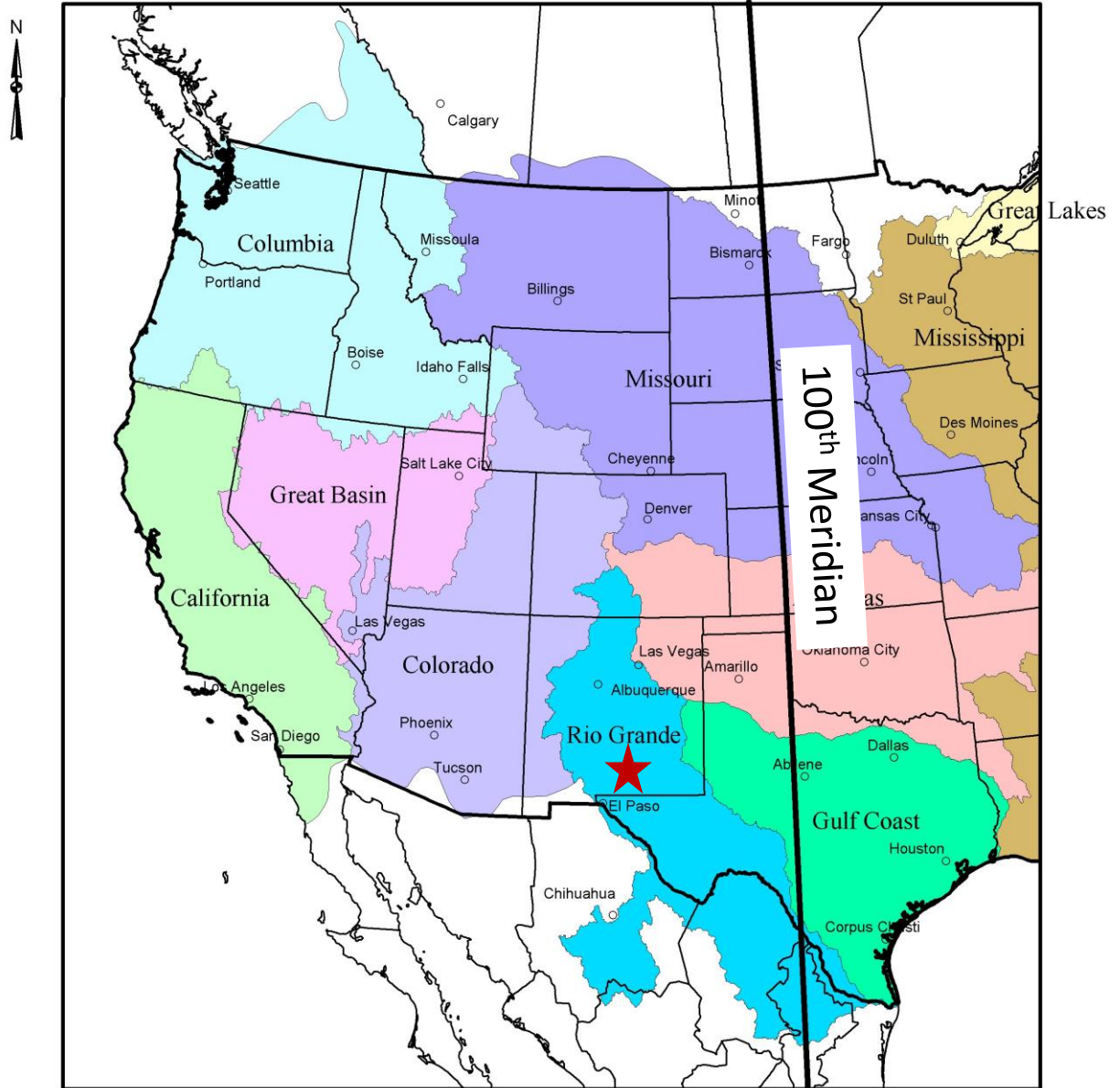


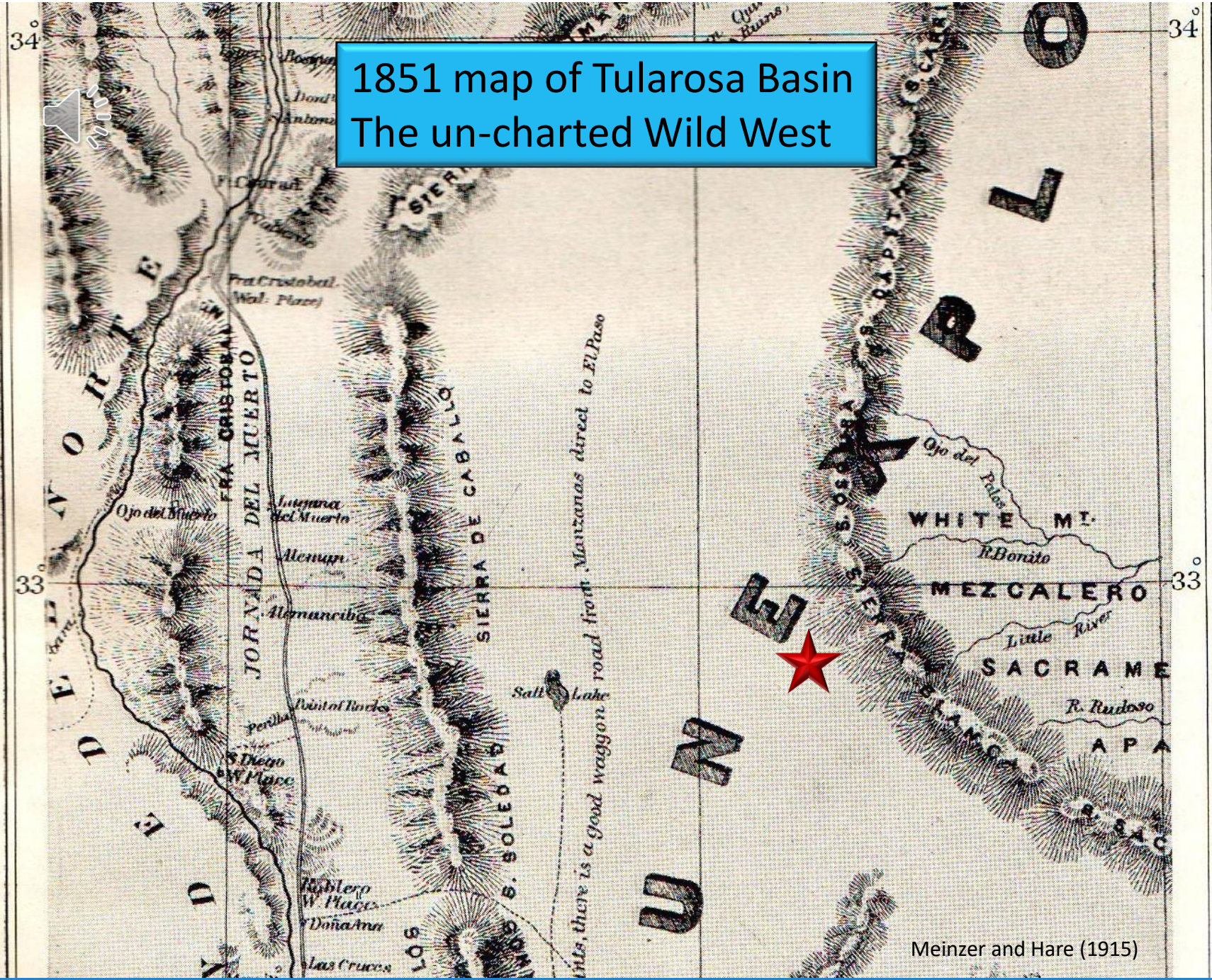
The Saga of the Alamogordo Regional Water Supply Project

Steven T. Finch, Jr.
John Shomaker & Associates, Inc.
MSSC 2019 Annual Conference
February 28, 2019

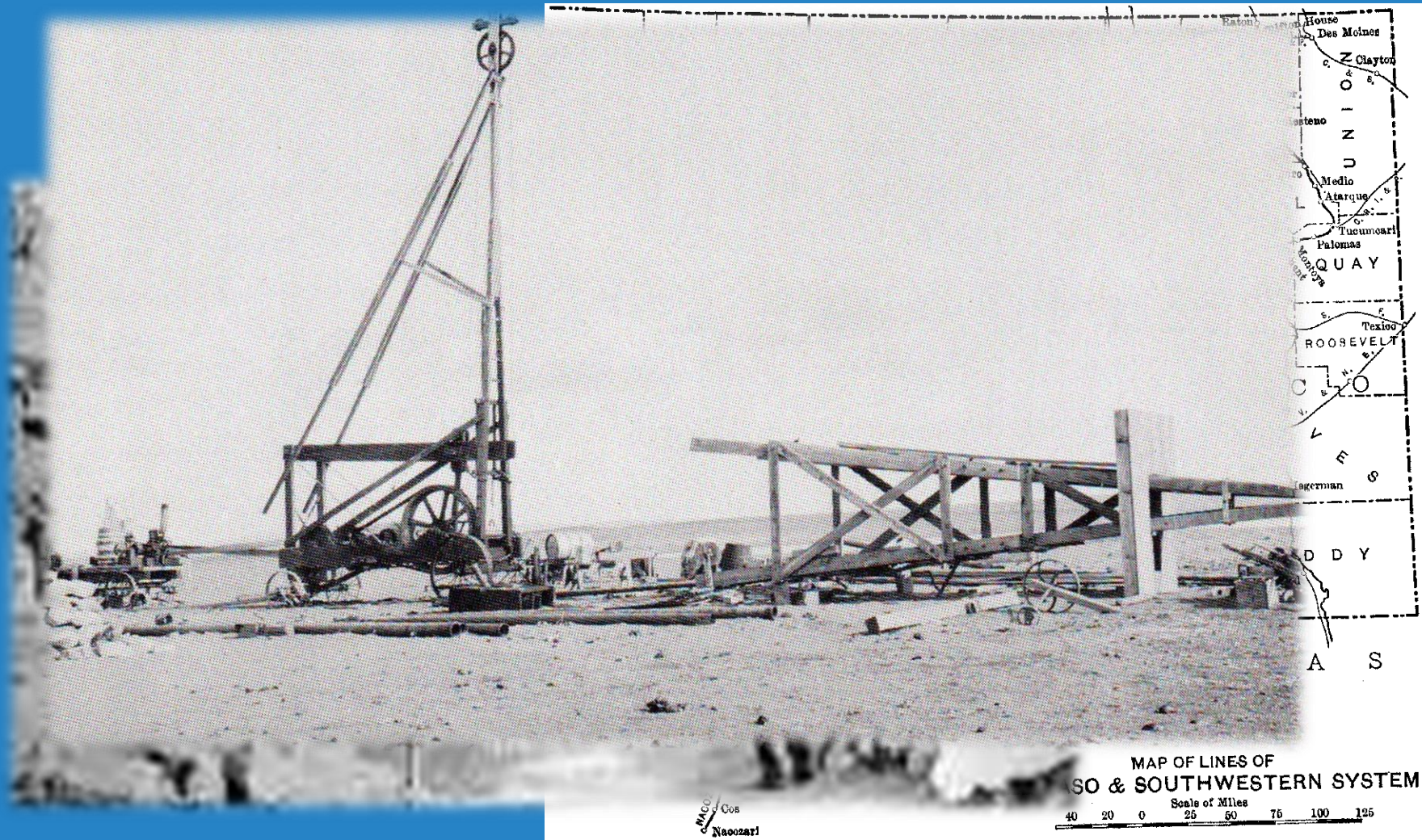
Alamogordo
is located
west of the
100th
Meridian in
the Tularosa
Basin of
south-central
New Mexico



1851 map of Tularosa Basin
The un-charted Wild West



Between 1880 and 1910 the Railroad and Well Drilling Technology Changes Everything – Alamogordo founded in 1898



Alamogordo - Fat Cottonwood Tree Reliant on Surface Water

Meinzer in 1911 –

The

“God Father of Applied Hydrology”

surveyed the Tularosa Basin

to find limited

surface water and abundance of

brackish groundwater.



In the Beginning of the Alamogordo Regional Water Supply Project there were Creosote Bushes and One Prince Albert Can - 1998



Hey Steve!
Help us find some brackish
groundwater that
no one else wants!



And So it Began -

Criteria for identifying a brackish groundwater source for the project:

- ❖ Adequate volume of stored groundwater of uniform quality (TDS ~ 2,500 mg/L)
- ❖ Potential for high well yield (>1,000 gpm)
- ❖ Project will not impact agriculture
- ❖ Proximity to Bonito Pipeline

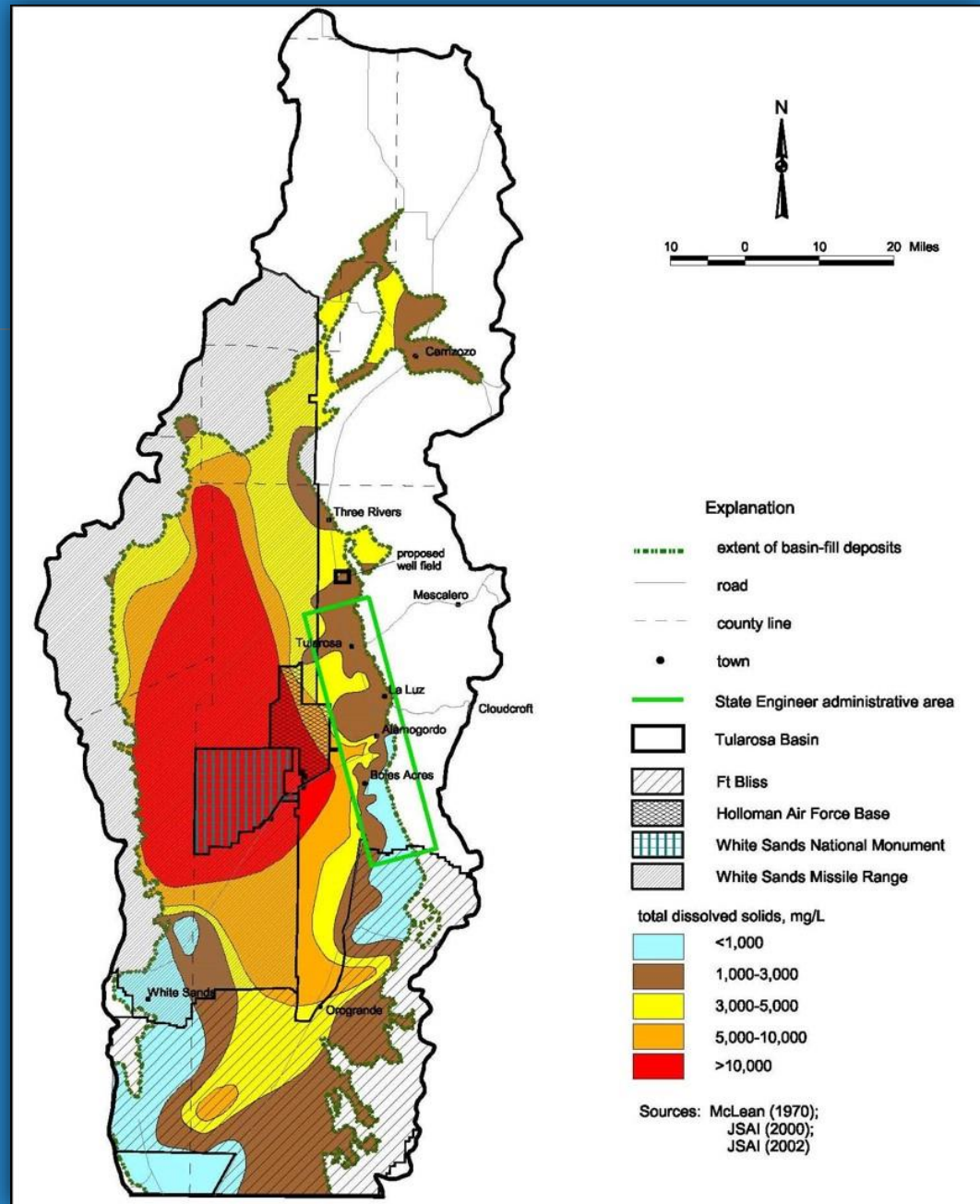
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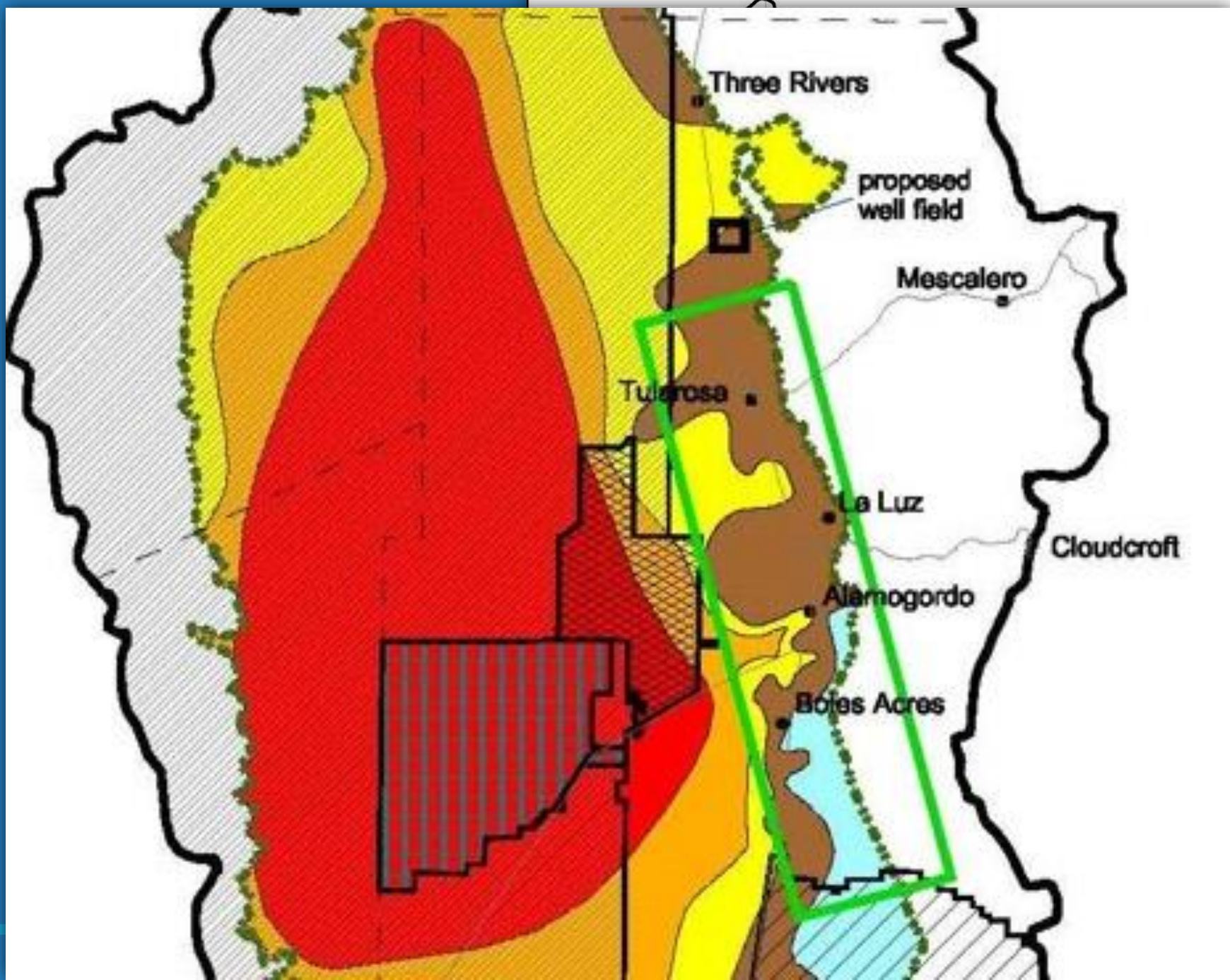


searched all night



Detailed map of fresh, brackish, and saline groundwater in the Tularosa Basin - YEAR 1999

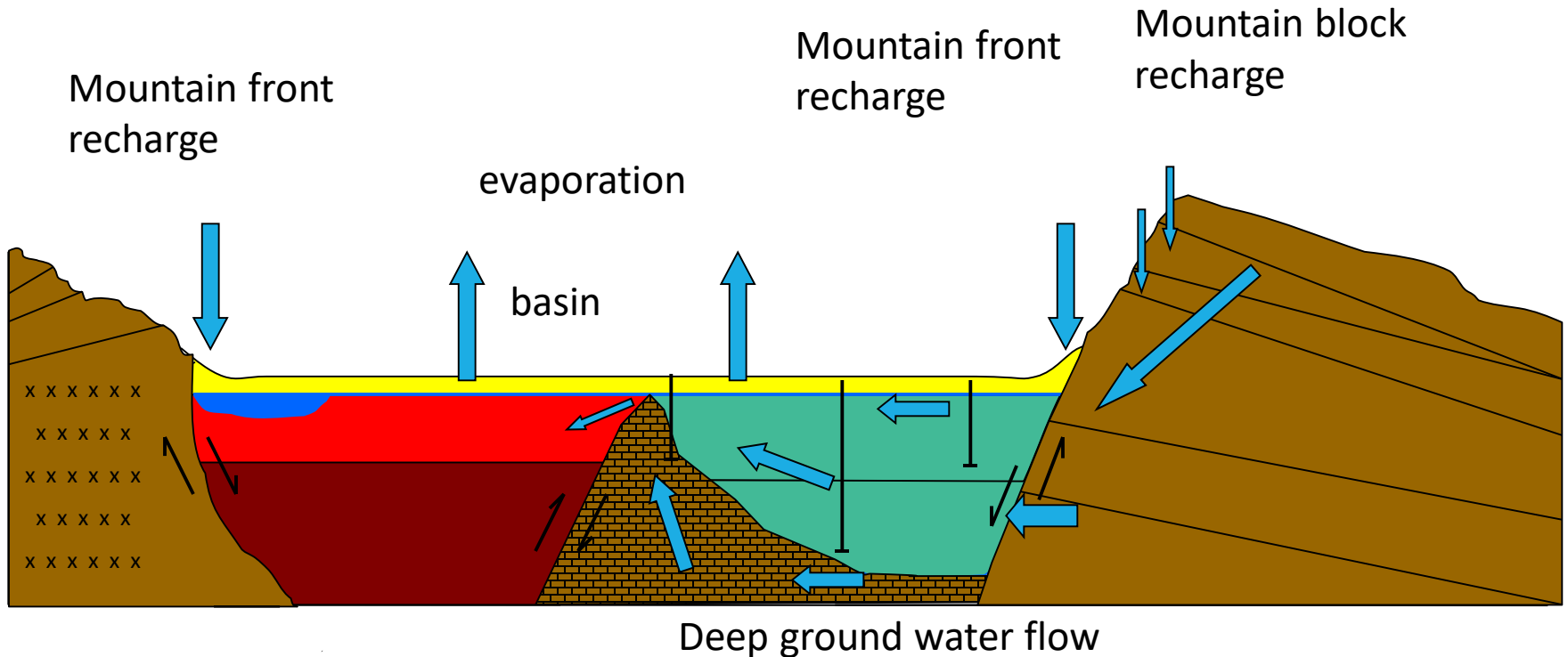




Conceptual Hydrogeologic Model

Alluvial fans with high well yield, brackish groundwater and recharge

West East



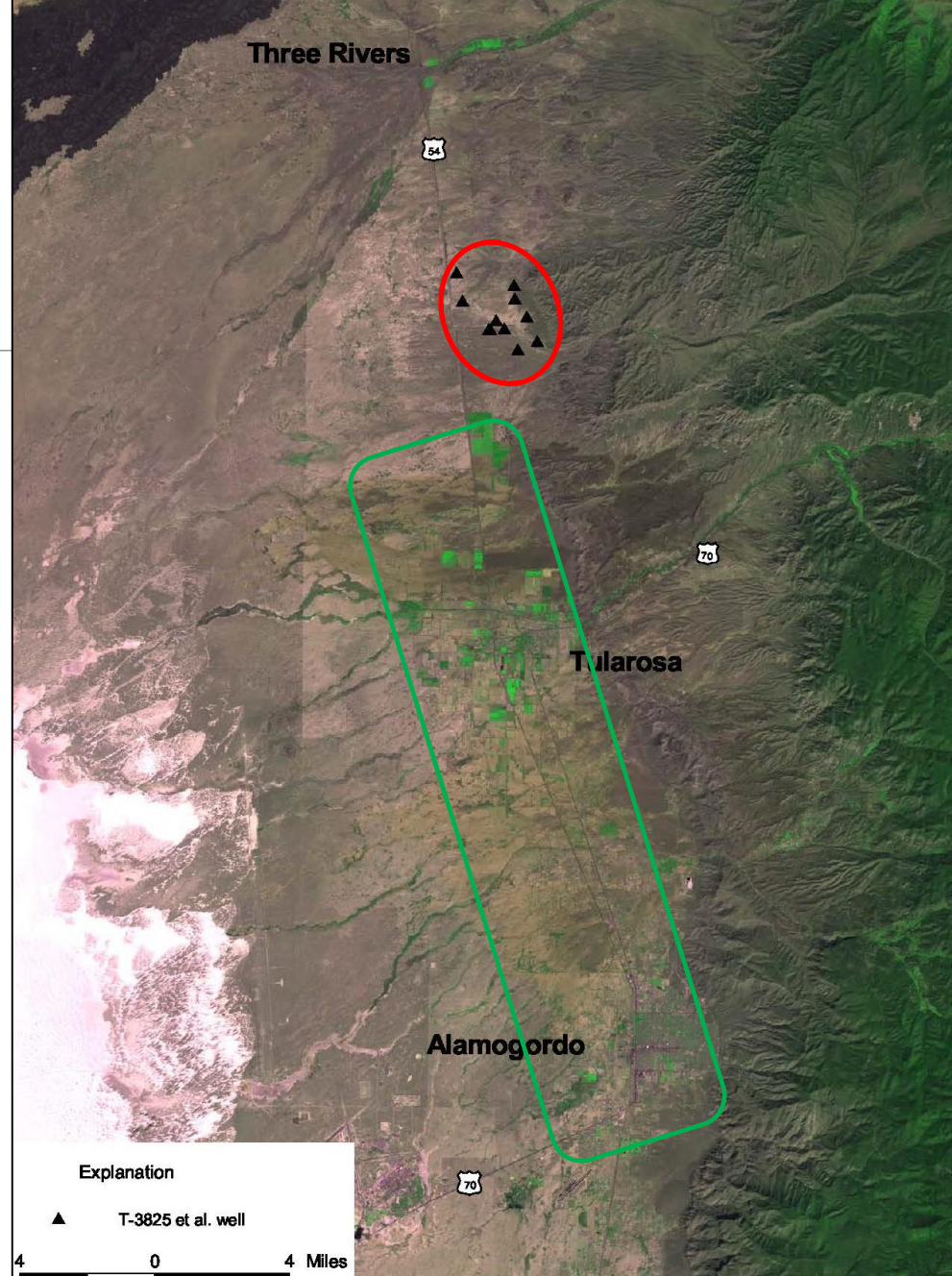


YES!

I FOUND PUBLIC BRACKISH
GROUNDWATER THAT NO
ONE HAS CLAIMED!



Far away from
agricultural
development



Original Test Well



RO Pilot Testing



YEAR 2002

Serving the Tularosa Basin since 1898

ALAMOGORDO

DAILY NEWS

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Alamogordo, New Mexico

MONDAY, JUNE 12, 2000

Fifty Cents

Reverse osmosis pilot project in place

By Elva K. Österreich
Staff Writer

Just south of Tularosa, on U.S. 54/70, sits a small compound with a large sign. "City of Alamogordo desalination pilot project," proclaims the sign.

Behind the fence is a reverse osmosis (RO) plant in miniature. The City of Alamogordo with the help of a local consulting engineering firm, Livingston Associates, P.C., is studying the viability of desalinating some of the 300 million-acre-foot of brackish (mineral/salt) water under the Tularosa Basin.

One acre-foot of water is the amount it takes to cover one acre of land with one foot of water, the equivalent of 325,830 gallons. This is enough water that one-percent of it could provide the city of Alamogordo with all its water needs for 200 years.

Reverse osmosis involves a

salt.

The Tularosa pilot plant is processing 25 gallons a minute out of an abandoned well producing 15 gallons per minute of bottled water quality water and 10 gallons a minute of highly mineral concentrated water, Eddie Livingston of Livingston Associates, P.C., said.

Livingston and his associates check the quality and production of the water daily.

According to Livingston, a common misconception regarding RO processing on a large scale is that the community would then be receiving bottled water quality in their homes. This would be expensive and wasteful, like pouring bottled water over oneself for a shower.

Rather, processed water would be blended with unprocessed water to match the quality of existing city spring water, the kind that comes in the mountain streams.

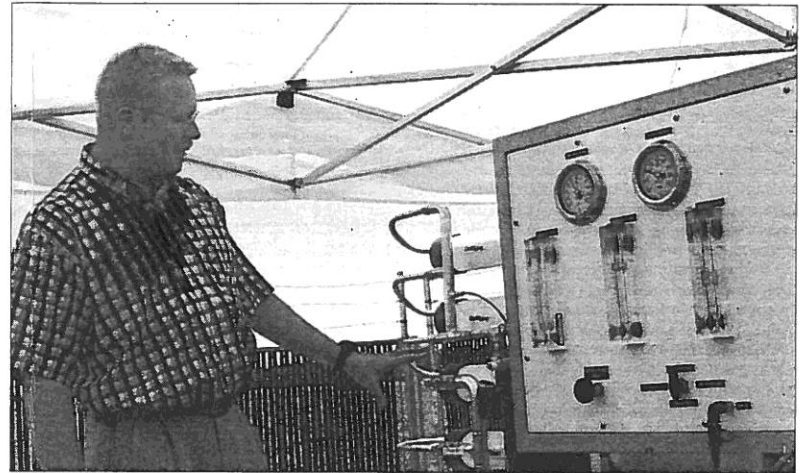
close by. The unit will spend two months at the location and then be moved to another location in the Tularosa Basin with a different density of brackish water.

Replacing the RO unit in Tularosa will be an electro-dialysis reversal system. Electro dialysis reversal uses voltage to draw water through a membrane. The results vary according to the amount of power used.

An electro-dialysis reversal plant is currently in use at White Sands Missile Range in the Stallion Gate area.

All this activity is part of a desalination feasibility study sponsored by the City of Alamogordo and the South Central Mountain Resource and Development Council to study water needs in and around the Tularosa Basin.

The first part of the desalination feasibility study will be complete by the end of 2000 and



Elva K. Österreich/Daily News
TALKING WATER — Eddie Livingston of Livingston and Associates P.C. describes the reverse osmosis process to members of the Tularosa Basin Water Planning Committee as they tour the reverse osmosis pilot plant set up near Tularosa.

water is where, and how deep the water is over the Tularosa Basin; a realistic prediction as to actual costs and benefits to the water consumer; a knowledge of available financing options; and a close estimation of actual costs of operation of an

RO plant to pursue a RO plant to supplement the Basin's water supplies. When funding fell through the plans were abandoned.

Since then, techniques have improved, machinery is more developed and materials are

estimated to cost 5.17 million. To increase the production of a \$5 MGD plant to a 10 or 20 MGD plant is also not so costly. It involves adding RO units, not building a whole new structure.

Information, definitions and statistics for this article were

STAFF WRITER

Members of the Alamogordo Department of Public Safety responded

response to a possible aggravated assault with a firearm.

According to DPS reports, at a little after 7 p.m., officers responded to the

Blvd. after a call from the female clerk. The investigation revealed that the clerk and a man who had entered the store began arguing about a private

more heated, the male pulled out a firearm and threatened to harm the clerk.

The suspect then left the area in a

hours after the incident. The incident is still under investigation.

Tulie residents eye RO plan

By ELVA K. ÖSTERREICH
STAFF WRITER

Last night representatives of the City of Alamogordo met with Tularosa officials and residents to illustrate plans for a well field 13 miles north of Tularosa. The wells would draw water of a higher than acceptable saline content, which then would be processed through a reverse osmosis plant located somewhere between the well field and Alamogordo.

Residents of Tularosa and the surrounding areas are concerned about the well field's effects on their own water. Wells and creeks have been drying up due to drought conditions in the past several years and putting more pressure on the water tables has made citizens leery.

Alamogordo City Manager Pat McCourt began the presentation by saying, "We have no desire or intention that's going to negatively impact surrounding water users. The state engineer will not allow that."



Ellis Nee/Daily News

LISTENING HARD - Numerous concerned Tularosa residents gathered in the Tularosa Community Center Monday to listen to a presentation on the proposed well-field and desalination plant north of Tularosa.

plans, added that Alamogordo has on top, Livingston said. At a water as taken out of the well

applications to reduce some additional power costs."

Len Stokes, water consultant for the city of Alamogordo, said what Alamogordo and surrounding areas need is a sustainable water supply for the long term. Before they can do anything, Alamogordo has to get the permits from the state engineer and go through the NEPA (Environment Protection Agency) process including studies and public meetings.

At this point in the meeting, longtime Tularosa resident Bertha Meeks called out, "Go into the white sands. Saudi Arabia learned to take the salt out and you can too," earning applause from the audience.

Stokes reiterated the project has not even been looked at by the state engineer who has to evaluate the application. If the wells would in any way endanger other people's water, the engineer would not approve it.

"If the springs dry up, we have to supply replacement water,"

Dead man could have fallen off a train

By MICHAEL SHINABERY
STAFF WRITER

A California man deceased apparently died when he fell off an eastbound train through Otero County near Alamogordo.

The body of Alfred Meeks of Bakersfield, Calif., was found on Monday, said Otero County Sheriff's Det. Norbert Sanchez. "It appears that he fell off the train," Sanchez said.

The body has been identified by the New Mexico Office of Medical Examiner, in Albuquerque, after an autopsy.

According to the investigation, Meeks was "deceased for 2-3 days" when his body was found, Sanchez said.

Commissioner considers

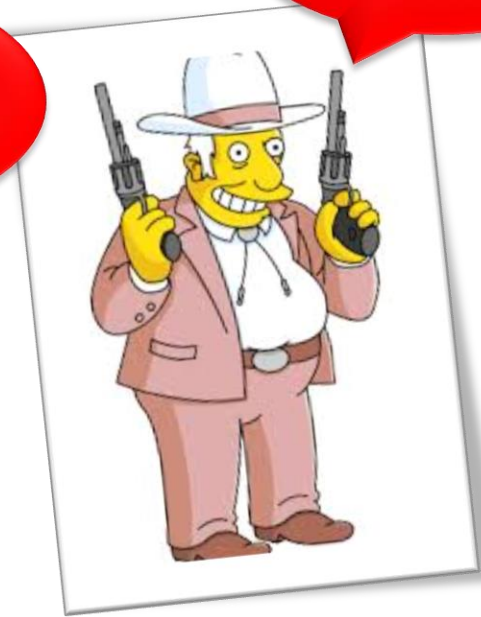
NO!



NO!



NO!



This is my public land and
no one can use it!



NO!



NO!



NO!



**The city should #&^%
So it will benefit me!**



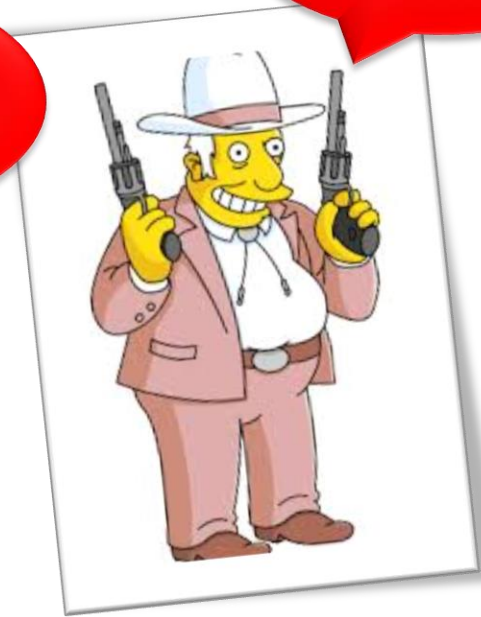
NO!



NO!



NO!



I'm going to win!



NMOSE 2003-04
District Court 2006-08
Court of Appeals 2009
NM Supreme court 2010
Final Permit 2010



Let the Hearings Begin

STANDING UP FOR THEIR TOWN — Tularosa residents stand outside the Alamogordo Civic Center last Tuesday letting their feelings be known about the prospect of having an Alamogordo well field north of their town. An ongoing hearing in front of the State Engineer's office is taking place at the center last week and the rest of this week.

Elva K. Österreich/Daily News

Alamogordo Regional Water Supply Project 2015



MUSIC by California Guitar Trio

