Build Your AdvanTex Know-How

Operations and Maintenance for Residential and Commercial Applications

Overview

- O&M basics
- Before going to the site
- At the site
- Before leaving the site
- Back at the office

O&M Basics

O&M is Important Because ...

- It optimizes treatment process
- It ensures system longevity
- It establishes accountability
- It protects the owner's investment

Effective O&M Requires ...

- Knowing the system's configuration and components
- Knowing how the system operates
- Knowing the system's capabilities
- Knowing local regulatory codes (application-specific criteria)
- Knowing the permit requirements
- Having a signed service contract

Dealer's O&M Responsibilities

- Ensure service provider has obtained all required state or jurisdictional authorization for performing maintenance
- Training, authorizing, overseeing, and re-training authorized service providers on AdvanTex treatment systems

Dealer's O&M Responsibilities: Training

Authorized Service Providers Receive….

- Program, Design, Installation, and O&M training
- advantexservice.com & vericomm.net training
- Installation and O&M manuals
- AdvanTex® Design Information
- Site-specific documentation (site sketch, as-built, etc.)
- Homeowner's Package

Service Provider's O&M Responsibilities

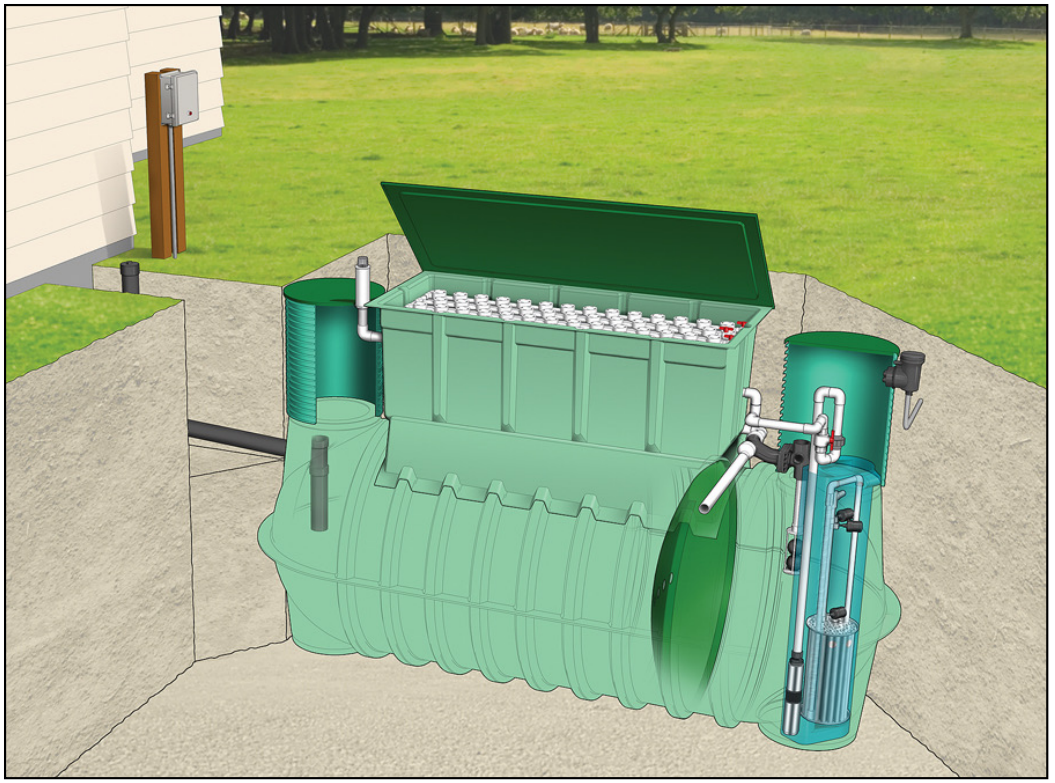
- Attend training on AdvanTex® program, design, installation, and operation & maintenance
- Obtain signed service contract from property owner, and provide homeowner's package
- Attend pre-construction meeting, if possible
- Handle system start-up
- Handle all regular service calls, alarm calls, sampling, and monitoring
- Record service reports and sampling data in advantexservice.com

O&M Service Contract

- An initial service contract must be signed by the system owner
- The service contract must contain provisions for inspection/service visits, as well as alarm/emergency response

Routine Maintenance Focuses On ...

- Control panel
- Pumping system
- Septic tank / Chamber
- Recirculation tank/chamber
- Discharge tank/chamber
- Textile filter
- Miscellaneous



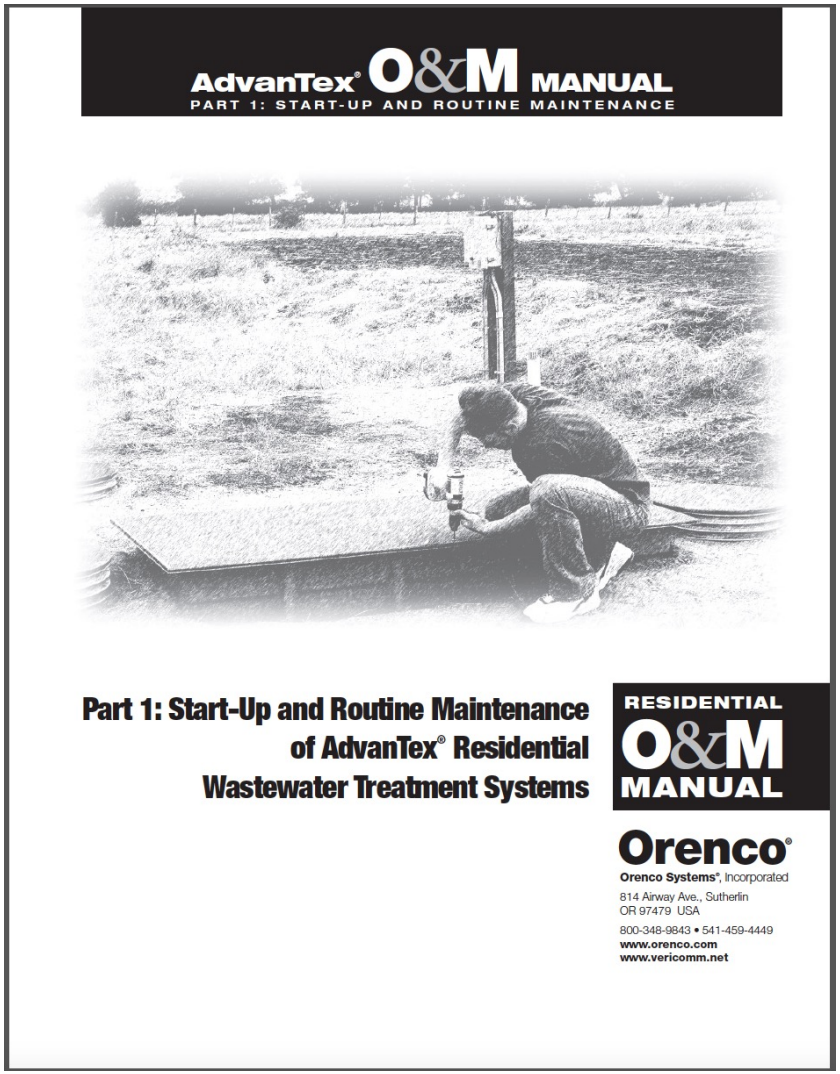
Routine Maintenance Frequency

- Commercial Systems:
  - Typically based on reporting requirements
  - Once every 3-6 months is common after 1st year
- Residential Systems:
  - Within 3 to 6 months of start-up
  - At ...
    - ~ One year
    - ~ 18 months (NSF states only)
- Thereafter, every 12 months
  - Spring/summer is the best time for annual visits

Before Going to the Site

Review AdvanTex® O&M Manual

- Read the AdvanTex O&M manual and take it to each site visit for quick reference



AdvanTex® O&M Manual Includes ...

- Typical system configuration
- Treatment process and performance expectations
- Typical materials list
- Tools, equipment, and spare parts list
- Routine cleaning and maintenance procedures
- Effluent testing procedures
- Troubleshooting tips for operators: process treatment
- O&M for nitrogen reduction
- Maintenance checklist and field report forms
- Appendix and abbreviations
- Record of system facts

Review Site Information

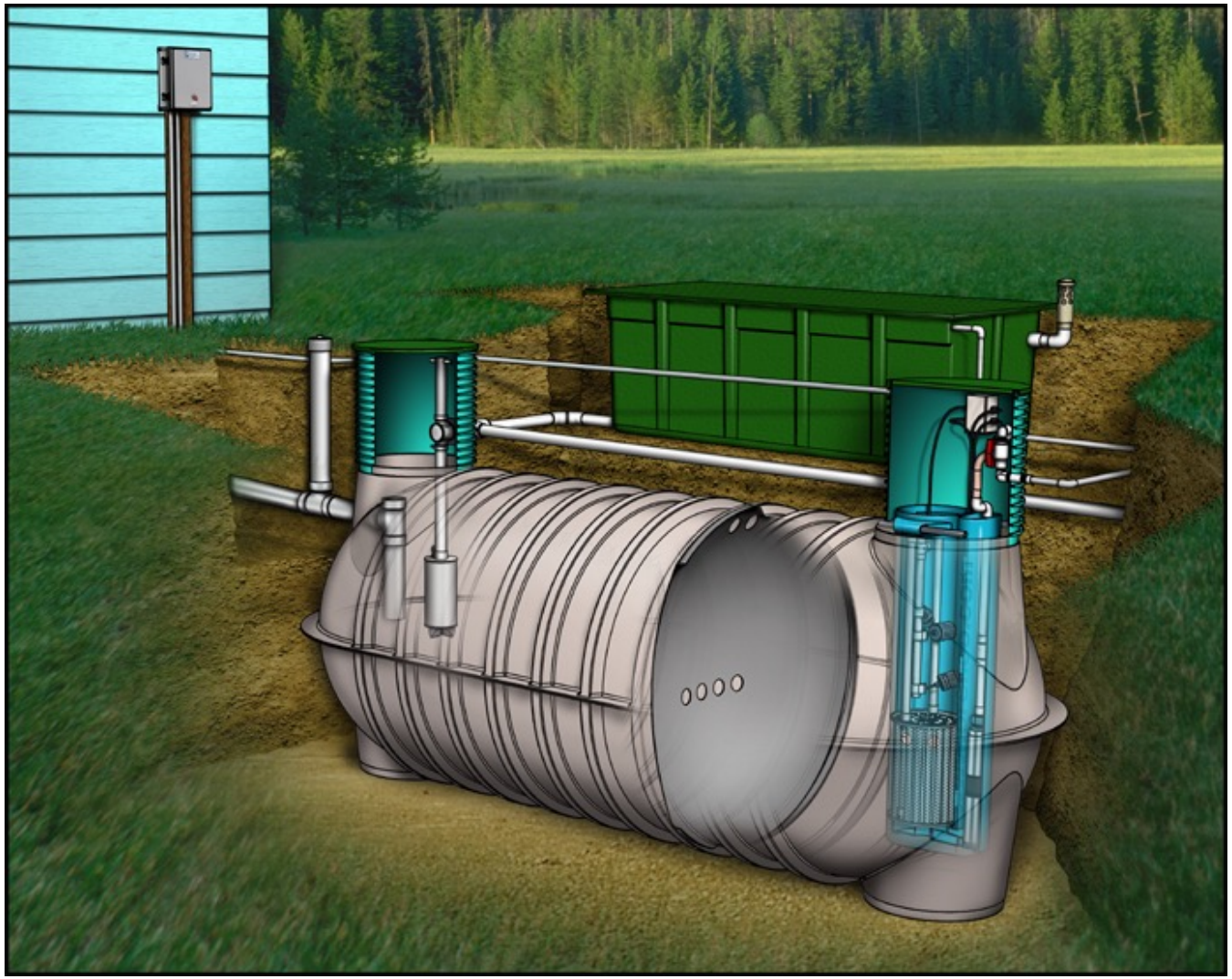
- Print all appropriate maintenance forms
- TCOM (Commercial)
- VeriComm.net
- AdvanTexservice.com
- Hard files

Tools Required for Effective O&M

- Come to the site with appropriate equipment
- See the equipment list in the AdvanTex® O&M manual
- Always wear eye protection, gloves, and protective clothing

At the Site

AdvanTex® Treatment Systems

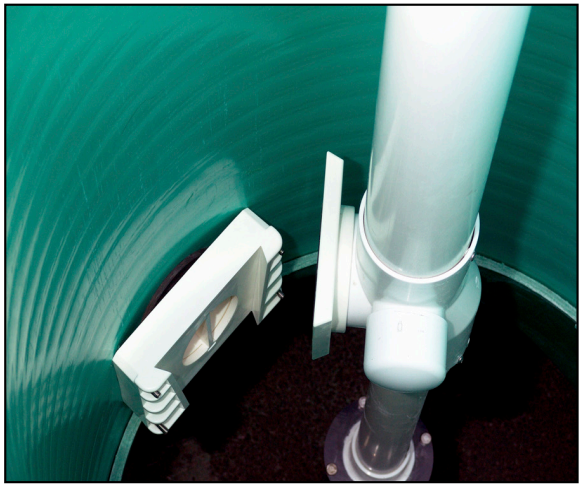


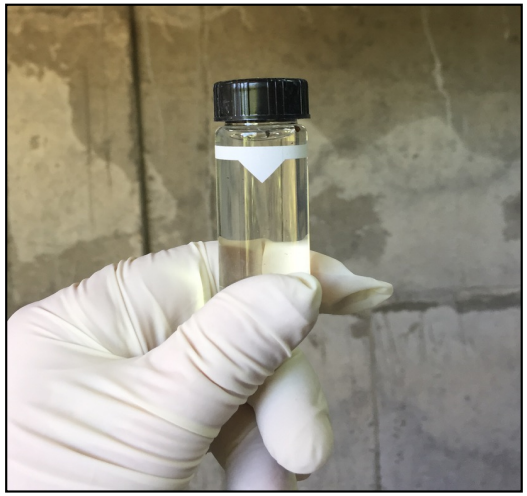
Getting Started

- Walk around the site
- Visually inspect
  - ~ Equipment for damage
  - ~ Tank liquid levels
- Unbolt pod lids
- Check pods for odors
- Look at media for even dispersal

Sampling Filtrate

- Pull RSV out of its quick disconnect holster and lay it on the riser lid
- Collect a filtrate sample from the RSV inlet
- Refer to the “Field Sampling/Observations” in the Residential AdvanTex® O&M manual

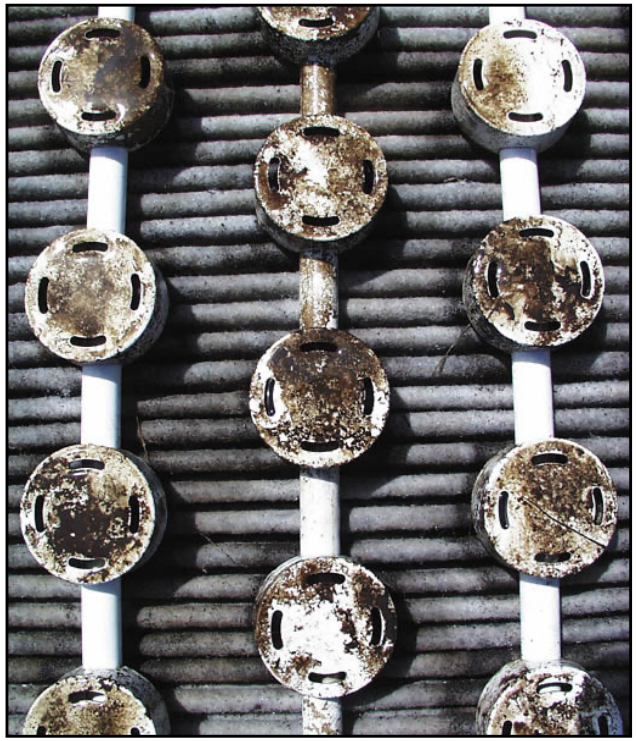




AdvanTex® Textile Filter

Characteristics of Biomat

- Color — Light to dark brown, not yellow
- Texture — Gelatinous, not lard-like
- Odor — Musty, not pungent
- Moisture — Moist, not ponding*



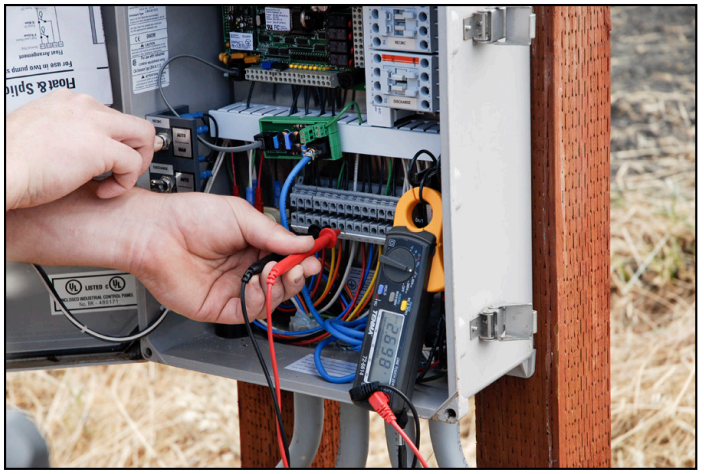
**If ponding or nuisance odors occur, refer to the troubleshooting section of the Residential AdvanTex® O&M manual.*

Oily Film: Commercial

- There should be no signs of oil or grease on the textile or in the tank
  - ~ Excessive grease and oil is typically not a problem when commercial systems are properly designed and managed

Checking Pump Operation

- Put the panel in test mode (VeriComm® panels only)
  - Hold the “push to silence” button for ~15 seconds until panel chirps
- Measure the incoming voltage at the panel
- Hold spring-loaded switch in the “manual” position
  - Measure and document voltage and amperage of the pump(s) while running
- Verify pump operation



Cleaning the Pump

- Ensure that the breakers in the control panel are in the off position.
- Close ball valve
- Disconnect discharge assemblies
- Remove pump

Cleaning the Pump

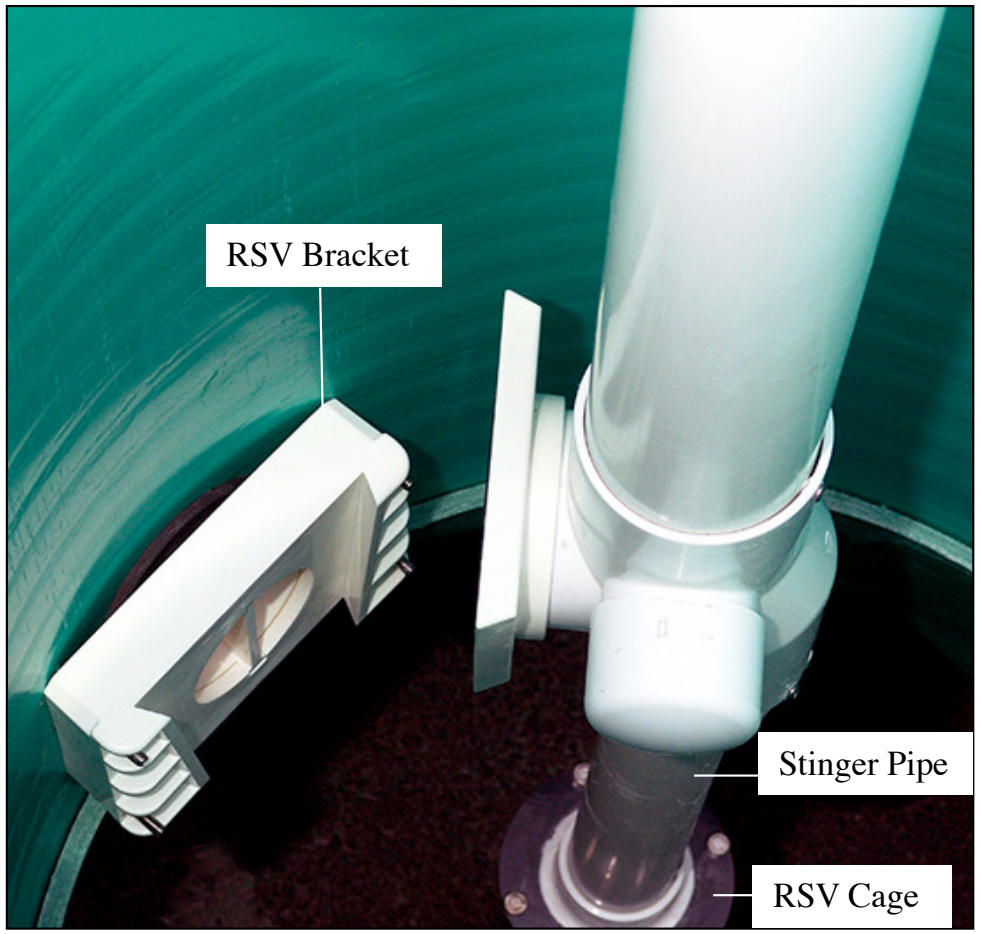
- Check intake screen
- Wash off particles, as necessary
- Report abnormal particles on the Field Maintenance Report Form
- Inspect cord for nicks or swelling
- Reinstall pump
- Reconnect discharge assemblies
- Repeat the above process for each pump in the system

Cleaning the Biotube® Filter Cartridge

- Switch MOA and circuit breakers to “off”
- Remove float assembly
- Remove and hold cartridge over inlet of tank
- Carefully spray buildup into tank
- Reinsert cartridge **completely** into pump vault
- Reattach float stem

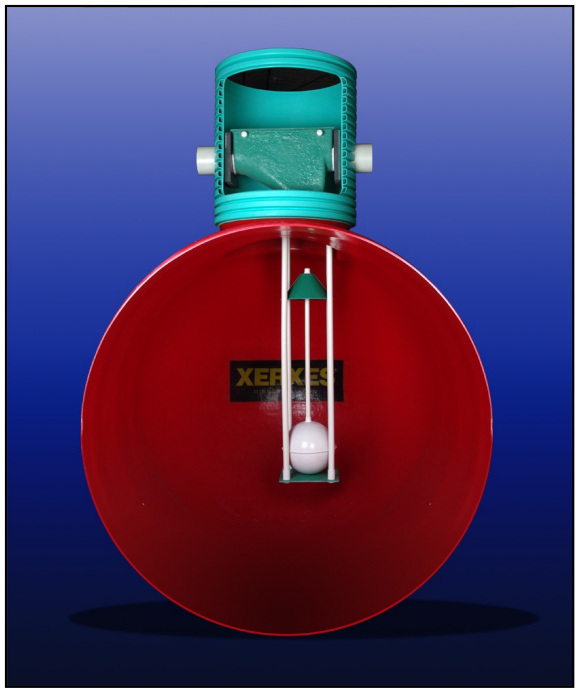
Cleaning Recirculating Splitter Valve: Residential

- Clean RSV of any debris



Recirculating Valve: Commercial

- Check buoy for ...
  - ~ Proper inflation if it's an inflatable ball
  - ~ Free movement in the cage

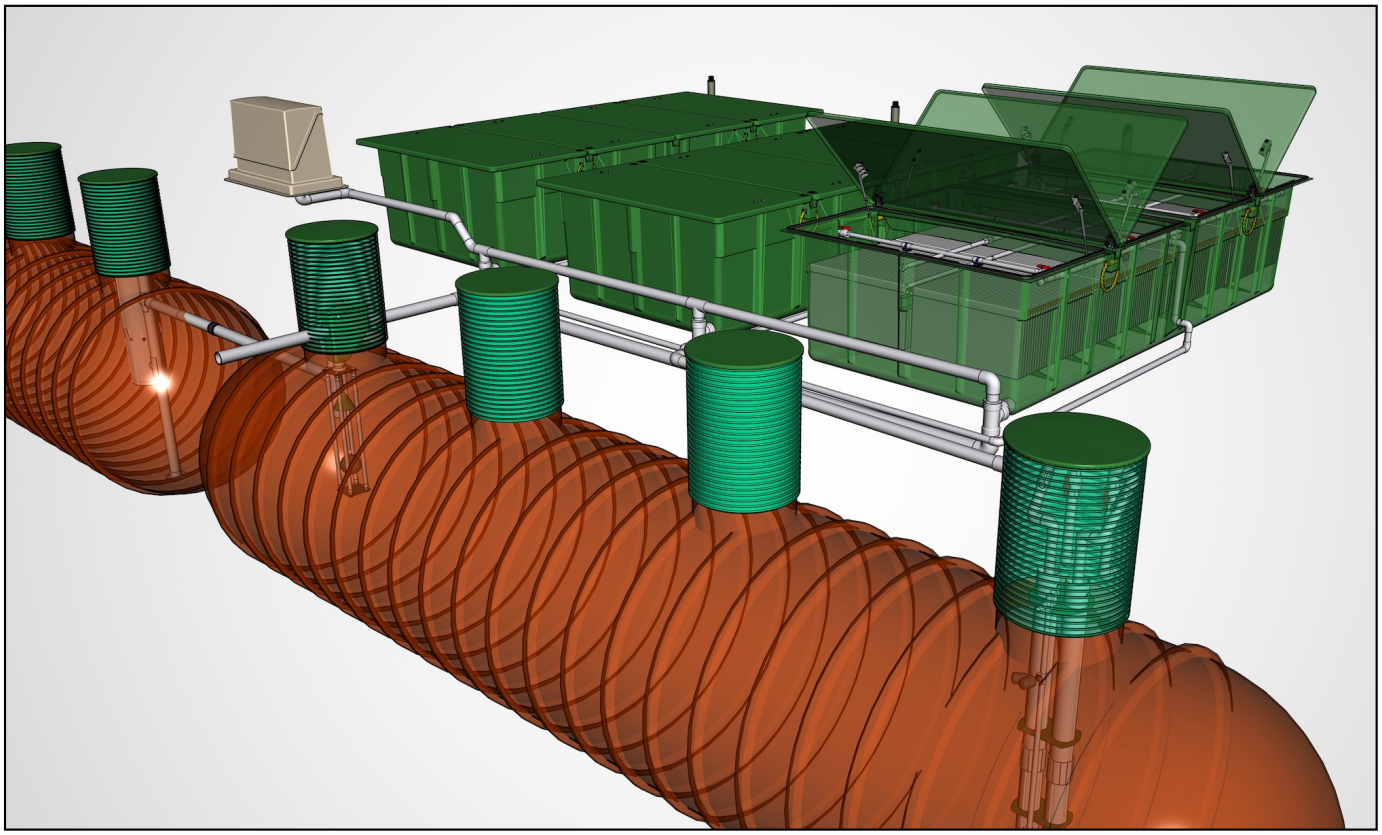


Checking Controls Operation

- Confirm the operation of the audible and visual alarm by lifting and lowering the alarm floats

Inspecting the Processing Tank

- Verify there is no continuous flow at inlet (could indicate faulty fixtures or leaking plumbing)

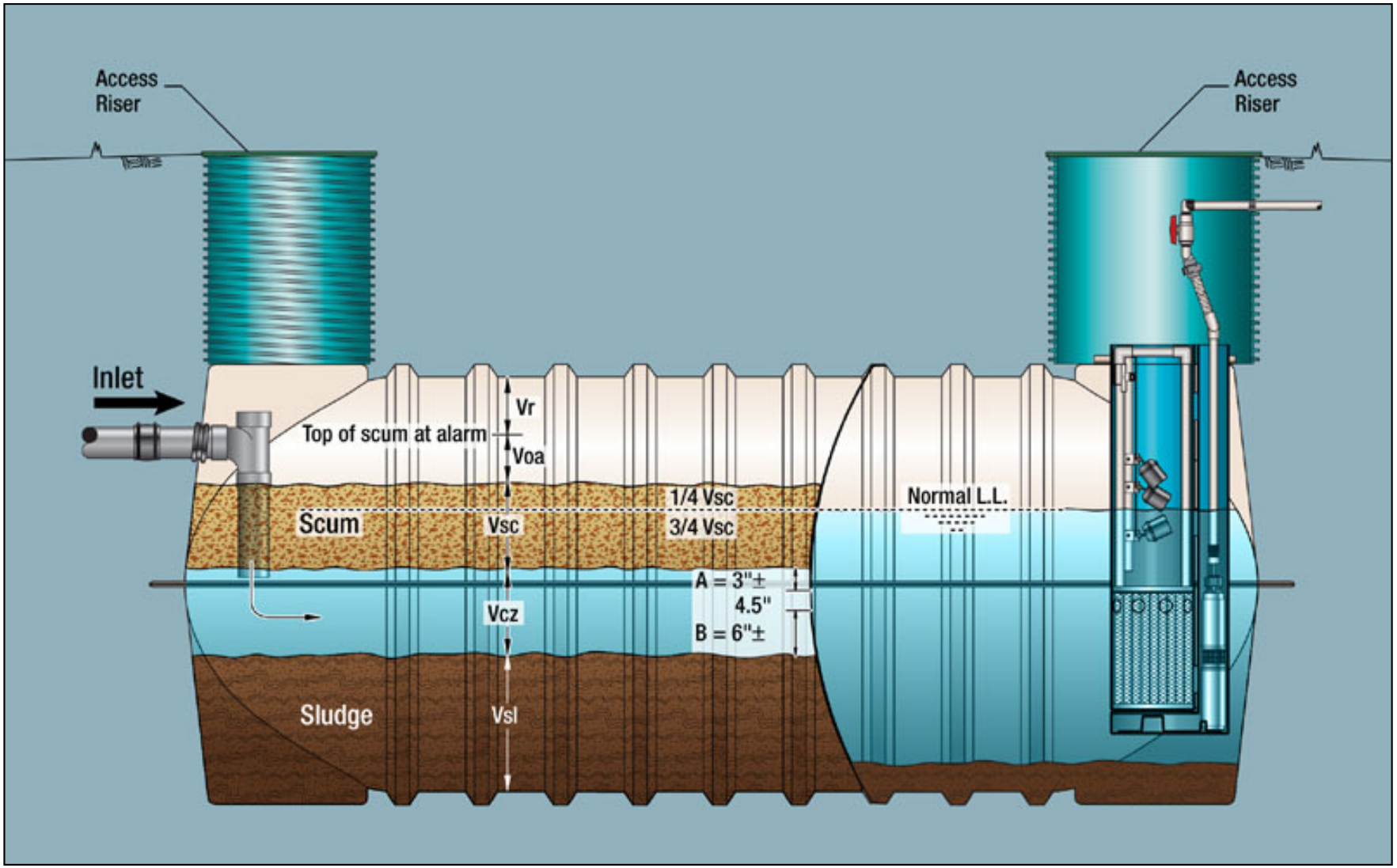


Inspecting the Tank

Measuring Sludge/Scum Thickness

- Measure sludge/scum accumulation after 1 year
  - ~ Thereafter, measure every 3 years
- Recommend pumping when ...
  - ~ Scum is about 3" above flow-through ports, or
  - ~ Sludge is about 6" below flow-through ports
- Measure and record buildup in recirculation chamber as well

Measuring Sludge/Scum Thickness



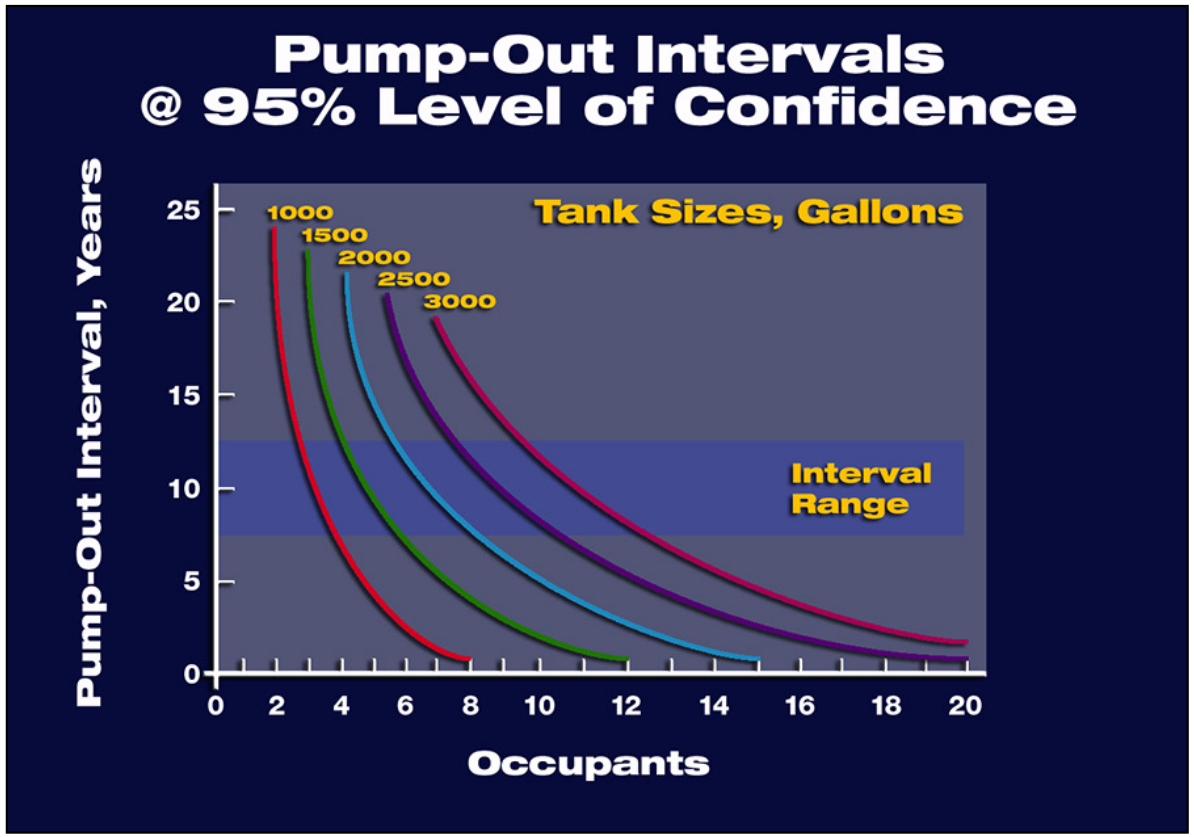
Inspecting the Processing Tank

Secondary Compartment

- Little scum will be present in the secondary compartment

Pumpout Intervals, in Years

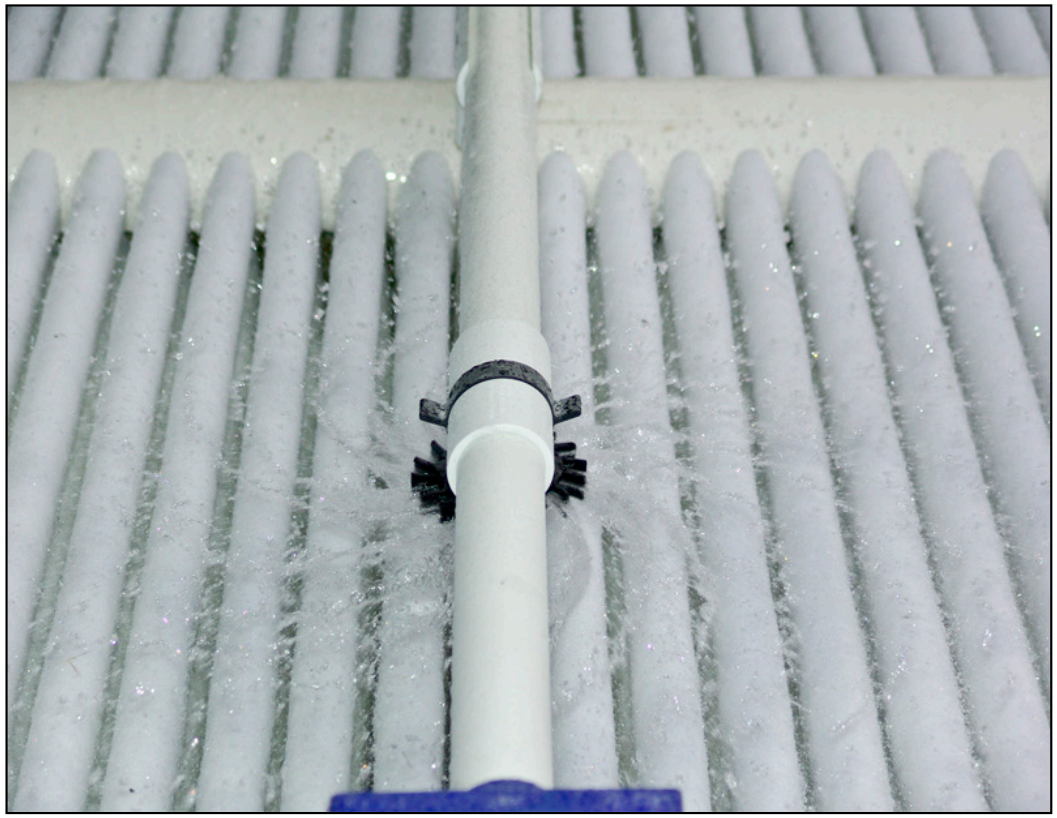
- Don't pump the tank unnecessarily
- Excessive pumping retards digestion of solids and increases maintenance costs



Pigtail Nozzles

Spin Nozzles

- Have a uniform spray
- Easy to clean
- Easy to remove
- Side Shields



2 Main Ways to Clean Laterals

- Use pump or jet hose
- Use a bottle brush

Flushing AdvanTex® Laterals

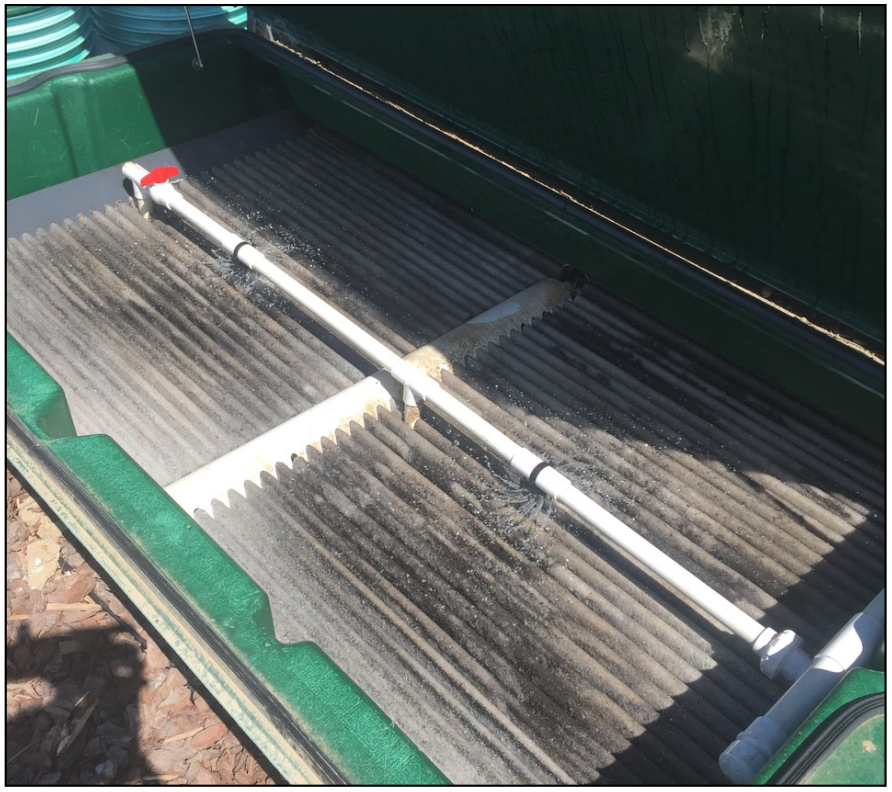
- Open ball valves at lateral ends
- Turn pump control to “manual”
- Run pump to flush laterals
- Turn off pump before brushing laterals

Brushing is Better

Cleaning by running pump

Cleaning with bottle brush

Flushing AdvanTex® Laterals



Spinner Nozzles
Check spray coverage

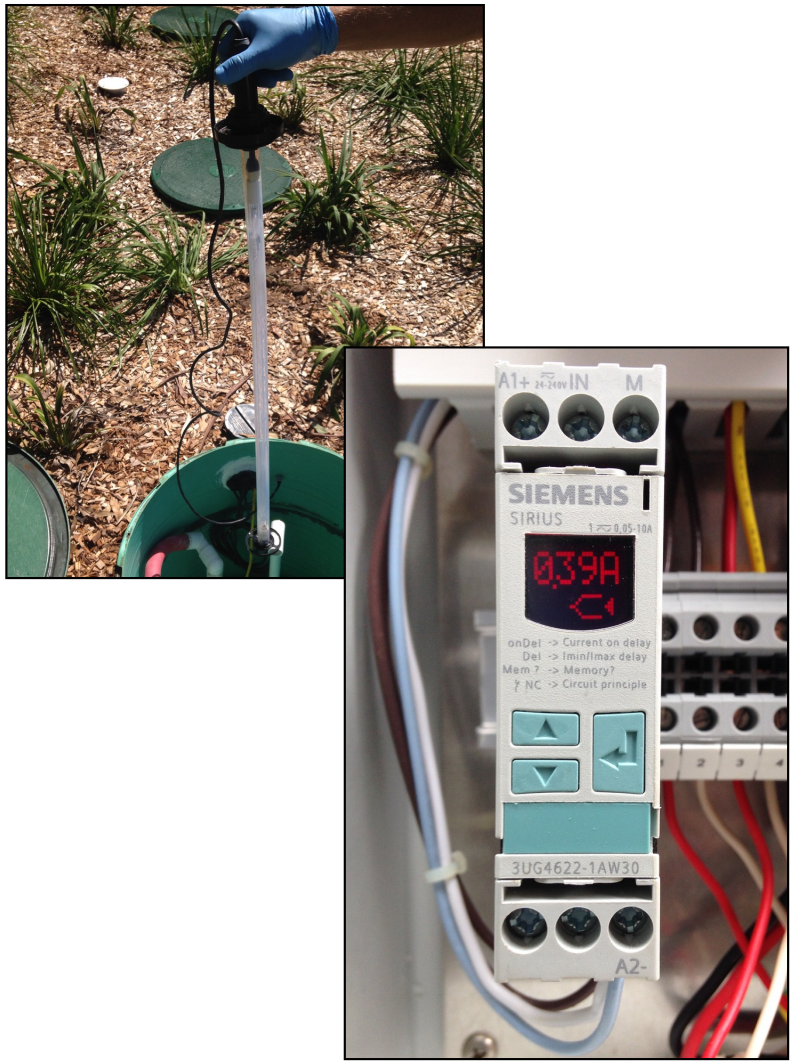
Orifices
Check squirt height

Risers, Splice Box, Floats, and RSV

- Reinstall splitter valve (if applicable)
- Verify tank liquid level is in normal range (refer to drawings)
  - ~ If low, the ball mechanism could be jammed in the seated position; remove, disassemble, and inspect
  - ~ If high, the RSV may require cleaning because it is not making a tight seal when seated; remove, disassemble, and inspect
- Verify no holes or leaks in riser/riser connection
- Inspect splice box for secure, watertight connections. Remove any water present
- Verify float condition and neat wrap of float cords

Miscellaneous O&M Procedures

- If system has a UV device, perform maintenance on UV disinfection unit per manufacturer's instructions
- If system has another manufacturers proprietary device, consult their manuals for proper maintenance instructions
  - UV
  - Drip



Before Leaving the Site

Before Leaving the Site

- Verify that valves are back to proper operating positions
- Toggle switches are in auto
- Circuit breakers are On
- RSV is reinstalled
- AX pod valves in proper position
- Floats are operational
- Biotube Secured
- Debris is hosed off of the riser
- Inspect and clean the lids and their gaskets

Before Leaving the Site

- Make sure all lids are securely bolted
- It's helpful to take photos of the system for future reference
- Fill in checklists/forms (see O&M manual)
  - ~ Field Maintenance Report
  - ~ County/State required forms

Back at the Office

- Complete all paperwork and submit all reports as required

Preventative Maintenance

Homeowner Don’ts

- Septic additives
- Flammable or toxic products
- Excessive use of cleaners
- Pool or spa products
- Pharmaceuticals
- RV waste
- Storm water
- Excessive FOG
- Food byproducts
- Cigarette butts
- Disposable wipes
- Water softener backwash

Summary

- It optimizes treatment process
- It ensures system longevity
- It establishes accountability
- It protects the owner's investment

Solutions for Decentralized Wastewater Treatment

Orenco Systems®, Inc.

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