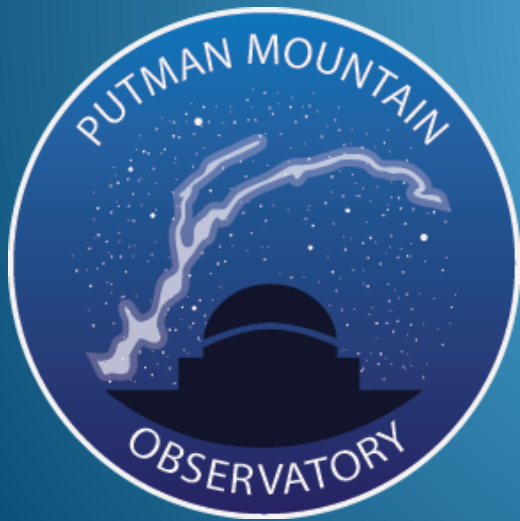


Rainwater Revival 2013

A Homeowner's Perspective

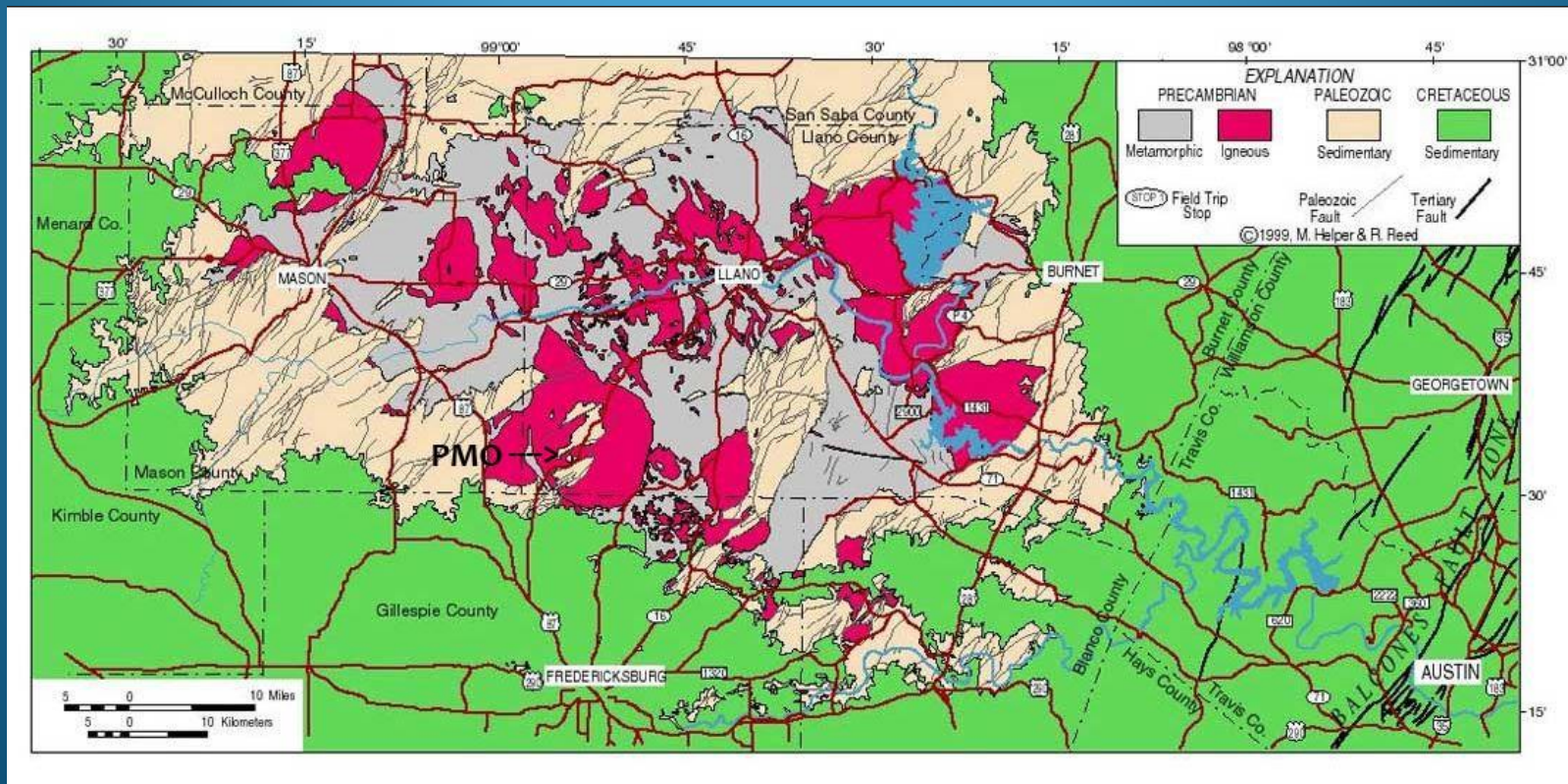


Design Considerations

- Property includes an observatory and is located far from city lights and municipal water supplies
- Property is also located in the Llano uplift and the geology has a mixture of granite, other metamorphic and igneous rock and Hickory sandstone
- Difficult geology for a water supply based only on well water
- A geologist was retained to assist in locating a well site

Difficult Geology

- Property location in the Llano Uplift
- Rock formations over 1 billion years old



Well was tried first

- Geologist suggested rainwater collection as primary water supply
- Well water as backup supply
- Well drilled with 3,000 gallon storage tank, only 5 gallons/minute
- Well water was tested and some radium detected due to naturally occurring radioactivity in the granite geology



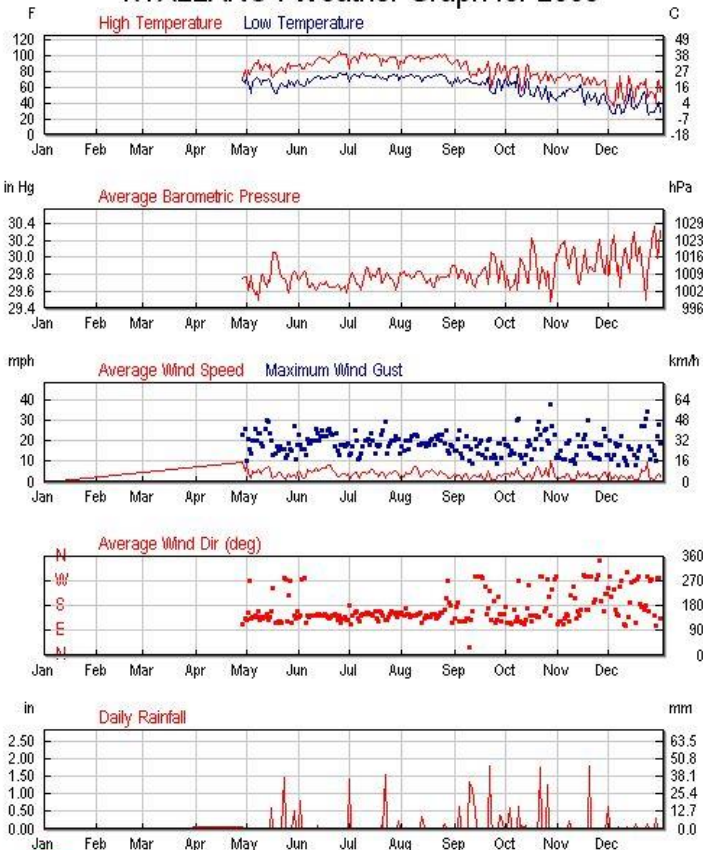
Rainwater Considered

- Before observatory design was completed, rain water was monitored
- Weather station installed to monitor rainwater
- Rain water was monitored for two years before construction

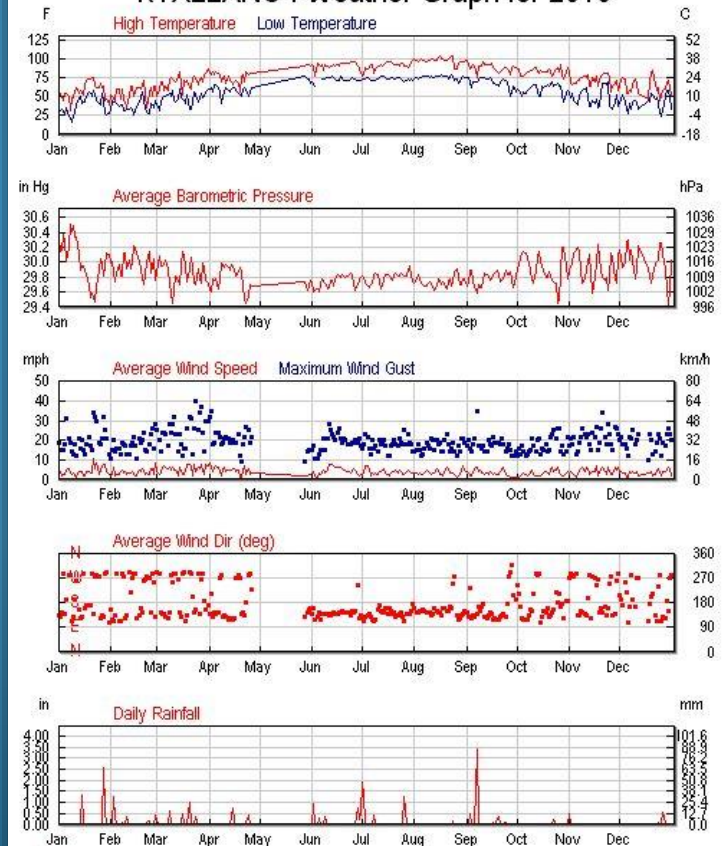


Rainwater Monitoring

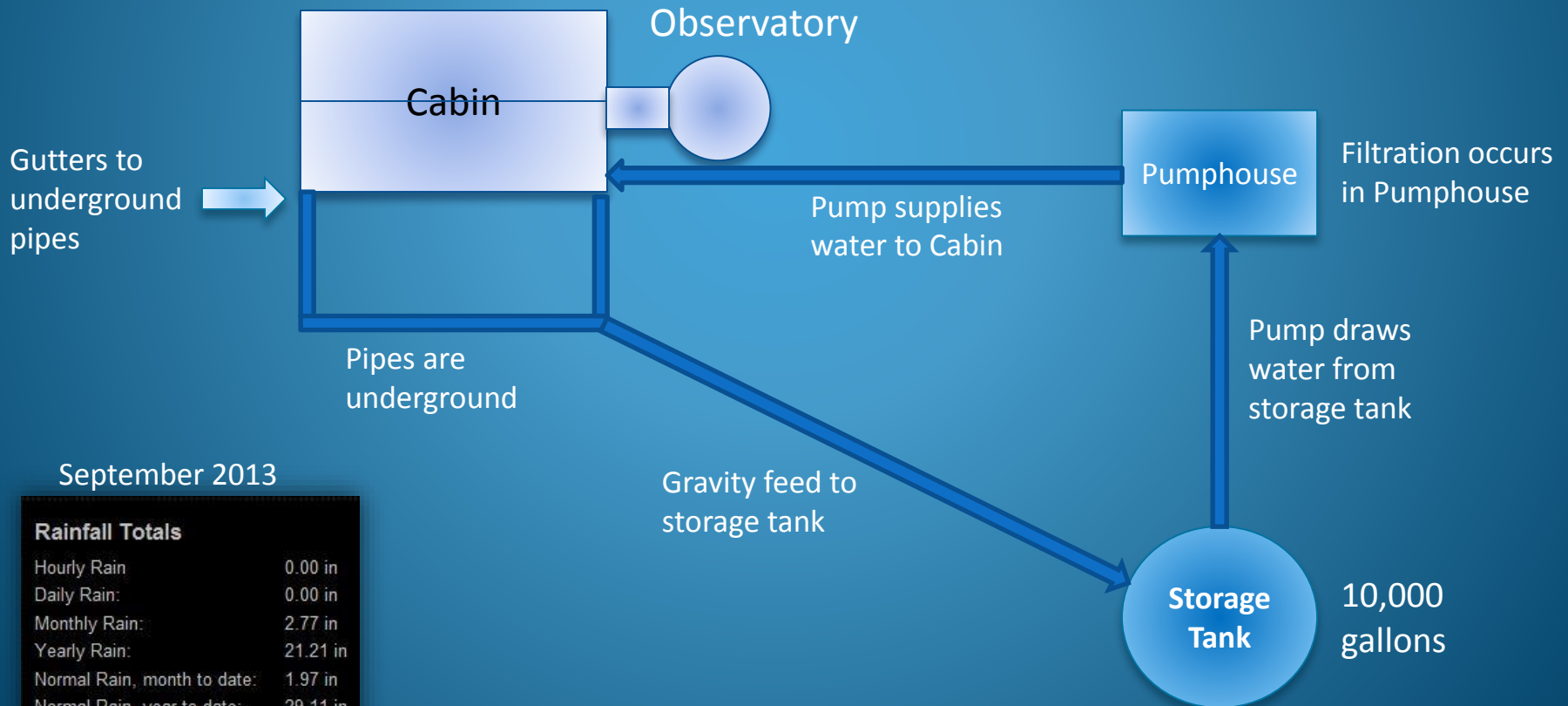
KTXLLANO4 Weather Graph for 2009



KTXLLANO4 Weather Graph for 2010



Rainwater Design



September 2013

Rainfall Totals

Hourly Rain	0.00 in
Daily Rain:	0.00 in
Monthly Rain:	2.77 in
Yearly Rain:	21.21 in
Normal Rain, month to date:	1.97 in
Normal Rain, year to date:	29.11 in

Gutters Installed



Gutter connections



Gutter to underground pipes

Underground Pipes



Trenches for piping



Gravity feed to storage tank

Water Storage Tank



Filtration



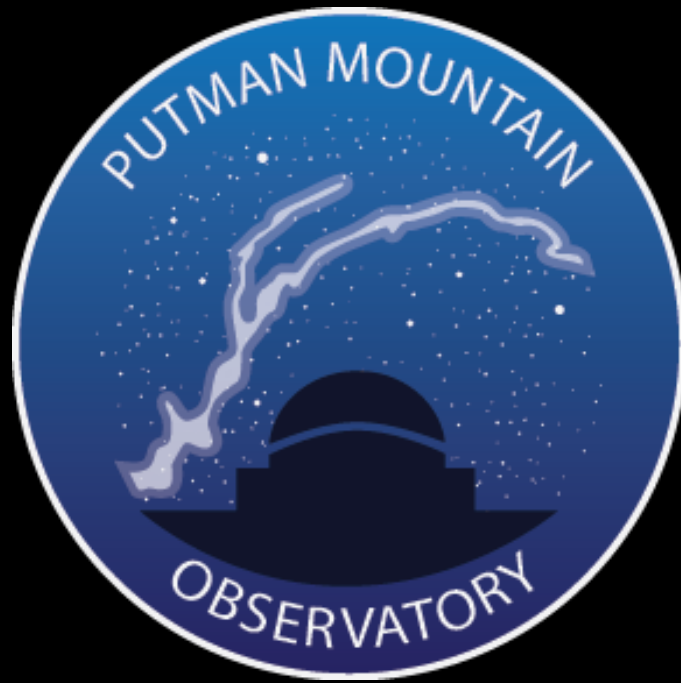
Sediment and charcoal filtration
UV Sterilizer



Pump and pressure tank

Great Water!





www.putmanmountainobservatory.com