



Advanced Water Treatment Process

Highly treated water from the Nansmond Treatment Plant is pumped to the Research Center's advanced treatment facility where it undergoes an 8-step process to prepare the water for recharge of the aquifer.

- 1** **Flocculation and Sedimentation**
Removes suspended solids by settling large particles to the bottom of the water column.
- 2** **Ozone Contact**
Breaks down organic material and provides disinfection.
- 3** **Biologically Active Filtration**
Filters out suspended particles, pathogens, and removes dissolved organic compounds through microbiological activity.
- 4** **Granular Activated Carbon Contactors**
Removes trace organic compounds and prepares the water for ultraviolet disinfection.
- 5** **Ultraviolet Disinfection**
Provides a barrier to pathogens by disinfecting the water with high intensity ultraviolet light.
- 6** **Chlorine Contact**
Disinfection of finished water using chlorine serves as an additional barrier to pathogens.
- 7** **Chemical Addition**
Disinfected water is adjusted by small chemical doses to more closely match the geochemistry of the water already in the aquifer.
- 8** **Aquifer Recharge**
SWIFT Water from the treatment train is pumped into the recharge well, where the well conditions and surrounding aquifer water quality can be constantly monitored.