired, quantified conditions of groundwater resources (such as water levels, water quality, **spring flows**, or volumes) at a specified time or times in the future or in perpetuity.



# Desired Future Conditions: Examples

- water levels do not decline more than 100 feet in 50 years
- water quality is not degraded below 1,000 milligrams per liter of total dissolved solids for 50 years
- **spring flow** is not allowed to fall below 10 cubic feet per second in times during the drought of record for perpetuity



# Managed Available Groundwater

- $DFC + GAM = MAG$
- Desired future conditions + Groundwater Availability Models = **Managed Available Groundwater**

# Timing is everything...



# More about groundwater in Texas



Groundwater in Texas:

[www.twdb.state.tx.us/groundwater](http://www.twdb.state.tx.us/groundwater)

- **Ted Angle:**  
(512) 463-3879

