

## **Use of Reclaimed Water at Nurseries**

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### **Background**

The encouragement and promotion of water reuse and conservation are formal state objectives in the state of Florida. These objectives are established in Sections 403.064 and 373.250, Florida Statutes. Florida's reuse program was implemented in response to the state objectives. A comprehensive set of rules governing the reuse of reclaimed water is one of the key elements of the reuse program. Regulations for water reuse in Florida are contained in Chapter 62-610, Florida Administrative Code (F.A.C.). Irrigation of wholesale and retail nurseries, ferneries, sod farms, and other agricultural lands is allowed under these rules.

Florida is one of the nation's leaders in the reuse of reclaimed water. In 2000, over 575 million gallons per day of reclaimed water was used for various beneficial purposes in Florida. Approximately 40 percent was used to irrigate landscaped areas (i.e., golf courses, residential lawns, parks, etc.), and an additional 19 percent was used for agricultural irrigation.

### **Rules**

The use of reclaimed water at nurseries and other agricultural operations is regulated by Parts II and III of Chapter 62-610, F.A.C. Part II deals irrigation of land of which the public does not have access. Part II can be used to regulate wholesale nurseries. Reclaimed water used for this type of irrigation must meet the minimum state criteria of secondary treatment and basic level disinfection. Secondary treatment represents about 90 percent removal of carbonaceous biochemical oxygen demand (CBOD) and total suspended solids (TSS). For basic level disinfection, fecal coliforms must not exceed 200 fecal coliforms per 100 mL. The treatment and disinfection levels are described in more detail in Chapter 62-600, F.A.C.

Irrigation projects permitted under Part II normally involve percolation of the applied reclaimed water to ground water and a 100-ft setback distance to minimize impacts on adjacent properties. The reclaimed water may be collected in underdrains and discharged

to surface waters. If a surface water discharge results, additional permitting is required to protect water quality in the receiving body.

Part III of Chapter 62-610, F.A.C., regulates irrigation of lands to which the public has access. This includes golf courses, parks, schools, residential areas, and edible food crops. Reclaimed water used for these purposes receives a higher level of treatment and disinfection than Part II projects, due to the potential for human contact. Filtration is required in addition to secondary treatment in order to meet a maximum TSS concentration of 5 mg/L. This reclaimed water also receives high-level disinfection which requires that fecal coliforms be less than detection 75 percent of the time with no single sample exceeding 25 fecal coliforms per 100 mL. Reclaimed water meeting the requirements of Chapter 62-610, F.A.C., meets many of the state's drinking water standards, but is not meant for human consumption. Reliability and operational controls are placed on these reuse systems to ensure a continuous supply of high-quality reclaimed water. Florida's reuse rules are consistent with the national *Guidelines for Water Reuse* published by the Environmental Protection Agency.

## **Use of Reclaimed Water at Nurseries**

Retail nurseries, which are accessible by the general public, are considered to be "public access areas." Therefore, reclaimed water provided to retail nurseries must meet the requirements of Part III of Chapter 62-610, F.A.C.

Wholesale nurseries are subject to Part II of Chapter 62-610, F.A.C., since public access at these facilities is usually restricted. Wholesale nurseries may also receive reclaimed water that meets Part III of Chapter 62-610, F.A.C.

Exhibit I presents a list of reuse systems identified in the 2000 Reuse Inventory (DEP, 2001) as providing reclaimed water to nurseries or ferneries.

### **The "Public"**

The degree of public access to a reuse site determines whether Part II or Part III requirements apply. The "public" refers to the "general public." Employees at a nursery are not considered as being part of the "public." In the same fashion, wholesale buyers at a wholesale nursery also are not considered as the "public." For projects permitted under Part II, employees can be trained in the use of reclaimed water. Also, nursery operations can be adjusted to accommodate relatively infrequent visits by wholesale buyers and delivery personnel.

Retail establishments are open to the general public. As a result, the more stringent Part III requirements are applicable.

## **Potted Nursery Stock**

As noted above, irrigation projects involving reclaimed water normally involve percolation of the applied reclaimed water to the ground water. If underdrains are used to collect the reclaimed water, a surface water discharge usually results. The surface discharge is subject to additional permitting considerations to ensure protection of water quality in the receiving surface water body.

Nurseries using potted stock may involve runoff and collection of a portion of the reclaimed water. If the collected runoff will be discharged to surface waters, this will be handled in a similar fashion to the underdrain system. The level of DEP permitting involved generally will be determined by the level of treatment provided (Part II or III), the size and character of the receiving water, the degree of recirculation provided in the nursery's tailwater return system, and the frequency, volume, and duration of the discharge to surface waters.

## **Conclusion**

Reclaimed water can be safely used to irrigate at nurseries, ferneries, sod farms, and other agricultural establishments. The State of Florida encourages use of reclaimed water for this type of irrigation.

## **References**

Department of Environmental Protection. 1992 Reuse Inventory. Tallahassee, FL. 1992.

Department of Environmental Protection. "Reuse of Reclaimed Water and Land Application." Chapter 62-610, Florida Administrative Code. Tallahassee, FL. 1999.

Department of Environmental Protection. "Domestic Wastewater Facilities." Chapter 62-600, Florida Administrative Code. Tallahassee, FL. 1996.

Department of Environmental Protection. 2000 Reuse Inventory. Tallahassee, FL. 2001.

U.S. Environmental Protection Agency and U.S. Agency for International Development. Guidelines for Water Reuse. Report EPA/625/R-92/004. EPA Center for Environmental Research Information. Cincinnati, OH. 1992.

York, D.W. "Reclaimed Water: Is it Safe?" A paper prepared for a Florida Legislative Committee. Tallahassee, FL. 1995.

## EXHIBIT I

### REUSE SYSTEMS PROVIDING RECLAIMED WATER TO NURSERIES

October 26, 2001

#### Apopka/Project Arrow (Orange County)

Wholesale nursery - provide high-level disinfection

Bob Elmquist 407/703-1731  
Project Coordinator  
P.O. Box 1229  
Apopka, FL 32704-1229

#### Brevard County Utilities - Merritt Island - Sykes Creek Regional

Wholesale/retail nursery - provide high-level disinfection  
Crisafulli Enterprise

Richard Martens 321/633-2091  
Director of Water Resources  
Government Center Building A  
2725 St. Johns Street  
Melbourne, FL 32940

#### CONSERV II (Orange County)

Wholesale nursery (a fernery) - provide high-level disinfection

Phil Cross 407/656-2332  
Woodard & Curran  
P.O. Box 783125  
Winter Garden, FL 34778-3125

Landscape Nursery  
1955 S Apopka-Vineland Rd.  
Orlando, FL 32811

**Deland/Brandytrails (Volusia County)**

Wholesale fernery - provide basic disinfection  
CFC Farms

John Jeffery 904/736-3900  
Quality Assurance Engineer  
P. O. Box 449  
Deland, FL 32720

**Largo (Pinellas County)**

Retail nursery - provide high-level disinfection

Lynn Ambirosiano 813/586-7417  
City of Largo  
5100 150th Ave. N  
Clearwater, FL 34620

**Manatee County Southwest**

Wholesale nursery - provide high-level disinfection  
Manatee Fruit Co. Gladiolus Farm (access is restricted)

David Shulmister 941/792-8811 Ext. 5249  
Manatee County  
4410 66th St. W  
Bradenton, FL 34210

**Palmetto (Manatee County)**

Dickinson Nursery - will provide high-level disinfection

Mike Hickey 941/723-4580  
Director of Palmetto Public Works  
600 17th Street W  
Palmetto, FL 34221

**St. Petersburg (Pinellas County)**

Retail nursery - provide high-level disinfection

Judy Gallizzi 727/893-7261  
Reclaimed Water Coordinator  
290 16th St. N  
St. Petersburg, FL 33713

**Sanford (Seminole County)**

Wholesale nursery - provide high-level disinfection

Bill Marcous 407/330-5649  
Sanford Utility Department  
P.O. Box 1778  
Sanford, FL 32772

Note: Data taken from DEP's 2000 Reuse Inventory, as updated in 2001 by DEP staff.