

# ROUGH GOING

## A Georgia contractor uses a combination of nozzles to break through heavy lime blockages in a wastewater treatment plant recycling line

By **Scottie Dayton**

**T**he Snapfinger Creek Advanced Wastewater Treatment Facility in Decatur, Ga., treats 36 mgd and is the only authorized disposal facility in DeKalb County for septage. When flows exceed plant capacity, the excess is diverted through a closed-loop, 30-inch ductile iron pipeline to the front of the treatment process.

In 2005, operators noticed a considerable drop in the recycled flow. The contractor hired to clean the 1,000-foot pipe did not video inspect it afterward. Two years later, the problem returned. Plant supervisors Keith Adams and Raymond Pearson called Cloyd Mason “Buck” Rogers Jr. of Rogers & Sons Inc. in Lithonia.

Rogers does other cleaning jobs for the facility, and his septic system service trucks offload there. His inspection revealed a line so encrusted with lime that a camera could not move through it. Using four jetting heads and unwavering tenacity, Rogers removed the deposit and restored full hydraulic flow.

### Grenades and Shamrocks

The recycling line was 75 percent occluded. Adams and Pearson asked that cleaning start at the outfall and progress toward the main building. Manhole spacing varied from 20 to 100

feet apart, and all the work was done outdoors.

The plant’s effluent enters a holding tank before flowing into Snapfinger Creek. Rogers’ four-man crew attached an air gap to the tank to keep material from backwashing into it, then filled the 1,000-gallon water tank on their combination sewer cleaner from Vac-Con Inc. The truck’s continuous-flow water pump delivers 80 gpm/2,500 psi.

“Keith and Raymond wanted the cleaning slurry to remain in the recycling line, enabling the plant to reclaim the water,” says Rogers. “That raised the concern of knocking off chunks big enough to plug the pipe, so we never worked farther than manhole to manhole before flushing the line.”

The men used a Grenade-Bomb flushing nozzle from ENZ USA and a Little Shamrock flushing nozzle from Shamrock Pipe Tools Inc. to open an 18-inch hole through the lime. A 30-inch rotating chain scraper from ENZ or Contractor Duty waterjet root cutter with 18-inch blade from Shamrock cleaned down to white metal.

Rogers documented every step of the procedure in still photographs using an Inspector General portable mini main-line system with OZII pan-and-tilt color camera on an Ultra Shorty transporter, all from CUES Inc.

### Slow progress

The Grenade-Bomb nozzle has two rings of jets arranged at 10 and 30

**Lime deposits were removed after cleaning with a 30-inch chain scraper. Lower photo: The same section of pipe after one run with the Little Shamrock nozzle, but before using the chain scraper.**



## TOUGH JOB

Technicians used the ENZ Grenade Bomb flushing nozzle to make a large enough opening in the outfall line so that larger nozzles could be inserted.

degrees. The Little Shamrock had one forward jet and 12 dual-degree (10 and 15) rear jets with standard flow straighteners. The chain scraper had welded manganese steel plates to handle the extra-heavy deposit. The Contractor Duty root cutter delivered 2,250 inch-pound torque and spun at 300 to 350 rpm.

“We jetted at 2,000 to 2,500 psi when using the chain scraper and Grenade-Bomb, 1,500 and 2,000 psi with the Little Shamrock, and 2,500 psi on the root cutter,” says Rogers. It took 30 minutes to move 12 inches.

One man operated the combination truck while another ran the jetting head. A third, in the upstream manhole, verified where the tool was and took pictures. “The manholes were close enough that we could almost see from one to another, but our concern was the amount of debris we sent into the recycling line,” says Rogers. The fourth man was the attendant and entry supervisor for confined-space entries.

Most of the time, the jetting heads moved slowly enough to clean down to metal in one pass. Occasionally, some tuberculation was missed when the

**PROJECT:**  
Remove dense lime blockage from 1,000 feet of 30-inch ductile iron pipe

**CUSTOMER:**  
Snapfinger Creek Advanced Wastewater Treatment Facility, Decatur, Ga.

**CONTRACTOR:**  
Rogers & Sons Inc., Lithonia, Ga.

**EQUIPMENT:**  
V390THA combination sewer cleaner from Vac-Con Inc., Green Cove Springs, Fla.; Grenade-Bomb flushing nozzle and 30-inch rotating chain scraper from ENZ USA, Aurora, Ill.; Little Shamrock nozzle and Contractor Duty root cutter with 18-inch saw from Shamrock Pipe Tools Inc., Baton Rouge, La.; Inspector General with OZII camera on Ultra Shorty transporter from CUES Inc., Orlando, Fla.

**RESULTS:**  
Tuberculation removed and full hydraulic flow restored

chain cutter hit a soft spot and traveled a little faster. “We didn’t have to re-clean too many sections,” says Rogers. “In fact, if the job had any surprises, it was hitting one of those soft spots.”



A tool is shown cutting through some of the toughest lime deposits. Bottom photo: The chain scraper is sent through the manhole to clean the invert and the beginning of the adjoining line.

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**Cloyd Mason “Buck” Rogers Jr.**

#### **More business**

The crew jetted the lime until it crumbled enough for the chain scraper and root cutter to break it off the pipe wall. The two flushing nozzles then cleaned the line before it was inspected and photographed. As the pipe’s hydraulic flow was restored, it helped wash away some debris. It took six

weeks to complete the project.

DeKalb County conducted a follow-up video inspection. “Considering the history of this pipeline, we wanted an independent party to confirm our work,” says Rogers. When Adams and Pearson saw the pictures and videotape, they hired Rogers & Sons to service the recycling line every six months. The ductile iron is in perfect condition and maintaining maximum hydraulic flow. ■

#### **MORE INFO :**

**CUES Inc.**

800/327-7791  
www.cuesinc.com

**ENZ USA Inc.**

630/692-7880  
www.enz.com

**Shamrock Pipe Tools Inc.**

800/633-7696  
www.shamrocktools.com

**Vac-Con Inc.**

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