

KENYA



Shiraha Mixed Secondary School

In Honor of Jack McAtee

2016 Investment

WATER

Community Details

There are currently over 250 families who consider the community of Shiraha home. In 1981, a successful borehole was drilled at one of the local schools, the Shiraha Mixed Secondary School, that provided water for the people of Shiraha until 2005, when it developed mechanical problems. By this time, the population in Shiraha had risen dramatically, greatly increasing the demand for water. After the pump broke, the water flow from the borehole was not enough to sustain the community and the students, so the community left the well to be used only by the school and reverted back to fetching water from springs that were located in the valleys. In 2009, this borehole experienced further issues when its walls collapsed, trapping the pump inside, and rendering the borehole unusable. At this point, the water source from which the school collected its water was a stream that was two kilometers away. Students had to collect the water, and because of the number of students, 177 boys, 153 girls, 18 teachers, and 13 support staff, totaling 361 persons, the amount of water collected per day was 1,000 liters, which was never enough to sustain the school's needs. Being a day school, students used water collected from many different water points throughout the day, such as streams, springs, and rainwater barrels. Most, if not all, of these sources provided water that left those who drank the water sick with illnesses and symptoms like typhoid, malaria, stomach pains, common cold, and fevers.

In trying to figure out the best remedy for the students and families of the Shiraha Mixed Secondary School, school officials sought help from the local government, but they did not have enough funds for a repair. The government officials suggested that the school seek help from a local water pump equipment supplier. This company came to look at the well but said they could not provide any assistance until the borehole was in working condition. At this point, knowing that the Living Water Kenya field team had the equipment and experience necessary to repair boreholes, officials from the community water committee stepped in and wrote a letter to Living Water explaining their predicament and seeking help.

The Living Water Kenya team arrived in the community ready to repair the borehole. After a handful of failed attempts, the borehole was deemed irreparable, and it was decided that the best course of action would be to drill a new well adjacent to the old one. After drilling 52 meters, an aquifer was reached. Then, casing was installed, the water was flushed, a gravel pack was installed, a submersible pump was put in, and the water was chlorinated to complete the well. Next, community members poured and leveled concrete for the concrete slab that would surround the well. This slab helps prevent contamination of the water and has an area for water to drain off so that it does not pool and attract malaria-carrying mosquitoes. In addition to the labor provided by the community, materials and money were also donated. These contributions were a way for the people of Shiraha to demonstrate their appreciation and investment in the long-term success of their well. After the concrete had dried, Living Water constructed a six-meter steel tank tower that carries a 10,000-liter water main reservoir tank. The equipment supplier that the community first contacted supplied a solar water pump to the community, which will pump water into the water reservoir during daylight, allowing the water level in the reservoir to remain high so water is always accessible. Then, water was distributed from the reservoir by gravity flow to four water points that include the Shiraha Primary and Secondary Schools, a health center, and a church. At the Shiraha Mixed Secondary School, this water is servicing the students, as well as the kitchen and laboratories.

Additionally, a handwashing station was constructed for students and faculty to use after using the latrines on the school grounds. The ability to now wash one's hands with safe water will prevent the transmission of germs that previously caused disease to spread quickly amongst the students. To ensure students understood the importance of proper handwashing and other sanitary habits, the Living Water team conducted hygiene and sanitation lessons while working in the community. They addressed the topics of disease transmission, germs, proper handwashing techniques and water-saving methods, how to properly care for the pump, and how to keep their water clean. The students were so eager to learn this information that even though they had just finished taking their end of term exams, and were not yet learning any new material in their classes, they still brought pens and paper so they could take notes.

A few days after the project had been completed, a celebration was held at the secondary school to dedicate the well. Prayers and

thanksgiving were offered for the well, and the JESUS film was also shown to the students and teachers in attendance in their native language of Kiswahili. The students were so excited to watch the film that they rushed into the hall and settled down as soon as the equipment was setup. Approximately 130 students and 4 teachers watched the film. After viewing the birth, life, death, and resurrection of Jesus Christ, 39 students prayed to receive him as their Savior!

McAtee family and friends, your willingness and desire to honor Jack by blessing others has not only provided living water for the people of Shiraha, it has opened the door to provide them with the Good News of the *living water* as well. Thirty-nine students accepted Christ as their Lord, impacting how their lives will be lived and where they will spend eternity. Your sacrifice has improved the lives of thousands of people and the generations that will come after them. Time students spent previously fetching water can now be spent in the classroom earning an education. Furthermore, the time, energy, and money women spent gathering water and caring for their children with waterborne diseases can be used productively to earn a living and take care of their households. Jack's legacy of sharing Christ and winning others to the Kingdom is persisting in the community of Shiraha in Kenya. How beautiful that a life well lived is providing the means for others to live well. Thank you.

Project Details

Product	New Well
Location of water point	Shiraha Mixed Secondary School, Shiraha, Kakamega, Butere, Kenya
Type of Institution Served	School
GPS Coordinates	Latitude: 00 11.49 N Longitude: 034 34.18 E

School

Total number of Students	Boys: 177	Girls: 153
Latrine: Pupil Ratio		1:25

Construction

Altitude	1438 m
Total depth drilled	52 m
Static level	21.94 m
Total depth of casing	52 m
External Diameter of casing	150 mm
Casing material	PVC
Screen	Start: 34 m Stop: 43 m
Pump Type	Submersible
Depth of cylinder	45 m
Engineer Approved design drawings for piped water system on file in Living Water office	Yes

Number of Tap stands	6
Total Meters of Piped Water distribution lines	1200
Gravel Pack	Yes
Gravel Pack Depth	12 m
Well yield	116 Liters/minute
Sanitary seal depth from surface	3 m
Shock Chlorination	Yes
Problems Encountered	The previous borehole that was to be rehabilitated collapsed on its own walls. This necessitated construction of a complete new borehole.
Anything else constructed	Separate washing platform

Water Quality Results

Water Purity Test	Local Government
Total Dissolved Solids (as per T.D.S meter) :	5
pH:	5.5
Total Hardness:	4 Ppm
Nitrate/Nitrites:	0 Ppm
Bacteria Test	Coliform Bacteria NOT detected (Colorless or Light Yellow color)
Arsenic:	0 Ppm
Iron:	0 Ppm
Fluoride:	0.96 Ppm

Water Storage - FOR PIPED WATER SYSTEMS AND RAINWATER COLLECTION

Owner	Community
Storage Tank Type	Plastic
Overflow Control System	Automatic
Drain line with valve installed?	Yes
Overflow pipe installed?	Yes
Vent installed with contamination prevention measures?	Yes

FOR LIFE

Hygiene Promotion

Without a dependable water source, the residents had been unable to make personal hygiene or sanitation a priority. Now, with easy access to safe water, the community has the opportunity to begin implementing safer hygiene and sanitation practices to see their personal and community health improve. Before they offered hygiene and sanitation lessons at the school, members of the Living Water team conducted an assessment to determine which topics the community would most benefit from hearing.

With 298 students and teachers present for the lessons, the Living Water team addressed the topics of disease transmission, germs, habits of healthy and unhealthy communities, proper handwashing methods, how to conserve water, the importance of latrine use versus open defecation, how to take proper care of the pump, and how to keep the water clean from collection to consumption. They were very intentional about asking for volunteers to help with demonstrations and encouraging audience participation to help those in attendance recall the information when needed, and be able to share what they learned with friends and family members who had not been able to attend the lessons. The students asked and answered many questions throughout the session, and were very engaged by the material being taught. The principal also attended so she could ensure that those who would pass through the doors of her school in the future could also practice proper sanitation habits.

Community Member Interview

Nehando Freshier is a 17-year-old student at Shiraha Mixed Secondary School. In between taking sips of the safe water from the recently installed water point she said, “On behalf of the school, we say ‘thank you’ for the cup of clean water. We are so thankful... Please take our sincere appreciation to [the donors].”

IN JESUS' NAME

Christian Witness

The main religions practiced by those living in Shiraha are Protestantism, Catholicism, and Islam. Fortunately, this means some residents have heard the Good News and know that Jesus is the Savior of the world. Others, however, have never heard this message. The well celebration ceremony provided the ideal opportunity to explain to the 66 girls, 61 boys, and 4 teachers that were present that just as the new water point satisfies a physical thirst, only Jesus Christ can satisfy the spiritual thirst in our souls. Before the JESUS film was shown at the celebration ceremony, the Living Water Evangelist prayed over the students and the well and shared the story of the gospel. After hearing the gospel and watching the film, 39 students asked Jesus to be the Lord of their lives. After the event, one of the teachers on duty stepped forward to thank the Living Water team for the life-saving work they had provided. He also took time to encourage the students who had just prayed to receive Christ to not depart from the ways of Jesus. It is very encouraging for those students to know they have a Christian teacher at their school who they can approach when they have questions. Additionally, there are four churches in the community where the new believers can attend. A member of one of the local churches, Vicar Mwenje, volunteered to be an additional person to whom the students could turn when they needed someone to talk with.

PHOTOS



Students drawing water from one of the previous water sources. Rainwater from the roof would collect in this barrel, and then students would draw water from it when needed. Unfortunately, there was never much water in this tank, and because this tank served so many students it emptied very quickly, requiring students to walk two kilometers to the nearest spring to collect water.



This is the well that needed repaired because the borehole had collapsed. After many attempts, it was deemed irreparable, and it was decided that a new well needed to be drilled instead.



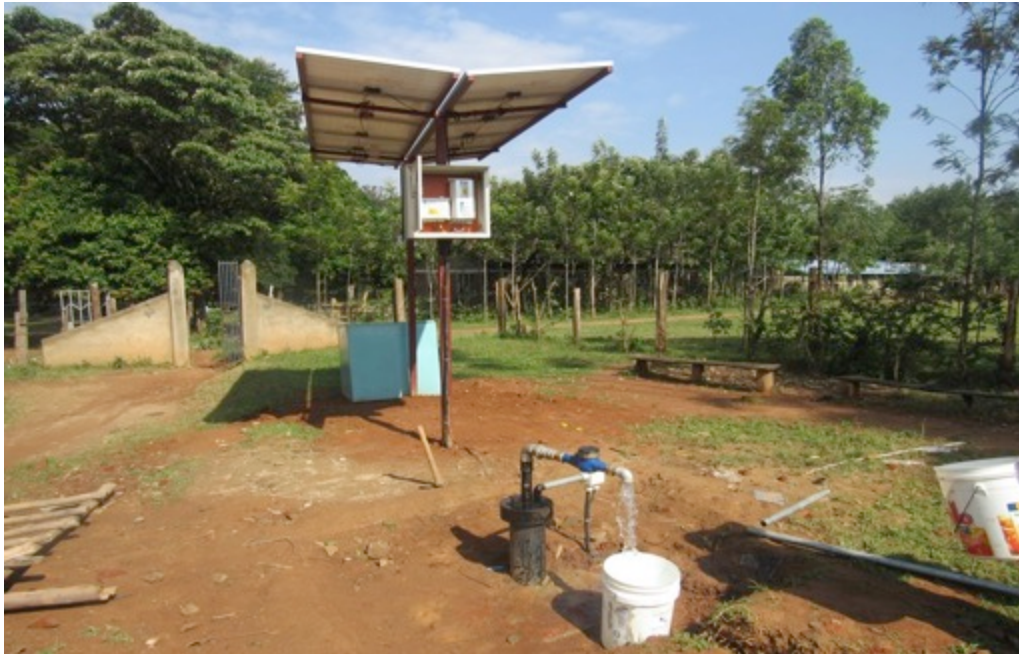
Water gushes from the aquifer that the team reached after drilling 52 meters.



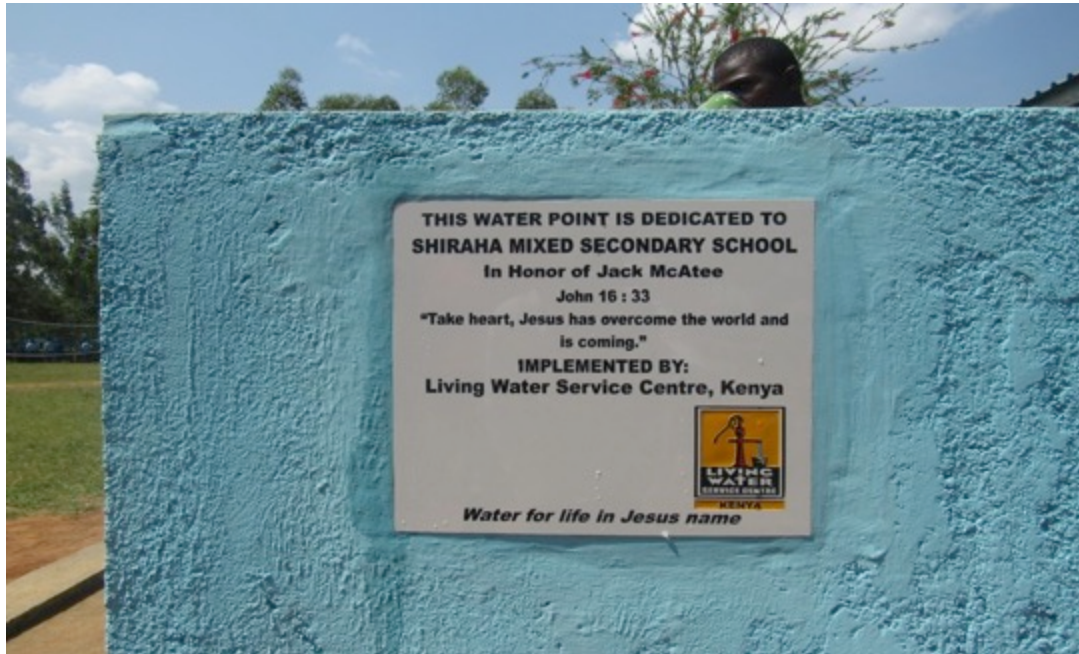
The handwashing station awaits its final smooth finishing, tiling, paintwork and plumbing.



The four foundational footings that were concreted into the ground to form the base for the 6-meter high tank tower pillars.



Water flow tests are being run to ensure the recently installed solar panels are working properly.



A close-up view of the plaque that shows the community's appreciation for the generosity of those who lovingly honored Jack's life by providing them with safe water.



A picture of the plaque attached to the side of the school's completed water source.



Students enjoy the water they collected from the taps on the front side of the source, as a girl fills a bucket using the tap placed on the backside.



Students can use this water for drinking, cleaning dishes, and washing their hands.



Students gather around the new water point at their school to celebrate the continuous safe water to which they finally have access.



Nehando Freshier takes a drink of water from her pink cup as she asks the Living Water team to “take our sincere appreciation to [the donors].”



The school head teacher, Mr. Fred Ashiekuva, coordinated well all the activities that went into this project, including the hygiene and sanitation trainings.



These students are in a typical classroom during an afternoon English lesson.



The Kakamega County Water Minister, Mr. Robert Sumbi (left) enjoys a cup of water with the school staff and Living Water team after officially opening the project during its inauguration celebration.



Students perform a praise song during the water project celebrations.



Students from the Shiraha Mixed Secondary School play a game of soccer in the late afternoon.



The Shiraha Mixed Secondary School Health Club. This group will oversee the maintenance and care of the water point.



Students demonstrating proper hygiene techniques during in front of some display charts during the hygiene and sanitation sessions.



Students watching the JESUS film after watching the film and hearing the gospel preached; 39 students accepted Jesus as their Savior!



The completed solar-powered borehole pump system, which includes the solar modules, enclosed borehole, water tower, and tank. Water is pumped from the borehole using a solar-powered pump that delivers water into the elevated tank. The water is then distributed to the four main water points through pipelines' gravitational flow.



A front view of the school grounds.