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City will save well field for a 'rainy-less day'

EDITOR'S NOTE: This is the second of two stories outlining steps San Angelo has taken in its search for a long-range water resource.

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April 2, 1971 was an unusually cool day for spring, but dry and rainless, a circumstance San Angeloans had grown unhappily accustomed to.

It had been rainless so long, in fact, that citizens tried not to allow their thoughts to dwell on the state of the lakes: there were 6,780 acre-feet of water in Nasworthy, and the Twin Buttes Reservoir seemed scarcely more than a puddle, with only 2,186 acre-feet behind the giant length of its dam.

It added up to what was called a little more than four months' supply of water.

So it was heady news to read in the copies of The Standard-Times that carriers flung that afternoon onto unwatered lawns that the City of San Angelo had wound up the negotiations with the Baptist Foundations of Texas for the water rights to 26 sections of ranch land that lay atop a giant underground formation. Geologists speculated it contained at least 70 million acre-feet of water.

Supper-table talk across the city focused on the fact that water rationing and the more serious threat of a really critical water shortage had finally been met with a long-range remedy.

Until then, officials who had developed chronic, worried frowns had come up only with temporary measures. Just a week earlier, a deal had been made with farmers and ranchers along the South Concho River to stop irrigating for a year in return for about $80,000 in cash compensation.

Another project was in the works, to pipe well water from the Hulldale area of Schleicher County here.

But those remedies didn't promise a permanent balm for the city's water ills.

The deep water rights did — and eventually they were augmented by similar rights under the adjoining G. Rollie White Estate lands.

The last of the legal transactions is due to be wound up next week, making San Angelo the owner "forever" of the rights to the deep water under about 42 sections of White land and more than 18 sections of the Baptist acreage, in which a life estate is held by Mrs. Aileen Noyes Miller.

Much has happened in the 16 months since the April 1971 announcement.

A first test hole was started in July on the Miller land in the corner of Concho County, several miles southwest of Melvin.

To fully penetrate the Hickory formation, the well was drilled to 3,448 feet. Water of acceptable standards, but vary warm — about 96 degrees — was pumped from the well. The hole was a relatively small one, and it penetrated several different formations — including several in which water quality is poorer than what's found in the Hickory sandstone.

That's why it is difficult to compare

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Long-range water

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that water with what was found in the second test hole — drilled larger and capable of being used as an actual producing water well. Lab tests show the second well's water is of a somewhat higher quality.

The second well, about five miles southeast of the first, is in McCulloch County, south and a little east of Melvin.

The upper formations were cased off to keep out the water from nearer the earth's surface. The second well, located on the White Estate acreage, encountered the Hickory formation nearer the surface than the first test had.

The driller hit the Hickory at 2,250 feet, 745 feet higher than on Test Hole No. 1.

In his official report to City Commission, furnished last week, Midland hydrologist Ed L. Reed, furnished a lab report that shows the water in the second test well had a temperature of 92 degrees and contained just over 500 parts of total dissolved solids per million parts of water and its total hardness (calcium-carbonate content) was put at 334 parts per million.

The total dissolved solids content is similar to the water in the Spence and Twin Buttes reservoirs now, according to Water Supt. Tom Koederitz. Nasworthy has a higher ratio. "The water we're getting at the treatment plant here now has about 800 to 900 parts solids per million," said Koederitz.

The state calls the acceptable range 500-1,000 parts of solids per million.

The hardness factor in the McCulloch County water is a little higher than what San Angelo is getting right now — the hardness is about 300 parts per million, says the water chief.

In the spring of '71, San Angelo water was measured at a whopping 1,436 ppm of dissolved solids and the hardness was put at 588 ppm.

Reed recommends spacing the deep water wells about one to a section of land.

He says that number of wells, producing at his recommended rate of 500 gallons a minute (although they are capable of pumping well in excess of that, judging from the test holes) could supply 21 million gallons of water a day to San Angelo every day for 20 years with a resulting drop in the underground water level from 430 feet to a point 1,200 feet below the surface.

By drilling more wells, the city could get about 40 million gallons a day if the need ever appears. Original 1971 estimates of total costs of drilling wells and building a 55-mile pipeline were put at $6 to $8 million.

Today, city officials are prone to talk in terms of $15 million — that many bonds could be issued much more conveniently 10 years from now, when present debts are paid down to a much lower figure, they say.

A bond issue now wouldn't be appealing to voters, they also figure, with the city's lakes holding about 100,000 acre-feet of water from the August '71 rains that broke the drought. (Some relief came less than two weeks after the April 2 deal was announced, but things were getting very droughty again by August.)

Even if they don't want to okay bonds to build a pipeline now, few gripes are expected from San Angeloans at the 7½ per cent increase in water rates that is expected to help pay for the two wells a year Reed believes the city needs to drill, to furnish more information about what's under the ground.

One swallow doesn't make a spring or two test holes a sure-fire well field, the Midland man figures.

Nobody has made any definite plans on the drilling, but one thought that's been broached is that it might be economical to let a contract for four wells at once. That could be accomplished by waiting until near the end of the 1973 fiscal year (which ends Sept. 30, 1973) and pay for the two wells each out of the 1973 and 1974 budget.

The rationale: The city would get a better price from a contractor for a four-well cluster than if he were bidding on a single hole.

Reed's report maps the well field, as he thinks it could be drilled most economically, thus: 27 new wells, all located on the White land — plus the two test holes to make a total of 29 wells.

All but six of the proposed well locations are in McCulloch County, two are just east of the McCulloch line in Menard County, and two lie in Concho County. One of those two, at the site of the first test hole, is on the Baptist land.

An alternate well field pattern prepared by the Freese engineering firm proposes locating four of 29 wells on the Baptist lands.

City Manager Dick Howard points out that Reed drew his well field pattern before it was decided whether the city would acquire all or any part of the Baptist lands.

"When the time comes to drill, we will go back to Ed Reed and ask for recommendations on where to start drilling," Howard said.

The city is obligated to pay the landowners a combined minimum royalty payment of $18,000 a year, whether any water is taken out of the deep wells or not.

Whenever the pipeline goes into operation, the $18,000 will buy water at the rate of 2 cents per thousand gallons — and the 2-cent rate also will apply to water in excess of the first $18,000.

The water rights are costing the city $5 an acre, plus another 50 cents an acre for options.

Rights, options, well drilling, engineering, right-of-way purchase, pipeline-building. It all adds up to a great deal of money.

Still, the project is one that has drawn as little criticism as any municipal undertaking in the memory of longtime San Angeloans. That's in spite of the dubious success of another pipeline, the one built to bring surface water her from the Coke County Spence lake.

It's apparent most San Angeloans feel more comfortable knowing all that water is there, safely under the ground, ready to tap whether the rains come or not — and killing off for all foreseeable years any fear that San Angelo could end up a waterless ghost town.

Overstated? One year ago, that [illegible] a distinct possibility.