

Green SRF Wastewater Projects ~ Phase 4

Left Fork Watershed of the Mud River



**Lincoln County Commission ~ US EPA ~
WV DEP ~ WV DHHR Cooperative Projects**

Final Adaptor Ring Report

~ January 2013 ~

Between July and December 2012, the Project faced continual problems with leaking and cracked adaptor rings, a component of septic and pump tanks. Adaptor rings were replaced multiple times using various sealants and procedures before a solution to the problem was found. This highlights the major points in this effort.

Background: In Phase 3, Infiltrator brand tanks, risers, and lids were used. However, the Project found that these risers lacked adequate molded openings for attaching the lid screws. As lids were removed to check systems it was often very difficult to realign screws with original holes. As a result, over time, there were more and more holes in the top riser where the lids attached. This would be less of a problem if lids were rarely removed, but it is a problem in projects like this which are continually monitoring systems' effectiveness.

The Project was concerned that over time the lid risers would have to be replaced because of multiple screw holes. For this reason, the Project decided to change lids for Phase 4.

Phase 4 specs called for riser lids with full 360-degree internal anchor bases, and covers with lift handles. This meant that tanks for Phase 4 were manufactured by Infiltrator, while risers and lids were manufactured by Polylok. The two companies work closely together, and Infiltrator's installation guidelines reference how to use Polylok products. Polylok has a special adaptor ring for use between the tank

opening and the first riser. It was at the ring where the Project had multiple leaking / infiltration problems.



Dyed water coming from outside the adaptor ring demonstrates leaking and infiltration

Final Resolution. The Project initially worked closely with representatives from Infiltrator and Polylok. These representatives came on site to work and evaluate systems. However, the final solution came from Lloyd McVay, installer for Wiseman Excavating, the company which had the contract for most of Phase 4's installations.

In the end what worked was using Infiltrator risers, putting the Polylok adaptor ring on **the very top riser** and attaching the Polylok lid to the ring. The initial Infiltrator riser was attached to the tank using mastic and screwed down using the proscribed star pattern. Between all other risers, CS-1500 was used as a sealant.

Of the 8 installations involved with leaking adaptor rings, 4 of them were redone 4 times using a variety of different retrofit attempts. The other 4 homes were retrofitted less often. The chart below shows the individual homes and the number of retrofits done to each. Costs added to the Project as Change Orders are also shown, but these do not include time and expenses of project staff, manufacturers and distributor.

Homeowner	WJ Clark Retrofit	Wiseman Retro #1 Change Order 2	Wiseman Retro #2 Change Order 3	Wiseman Retro #3 Change Order 5	Infiltrator Retrofit	TOTAL Retrofit Costs to Project
Tim Hager	X	X	X	X		
Mark Walls	X	X	X	X		
Thomas Lovejoy	X	X	X	X		
Norvil Adkins	X	X	X	X		
Gary Curry					X	
Beverly Adkins		X	X	X		

Phil Cantley		X	X	X		
Josh Hager				X		
COSTS	\$0.00	\$9,834	\$4,086	\$10,259	\$0.00	\$24,179

Important Lessons Learned

Diligent oversight and testing by the Project are critically important. Too often the assumption is made that high tech, expensive systems will work as they are supposed to. The Project's due diligence insuring that systems work as they are supposed to supports state agencies. Both the WV Department of Environmental Project's mission to protect the environment and the WV DHHR's mission to protect public health are strengthened by Lincoln County's Green Wastewater Projects.

It is crucial for multiple players involved in problems like the leaking adaptors to avoid pointing fingers and work with each other on solutions. As attempted solutions failed to work, the number of players at the table brainstorming for new answers grew less. Yet, the Project always benefited during the times all the key players worked together.

Only the most up-to-date instructions should be on websites, included with components, and used in trainings . Multiple and contradictory installation instructions created confusion for the Project and the installer.

Having the active support and onsite help from state agency people like District Sanitarian, Ryan Harbison, adds tremendously to the effectiveness of projects like this. Consistent, long term involvement of state agency staff increases the knowledge base for understanding and solving problems as well as increasing agency appreciation of project challenges and successes. It takes practical field experiences and helps translate them to state agency guidelines, regulations, and action.

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