



Result Demonstration Report

2016 Rain Water Harvesting

Wood County Master Gardeners and The Mineola Nature Preserve
Cooperators

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Summary:

The Rainwater Harvesting installation at the Mineola Nature Preserve had two purposes. One is to provide irrigation for part of the Wildscape Garden and the second is to provide a way to educate other MG's and the public about the benefits of Rainwater Harvesting.

Objective:

The objective of this result demonstration was to demonstrate rainwater harvesting techniques by utilizing structures for the rainwater collection then using this water to irrigate flower beds to educate clientele on water saving techniques.

Materials and Methods:

It was decided to build a roof structure to collect the water. A fiberglass tank size of 300 gallons and a collection roof size of 10 ft by 14 ft. Materials for 300 gallon fiberglass tank stand, plumbing and catchment roof are listed below.

Materials for construction of the catchment roof:

- 7 - 4x4x10 pressure treated lumber
- 2 - 2x6x14 pressure treated lumber
- 8 - 2x6x10 pressure treated lumber
- 4 - 1x4x14 pressure treated lumber
- 7 - 2ft x 10ft metal roofing
- 1 - 14ft gutter
- Screws

Tank Plumbing:

2 - 2" x 10 ft PVC

2 - 2" "L" PVC

1 - 2" "T" PVC

1 - 2" Valve PVC

1 - 2" adapter to the gutter faucet and fittings appropriate for the tank

Materials for the construction of the tank stand

1 - 4x4x10 Pressure treated lumber

6 - 2x4x8 Pressure treated lumber 4 - 5/4x6x8 Pressure treated lumber

4 Cement blocks

Screws

**Results and Discussion:**

A 10 ft. x 14 ft. catchment roof will collect about 87 gallons of water for every one inch of rain. It takes about 3-1/2 inches of rain to fill the fiberglass tank. The average rainfall in Wood County is 44 inches, and will provide a potential of 3800 gallons of water. The water collected is then utilized to irrigate educational flower beds using drip irrigation.

Several local businesses participated in the project by donating materials and labor. A home improvement store donated the wood and other materials for building the collection structure, a metal roofing manufacturing company donated the roofing and a local contractor donated the actual construction labor. A specialty gutter manufacturer provided and installed the guttering. A lumber company donated the materials for building the stand for the tank. The Master

Gardeners purchased the tank and PVC plumbing and oversaw the project and completed the minor construction involved with the project.

After the system was completed, we then responded to a request by the City of Mineola and the Mineola Nature Preserve to use the collection roof as part of an information kiosk. The city donated the funds and we added flooring along with a weather proof bulletin board. It's a win-win partnership that provides an educational venue for training and for the public.





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RAINWATER HARVESTING

Rainwater harvesting is the same basic principle as your ancestor's water cistern - collecting rainwater for later use.

- This system has 140 sq ft catchment space.
- For every 1 inch of rain it will collect 87 gallons of water.
- It will take about 3-1/2 inches of rain to fill this 300 gallon tank.
- Wood County has an average annual rainfall of 44 inches. At this rate this system will collect over 3800 gallons of water in a year!

A simple low cost rainwater harvesting system at your home can save on your water bill while providing better water for your plants.



Conclusion:

This Rainwater Harvesting Result Demonstration provides educational information to the general public on water conservation techniques. The water collected is used through drip irrigation tubing to water flower beds at the Mineola Nature Preserve. It takes about 3-1/2 inches of rain to fill the fiberglass tank. The average rainfall in Wood County is 44 inches, and will provide a potential of 3800 gallons of water.

Acknowledgments:

A special thanks to the Wood County Master Gardeners, Mineola Nature Preserve, Friends of the Mineola Nature Preserve, East Texas Construction, NETAFIM USA, Lowes, ETAF Metal Roofs, and G&S Lumber Yard for donating time and materials for this result demonstration.

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