



## **STANDARDS FOR IMPLEMENTING WATER PROJECTS**

### **WATER PROJECT TECHNICAL BOARD**

All of Thirst Project's implementing activity is overseen and managed by the organization's Water Project Technical Board. This group of five individuals is made up of leading experts in the field of water and sustainability (civil engineers & hydrogeologists). The Water Project Technical Board meets Quarterly to review and approve the selection of upcoming projects to be implemented by the organization in the coming Quarter. The Board reviews and approves Site Assessments, Quotes, and Planned Action before a project is funded. After projects are complete, they review Completed Reports, Pump Tests, and Water Quality Tests for each site.

### **COMMITMENT TO SUSTAINABILITY**

Sustainability is Thirst Project's number one core value when it comes to implementing water projects in developing nations. This document outlines how The Thirst Project assesses the "sustainability" of the organization's water wells. According to the World Health Organization (WHO), the average life span of a water well in Africa is 4 years, and the failure rate of borehole wells implemented by NGO's on the continent is upwards of 60% within the first 4 years. This is alarmingly high, and entirely unacceptable, as most "failures" are completely preventable if the following sustainability measures and appropriate community engagement are in place. Relatively few organizations build in sustainability measures in their water projects to ensure the long-term benefits and operation of water wells.

### **PROJECT MANAGEMENT**

Under the direction of the Water Project Technical Board, The Thirst Project utilizes a GIS-based Project Management System that allows for the tracking of all completed water well projects, as well as in-process projects that have been approved by the Board and are under development. The Thirst Project Team must collect and continually update background information on Water Quality Issues for each country the organization is active in.



## **DRILLING PARTNERS**

When implementing water projects in the field, The Thirst Project hires local drilling companies to drill and construct its projects in the developing countries the organization works in. By hiring local contractors and overseeing them with the expertise of our Water Project Technical Board, the organization funds into and supports local economy, while providing the best service to the communities. The Thirst Project and its drilling partners sign a contractual document that includes everything contained in these standards to ensure accountability in construction. In vetting the organization's drilling partners prior to hire, the organization ensures that the typical timeline for project completion that the driller quotes is reasonable and competitive with the market. Thirst Project also establishes a system for reporting progress from the driller to the organization throughout that process. Thirst Project requires that each driller provide an itemized and comprehensive cost breakdown of all Quotes, Estimates, and Supplies for accurate accounting.

The following are the steps in The Thirst Project's life cycle of completing a water project (though the general drilling and construction of the borehole and well are denoted by asterisks, the numbered steps outline only those measures specifically relevant to the value of "sustainability"):

### **1.) Identify and Qualify a Community in Need**

The Thirst Project Team employs nationals as "Community Development Officers" on the ground in every country the organization works in to manage relationships with drillers and communities, and to oversee the implementation of all projects. These Community Development Officers collect and compile Assessments on all communities that The Thirst Project works in. Assessments must include the following data:

- What is the Community Name?
- What are the GPS Coordinates of the Community?
- What is the Population of the Community?
- How many Homesteads in the Community?



- How many Children are currently enrolled in School in the Community?
- How many Women are currently employed in the Community?
- What is the Current Water Source? (ex. Pond? Stream? River?)
- What is the Distance from the Community to the Current Water Source (In either Miles or Kilometers.)
- What Water-Related Illnesses has the Community dealt with in the Past? (Cholera? Schistosomiasis? Extreme/Fatal Diarrhea?)
- Have there been any Water-Related Deaths in the Community in the past 5 years? If yes, how many?

Based on the results of these Assessments, the Water Project Technical Board determines whether a submitted Community qualifies for intervention or not. If they do, the organization proceeds to the next step in the life cycle of completing a water project.

## **2.) Sample Area Wells**

Prior to Surveying approved Communities that qualify for intervention to determine the best location to drill, The Thirst Project must sample other existing wells in the areas the organization is contemplating installing a water supply and test those samples for any naturally occurring contaminants (i.e. micro-organisms, major ions, fluoride and trace elements) that could cause future health problems for the Communities the organization looks to serve. If there are problematic contaminants discovered, the Water Project Technical Board will determine the best course of action to consider if any modifications need to be made during the construction process, or if any preparations need to be made to have materials on-hand before the new wells are constructed, to treat them when they are.

## **3.) Engage the Local Community**

Thirst Project must always involve local Communities in its water well projects. Community involvement is a critical component to well sustainability. If an organization puts a water-well into a village without community participation and contribution (financial or sweat-equity), then sustainability, the effectiveness and the benefit of that



water well is highly questionable. Each Community must sign a Water Constitution. The Constitution is an agreement that outlines that the Community will ensure equal & adequate use of the water supply for everyone in the entire community. Each Community must either contribute financially to the project in some way (feeding drillers/collecting to cover fuel costs, etc.), or they must contribute sweat-equity to the project in some way (clearing the bushes from the Surveyed and selected site, helping the drillers trench and pour concrete, etc.). This is critical, because it creates a sense of ownership over the project, rather than The Thirst Project just going into Communities and giving stuff away. (We know this to be one of the most critical component for ensuring that Communities are committed to maintaining wells after The Thirst Project has left, because they have a personal investment in them.)

#### **4.) Form Water Committees**

Thirst Project must work with community leadership to form “Water Committees” in each Community that they build a well in. Water Committees are vital to effective water projects and Community Development. These Committees are formed to both manage water resources and promote hygiene within the community. Members are trained in business management, pump maintenance and repair, hygiene and sanitation, trachoma control and prevention, en-vironmental and natural resource management. Further, women are represented equally on these committees, which begins to engender a more equitable position for women in their community.

#### **5.) Complete Hydrogeology Surveys**

The Drillers assigned to approved Communities use Hydrogeology Surveys to first assess the water table and aquifer of the region in which the organization looks to build, so as to assure the well installed is appropriate and will not overdraft the aquifer and destroy it before the water table has time to replenish when during rainy times. In addition to protecting the aquifer, this ensures that the Community always has an adequate supply to meet the needs of the population.



\*\*\*At this point, the drilling team drills the borehole, installs the casings, cements around the casings, and trenches to create the foundation of the base.\*\*\*

### **6.) Perform Pump Tests**

At this point, the Drilling Team inserts a submersible pump into the freshly drilled borehole and pumps for 8-hours straight. This allows the organization to assess the yield of the borehole to ensure that the water supply is adequate to meet the needs of the Community.

### **7.) Perform Water Quality Tests**

The Thirst Project's Drilling Partners then collect samples from the new borehole and ship them to certified laboratories for "water quality" testing. Clear water is not necessarily safe water. There are many naturally occurring contaminants (i.e. microorganisms, major ions, fluoride and trace elements) that can seriously harm an individual's health and quality of life. Skeletal fluorosis, for example, is a serious health problem related to excessive accumulation of fluoride in the bones that causes serious deformities in the bone structure and making them extremely weak and brittle.

All projects must meet AWWA A100 Standards. (Some water sometimes might be better than no water.)

\*\*\*At this point, the drilling team pours the cement to complete the construction of the base, installs the hand pump, installs any necessary filters or treatments based on Water Quality Test Results, and constructs fencing around the well to keep animals away from it.\*\*\*

### **8.) Complete Sanitation & Hygiene Training**

The organization pairs sanitation facilities (i.e., latrines) and hygiene education (hand-washing training, etc.) with the provision of clean water. 88% of diseases in the developing world are water-related. The majority of health benefits of clean water (i.e. reduction in diarrheal rates) are only realized when accompanied with good sanitation and hygiene education.



### **9.) Open an Operations & Maintenance Fund**

Each Community must open a bank account in the Community's name where each head of household will contribute a pre-agreed upon amount each month. The purpose of this fund is to ensure that when maintenance and repair is necessary, not only do communities know how to make those repairs themselves, but they have their own funds to do so.