

Port of the Islands Community Improvement District

DEDICATION OF THE NEW WATER TREATMENT PLANT

JANUARY 18, 2013

Right: 2012 aerial photo of the POI Utilities site with relocated Union Road and additional 1 acre property to the south of the wastewater treatment plant. Redeveloped property includes new water treatment plant, modernized MBR wastewater treatment plant, reuse storage and irrigation pump station.



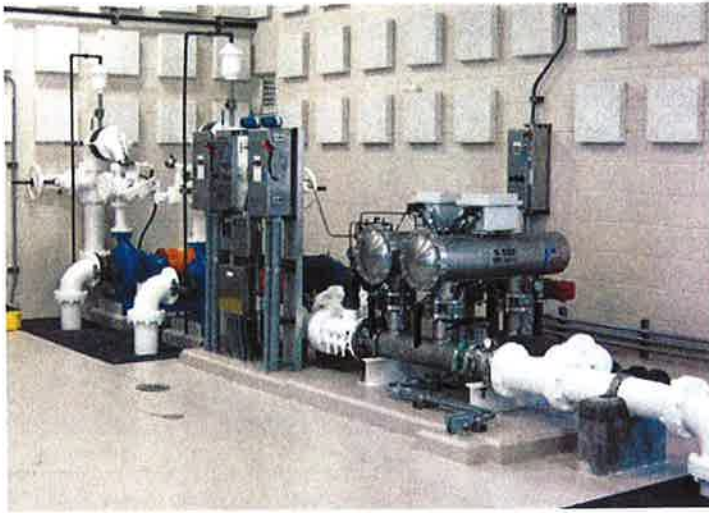
Left: 1993 aerial photo of the POI Utilities site following construction of the advanced wastewater treatment plant and installation of the used water treatment plant which previously served Quail Creek in northern Collier County.

The Port of the Islands Community essentially owns their own potable water, irrigation water, and sanitary sewer utility company. The Community Improvement District (CID) has invested nearly \$10 million over the past twenty plus years to provide the residents of Port of the Islands the highest quality utility system. The above photos illustrate the same property from December 1993 following the initial development of the water and wastewater treatment plants as planned for build-out needs of the community as well as the newly revamped utilities complex at Port of the Islands. Most of this property was acquired twenty years ago during the early years of the CID with ultimate needs of the community in mind, although an additional acre of land (south of the wastewater treatment plant) was acquired from BRH Enterprises in 2010 at which time an agreement was reached to relocate Union Road to the west side of the utilities complex (it used to run thru the middle) as well as potential future realignment of Union Road as it passes through the BRH property at the time BRH may develop the property. This allowed improved access to the Gun Club, provided a much more usable site for future development by the CID, as well as allows BRH more flexibility in development of

their property in the future. This was a win-win proposition for both public and private parties.

At the time redevelopment of the CID utilities site was in the planning stages, rezoning and site development approvals had to be obtained from Collier County. The approved plan for development of the site includes room for a future building and parking lot in the area south of the wastewater treatment plant which is currently being used for stormwater management. While such a project is not in current planning or budgeting stages, a multi-purpose building to serve the POI community now has a potential site at this location. In the event such a project were undertaken, a portion of the site north of the new water treatment plant (where the old water treatment plant used to be located) would be converted to stormwater management at that time to replace the areas filled in for construction of new facilities.

In order to be good stewards of the environment, the CID utilities site has been graded to divert all rainfall runoff into on-site retention areas for treatment as well as groundwater recharge. In the event of a very large tropical storm or hurricane, the excess runoff can overflow to a pipeline which discharges the water to the Faka Union Canal near the entrance to the Gun Club.



Raw water booster pumps and strainers prepare water from the wells for reverse osmosis treatment.



Two parallel Reverse Osmosis water treatment skids. Each skid can produce 200,000 gallons/day if operated 24 hours per day.

Water Treatment Process at Port of the Islands

The first step in the treatment of the water at Port of the Islands is that it is passed through automatically cleaned strainers in order to remove any sand or particulate matter. The second step is the filtration of the water using cartridge filters to remove even smaller sediment before the water is treated by pumping it through reverse osmosis membranes. Treatment using reverse osmosis membranes provides such a high level of removal that even dissolved minerals are removed such as calcium hardness, sodium chloride and other salts. The membranes use a two-stage process where the concentrated water from the first stage is concentrated a second time to reduce the volume of concentrated water while increasing the quantity of finished product water.

Following reverse osmosis treatment, the water is very pure. High purity water is actually low in pH and very corrosive and aggressive on metal plumbing, so the next process is to add some pure calcium carbonate back into the water to make the water less corrosive and more pleasing to taste. This is done essentially by trickling the water over high purity limestone pebbles. The pH of the finished water is adjusted and chlorine is added for disinfection. After allowing sufficient contact time for the chlorine with the water, a trace amount of ammonia is added in order to convert the chlorine into chloramines which do not have the same chlorine odor and taste you may notice in some public water supplies, as well as to form a longer lasting disinfectant prior to the water being stored on-site and then travelling in the distribution system to the customer's homes.

All of the minerals contained in the well water are removed, as the drinking water is being produced, and concentrated in the portion of the water which is then able to be used for irrigation. All process wastewater is sent to the wastewater treatment plant where it is treated and reclaimed for irrigation water.



Calcite Contactors treat the water following reverse osmosis to add some calcium and alkalinity back into the pure water to make it less aggressive when in contact with metal plumbing.



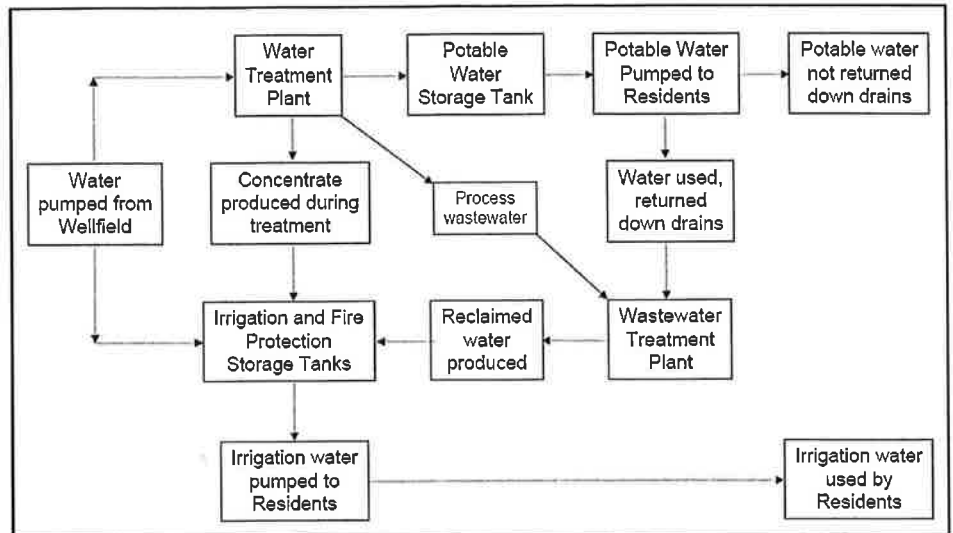
Sodium hydroxide is added in order to raise the pH of the treated water, sodium hypochlorite (bleach) is added for disinfection, and a trace amount of ammonia is added to form a longer acting disinfectant in the distribution system.

100% Water Reuse at Port of the Islands

The Port of the Islands community is located in an extremely unique location, in the middle of a large natural ecosystem protected by the State and Federal governments. Other than the water use permitted for the POI community, one hundred percent of the water resource is reserved for the natural environment. For that reason, in order to obtain a twenty year extension to the water use permit, the CID proposed to implement a program in which 100% of the water which can be reused would be reused. In addition, this program was developed in a manner to also provide the residents with the highest quality potable water and irrigation water possible.

Previously, the primary source for irrigation water used to be the Faka Union Canal and as long-time residents of POI will recall, this water would become salty during part of the year. The current program provides irrigation water from a combination of well water, blended with reclaimed wastewater effluent along with concentrated well water from the potable water treatment plant.

The diagram above, illustrates water reuse at Port of the Islands. The production of potable water consists of converting 10 gallons of well water into 8 gallons of drinking water by removing the minerals and natural organic matter in the well water and concentrating it in the



other 2 gallons. The 8 gallons of drinking water goes into the potable water storage tank and pumped to the customers. The 2 gallons of well water which contains the concentrated minerals and natural organic matter which was removed from the other 8 gallons is discharged into the irrigation water storage tanks. The wastewater collected at POI is treated through a combination of an advanced biological treatment process followed by a membrane treatment process which produces a very high quality reclaimed water which is also sent to the irrigation storage tanks. Each day, sufficient well water is added to the irrigation storage tanks to keep them full.

Advanced Wastewater Treatment at Port of the Islands

The Port of the Islands community has had an advanced wastewater treatment facility since 1993. This treatment plant was initially designed using the same treatment process used by the City of Naples, City of Fort Myers, and City of Cape Coral which meets the highest treatment standards required in Florida for nutrient removal.

The treated wastewater effluent is of better quality than the irrigation water which was previously coming from the Faka Union canal, and the Florida Department of Environmental Protection has permitted POI to use the reclaimed water from the wastewater treatment plant for irrigation. In order to provide the highest level of protection to the public, the wastewater effluent receives the highest levels of treatment.

About four years ago, much of the mechanical equipment at the POI wastewater treatment facility was upgraded to add membranes which filter the effluent to a much higher degree than the previous sand filters. This provides the highest quality water for irrigation possible in order to minimize concerns with viral and bacterial contamination from occurring. These equipment upgrades

from four years ago, illustrate the approach which has been taken at POI in planning the expenditures for the community's utility system—construct the structures to last a lifetime (using materials such as reinforced concrete) while allowing the ability to upgrade to newer types of treatment at the time when the mechanical equipment reaches the end of its useful life, which is much shorter than the length of time the concrete structures will last. Also the citizen-elected Board of Supervisors, who are residents of the community have made the decision to provide their neighbors with the highest level of service practical. These goals have taken a number of years to implement, but with the completion of the new water treatment plant, the major work to accomplish these goals have been achieved.

When you tour the wastewater treatment plant at POI, you will note the integrity of the reinforced concrete structures at the facility which were constructed twenty years ago and see that the investment in these facilities was made for the long-term, just as the new water treatment plant has also been constructed to last a lifetime.



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| | <p>District Management Services by Severn Trent Management Services Fort Myers, Florida</p> |
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| | <p>Construction of the Plant by Cardinal Contractors, Inc. Sarasota, Florida</p> |
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| | <p>Engineering Design and Inspection provided by Hole Montes, Inc. Naples, Florida</p> |
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| | <p>Operation of the POI Utility System by Severn Trent Environmental Services</p> |
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