



Engineers Without Borders

Temple University Chapter



ENGINEERS WITHOUT BORDERS-USA
TEMPLE UNIVERSITY CHAPTER

Who We Are



EWB-USA builds a better world through sustainable engineering projects that empower communities to meet their basic human needs

Founded at the University of Colorado in 2002

Nearly 300 university & professional chapters across USA

EWB Temple



- Started in 2009
- Grown to membership of 80 students, 3 faculty mentors
- Manage local and international projects



Figure 1. Z. Klee and C. Marshall interview Saccha community members

First International Project



Design potable water
distribution system for
Saccha, Peru



Figure 2. Typical homes in Saccha,
Peru₄

Saccha, Peru

- Located in northern Peru
- 15 households, ~30 people
- Sustenance farmers



Figure 3. Location of Saccha, Peru 5

Phase 1. Assessment Trip



- Water quality tests
- Flow rate measurements
- Topographic survey
- Community interviews



Figure 4. January 2017 travel team

Phase 1. Assessment Trip



Figure 5. Z. Klee & C. Marshall measuring spring flow rate

Figure 6. Dr. R. Ryan instructing

Figure 7. Current water storage methods in Saccha

Phase 1. Assessment Trip: Water Quality Tests



- pH
- Hardness
- Iron content
- Conductivity
- Bacteria (fecal and total coliform)



Figure 8. Total coliform field test

Phase 2: Implementation



- Design storage, filtration, and distribution system
 - Pipe network, filtration process, spring box, storage tank, tap stands
- Submit design and safety plan to EWB HQ
 - Approved on October 2, 2017

Implementation Plan: Structures

Designed and modeled in
AutoCAD and RAM Elements

- Spring Box
- Storage Tank
- Tap Stands

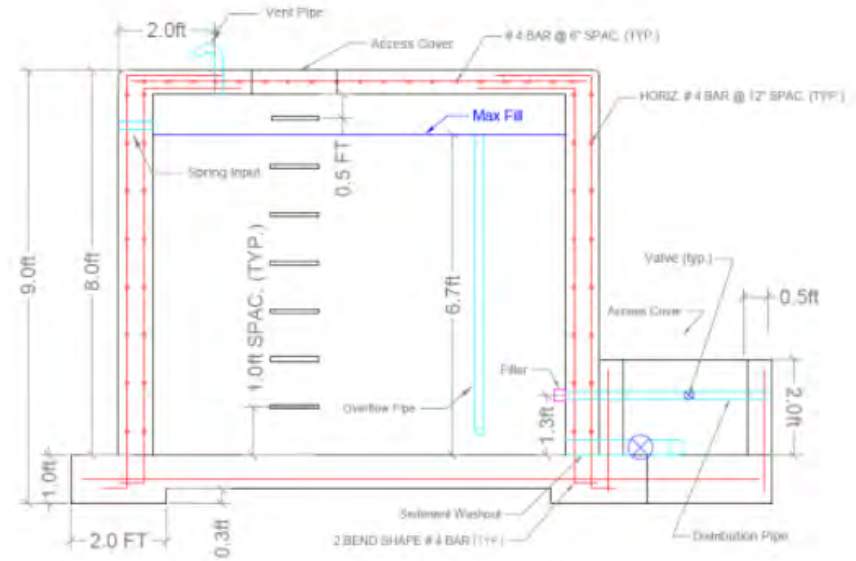


Figure 9. CAD drawing of storage tank 10

Implementation Plan: Pipe Network

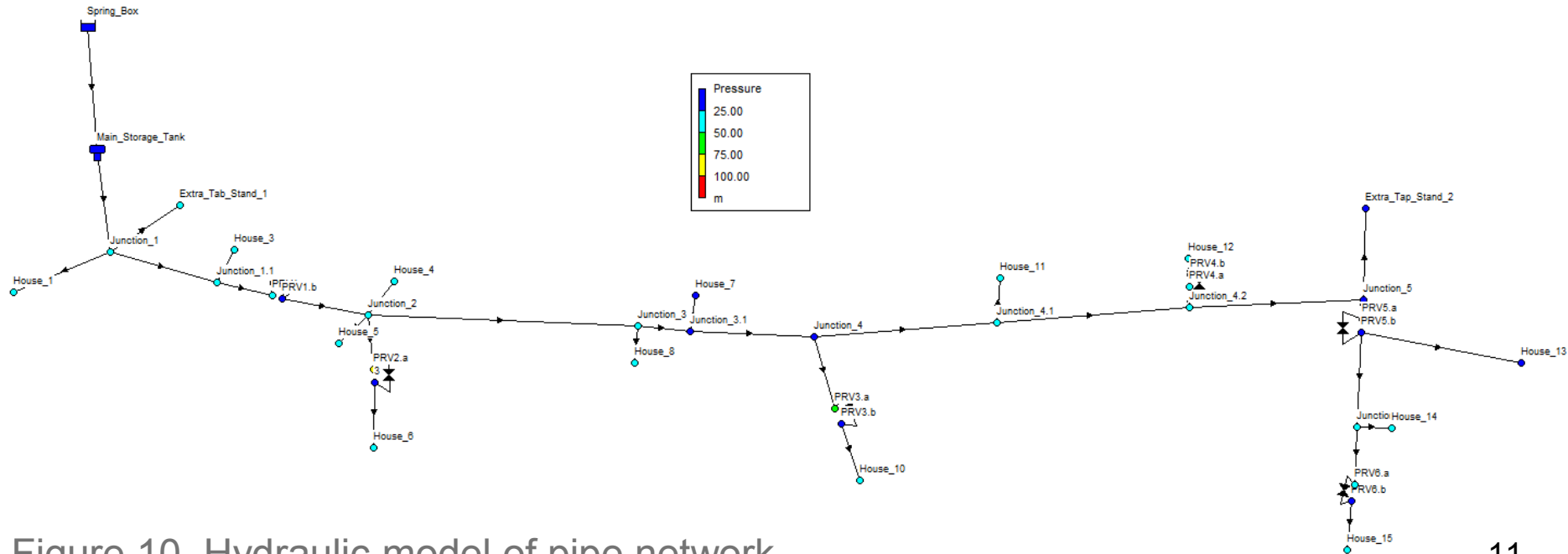


Figure 10. Hydraulic model of pipe network

Moving Forward



January 2018 and March 2018 implementation trips

