



# ***norweco***®

*Engineering the future of water  
and wastewater treatment*

Presented at 2025 Mega-Conference, October 19-22, 2025

**The views and opinions expressed in this presentation are solely those of the presenter and do not reflect the views or positions of NOWRA.**



***Norweco's mission is to lead the small flow  
water and wastewater treatment  
industry by manufacturing the  
most effective products with the  
greatest value for our customers.***

**Originally founded in 1906, Norweco has years of experience in the pollution control field.**

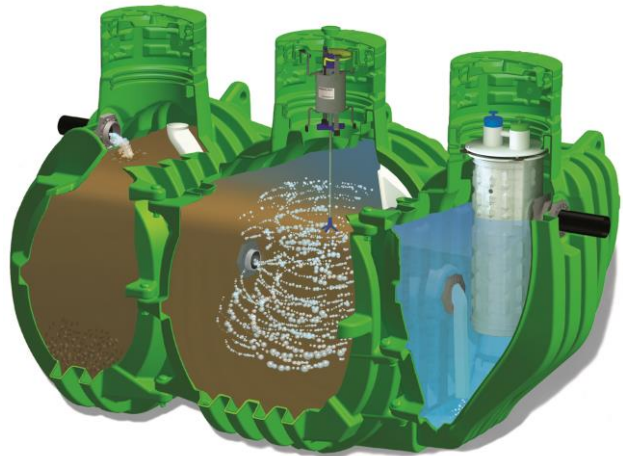
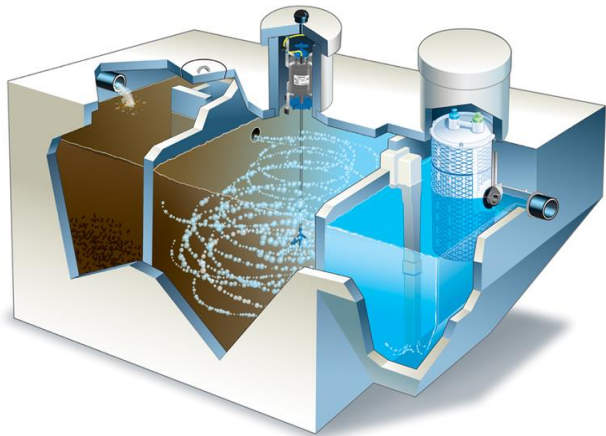
**“Progress through service since 1906” sums it up nicely. A quality product serviced by a local expert has earned Norweco a reputation for excellence.**

**1906 1916 1926 1936 1946 1956 1966 1976 1986 1996 2006 2016**

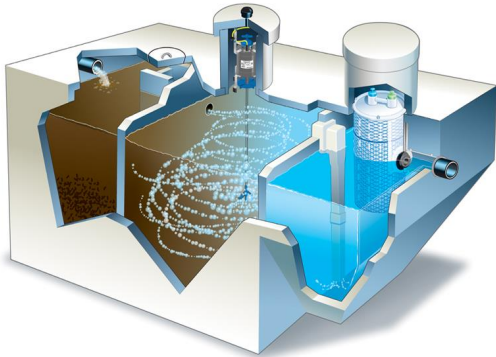
# ***SINGULAIR<sup>®</sup>*** ***TECHNOLOGY***



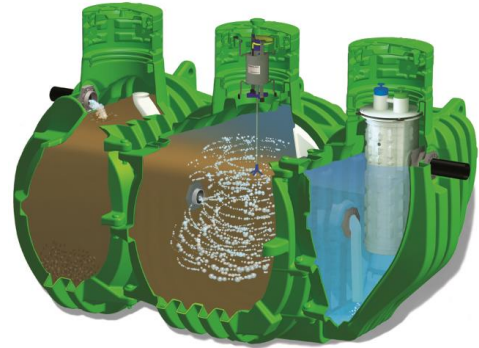
# ***SINGULAIR® TANK OPTIONS***



# ***SINGULAIR® TANK OPTIONS***

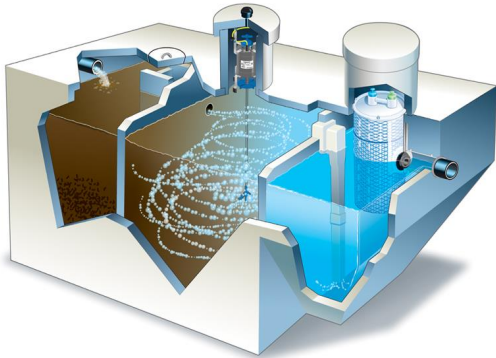


- ◆ **9' 3" LONG**
- ◆ **5' 6" WIDE**
- ◆ **6' HIGH**



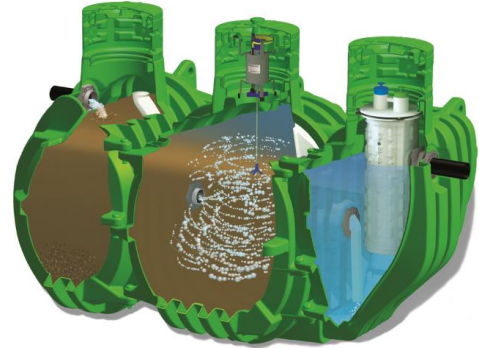
- ◆ **10' 6 1/2" LONG**
- ◆ **6' 6" WIDE**
- ◆ **5' 11 3/8" HIGH**

# ***SINGULAIR® TANK OPTIONS***



💧 **4" Inlet**

💧 **4" Outlet**



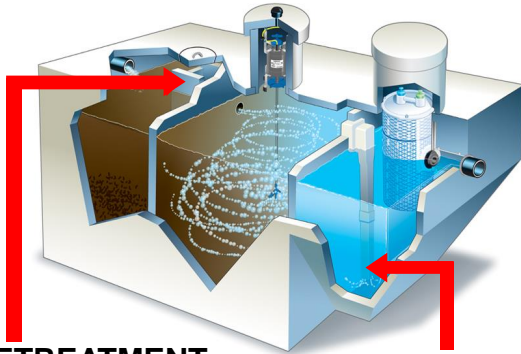
💧 **4" Of fall**

# ***SINGULAIR GREEN® DESIGN***

- ◆ **3 independent chambers**
- ◆ **Threaded transfer fittings**
- ◆ **Welded transfer port**
- ◆ **12 locking rivets**
- ◆ **6 lifting lugs**

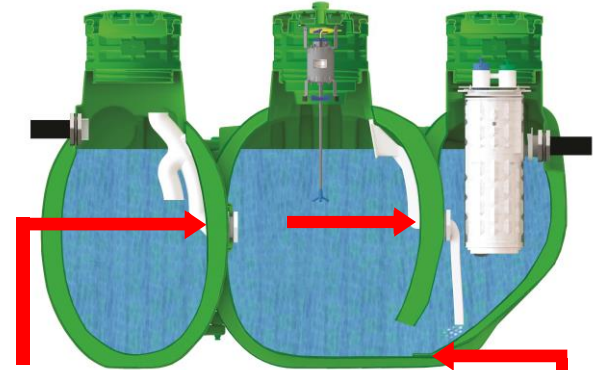


# **SINGULAIR<sup>®</sup> TECHNOLOGY**



**PRETREATMENT  
TEE**

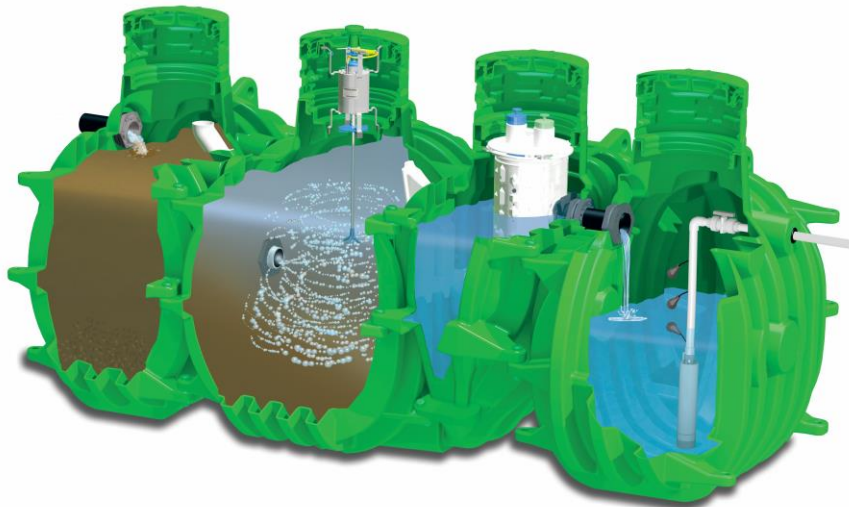
**BIO-STATIC  
SLUDGE  
RETURN**



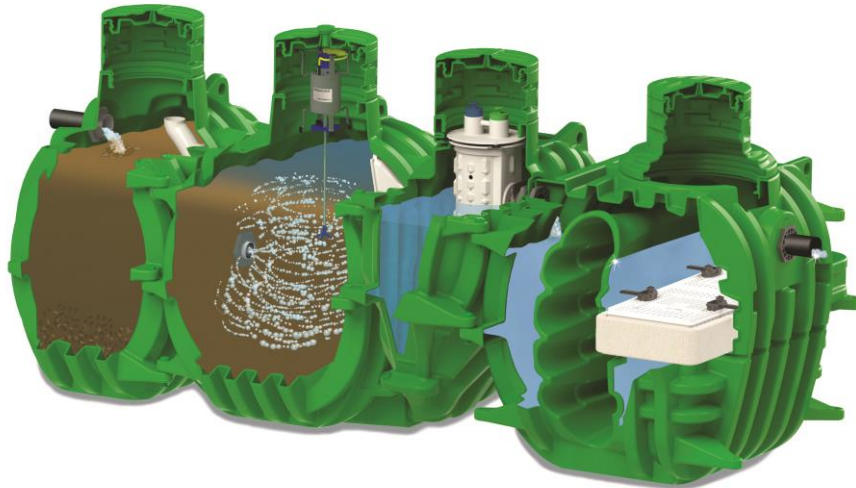
**THREADED  
CONNECTIONS**

**WELDED  
CONNECTION**

# ***SINGULAIR GREEN® WITH INTEGRAL PUMP CHAMBER***



***SINGULAIR GREEN® WITH  
INTEGRAL BIO-FILM REACTOR***



# ***SINGULAIR®***

## ***SYSTEM PERFORMANCE***



# **SINGULAIR® CERTIFICATIONS**

- 💧 **Model 960 – NSF Standard 40**
- 💧 **Model TNT – NSF Standard 245**
- 💧 **Model R3 – NSF Standard 350**
- 💧 **Bio-Kinetic System – NSF Standard 46**



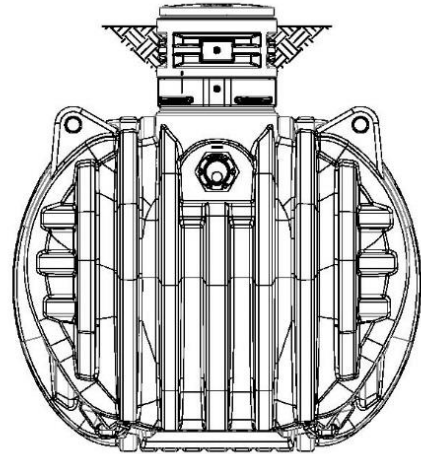
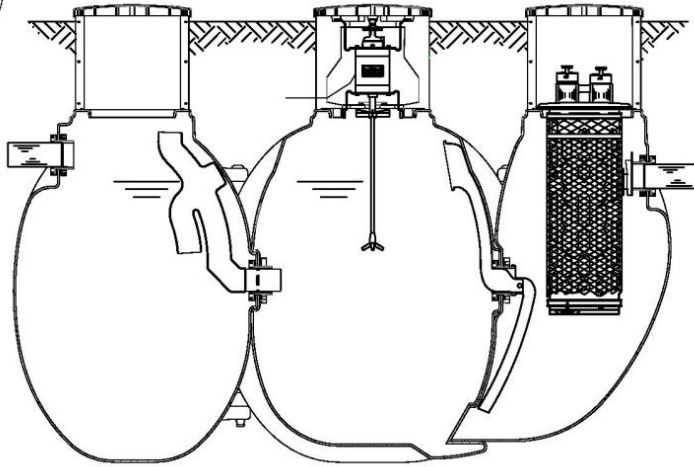
# ***WASTEWATER CONSTITUENTS***

- **Five Day Carbonaceous Biochemical Oxygen Demand: CBOD<sub>5</sub>**
- **Total Suspended Solids: TSS**
- **Ammonia: NH<sub>3</sub>**
- **Fecal Coliform: FC**

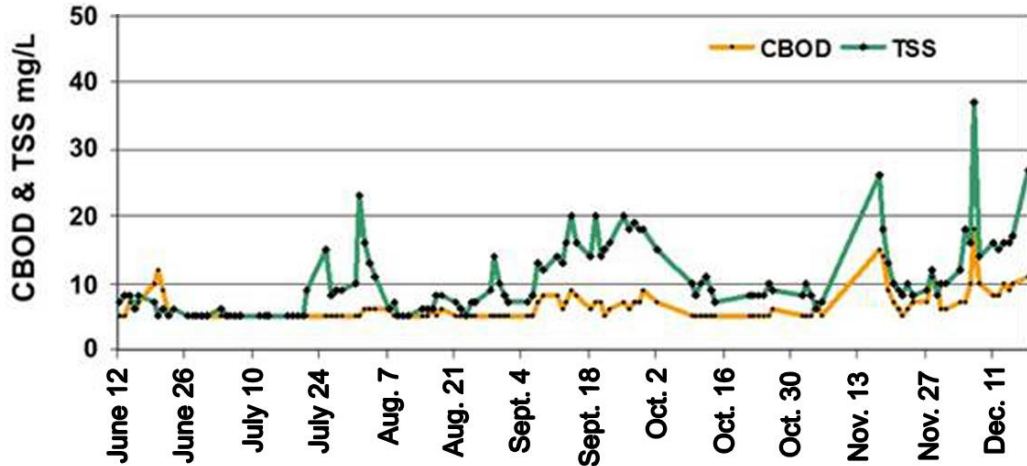
# ***WASTEWATER CONSTITUENTS***

- ◆ **Total Kjeldahl Nitrogen (TKN):** The sum of ammonia and organic nitrogen
- ◆ **Nitrite:**  $\text{NO}_2$
- ◆ **Nitrate:**  $\text{NO}_3$
- ◆ **Total Nitrogen (TN):** The sum of  $\text{TKN} + \text{NO}_2 + \text{NO}_3$

# ***MODEL 960 WASTEWATER TREATMENT SYSTEM***



# ***MODEL 960 NSF TEST RESULTS***

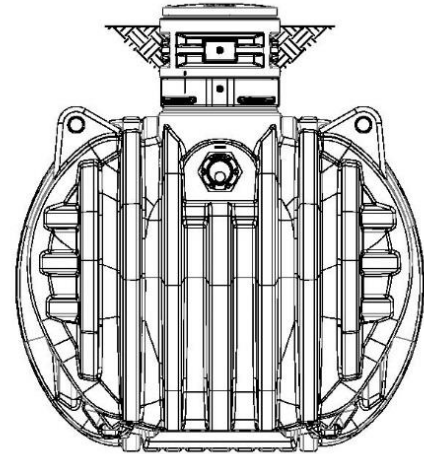
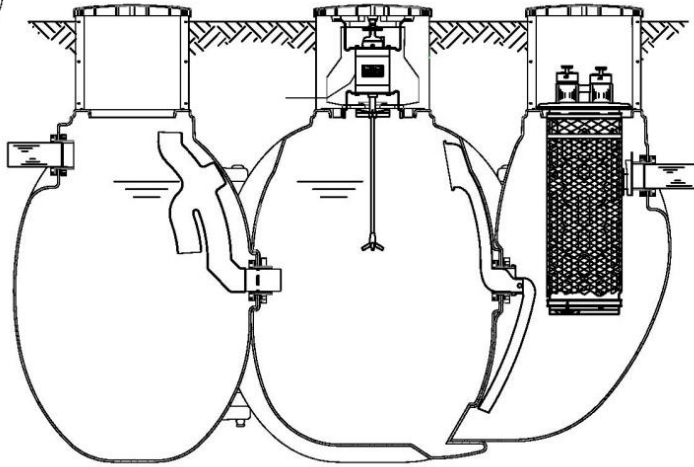


**Test Average**

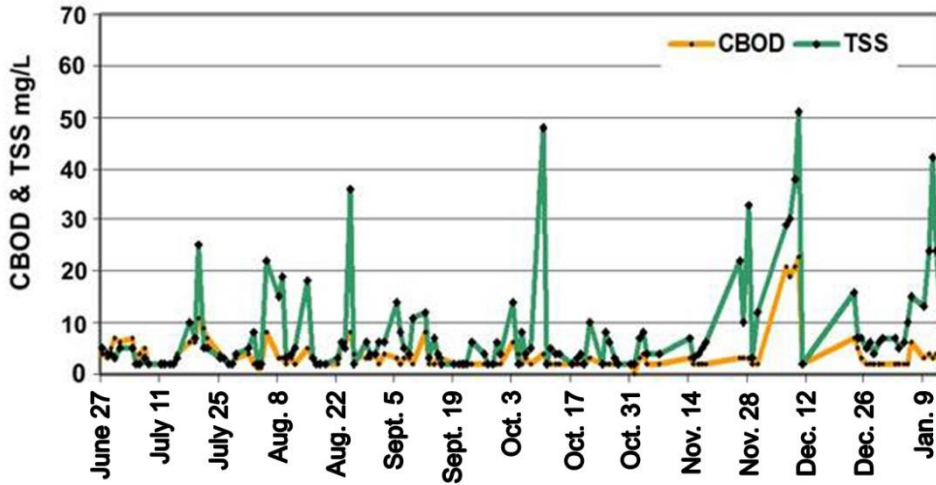
**CBOD**  
**6 mg/L**

**TSS**  
**10 mg/L**

# ***MODEL TNT TOTAL NITROGEN TREATMENT SYSTEM***

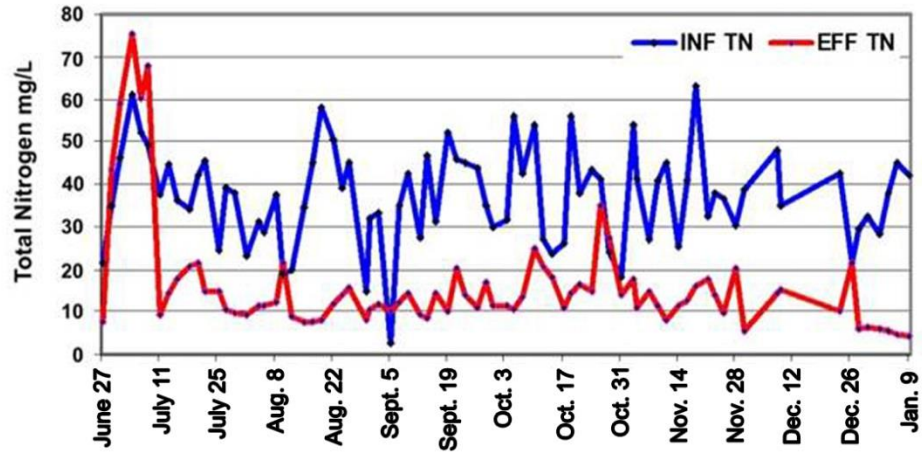


# ***MODEL TNT NSF TEST RESULTS***



**Test Average**      **CBOD**      **TSS**  
**4 mg/L**      **9 mg/L**

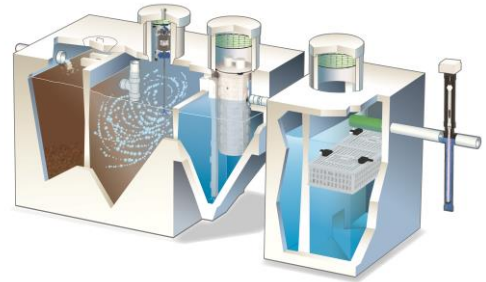
# ***MODEL TNT NSF TEST RESULTS***



**Test Avg. Influent TN Effluent TN % Removal**  
**38 mg/L 12 mg/L 68%**

# ***MODEL R3 REUSE TREATMENT SYSTEM***

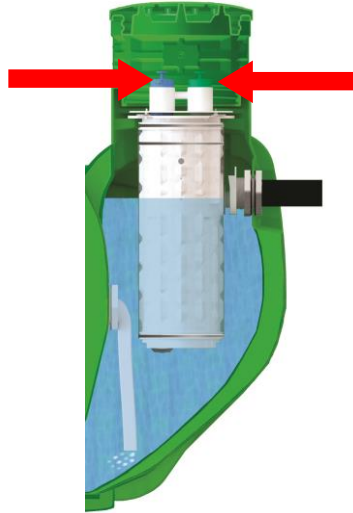
- 💧 **5.0 mg/L CBOD**
- 💧 **4.6 mg/L TSS**
- 💧 **2.3 NTU turbidity**
- 💧 **2 MPN/100 ml E. coli**
- 💧 **66% Total nitrogen reduction**



# ***BIO-KINETIC<sup>®</sup> SYSTEM***

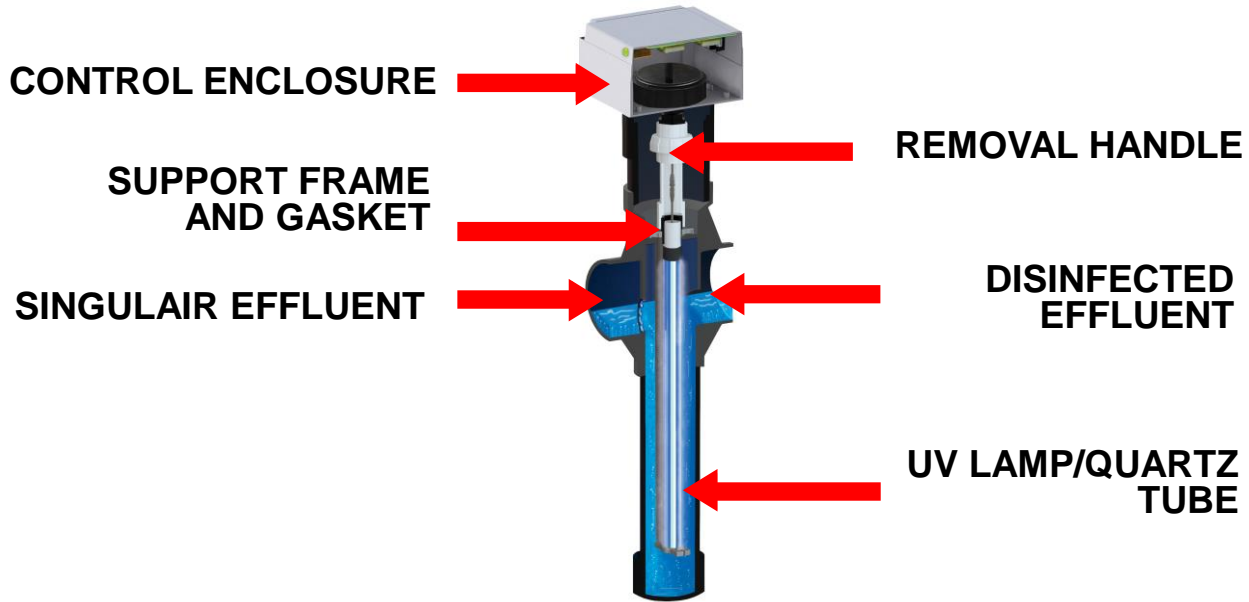
## ***NSF STANDARD 46***

**BLUE CRYSTAL  
CHLORINATION**



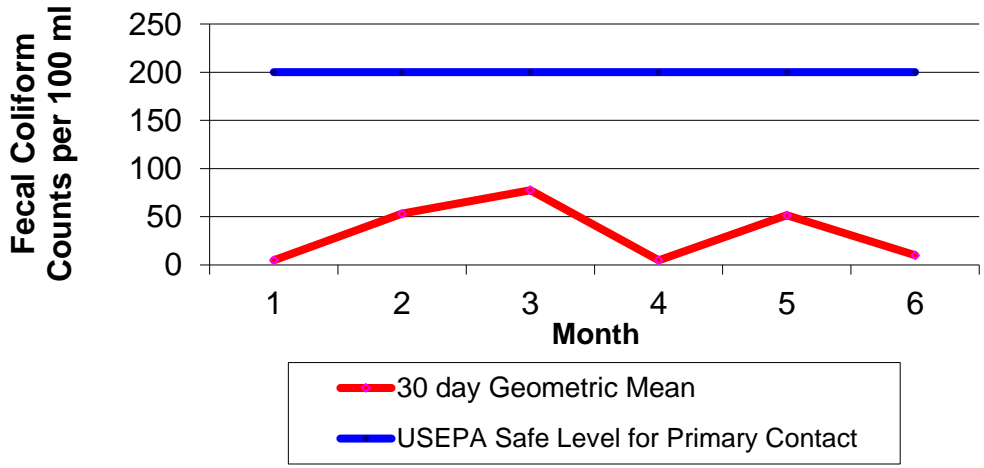
**BIO-NEUTRALIZER  
DECHLORINATION**

# ***AT 1500 UV DISINFECTION SYSTEM***



# ***AT 1500 UV DISINFECTION SYSTEM***

## **NSF Fecal Coliform Test Results**



# ***SINGULAIR<sup>®</sup>*** ***SYSTEM SERVICE***



# ***SINGULAIR® SYSTEM SERVICE***



# ***SERVICE PRO® CONTROL CENTER***



## ***REMOVE AERATION COVER***



## ***UNPLUG AERATOR***



## ***REMOVE AERATOR***



## ***LOOSEN SET SCREWS***



## ***CLEAN MOTOR SHAFT***



## ***CLEAN ASPIRATOR SHAFT***



## ***CLEAN ASPIRATOR SHAFT***



## ***OUTLET COUPLING SEALING TOOL***



## ***MOISTURE VAPOR SHEILD***



## ***REMOVE INNER ASSEMBLY***



## ***CLEAN INNER ASSEMBLY***



## ***TURN LOCKING LUGS***



## ***CLEAN OUTER BUCKET***



## ***AERATOR INSTALLED***



# ***BIO-KINETIC<sup>®</sup> SYSTEM***



## ***REINSTALL MOISTURE VAPOR SHIELD***



## ***REMOVE OUTLET COUPLING SEALING TOOL***



## ***RISER SAFETY NET***



## ***INSTALL LIDS***



# ***SERVICE PRO® CONTROL CENTER***



# ***SERVICE COMPLETE***



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