



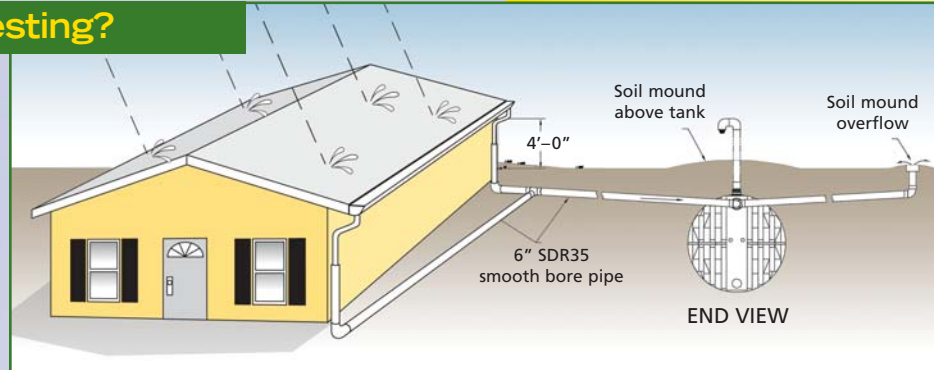
JOHN DEERE
GREEN TECH

WATER HARVESTING MADE SIMPLE

Rain Capture Cistern Systems from John Deere Green Tech

What is Rain Water Harvesting?

Rain water harvesting is the process of intercepting storm water runoff from a surface (roof, parking area, land surface), and putting it to beneficial use. Intercepted storm water can be collected, and retained or routed through the site landscape using microbasins, swales and other water harvesting structures; one of the most efficient of which is the Polyethylene underground storage tank system, offered by **John Deere Green Tech**.



Why you need it:

Land developers, engineers, property owners, and designers recognize that ecological water storage tank systems are important elements in their new projects. The systems are ecological, as they can improve a site's water quality by allowing rainwater infiltration and groundwater recharge. The Water Harvesting Tank Systems are also used to capture water, when incorporated into drainage and irrigation systems, to achieve *federal NPEDS Phase II Storm Water Management regulations, water capture and re-use, and zero discharge goals*.

Developers can also reduce construction costs by eliminating or reducing the size of retention systems, offset by the installation of water storage systems.

By harvesting and using storm water you can:

- Reduce dependence on dwindling groundwater reserves and expensive water resources provided by local water suppliers
- Increase water availability for on-site vegetation
- Reduce on-site flooding and erosion
- Store water for emergency use with direct hook ups to fire hydrants
- Reduce water bills and groundwater pumping
- Extend the life of landscaping (rainwater is usually low in salt content and relatively high in nitrogen).

How the Water Harvesting experts at John Deere Green Tech can help:

Every site is unique.

The appropriate scale of any water harvesting system must be factored around site-specific conditions. An integrated design is based on a detailed site analysis, generating solutions conforming to all local, state, and federal regulations and codes. **The Green Tech Water Harvesting Team** will help to determine the appropriate tank volume based on roof area, rainfall, downspout locations, available space, and water uses for your specific needs.



Modular tank design allows for storage capacity from 2,000 to 30,000 gallons.



3-Tank System with above ground filters, connections and manway access.



Light-weight modules can be handled with small excavator or skid steer loader.

The Water Harvesting experts at John Deere Green Tech; the key to successful water storage & reuse management

Because an integrated site design matches the needs of a location; (water usage, energy, aesthetics), with the products of a site; (storm water runoff, shade from buildings, vegetation), **The Green Tech Water Harvesting Team** will develop an efficient design that saves resources of energy and water, while improving the function and sustainability of the site.

Green Tech's considerations for a customized Water Harvesting tank system include:

- Appropriate siting, water volume & slope
- Construction Methods, plans, and permits
- Soil types and testing
- Existing and additional Vegetation
- Overflow of water storage
- System monitoring and maintenance
- Site plans including building layout, grading, drainage, architecture and landscaping.

Green Tech's services for optimal system installation include:

- Site evaluation
- Pre-construction consulting
- Site visit during construction
- One year of tech support included, and 1 year warranty on system parts, with continued technical support available



Incorporating water harvesting concepts early into an integrated design for the site is key to reducing costs and maximizing long-term benefits. The higher above-ground tanks are located on the site, the more gravity-feed pressure will be available. Water can be distributed by gravity flow or by a booster pump via hoses, irrigation systems, channels, or perforated pipes.

With the use of water tanks to further supplement landscaping irrigation or cooling systems, the detention and retention volume requirements for a site can also be reduced.



LEED Certification:

Another factor when considering RWH is its inclusion in the **LEED** rating system for new commercial construction. **LEED**, the committee responsible for overseeing the nation's fastest growing ecological building rating system, has made storm water containment a high priority when assessing a site's environmental performance. Reviewers can award credits for using Water Harvesting Systems in storm water management that reduce runoff, help reduce potential soil loss, and reduce the release of suspended solids.

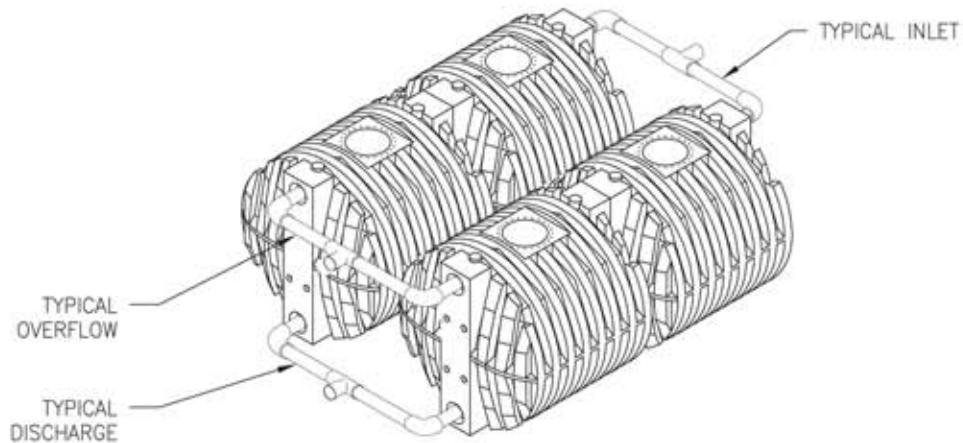
Public works officials also are recognizing the ecological benefits of RWH systems, as many coastal states are adopting increasingly restrictive regulations regarding construction and pollution impact on surface waters.



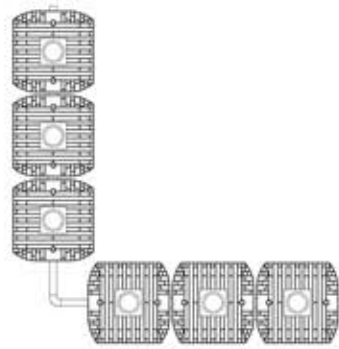
Fire protection cisterns are often set up for discharge slightly downhill to a fire hydrant. Just a few feet of drop between the tank and the hydrant creates sufficient pressure to force water directly into the fire truck pump when the hydrant is opened.

Tank Configurations for various volumes and any footprint... A John Deere Green Tech Exclusive!

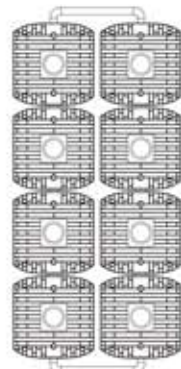
Water Harvesting Tank Configurations Incorporating 8" Manifolds



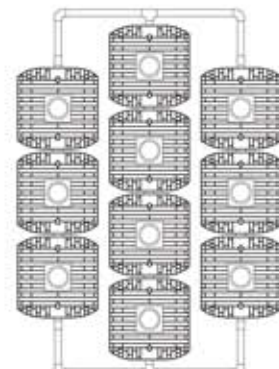
8,000 GALLONS



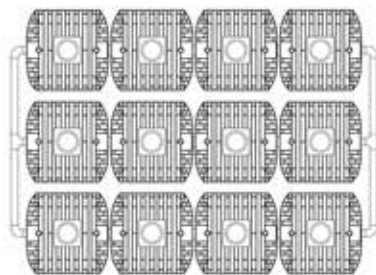
12,000 GALLONS



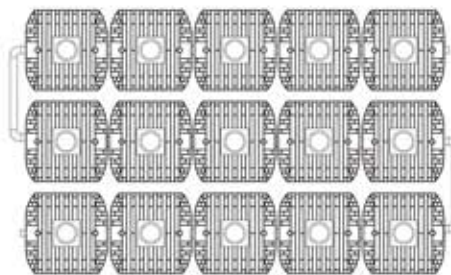
16,000 GALLONS



20,000 GALLONS



24,000 GALLONS
PARALLEL SYSTEM



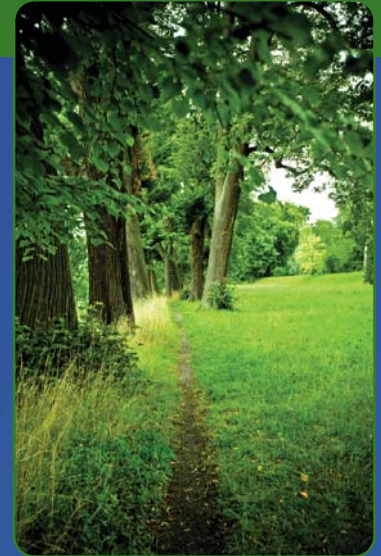
30,000 GALLONS
SERIES SYSTEM

The Green Tech Water Harvesting Tanks can be configured for various volumes and any "footprint", incorporating 8-inch diameter interconnecting manifold assemblies.

- Manifold design and layout required by flow path and volume
- Manifolds may be assembled at either end of modular rows or left blank without manifolds
- Systems can be built to suit your particular site application and flow path

FEATURES & BENEFITS

- Pre-engineered tank assemblies save time and money
- 2000 gallon high density polyethylene tanks are resistant to corrosion and can be arranged for the most efficient excavation "foot print"
- Light-weight modules can be handled with small excavator or skid steer loader
- **LEED certified**, complying with all new building code standards
- John Deere Green Tech exclusive on-site technical support and warranty protection
- Pump assemblies provide irrigation water to meet any flow demand
- Modular tank design allows for storage capacity from 2,000 to 30,000 gallons
- UV protected, if any portion is exposed above ground
- One full year of technical support provided by the **Green Tech Water Harvesting Team**, plus one year warranty on all parts and labor
- Manufactured from a "food contact" grade polyethylene resin and are safe for the temporary storage of drinking water (potable water)
- Properly buried water tanks won't freeze - no worries about insulation and electrical heat tape, even in high mountain areas and northern states
- Underground water temperatures average about 50 degrees Fahrenheit, an environment less likely to support the growth of algae or bacteria
- Unlike steel tanks, **Green Tech Water Harvesting Tanks** will never rust or corrode
- Storage capacity can be added whenever needed by connecting additional modules to your existing tank system
- **Green Tech Water Harvesting Tanks** make excellent multi-compartment septic tanks and sewage vaults, and are easily fitted with an *effluent filter* to meet discharge standards
- "Traffic Friendly" Green Tech Water Harvesting Tanks will withstand the weight of autos and trucks when properly installed beneath an approved concrete traffic slab on grade
- In stock and available immediately. No need to wait for custom fabrication or special fitting installation
- **Green Tech Water Harvesting Tanks** meet the basic **NFPA Fire Cistern** design requirements, and rural fire fighting flow standards, often required for homeowner insurance coverage in remote rural or forested areas
- Additional pipe connections can be installed as needed using inexpensive "bolt-in" fittings
- Green Tech Automatic Self-Cleaning Filters can be utilized with the tank system (see separate brochure)
- Storm water stored in Water Harvesting Tanks is typically available beyond the rainy season
- Meet the "zero discharge" goal with JD GT's water harvesting system to comply with federal stormwater management regulations
- Tax credits are available to developers, contractors and businesses at the local, state and federal level for sustainable design and green building practices



Green Tech Water Harvesting Tanks meet rural fire fighting flow standards, often required for homeowner insurance coverage in remote rural or forested areas

SPECIFICATIONS

Tank Size: 90" x 90"

Capacity: 2000 U.S. gallons

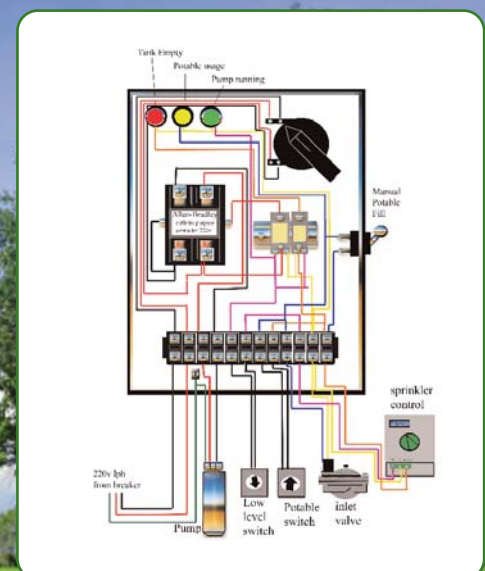
Material: Polyethylene Plastic

Interconnecting Manifold Assembly Size: 8"

Manway Height: 18"– 36"

Dimensions & Bury Depth: 36" Maximum

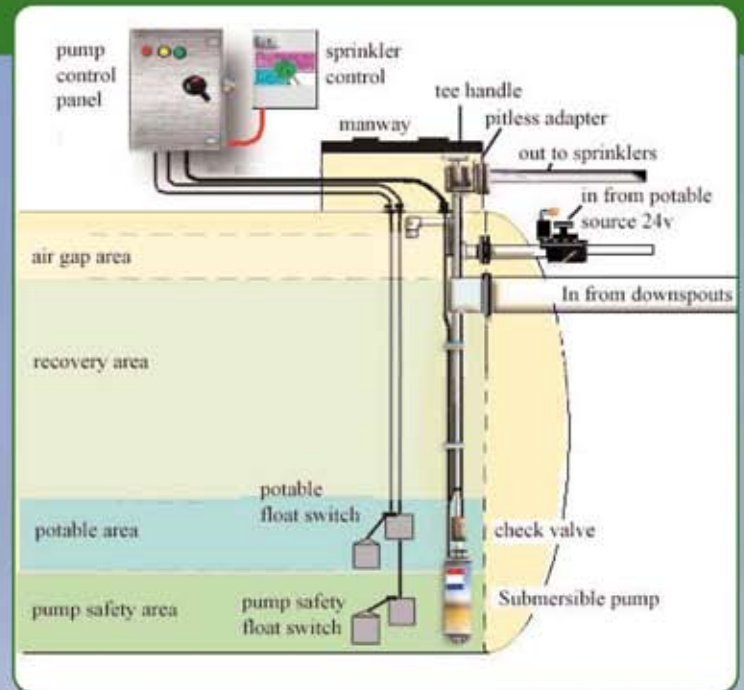
Voltage & Phase: 230V Single Phase, 20-40 Amp service required



The Water Harvesting Tank Infrastructure

Although a system's components will vary depending on the site's custom specifications, a typically versatile water tank storage system such as this is designed to serve the multiple needs of a location's water management program.

The Tanks are very durable, with internal spreader bars and a "spool riser" manway opening on each 2,000 gallon module to add to the structural integrity of the tanks. They can also be drained completely without damage to the tank while underground.



Condensers for multiple ton HVAC rooftop units used for large buildings and hotels can generate upwards of 20,000 gallons of discharge water each day.

The Green Tech Water Harvesting System is ideal for capturing condensation water in situations like these for economical and ecological re-use of the water.

Durable Tank Fabrication and Testing

Polyethylene plastic powder is loaded into a stainless steel 2-piece mold. The mold is placed in a large oven at 600 degrees Fahrenheit and rotated. The powder melts and distributes evenly over the inside of the mold. The mold is removed from the oven and cooled at room temperature.



Pressure Test

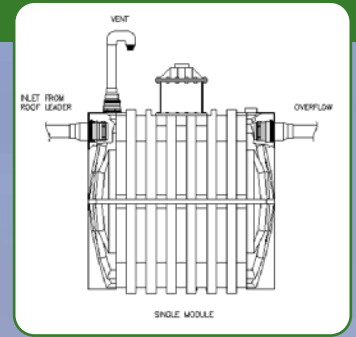
Each module is removed from the molding machine and placed in a sizing stand. It is then pressurized while it cools to a specified length and diameter. Before removal, soapy water is sprayed over each vessel to confirm there are no pin holes unidentified during visual inspection. Upon cooling and external inspections, the module is removed from the stand at room temperature and the manway opening made for an internal visual inspection. In all, three inspections are made prior to assembly into a cistern system.



John Deere Green Tech's Pre-Engineered Water Harvesting Systems

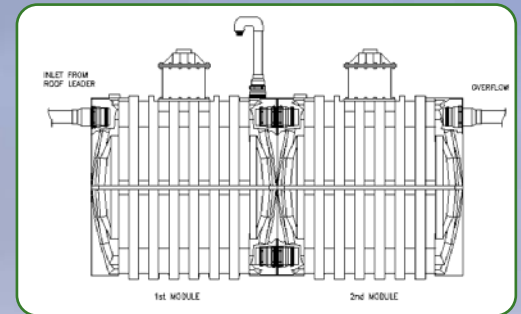
GREEN TECH PART NUMBER: GT-RWH-2K (SINGLE TANK)

- One 2,000 gallon underground polyethylene tank with manway
- 230v/1ph pump system rated for 10-20 gpm @ 50 psi max
- In-line leaf and debris filter assembly
- UL listed control panel with fusible service disconnect
- Low water level safety & backup potable supply auto-fill switches
- Indicator lights for tank empty, potable water use & pump on
- Integrated air vent, all required tank accessories & hardware
- Includes Green Tech on-site technical support & 1 year warranty



GREEN TECH PART NUMBER: GT-RWH-4K (DUAL TANKS)

- Two 2,000 gallon underground polyethylene tanks w/ manways
- 230v/1ph pump system rated for 20-40 gpm @ 70 psi max
- Remaining features same as GT-RWH-2K package above



GREEN TECH PART NUMBER GT-RWH-10K (FIVE TANKS)

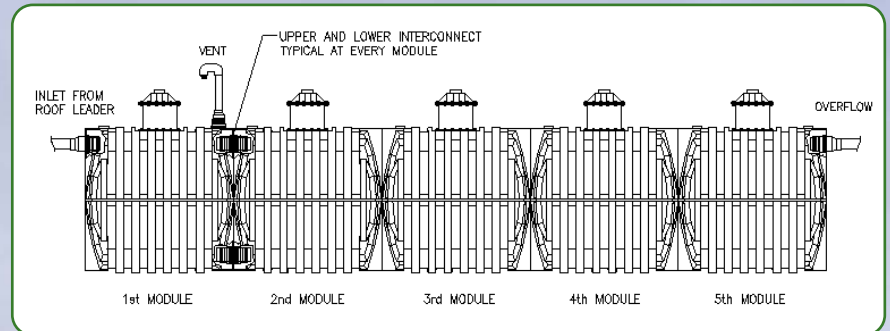
- Five 2,000 gallon underground polyethylene tanks w/ manways
- 230v/1ph VFD pump system rated for 10-50 gpm @ 80 psi max
- Remaining features same as GT-RWH-2K package above

GREEN TECH PART NUMBER GTD-2000-AT (ADD-A-TANK)

CUSTOM PACKAGE:

- Customize a system of any size or scope. Contact your Green Tech District Sales Manager, or call Green Tech toll free:

800-427-0779



Custom Tank Configurations and Accessories, based on your application or engineering criteria are always available through your local John Deere Green Tech Sales Representative.

We pledge to accommodate any *Architect* or *Engineer* regarding special applications necessary to solve custom installation requirements.

John Deere Green Tech leads the industry in Water Harvesting Tank Systems. Call your local John Deere Green Tech Sales Representative for a consultation on the ways that Water Harvesting can best serve your particular water management needs.



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3 Chrysler • Irvine, CA 92618

800-427-0779

www.johndeeregreentech.com