PICKING UP THE PIECES

Restoring a Failed Small Community Wastewater System

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Picking up the Pieces

- **The views in this presentation are the Presenters and are not reflective of NOWRA.**
  - The Presenter is getting more opinionated in his later years

Picking up the Pieces

- **Perspective**
  - A 40,000 gpd “non-discharging” wastewater system is discharging into a local creek
  - The breakers are tripped to the treatment unit, to the UV disinfection, and to the drip dose pumps
  - The equivalent of septic tank effluent is flowing out of the top of the lowest tank in the system and down the hill

A Public Utility got into a Serious Pickle

- **Operates 18 small community wastewater systems**
  - Each has STEP collection, fixed-film treatment and drip dispersal
  - Operators came and operators went
- **The systems had been successful**
  - Until they were not
- **The reality of having to perform maintenance on a timely basis bit them square in the hind-end**

Most of these small communities are resort villas

- **Very few housing units are locally owned**
  - One group rents them out
  - Another group cleans the villa between guests
  - Nobody pays much addition to the STEP tank or to the red light on the control panel

Typical Resort Villas and Cabins





And a couple of High-Dollar Neighborhoods





This problem has been simmering for 10-plus years

- **No major complaints**
- **Property owners occasionally fussed about smells**
- **No large-scale wastewater discharges**
  - Nothing that could not be fixed with duct tape

It’s not all bad news,

- **The systems were well designed**
- **For the most part**
  - The installation was good



Five years ago...

- **TDEC performed a state-wide inspection of all small community drip systems**
  - Most of this utility's drip systems were found to be out of compliance with their permits
  - TDEC personnel started digging a little deeper

Overloaded and Under Loaded Treatment Systems





Box on left shows signs that it has been the primary treatment unit. Minimal flow was observed in the box on the right. Blankets in box on right were mostly white, indicating very little use.

UV System Offline and Disconnected



UV disinfection box: One UV light is completely offline and is valved to prevent flow through the unit.

Lack of Regular Visits by the Operator



A Few Broken Pipes



A Few Electrical Issues



Overgrown Distribution Area





Wait, What is the Purpose of that Pipe?



Drip Systems and Bears



Treatment Systems and Bears





Discharging, but not NPDES





Overall, the biggest problem is a lack of documentation

A lot of time has been wasted while tracing pipes, deciphering control panels, and looking for valves

Most of the documentation was “lost in the shuffle” as the Utility imploded

VFD



Closing thoughts for Utilities

Don’t underestimate the cost of O&M

Don’t think that distributed wastewater systems can be used as “Cash Cows”

Don’t get behind on Maintenance

New Moto

If the system is remote, keep it simple

how far will specialists have to travel to fix complicated controls?

Thank You

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