WATER DEEPLY

Getting to the Roots of California's Drinking Water Crisis

July 5, 2017

By: Tara Lohan

The epicenter of the state's drinking water catastrophe is in the San Joaquin Valley, where 200,000 people have struggled to obtain clean, safe water for decades.

SANGER, CALIFORNIA – Carolina Garcia is a gracious hostess, offering visitors baked goods still warm from the oven and peaches picked fresh from her backyard, which is a tightly packed homestead of fruit trees, grapevines and tomatoes. Bandannas wave along a laundry line, like a colorful flag, and behind the woodpile are constantly chattering chickens and a vocal trio of sheep.

Inside, the modest one-story house bustles with family. Garcia and her husband have four children, with another on the way – a household she describes as humble but happy.

They are lacking just one crucial thing: clean drinking water.

The Garcias live in a small neighborhood of about four blocks called Tombstone Territory, an unincorporated community in Fresno County in California's San Joaquin Valley. The name gives it a Wild West feel, but it is less than 1 mile from the town of Sanger, population 25,000, and 2.5 miles from the nearest Starbucks.

When it comes to water, however, it feels pretty isolated. Unlike Sanger, which has a centralized community water system, Tombstone residents including the Garcias rely on private wells. Three months ago the family learned that the water they pump from their well had levels of nitrate above state health standards and high levels of bacteria, the latter likely to be the result of faulty septic systems in the neighborhood. Nitrates can be especially dangerous and even deadly for infants because they decrease the ability of their blood to carry oxygen.

Now the Garcias rely on bottled water for drinking and cooking, buying as much as they can afford. "We buy all the necessary food for our children and we buy the water. But that might mean we buy less food for our children," Garcia says.

They are not alone. As thousands of wells began coughing up dust during California's five-year drought, a problem bigger than water shortages came into focus: Many communities in the state lack clean, safe drinking water; some have done so for many years.

This is not just a problem for people with private wells, like the Garcias. Across California more than 1.5 million people rely on drinking water from a community system that has a water quality violation that could impact public health, according to an estimate by the state using 2015 data.

But that number fails to capture the complexity of the problem.

First, it doesn't count people like the Garcias. There are some 2 million private well owners in California who are not regulated by the state and therefore are not required to test their wells and report any violations. The Garcias did not know that their well was contaminated until a local nonprofit agency, concerned about water quality in the area, knocked on their door and asked to test their supply.

Second, it does not differentiate between sporadic and chronic water problems. The number of people lacking safe drinking water consistently, not just intermittently, is much lower. The heart of the state's problem boils down to about 200,000 people served by roughly 300 water systems, according to Kurt Souza, assistant deputy director for the Division of Drinking Water at the State Water Resources Control Board (SWRCB).

This number is much smaller than the 1.5 million people affected by water quality violations each year, because many of those violations were short-lived, explains Souza, with some lasting only one day.

By contrast those 300 systems, “either need a new source [of water], to be connected to a compliant water system or they need a treatment plant,” he says. “They don’t go in and out of compliance, they are out of compliance all the time and they need something to fix it.”

To understand why a wealthy state like California, the world’s sixth-largest economy, has so many people going without one of life’s most basic necessities, we have to look at why there is a lack of access to safe drinking water, and why it persists.

All Over the Map

If you ask Californians who live in communities with unsafe drinking water how bad things are, they will tell you in no uncertain terms that the situation is a crisis. But unlike the nation’s most visible water crisis in Flint, Michigan – where 98,000 people were drinking water tainted with high lead levels for two years before the full story came to light – California’s drinking water problems do not exist in one central location or involve one culprit contaminant. The state’s problem didn’t begin on a particular date and even the number of people feeling the impact changes over time.

If you look at a website the SWRCB launched this year called the Human Right to Water Portal, which tracks the 300 or so chronic offenders, you can see California’s problems are literally all over the map, stretching nearly 1,000 miles from Calexico on the Mexico border to Crescent City in the north of the state. Unlike an earthquake or flood, the drinking water catastrophe did not strike suddenly but has been a slow-motion disaster unfolding over decades.

In some cases the water quality problems stem from agricultural pesticides no longer in use but still found in groundwater, such as 1,2-Dibromo-3-Chloropropane (DBCP), classified as a probable carcinogen. In other cases they are the result of slowly accumulating levels of naturally occurring elements such as arsenic, which over time can cause blindness, paralysis and, potentially, cancer at high levels of exposure. Or they result from the gradual breakdown of infrastructure – leaking pipes, collapsing wells.

The problems are heavily concentrated in low-income communities of color, especially in the San Joaquin Valley, the southern half of California’s 450 mile-long Central Valley and the epicenter of the state’s $47 billion-a-year agricultural industry. There and in the Salinas Valley, nitrate is one of the biggest water contaminants; it infiltrates into groundwater when nitrogen is applied to cropland either through fertilizers or animal waste, according to a report from the University of California, Davis.

Other agriculture-intensive areas are hard hit, too, like the eastern Coachella Valley in Riverside County, where water systems serving a concentration of small mobile home parks housing farmworker families lack the infrastructure to treat arsenic and bacterial contaminants in their water.

There are some areas that you might not expect to see on the map, too – water systems in the wealthy Silicon Valley enclave of Palo Alto made the list, as did the wine-growing capital of Napa. The water systems had problems with disinfectant byproducts – chemicals formed when chlorine used to treat water reacts with organic matter. Two kinds of disinfectant byproducts occur most frequently in California – trihalomethanes and haloacetic acids, which the state says have been shown to cause cancer in laboratory animals and “may produce similar effects in people.”

For all the diversity of problems and locations, there is one common denominator: These repeat violations are most prevalent in small water systems.

The vast majority of Californians, more than 35 million people, get their water from one of about 400 urban water systems that serve populations of at least 10,000 people. And the vast majority of Californians drink clean, safe water.

But close to a half a million people get their water from one of about 600 water systems, which serve just 300 to 1,500 people each. A further 166,000 people are connected to nearly 1,000 water systems serving just 75 to 300 people each. It’s these smaller systems that are most problematic.

“Small community water systems typically lack the infrastructure and economies of scale of larger water systems, and in some cases cannot afford to treat or find alternative supplies for a contaminated drinking water source,” an SWRCB report found. “As a result, small community water systems may be more vulnerable to serving contaminated groundwater to their customers than larger water systems.”

Treating water to eliminate contaminants can be beyond the financial means of small systems, especially when health standards change. For instance, since the federal government in 2001 changed the maximum limit for arsenic from 50 parts per billion to 10 parts per billion, small water systems have struggled to comply with the new standard, which requires expensive treatment.

“And some of these same small systems will be hit with another regulationfor 1,2,3-trichloropropane (1,2,3-TCP) later this year,” says Souza, noting that the state is preparing to set a health standard for a contaminant it identified as carcinogenic in 1992. The contaminant was found in industrial solvents and two now-defunct fumigants that were used by Central Valley farmers.

“This is not just an issue of science and engineering, it’s an issue of adequate resources and leadership capacity,” says Susana De Anda, the co-founder and co-executive director of the Community Water Center, which advocates in California for clean drinking water as a human right.

Life at the Margins

“This is Third World living standards – this is California, this is the United States,” says Becky Quintana, describing life in her hometown of Seville, a small rural community of fewer than 500 residents in eastern Tulare County in the hulking shadow of the Sierra Nevada mountains, just 30 miles from the entrance to Sequoia National Park.

Seville has a gas station with a convenience store, an elementary school and a water well. From Quintana’s home you can see the community’s well – a large metal tank and some pumps – cordoned off by a chain-link fence. Behind that runs an irrigation ditch filled with murky water and some trash, and running through the middle of the ditch is Seville’s water pipeline, one that is prone to leaks. Bacterial problems from dilapidated infrastructure have plagued the community for years, says Quintana. Notices advising boiling water are common, as are taps running dry intermittently during summer months and, since 2008, unsafe levels of nitrate.

Problems in tiny Seville were so bad that in 2011 it was one of only a handful of places in the U.S. visited by Catarina de Albuquerque, an independent expert appointed by the United Nations Human Rights Council, who was investigating unsafe drinking water and sanitation conditions.

As bad as things are in Seville, the situation is more the norm than the exception. There are 310,000 people living in 525 low-income, unincorporated communities in the San Joaquin Valley where water quality problems are common. Being unincorporated means the communities lack a municipal government and often other basic services like streetlights, paved roads, emergency services and clean drinking water.

Many of the hardest-hit communities are in areas of persistent poverty, where generations of residents haven’t been able to get a leg up. A Congressional Research Service report in 2005 found residents in the San Joaquin Valley were poorer than those in central Appalachia.

Sixty-five percent of the population of these unincorporated communities are people of color and 64 percent are low-income, according to a 2013 report from the nonprofit PolicyLink.

Some of these unincorporated communities, called “island” or “fringe” communities, are near cities, even surrounded by them, but they have not been annexed into the cities’ borders and lack the services that urban areas provide. Others are considered “legacy” communities, which are in more remote areas, typically where people moved to be close to farm field jobs. Some of these communities even began as labor camps for farm workers, such as Rich Grove, Woodville and Farmersville, says Tom Collishaw, chief executive of the nonprofit Self-Help Enterprises, which has spent more than 40 years aiding rural residents in the valley.

Over the last century the communities have been built and shaped by a changing cast of arrivals, beginning with Dust Bowl migrants from places like Oklahoma, and African American farmers from the South. Later arrivals included seasonal farmworkers from Mexico, Japanese Americans released from World War II internment camps and, more recently, refugees from Laos and elsewhere.

African American communities such as Home Garden and Teviston “were places that were formed because people were not welcomed [in other communities] so they lived outside and became unincorporated communities,” says Collishaw. “The communities have changed over time, now they may be all Mexican-Americans, but the valley is speckled with those kinds of communities.”

An article in the California Law Review of 2012 by Camille Pannu, now director of the Water Justice Clinic at the University of California, Davis School of Law, sums up the situation: “The exclusion of communities of color and low-income white communities from the valley’s cities was not incidental – it was often an intentional policy choice, reinforced through de jure and de facto race- and class-based segregation.”

As evidence of this in practice, De Anda points to the Tulare County General Plan from the early 1970s, which called out 15 communities – 13 of which are still around – as having “little or no authentic future” and cited an explicit policy to essentially force them out of existence. “These non-viable communities would, as a consequence of withholding major public facilities such as sewer and water systems, enter a process of long-term, natural decline as residents depart for improved opportunities in nearby communities,” the plan reads.

Seville, Quintana’s hometown, was among those listed. “That’s an intentional discriminatory policy written in the books and, frankly, implemented,” says De Anda. “That’s a cheat sheet for me as an organizer to go door-knocking and tell them, ‘It’s not a coincidence that you don’t have safe drinking water in your community.’”

Clean Water on the Way

On a June day, you can see the still snow-capped peaks of the Sierra Nevada from the front yard of Quintana’s family home, a reminder of why irrigation ditches are running full as they pass through Seville.

Decades ago California managed to engineer a highly complex system of water conveyance to funnel snowmelt hundreds of miles through canals, reservoirs and pumps to transform arid land into one of the world’s most productive farming regions. But it’s a water system designed to feed the farms of the valley and the cities of southern California, not the region’s rural communities. The water runs right by them.

In Tulare County 40 of 41 community systems are reliant on contaminated groundwater as their sole source of drinking water. When small systems cannot meet health standards because they lack funds to treat contaminated water, residents are forced to either take a risk and drink water from the tap or spend twice for water – once for dirty water they can’t drink and once for bottled water.

Lucy Hernandez lives in West Goshen in Tulare County, a community where the water is contaminated by high levels of nitrate. “We’re to the point where we tell our kids not to drink too much water,” she says. “We either buy shoes for kids or water bottles. It shouldn’t get to that point. If we had safe drinking water that’s money we’d use for our families.” Hernandez says she has been spending $60 to $70 a month on bottled water for her family of seven, in addition to the regular water utility bill.

Goshen was recently able to connect to nearby Visalia’s water system. In Seville, Quintana sees a light at the end of the tunnel as a nearly decade-long battle to hook Seville up to neighboring Yettem’s water system is expected to be completed this year. But almost 10 years without safe water is too long, she says.

“We’ve always had these problems. We always addressed our [county] board of supervisors, but we were just people from a little community and we were really ignored for a lot of years. But the more people you get involved, other communities, you have a bigger voice and people do listen.”

In tiny Tombstone Territory, Carolina Garcia dreams of connecting her home’s water to the town of Sanger next door. And she wants her rural community to have access to the same services that cities enjoy.

“If we were connected with Sanger we wouldn’t have so many obstacles against us, we wouldn’t have to struggle to get these resources,” she says. “I just want people to know our needs out here and the services that we are lacking. We are out here in a rural area and hope they don’t forget about us.”

Thanks in part to the drought, the willingness of local residents to organize and the advocacy of nonprofit groups, the San Joaquin Valley’s drinking water problems are no longer a secret. And there is movement in Sacramento

from legislators and regulators to fund solutions. But cleaning up chronically contaminated water in 300 communities will take time and money. A lot of money.

Drinking water advocates are pushing for a new bill to provide several hundred million dollars annually to address ongoing operations and maintenance issues for water systems, but Jonathan Nelson of the Community Water Center says upward of $1 billion could also be required upfront for capital investments.

At least, now, more people who live in the communities are helping to shape the conversation of what those solutions look like.

“It’s important to recognize that just because you are low-income, or a person of color, or speak Spanish, you shouldn’t have to live in this reality,” says De Anda. “The current condition in California is a systemic problem and we need to address it from the root.”