

## Sewage in water the Haiti norm

### AID GROUP HELPS FILTER OUT BACTERIA TO GIVE PEOPLE 1ST CLEAN TASTE

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Photo by [Benjamin Krain](#)

Randolpho Zephirin, 23, bathes with water from a broken city pipe in the street in Port-Au-Prince, Haiti.

PORT-AU-PRINCE, Haiti — Adrienne Philosia sells household cleaning items from a makeshift stand on a quiet street, where a leaky city water pipe lies in an open sewage trough in front of a Presbyterian school, the Institution Racine.

Just behind her on the other side of the school's concrete wall, a team from Living Waters of the World - an aid organization that helps the world's poorest regions access clean water and improve sanitation practices - has begun installing a solar-powered water-purification system that will provide clean water for the neighborhood.

Philosia lives in the house next door, where she uses the water flowing from the broken pipe in the street to feed and bathe the seven family members who share her home. Her white dress with purple flowers looks remarkably clean and crisp for being scrubbed by hand with a bar of soap in buckets of dirty water.

"We purify our water," Philosia said. "We add clean water from the store to bad water and mix it up very good. That purifies it."

Many residents of Port-au-Prince use tin cans to scoop the rancid water that pools on street corners to bathe in. They drink straight from the pipe and use that water for cooking and laundry. Sewage flows freely along many streets, oozing out of trenches directly from houses.

Haiti's Jan. 12 earthquake killed more than 200,000 people and toppled thousands of buildings, leaving an estimated 1 million Haitians homeless and living in makeshift tents and shacks that fill every open lot and space in Port-au-Prince. The camps also dot the countryside outside the city along the southern peninsula near the quake's epicenter at Leogane. Most of the camps are filthy places, where the smell of raw sewage mingles with that of campfires and bubbling pots of food.

Concerns over feces-borne diseases like typhoid, cholera and polio are growing with each day at the hundreds of refugee camps.

Philosia's method of "purification" is one of many water myths among Haiti's residents.

"We're a product of where we grew up," said Karen Logan of Louisiana. "And if you grew up in a village where everyone drank from the well and didn't understand that it was the source of sickness, without knowledge of germs and disease, you wouldn't understand why you shouldn't keep drinking from that well or a broken pipe."

Education is part of Living Waters' mission in Haiti, with classes on sanitation and why it's important to use clean water.

Clean water and proper sanitation have never been prevalent in poverty-stricken Haiti, which spans the western half of the Caribbean island known as Hispaniola, as named by Christopher Columbus in 1492.

According to the World Health Organization, Haiti ranks last in the region of Caribbean, South and Central American nations in access to sanitary drinking water. In 2006, the latest statistics available, only 58 percent of Haiti's residents had access to sanitized drinking water.

And even that water is not considered clean enough to drink by United States standards.

The lack of clean water is directly related to Haiti's limited use of sewers. Even before the earthquake, just 19 percent of Haitians had access to sewage disposal that was separate from water supplies. The consequence is a nation riddled with diseases that many countries consider extinct.

When the Living Waters team first surveyed Institution Racine as a possible site for one of its water systems, it found the city waterline at the bottom of the sewage trough between houses.

"There is no clean water in Haiti," said Chris McRae of Fort Smith, a team leader for Living Waters. "And it makes a difference. Clean water is good medicine."

Living Waters has put more than 300 water-purification systems in 24 countries around the world. Twenty of those systems are in Haiti.

McRae has worked on more than half of the Haiti projects. The latest are solar-powered, so the schools and churches that use them don't have to supply power or fuel for generators.

The organization has dedicated more than \$100,000 this year to build new systems and refurbish older systems in Haiti and made Ferncliff Camp and Conference Center in Little Rock its solar-installation training camp.

"We survey new sites and locate water sources," said Logan, who tests water at new sites. "Sometimes it's a shallow well that's polluted or city water from a pipe. We're always looking for the next site."

Tests show that the site at the school carries the usual smorgasbord of bacteria and viruses.

"The whole thing in Haiti is bacteria," said Logan's husband, Dan, a cotton farmer from northern Louisiana. "The water looks pure and clean, but it's heavily polluted with sewage."

Mark Tew of Calico Rock, a retired electrical engineering professor at the University of Mississippi at Oxford, looked over the plans for the system as work began Thursday, explaining that the solar panels will create enough energy to power lights at the school as well as run the 20-amp water system.

By Friday, the system quietly purred and gurgled as it pumped 300 gallons of water from the leaky city pipe that runs down the street through the 5-micron and 0.5-micron filters, and the Ozonator. The Ozonator zaps the water with supercharged oxygen to kill any remaining germs and viruses, and then sends it into a giant holding tank on the roof.

The entire system costs about \$15,000 to purchase and install.

The water is pure enough for anyone, including the team members, to drink. Today the team members will inaugurate the water system at a community celebration and water-tasting.

Valdes Innocent, a Haitian, maintains all of the systems while training operators to educate the public about the importance of clean water. Within weeks of three of the systems being destroyed in the earthquake, he had them repaired.

"Only a small majority have clean water, though," he said. His family members still purify their water because they are not near a Living Waters facility.

A few blocks from the school, near a refuge camp where portable toilets overflowed, sending sewage into the street, a man lowered a bucket to collect water from a spewing city water pipe built over a main sewage canal.

"There is no problem with this water," said Isaak Kensley as he lowered the bucket and raised it again. "We put bleach in it. But it gives us diarrhea, of course. Water is life."

It's also his job. He sells this dirty city water for 3 gourdes [the Haitian currency], or about 7.5 cents per bucket, his only income.

At Darbonne, outside Leogane on Haiti's southern peninsula, a team at a Living Waters facility hustled to fill water bottles for a line of waiting customers. That water system is at a church and school compound that was badly damaged in the earthquake, but the system's little building near the road survived undamaged.

Living Waters partners with church groups to pay for two workers to operate each of its water systems. At \$57 a month, the workers make more than four times the average wage in Haiti.

"Sometimes we give away 80 gallons a day, but most of the time we give even more than that," said Esthene, who mans the Darbonne site.

Esthene said residents initially were hesitant to drink the water because it had no taste.

"Some people think that because this water is not bitter tasting that it is not treated, that it is not safe," he said. "We have to teach them that we make it safe."

On a path near the now-collapsed school, Junior Saint Rilus plays with friends. The smell of bodies still trapped in the rubble two months after the earthquake poisons the air with a pungent bitterness.

"We used bleach to clean the water. But it burned my mouth when I drank it," he said. "This water is without taste, it doesn't hurt."

Down the rough, dirt road even farther is the site where McRae's team plans to go next. McRae expects to take another team to Haiti in a few months. A well with a hand pump sits near a building that's under construction for the new water-purification system. A line of women with five-gallon buckets waits to fill up.

The well was a water source for 400 families. Since the earthquake, another 2,500 people have moved into town, building a refugee camp of tents and ramshackle shelters across the street.

McRae's team heads down the road to a quake-destroyed orphanage to check on a Living Waters system installed there last year. The team members find the 300-gallon holding tank that once sat on the roof of their water building sitting in the mud beside the polluted well. When Living Waters workers tested the water there before installing the system last year, they found the well to be one of the most polluted water sources they had ever seen.

More than 80 children live at the orphanage. Most of the children were abandoned by their parents because they couldn't afford to feed them. More than one little boy there bears scars on his head from fly bites that resulted in maggots that had to be removed.

Ann-Sophie Reveil twists her friend's hair into spirals held in place by thread. Her own hair is braided and held by one of her few precious treasures, a sparkly pink barrette.

"It's a better life here than at home," she said.

The Canadian military arrived soon after the earthquake and built wooden dormitories for the children. Each building held rows of wooden beds stacked three-high like shelves. Plans are under way to replace the water system. In the meantime, a large truck arrives with cases of bottled water, a delivery arranged by another aid organization.

"There is such a need, we could put one of these [water systems] up every mile or so," said John Guice of Winnsboro, La., part of the Living Waters team. "It's a matter of money."

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