

MUNICIPAL

SEWER  
&

WATER™

FOR SANITARY, STORM AND WATER SYSTEM MAINTENANCE PROFESSIONALS

July 2011

www.mswmag.com

BETTER MOUSETRAPS:  
FLOWMETERS WITH DATA DELIVERY

PAGE 34

SAFETY: "SEWER SLIDE"  
PROVIDES POWERFUL LESSONS

PAGE 10

TECHNOLOGY: THE BENEFITS  
OF DIRECTIONAL DRILLING

PAGE 26

# THE BATTLE OF NEW ORLEANS

A city struggles to find and fix  
water leaks caused by Katrina

PAGE 20



Rudy August  
Chief of networks  
New Orleans, La.

PRSTD STD  
U.S. POSTAGE  
PAID  
COLE  
PUBLISHING

CHANGE SERVICE REQUESTED

COLE PUBLISHING INC., PO BOX 220, THREE LAKES WI 54562



# COME HELL OR HIGH WATER



Down in the trenches is no place to second-guess your equipment. When you're being pushed to the limit, count on the sewer cleaner that never backs down — the Vactor® 2100 Plus.

Click here to visit [www.vactor.com](http://www.vactor.com)



MUNICIPAL

SEWER  
&

WATER™

FOR SANITARY, STORM AND WATER SYSTEM MAINTENANCE PROFESSIONALS

July 2011

www.mswmag.com

BETTER MOUSETRAPS:  
FLOWMETERS WITH DATA DELIVERY

PAGE 34

SAFETY: "SEWER SLIDE"  
PROVIDES POWERFUL LESSONS

PAGE 10

TECHNOLOGY: THE BENEFITS  
OF DIRECTIONAL DRILLING

PAGE 26

# THE BATTLE OF NEW ORLEANS

A city struggles to find and fix  
water leaks caused by Katrina

PAGE 20



Rudy August  
Chief of networks  
New Orleans, La.

PRSTD STD  
U.S. POSTAGE  
PAID  
COLE  
PUBLISHING

CHANGE SERVICE REQUESTED

COLE PUBLISHING INC., PO BOX 220, THREE LAKES WI 54562

# Everything new, All in one place.

*Why consider outdated gear when EnviroSight technology delivers superior data, expandability, productivity and support.*



New VeriSight™ Pro delivers all the functionality of the original, plus greater push power, improved image quality, sturdier construction and a lightweight controller with superior text, recording and annotation capability.

**VeriSight™  
PRO**



Without confined space entry, new DiaMetrik™ measures all dimensions of manholes and pipes to within 0.1". Quick and easy, it helps you safely complete inspections and plan relining.

New ROVER™ X brings an advanced touchscreen interface and dozens of new features to pipe inspection's most proven brand. Its digital pendant grants precise, concurrent control over camera, crawler and reel functions; records MPEG video; lets you classify observations for upload to WinCan; exports data via USB; and supports online diagnostics and upgrades. With all this digital horsepower, it's easy to overlook the hardware features that make ROVER X the new benchmark for inspection capability.

**ROVER™  
X**



 **quickview™**



With powerful Haloptic™ technology and a built-in manhole camera, the new QuickView™ captures 400' of infrastructure in a single pass. It's all you need to inspect pipes and manholes, scope maintenance work, and avoid confined space entry. Join 2000-plus users who already trust QuickView for fast, thorough inspection.

 **DIGISEWER™**

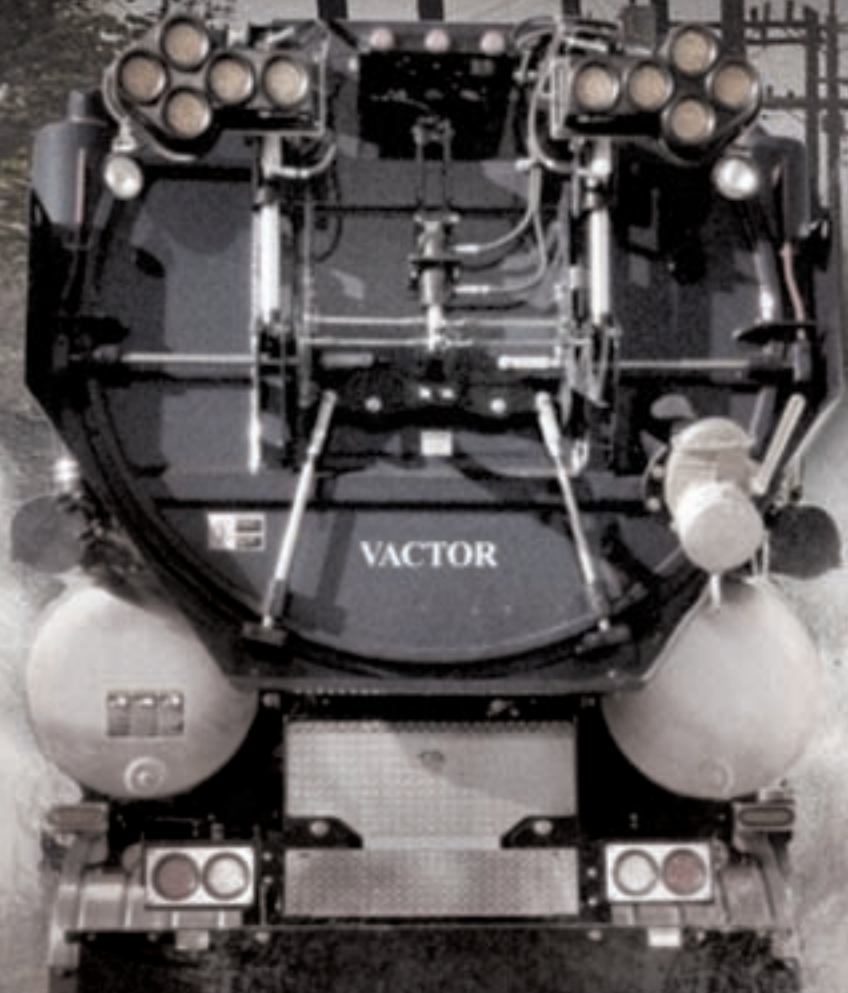
The new DigiSewer™ III side-scan camera captures brighter scans at higher resolution, imaging your infrastructure three times faster than CCTV. It is available for all EnviroSight crawlers, and works interchangeably with traditional video cameras.



**Envirosight™  
LLC**

[www.envirosight.com](http://www.envirosight.com) • (866) 936-8476

©2011 EnviroSight, LLC. All rights reserved. QuickView, Haloptic, ROVER X, VeriSight, DigiSewer and EnviroSight are trademarks of EnviroSight. QuickView carries patents 6,536,732 and 7,009,698; DigiSewer carries patent 7,163,376; others pending.



# COME HELL OR HIGH WATER



**Down in the trenches is no place to second-guess your equipment.**

When you're being pushed to the limit, count on the sewer cleaner that never backs down — the Vactor® 2100 Plus. Redesigned to deliver even greater performance and fuel efficiency, this industry leader can handle anything the job demands. Again and again. Contact your Vactor dealer, call **800.627.3171** or visit **vactor.com** to discover how no one compares to the machine that won't quit.



# INSIDE:

PIPE BURSTING/  
HORIZONTAL DIRECTIONAL DRILLING



## COVER:

The aftermath of Hurricane Katrina is still a daily reality for the Sewerage and Water Board of New Orleans. The board is working diligently on a water main repair and replacement plan, using tools that include acoustic technology to assess pipe degradation and locate leaks with precision. (Photography by Sean Gardner)



## COMING IN AUGUST 2011

### Special Issue: Chemical and Mechanical Root Control

- ◆ Water: Major main rehab program in Cohasset, Mass.
- ◆ Sewer: Innovative root control and maintenance practices in Colorado Springs, Colo.
- ◆ Human Side: Getting new employees into the swim
- ◆ Technology Test Drive: Acoustic monitoring systems from ADS Environmental

## FEATURES

### 12 SEWER: Playing in the Big Leagues

A northern tourist community steps up collection system performance with a CMOM program, GIS, and in-house inspection and cleaning.

By Ted J. Rulseh

### 20 WATER: The Battle of New Orleans

Long after Hurricane Katrina, the city struggles to locate leaks that total millions of gallons per day. Sophisticated acoustic monitoring tools are key weapons.

By Peter Kenter

### 26 Turning Toward Trenchless

Horizontal directional drilling gains momentum for sewer and water installation as municipal managers learn the technology and begin to appreciate the advantages.

By Randy Happel

### 29 SEWER: Bursting the Conventional Wisdom

An Oklahoma city is achieving success and saving big dollars by conducting a multi-year, \$90 million sewer rehabilitation program with in-house workers.

By Suzan Marie Chin

### 34 BETTER MOUSETRAPS: Above the Fray

A California agency gets a handle on its collection system flows using meters mounted in manholes over the wastewater stream.

By Scottie Dayton

### 36 TECHNOLOGY TEST DRIVE: Get In, Get Out

The QuickView pole-mounted inspection camera with Haloptic technology from EnviroSight enables fast inspections while yielding high-quality images.

By Gil Longwell

## COLUMNS

### 10 FROM THE EDITOR: No Fun At All

This trip down a water slide could have cost a sewer contractor employee his life. The safety lesson is clear: Follow procedures and never take shortcuts.

By Ted J. Rulseh

### 40 THE HUMAN SIDE: Tough Conversations

Here are four techniques to help you say what needs to be said, with integrity, when it's hard for you to say it and the other person doesn't want to hear it.

By JoAn Majors

### 42 NASSCO CORNER: Badly Needed – and Already Here

The IPBA division of NASSCO works to promote pipe bursting through education and development of specifications.

By Ted DeBoda, P.E.

### 44 PRODUCT FOCUS: Pipe Bursting/Horizontal Directional Drilling

By Peter Litterski

### 46 Industry News

### 48 Product News

Product Spotlight: Lightweight Pneumatic Shoring Simplifies Trench Safety

By Ed Wodalski

### 52 Worth Noting

People/Awards; Learning Opportunities; Calendar

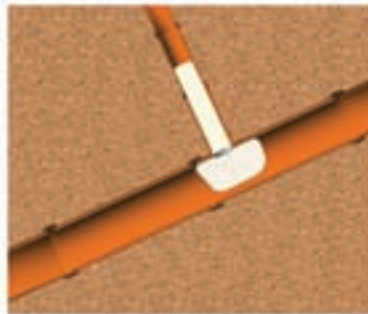
## Perma-Liner™ Sectional Main Line Point Repair™

- No Excavation - Eliminates Disruptive Digging And Restoration
- Repairs 6" to 54" Diameter Pipelines
- 100% Solids Epoxy
- Reinforced Materials With A PU Coated Finish
- Total Time of Repair Is Only Hours Compared To Days
- As Many As 7 Repairs In A Single Day
- Exceeds ASTM F1216 Specifications
- Manufactured In Kit Form, No Measuring Or Waste
- In Most Cases, No Bypass Pumping Needed
- Reduces Job Costs - Labor, Equipment, Materials, Traffic Control, and Unforeseen Liabilities

**PERMA-LINER™  
INDUSTRIES, INC.**



Sectional Main Line Point Repair™



**InnerSeal™ Innerwrap™**  
Lateral Connection Seal

## InnerSeal™ Innerwrap™ Lateral Connection Seal

- Independent Double Bladder System
- 100% Solids Epoxy
- Ambient or Steam Cure
- Tee & Wye Connections from 6" x 4" to 36" x 12"
- Lateral lengths available from 18 inches to 50+ feet.



after

## Perma-Main™ Continuous Air Inversion

- Trenchless Lining, Manhole to Manhole
- 600+ Feet Continuous
- 6" - 24" Diameters
- Steam Cure

featuring the  
"Top Gun"



## Turn-Key Trailers



**2011 Trenchless Tour**  
California / July 20th, Colorado / August 17th

**CALL**

(866) 336-2568 Toll Free  
(727) 507-9749 International



**VISIT**

[www.perma-liner.com](http://www.perma-liner.com)

# ● PROBLEM:

## EXPENSIVE WATER SYSTEM FAILURES



### SAVE ON REPAIRS

- Iron pipe suffers 35.9 repair-demanding breaks per 100 km each year<sup>1</sup>, and carries high costs in materials, transportation and maintenance.
- With an average break rate of 0.7 per 100 km per year<sup>1</sup>, plastic pipe from JM Eagle is the product that won't corrode or crack, and studies show it maintains its clean, smooth interior for at least 100 years<sup>2</sup>.

### SAVE PRECIOUS RESOURCES

- Cities across the United States lose an average of 15 percent of their water via an average of 700 water main leaks every day, and out-of-control storm and waste water cause \$50.7 billion in damage and waste each year<sup>3</sup>.
- Plastic pipe from JM Eagle is virtually leak-free and break-resistant. It protects the potable water it carries, and it protects cities from flooding and contamination.



### SAVE TIME & LABOR COSTS

- Iron and concrete are not only outdated, expensive materials, they are also labor-intensive, complicated and problematic to install, causing delays and budget overruns.
- With installation costs as much as 30 times lower than iron pipe, innovative and modern plastic pipe from JM Eagle promises a low-cost, on-time project free of heavy equipment, product failures and extra manpower requirements.



<sup>1</sup> Source: National Research Council of Canada.

<sup>2</sup> Sources: Plastics Pipe Institute and AwwaRF.

<sup>3</sup> Source: EPA.



# SOLUTION: EAGLE LOC 900™



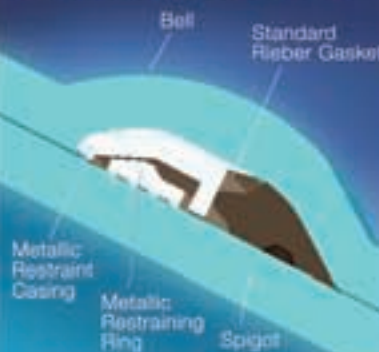
DRIVES COSTS DOWN

## HORIZONTAL DIRECTIONAL DRILLING

- Allows for placement in areas with high water tables and acidic soils.
- Fits in tight, hard-to-reach areas where other utility lines are present.
- Minimizes labor-intensive open-cut digging and trenching.
- Eliminates the need to pre-fuse the entire length of pipe.
- Minimizes disruption in congested urban environments.
- Allows for assembly during the pull-back operation.



BETTER ENGINEERED  
THAN TRADITIONAL  
JOINT RESTRAINTS



FEATURING BULLDOG™ TECHNOLOGY

Strong enough  
to lift this  
54,000-pound  
bulldozer!

Meets AWWA C900, FM1612, ANSI/NSF Std-61,  
ASTM D1784 and UNI-B-13 Million Cycle Test.






























## The JM Eagle 50-Year Warranty \*

- Unprecedented in the industry.
- Covers JM Eagle AWWA C900, C905, C909 and C901/C906 pipe and Eagle Loc 900 against manufacturing defects.
- Retroactive to 1983.
- Demonstrates that JM Eagle stands behind the quality of its pipe.

\*Visit [www.jmeagle.com/warranty](http://www.jmeagle.com/warranty) for complete details.

Please visit [www.jmeagle.com](http://www.jmeagle.com)  
for an introduction to JM Eagle's  
exclusive technology.

# ADVERTISER INDEX

COMPANY	PAGE	COMPANY	PAGE
 American Highway Products, Ltd. ....	18	 Perma-Liner Industries, Inc. ....	5
Applied Felts, Inc. ....	31	 Pipeline Analytics ....	13
 Aries Industries, Inc. ....	25	 PipeLogix, Inc. ....	43
 Cam Spray ....	24	 Prototek Corporation ....	32
 Central Oklahoma Winnelson ....	47	Pure Technologies, Ltd. ....	18
 Chempace Corporation ....	17	Radiodetection ....	24
Cloverleaf Tool Co. ....	53	 RapidView IBAK North America ....	33
Condux International, Inc. ....	11	 RootX, Inc. ....	58
 CUES, Inc. ....	23	 RS Technical Services, Inc. ....	43
E.H. Wachs ....	47	 Safety Corporation of America ....	35
 Environmental Products & Accessories, LLC ....	51	 Southland Tool Mfg. Inc. ....	13
 Envirosight, LLC ....	2	Spartan Tool, LLC ....	41
Epoxytec ....	45	Sto-Away Power Cranes, Inc. ....	38
 GapVax, Inc. ....	39	 Street and Sewer Parts Superstore ....	24
Hurco Technologies, Inc. ....	45	 T & T Tools, Inc. ....	17
JM Eagle ....	6-7	Underground Solutions, Inc. ....	19
Lee Supply Company, Inc. ....	9	 US Jetting, LLC ....	15
 LMK Technologies ....	59	 USA BlueBook ....	53
Mainline Backflow Products, Inc. ....	23	 USABlueBook ....	53
MAX-LIFE Mfg. ....	45	 Vac-Con, Inc. ....	60
 Municipal Sales, Inc. ....	28	 Vactor Manufacturing.....	3, 51
MyTana Mfg. Company, Inc. ....	28	CLASSIFIEDS .....	56
 NAWT, Inc. ....	38	MARKETPLACE .....	54
 NozzTeq, Inc. ....	28		

MUNICIPAL  
**SEWER & WATER**  
FOR SANITARY, STORM AND WATER  
SYSTEM MAINTENANCE PROFESSIONALS

Published monthly by:

 COLE publishing

1720 Maple Lake Dam Rd.,  
PO Box 220, Three Lakes WI 54562

[www.mswmag.com](http://www.mswmag.com)

© Copyright 2011, COLE Publishing Inc.

No part may be reproduced without permission of publisher.

In U.S. or Canada call toll-free 800-257-7222

Elsewhere call 715-546-3346

Email: [info@mswmag.com](mailto:info@mswmag.com)

Fax: 715-546-3786

Office hours Mon.-Fri., 7:30 a.m.-5 p.m. CST

**SUBSCRIPTIONS:** A one year (12 issue) subscription to Municipal Sewer & Water™ in the United States and Canada is free to qualified subscribers. A qualified subscriber is any individual or company in the United States or Canada that maintains, manages, designs or installs municipal or commercial sewer, water and storm infrastructures. Non-qualified subscriptions are available at a cost of \$60 per year in the United States and Canada/Mexico. Subscriptions to all other foreign countries cost \$150 per year. To qualify, visit [www.mswmag.com/order/subscription](http://www.mswmag.com/order/subscription) or call 800-257-7222.

Our subscriber list is occasionally made available to carefully selected companies whose products or services may be of interest to you. Your privacy is important to us. If you prefer not to be a part of these lists, please contact Nicole at [nicole@colepublishing.com](mailto:nicole@colepublishing.com).

**CLASSIFIED ADVERTISING:** Minimum rate of \$25 for 20 words; \$1 per each additional word. All classified advertising must be paid in advance. DEADLINE: Classified ads must be received by the first of the month for insertion in the next month's edition. PHONE-IN ADS ARE NOT ACCEPTED. Fax to 715-546-3786 only if charging to MasterCard, VISA, Discover or AmEx. Include all credit card information and your phone number (with area code). Mail with check payable to COLE Publishing Inc. to the address above. CLASSIFIED ADVERTISING APPEARS NATIONWIDE AND ON THE INTERNET. Not responsible for errors beyond first insertion.

**DISPLAY ADVERTISING:** Contact Jim Koshuta or Kayla Wilkowski at 800-994-7990. Publisher reserves the right to reject advertising which in its opinion is misleading, unfair or incompatible with the character of the publication.



Jim Koshuta Kayla Wilkowski

**EDITORIAL CORRESPONDENCE:** Send to Editor, *Municipal Sewer & Water*, P.O. Box 220, Three Lakes, WI, 54562 or email [editor@mswmag.com](mailto:editor@mswmag.com).

**REPRINTS AND BACK ISSUES:** Visit [www.mswmag.com](http://www.mswmag.com) for options and pricing. To order reprints, call Jeff Lane at 800-257-7222 (715-546-3346) or email [jeffl@colepublishing.com](mailto:jeffl@colepublishing.com). To order back issues, call Nicole at 800-257-7222 (715-546-3346) or email [nicolel@colepublishing.com](mailto:nicolel@colepublishing.com).

**CIRCULATION:** 2010 average circulation was 37,808 copies per month (U.S. and international distribution).



**PUMPER & CLEANER  
ENVIRONMENTAL EXPO  
INTERNATIONAL**

[www.pumpershow.com](http://www.pumpershow.com)

Education Day: Feb. 27, 2012 ■ Exhibits Open: Feb. 28 - March 1, 2012  
Indiana Convention Center, Indianapolis, Indiana



A subscription to *Municipal Sewer & Water* is **FREE**.  
Sign up at [mswmag.com](http://mswmag.com)

ALSO FIND: ✓ Product Information ✓ Used Equipment ✓ COLE Mart Superstore

# WE SUPPLY SOLUTIONS

ENERGY ■ MINING ■ MUNICIPAL ■ INDUSTRIAL ■ ENVIRONMENTAL



## Your HDPE Specialists

- Fabrication
- Pumps
- Fusion
- Pipe



1-800-353-3747  
[www.leesupply.com](http://www.leesupply.com)

**QUALITY**  
PEOPLE ▶ PRODUCTS ▶ SERVICE  
Since 1954

# NO FUN AT ALL

This trip down a water slide could have cost a sewer contractor employee his life. The safety lesson is clear: Follow procedures and never take shortcuts.

**I**magine working inside a large sewer interceptor and being swept away by the current. That's a "water slide" trip no one would enjoy.

Yet it happened to a 37-year-old contract worker in Pierce County, Wash., back on March 21. The obvious question is: How does something like this happen? The man sustained only minor injuries — he was rescued, then treated and released at a local hospital — but it's a minor miracle that he survived.

The man, an employee of Frank Coluccio Construction Co. in Seattle, was working in a temporary access shaft built for a project that involved lining of the sewer interceptor, which carries all the flow to Pierce County's Chambers Creek Regional Wastewater Treatment Plant in University Place, Wash.

By all accounts, he and co-workers had performed a proper confined-space entry with all necessary equipment. But the man, while

checking the pipe alignment, decided to unclip his safety harness to look around the corner and into the pipe. He somehow became caught in the flow of sewage (about 1,600 gpm) and, because untethered, was swept downstream.

This incident ended happily because the Pierce County collection system maintenance team acted quickly and heroically, drawing on extensive mandatory training members had taken over the years. But there are two obvious lessons:

First, avoid taking shortcuts or deviating from safety procedures at any time, in any way,

**"This man wouldn't be alive today if it weren't for (the Pierce County) people. I credit them for saving his life, and it was great working with people who didn't lose their cool and are well-versed in their training."**

**Kevin Kroenert**

when working in sewers. Second, never underestimate the importance of safety training. Because, you never know.

## Deep underground

County personnel reported that the man was working inside the access shaft some 150 feet below ground. The concrete pipe was to be lined with a reinforced fiberglass liner, and the installation required two temporary access shafts to enable liner placement.

Terry Soden, the county sewer and water utility's maintenance and operations manager, noted that about 400 feet from where the man slid into the pipe, the slope dropped off to a 4 percent grade and the flow sped up significantly. The man ultimately slid some 3,200 feet down the pipe and passed two access points before managing to stop himself just beyond the energy dissipater where the pipe narrowed to 48 inches.

That was about 300 feet from the bar screens in the treatment plant headworks. "What made the rescue possible was that he was able to communicate verbally," Soden reported. "As he was



## FROM THE EDITOR

*Ted J. Rulseh*

going down that pipe, not connected to anything and with no communication device, he could have run into some obstruction, bumped his head and become unconscious. Then we wouldn't have known where he was in the system.

"When our people got a call from our inspector on the surface just shortly after it occurred, they started opening all three access points on the wastewater treatment plant site. They were actually able to hear him yelling, so they could pin down where he was. It's also fortunate that there was enough headspace in the pipe to allow him to breathe."

## Sequence of events

According to the county's report on the incident, public works and utilities inspector Bob Buckley called maintenance program manager Scott Roth at the treatment plant at 7:53 a.m. to report the accident. "Roth immediately used his two-way radio to alert everyone at the plant that an emergency confined-space entry maneuver with harnesses and lifelines was needed," according to an account written by Mary Powers, county public information officer.

"Collection system manager Larry Butner grabbed his high-powered flashlight and a chain hoist and ran to the most upstream point, the energy dissipater. It is pitch black inside the pipe, and his light would help the man see. Meanwhile, the others set up hoists and formed two-man entry teams at the next two downstream points."

West Pierce Fire and Rescue was called just before 8 a.m. and told to prepare for a swift-water rescue.

By the sound of the man's voice, the county crew determined that he had passed the energy



**A well-trained staff and quick response time help save a 37-year-old contract worker's life after he was swept away inside a large sewer interceptor. (Photo courtesy of Terry Soden)**

dissipater and was moving toward the head-works. At the next opening, they lowered a rope and waited. Finally they saw a hand emerge from the water and grab the rope. The man then stood up and grabbed the manhole ladder, about 25 feet below grade.

Directed by confined-space entry supervisor Mark Newport and West Pierce Fire and Rescue commander Kevin Kroenert, an employee was lowered to hook a retrieval cable to the man just as he was letting go of the ladder.

**“One thing we learn is always to be connected, so that if you have to be retrieved, you’re attached to a mechanical device to help get you out.”**

**Terry Soden**

The West Pierce firefighters and paramedics removed the man’s gear as soon as he was pulled to the surface, decontaminated him in an on-site shower, and took him to the local hospital, where we was treated for minor injuries and released.

**Barely survived**

At the time he was rescued, the man was oriented feet downstream, and his waders were full of water. His hardhat had been knocked off when he passed under a grate. Powers reported

**This issue of MSW**

begins a slightly new look. You’ll notice that on the cover, the word “SEWER” in the logo appears on a green background, instead of blue.

The idea came from Jim Bollmann, P.E., a project manager with MSA Professional Services in Rhinelander, Wis. “The standard color convention for ‘sewer’ is green,” he told us in a note.

“Engineering drawings and field markings for sewer mains, sewer laterals and other sewer structures are all done in green.”

Our graphics department tried out the change, and we thought it looked great. So, from now on, our logo will be blue and green. It just shows us once again that readers’ suggestions are worth listening to — and shows you that we take our readers’ comments seriously!



that Kroenert told county utility managers, “This man wouldn’t be alive today if it weren’t for your people. I credit them for saving his life, and it was great working with people who didn’t lose their cool and are well-versed in their training.”

Local news reports said the state Department of Labor & Industries was investigating whether the accident involved violations of any worker safety laws.

Soden noted that all treatment plant and collection system employees are required to pass confined-space entry and fall protection training. “Everybody in the industry practices confined-space entry and self-rescue,” he said. “One thing we learn is always to be connected, so that if you have to be retrieved,

you’re attached to a mechanical device to help get you out.

“When we train, we have a mock manhole. All 80 members of my staff in the maintenance and operations realm train on that. They actually have to pull somebody up and be pulled up. We train on this annually. I’ve been here 25 years, and we’d never before had an incident where we had to retrieve somebody in an emergency situation.

“We applied what we had learned about keeping ourselves and our co-workers safe. It worked out rather well. In 30 minutes, it was all over but the shouting. I’m very proud of my staff. In the midst of duress, they handled it very professionally.” ♦

# GEAR UP TO GO UNDERGROUND

## With HDD, Compaction Boring & Cable Plowing Systems From Condux!

Successful underground construction projects start with the best equipment available, and that means Condux International. Condux is now a supplier of Triple D HDD, compaction boring and cable plowing tools and equipment! For over 30 years you’ve counted on Condux to deliver the highest quality cable installation tools and equipment. Now they’re the source for even more underground tooling. And with the Triple D name behind it, you know it’s the best!

- Reamers, paddle bits and sonde housings for HDD applications
- Compaction Boring Tools
- Cable Plowing Systems
- More!



**CONDUX**

1.507.387.6576 • www.condux.com  
1.800.533.2077 (U.S. & Canada)

Reamers



Paddle Bits



Sonde Housings



Featuring Triple D Quality Products

See the complete line at [condux.com](http://condux.com)!

# PLAYING IN THE BIG LEAGUES

A northern tourist community steps up collection system performance with a CMOM program, GIS, and in-house inspection and cleaning

By *Ted J. Rulseh*

**A** giant muskellunge made of concrete, steel and fiberglass presides over the northwest Wisconsin city of Hayward at the Freshwater Fishing Hall of Fame and Museum. And real muskies and other fish in the area's streams and lakes swim in cleaner water thanks to the efforts of the city public works department.

In fact, if you ask staff members from the Wisconsin Department of Natural Resources, Hayward might well belong in the hall of fame of small communities that manage their wastewater collection systems in exemplary fashion.

Public Works director John McCue heads a staff of eight people who take care of 34.8 miles of gravity sewers and force mains in this Northwoods tourist community of 2,300. Diana Lewis, administrative assistant and lead operator of the city's 300,000 gpd wastewater treatment plant, created a collection system management plan built around the U.S. EPA Capacity, Management, Operation & Maintenance (CMOM) program.

It helps make sure the city stays up to date with regular inspections,

**Crew members John Metcalf II, left, and Keith Metcalf jet a sewer line using a Vactor 2100 combination truck. (Photography by James Netz)**

*(continued)*





1430 N. Hundley St. Anaheim, CA | 714-632-8198 fax: 714-632-8228  
[www.southlandtool.com](http://www.southlandtool.com) | e-mail: [sales@southlandtool.com](mailto:sales@southlandtool.com)



**"PUMA TOOLS" ARE ...**  
**Manhole Debris Extraction and Sewer Cleaning tools, perfect for every Sewer Dept.**



New Flat trap for scraping and skimming



Scoopas bring it straight up.



New 4-prong hooker. Lifts better than before.



New Puma Fang Saw Cutter. 6" - 24" Includes 1" hub.



Debris baskets for the down stream line.



Hose grapple



New Curved Chopper blade. Great for cutting and pushing



Heavy Duty Concave Saws



Debris Cylinders from 6" to 15"



9" Catch basin spoon



Vacuum Traps



The "Craw" hook and rope grabber



6-Wire, Fined and Football extensions



Camera hook



Proofers



Sewer rods, tools accessories



Handy-clams



Pull and Turn Type Porcupines



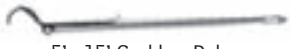
Continuous Rod Loading Rack



Fiberglass pole sets



Spoon with wood pole



5' - 15' Grabber Pole



Telescopic Claw 7' - 16'



Heavy Duty Pick and Hook Combo "Pook"



**What's Your Infrastructure Trying to Tell You?**

**Worldwide, More Users Trust WinCan™ to Understand Their Pipeline Assets.**

When you choose underground infrastructure software, you're selecting more than specific capabilities at a given price—you're picking a partner to support and evolve the technology for decades to come. WinCan has been around 15 years—longer than anyone—and we've always been market leader. From small contractors to large cities, more users trust us to deliver responsive support, scalability, and ceaseless innovation.



With **WinCan GIS**, simply drag on a map to create projects prepopulated with section data; add linked map elements from observations; dispatch crews with ease; and much more.



**WinCan Value Bundles** deliver more functionality for your investment, with savings up to 60% off traditional pricing.



**(877) 626-8386 • [www.pipelineanalytics.com](http://www.pipelineanalytics.com)**

WinCan and Pipeline Analytics are trademarks of Pipeline Analytics. ©2011. All rights reserved.

cleaning and repairs. Starting in 2010, the city equipped itself to handle nearly all inspection and cleaning in-house. As a result, emergencies have been reduced significantly and the city is able to identify needs for repairs and schedule them efficiently.

“It is commendable that even a small community like Hayward can develop a CMOM program and do such a good job of managing, operating and maintaining a sewer system,” says Jack Saltes, M.S., P.E., wastewater operations engineer with the DNR Bureau of Watershed Management. “CMOM isn’t just something for big communities. The Haywards can do a great job, as well — and do.”

### A little research

McCue and Lewis joined the Public Works staff on the same day nearly 11 years ago. McCue became director in 2004, and Lewis was promoted to lead operator at the treatment plant in 2005. Together, they and their team have made a substantial impact.

The sewer system, consisting mainly of 6- and 8-inch mains, is relatively old, and large sections of the city are served by clay pipe. “It’s been in there long enough so that tree roots have followed the pipe and worked their way into the joints,” says McCue. In addition, groundwater depth ranges from 4 to 8 feet in most of the city, and that makes infiltration a



The Hayward Department of Public Works team includes, from left, front row, crew member John Hutchison, administrative assistant Sari Marks, administrative assistant and lead operator Diana Lewis, and crew member Brent Kuczenski; back row, crew member John Metcalf II, foreman Steve Regenauer, crew member Keith Metcalf, and Public Works director John McCue.

constant concern.

Major pipe rehabilitation projects in the downtown area in 2005 and 2007 put a dent in I&I. Ongoing rehabilitation — almost all of it by open-cut replacement — helps keep I&I in check. Wastewater flows average about 400,000

gpd in the peak summer tourist season and about 275,000 gpd for the rest of the year.

Lewis started working on a CMOM-based program in 2008, with the aim of improving the system and achieving better grades on the Compliance and Mainte-



**PROFILE:**  
City of Hayward  
(Wis.) Department  
of Public Works

**FOUNDED:**  
1915

**POPULATION:**  
2,300

**AREA SERVED:**  
3.4 square miles

**INFRASTRUCTURE:**  
30 miles of gravity sewers,  
4.8 miles of force mains,  
491 manholes, 11 lift stations,  
1 inverted siphon

**EMPLOYEES:**  
8

**ANNUAL BUDGET:**  
\$460,000 (sewer operations)

**WEBSITE:**  
[www.cityofhaywardwi.gov](http://www.cityofhaywardwi.gov)

## PRAISE FROM REGULATORS

The Wisconsin Department of Natural Resources doesn’t mandate CMOM programs for the state’s communities, but it does promote the concept, according to Lonn Franson, an environmental engineer who serves the northwest part of the state.

“In Hayward, the new Public Works director and some new operators wanted to get a handle on their system and wanted to work smarter, not harder,” says Franson. “They wanted to get ahead of the curve for the short term and the long term.”

“At the time, we didn’t have good CMOM guidance. We provided them with some Web links and other information. They took the time to dig into that, and they created an outline and a template. They asked me to review it, and we spent a day going over it and making some changes.”

“A key to Hayward’s and any community’s CMOM program is an annual review component that makes the program a living document. Hayward has done that. They review their program every year as part of work planning.”

Once the program was in place, says Franson, Hayward was positioned to plan work on the system proactively, evaluate projects, and decide which ones would deliver the greatest value. “A lot of credit should go to Public Works director John McCue and his entire staff for deciding that a CMOM program was important for the immediate and long-term economic sustainability of the community,” Franson says.

“They are looking at ways to improve and become more cost efficient, and that’s especially important in times of increased budget constraints at all levels of government.”

“Hayward’s example shows that CMOM is not just another state government program. It’s much more important than that. It’s something that has value.”

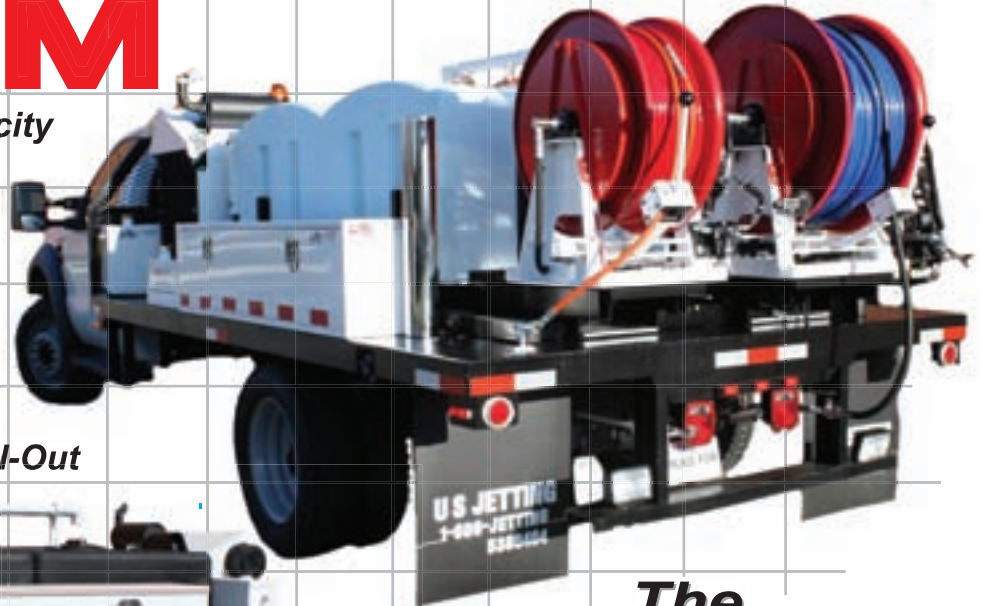
(continued)



# STEP UP TO THE POWER OF **3000 PSI** **40 GPM**



- 600 or 750 Gallon Water Capacity
- 99 HP Kubota Diesel Power
- 500 Ft of  $\frac{3}{4}$  Inch Hose
- Truck or Trailer Mount
- 7 Position Swivel Hose Reel
- No CDL License Required
- Optional Second Swivel Reel with 500 Ft of  $\frac{1}{2}$  Hose
- Optional Hydraulic Power Pull-Out Hose Reel(s)



## The Next Generation Of High Pressure Jetting Units



Built with the same reliability and performance of our higher pressure machines that our customer's have depended on for over 20 years, *US Jetting's Flusher Jets* are now available to meet the demands of big cities, small cities, towns & villages. Operating at **3000 PSI at 40 GPM** water flow, these units are capable of tackling any sewer and drain cleaning tasks. Contact *US Jetting* today to schedule a demonstration or visit [www.usjetting.com](http://www.usjetting.com) to view our extensive product range.



**Increased Pressure... Increased Cleaning Power... Increased Versatility.**



We build Jetters for **EVERYBODY**  
& We build Jetters **JUST FOR YOU**



[www.usjetting.com](http://www.usjetting.com)  
[sales@usjetting.com](mailto:sales@usjetting.com)  
1-800-538-8464  
1-800-jetting



[www.usjetting.com](http://www.usjetting.com)

nance Annual Reports (CMAR) the city must file with the DNR. The CMAR questionnaire asks whether a community has a CMOM program — and Hayward wanted to answer: Yes.

“I looked at the EPA website and they had a CMOM guide, but it was 126 pages long and very complicated,” Lewis recalls. Using the CMAR checklist itself and taking the best from a few simple templates she found on the Internet, she developed a CMOM guide that fit the city’s needs.

**“It is commendable that even a small community like Hayward can develop a CMOM program and do such a good job of managing, operating and maintaining a sewer system.”**

Jack Saltes

The guide documents the city’s operation and maintenance procedures, system design and performance standards, emergency overflow response plan, capacity assurance review, annual self-audit and special studies such as I&I analysis and lift station evaluation, and other essentials of operating a collection system.

Not long after Lewis completed her project, the DNR published a simple 26-page Wisconsin CMOM guide designed specifically to help small communities develop CMOM programs. Lewis found the program outline in the booklet closely mirrored her own, which she still follows.

### Getting a handle

Hayward’s efforts to improve the collection system began before the CMOM program. A treatment plant upgrade in 2005 that included better flow monitoring enabled the city to quantify I&I more closely. Also in 2005, with help from Cedar Corp. of Menomonie, Wis., the city built a geographic information system for tracking assets.

“When I took over in 2004, we did not have a good functional map of the system,” says McCue. “Diana and I sat down one day and laid the map out, and I was sur-

prised at how many manholes that I knew were there were not on the map. We knew we needed to do something. We found a lot of errors on the old paper maps and made a lot of changes. Now everything is more modernized.”

The city is now on a program of inspecting one-fourth of the system each year, and inspecting and cleaning known problem areas more often as needed. In addition, crew members open all manholes on a two-year cycle, visually inspect, and record observations for entry to the GIS.

Collection system duties are shared among the entire staff, which in addition to McCue and Lewis includes foreman Steve Regenauer, crew members/certified operators Keith Metcalf and John Metcalf II, crew members Brent Kuczenski and John Hutchison, and administrative assistant and certified operator Sari Marks.

Team members rotate taking one week on call around the clock to deal with emergencies as needed. There are far fewer of those now — perhaps a dozen a year — than several years ago, McCue observes.

### Buying the tools

The city took a major step forward in 2010 by investing in a mainline camera system and a combination cleaning truck and training the crew to operate both. Previously, the city contracted for pipe inspection and vacuum truck services and used an older cable rodder to clear blockages.

Taking the work in-house was easy to cost-justify. “We televised about 7,000 feet of gravity mains last year, and the cost to contract for that was about half the price of the camera,” says McCue. “It probably paid for itself in just the first year we’ve had it.

“With the vacuum truck, in the past, every time we had an issue and hired a contractor for a few days to clean some lines I had specified, it cost about \$10,000. If we use our own truck at the rate of a couple days a week for a few weeks a year, we’ll have it paid for in a hurry. It’s an awesome tool.” Besides pipe cleaning, the Hayward crew uses the truck for hydroexcavating to expose utilities, for water valve box and stormwater catch



Administrative assistant and lead operator Diana Lewis also handles laboratory duties for the wastewater treatment plant.



Public Works director John McCue works with the city’s GIS program on his computer. The city has deployed a variety of tools to build a sewer maintenance program built on CMOM concepts.

**“When I took over in 2004, we did not have a good functional map of the system ... We found a lot of errors on the old paper maps and made a lot of changes. Now everything is more modernized.”**

John McCue

basin cleaning, and even to clean catch basins in the city garage.

The camera and truck were supplied by Envirotech Equipment Co. of Pewaukee, Wis. The camera is a refurbished Saturn III pan-tilt-zoom unit from Aries Industries, mounted by the city staff in a 5- by 8-foot single-axle enclosed trailer with a desk, control panel and monitor, all powered by a 2 kW Honda gasoline-fueled generator.

The combination truck is a 1995 Vactor 2100 with a 10-cubic-yard debris body, 1,000-gallon

water tank, and 80 gpm/2,500 psi water system. The nozzle package includes a Model 906 hydraulic root cutter unit from Shamrock Pipe Tools purchased in 2011.

Envirotech president David Bogie spent a day with the crew demonstrating the equipment and training the crew in its use. He also provided ongoing support by telephone as the staff got adjusted.

### Keeping constant tabs

The city’s CMOM program helps guide all collection system work.

Lewis updates the program in May or June while completing the annual CMAR report to the state.

She estimates that collecting all the information for the program on the front end took about two months, and that the annual updates take from two or three days to a week.

She considers the time spent developing and sustaining the program well worthwhile. "This way, everything is very organized and put together," she says. "All the information is there in case there are questions from anyone who is new. It's good to keep a complete asset inventory so you know what you have. It's an easy way to have your maintenance schedule ready to go, so you can see where you're at and take a proactive approach, rather than wait until something breaks."

McCue adds, "I think it's having a great impact on our performance. It's making sure we get out there and check everything regularly. If you have an issue with a certain party, say for example a sewer backup, you have the maintenance report to fall back on and say, 'Yes, we did maintain that line

— it was cleaned on this day.' It helps with your liability to have that kind of documentation.

"It's also helpful in case of an emergency like an overflow, to be able to go quickly to the GIS map, and pull up a manhole and say, 'There it is. Here's the next one, the flow is in this direction, here's the pipe size.' With that information we can make sure we've got the right tools for the job before we get there.

"It's a lot easier to take care of everything when you have a plan and the information is all in one place." ♦

**MORE INFO:**

**Aries Industries, Inc.**  
800/234-7205  
www.ariesindustries.com  
(See ad page 25)

**Shamrock Pipe Tools, Inc.**  
800/633-7696  
www.shamrocktools.com

**Vector Manufacturing**  
800/627-3171  
www.vector.com  
(See ads pages 3 and 51)

www.pumpershow.com



**Indy 2012**

**February 27 - March 1, 2012**

**Indiana Convention Center • Indianapolis, Indiana**  
**Monday - Education Day • Tuesday - Thursday - Exhibits**





Pure Technologies is a global leader in the development and application of innovative technologies for inspection, monitoring, and management of pipeline infrastructure. Our suite of patented technologies and services include:



### Free-Swimming Inspection

SmartBall® is a free-swimming tool capable of detecting and locating acoustic activity associated with leaks and pockets of trapped gas in pressurized pipelines.



### Metallic Pipe Initiative

Pure expands its services in pipe wall assessment with a state-of-the-art in-line inspection tool that measures wall thickness utilizing high-resolution magnetic flux leakage (MFL) technology



### Tethered Inspection

Sahara® pipeline inspection system detects leaks, pockets of trapped gas, and structural defects in large in-service mains.

Visit us online at [www.puretechltd.com](http://www.puretechltd.com)

# AMERICAN HIGHWAY PRODUCTS LTD.

## RAISING AMERICA, ONE INCH AT A TIME

### the PIVOTED TURNBUCKLE Manhole Riser



The Most Efficient and Powerful Expanding Riser on the Market.

Riser Heights 3/4" and up in All diameters. 1" diametric variance and DOT approved in most states.

Made in the USA



**Catch Basin & Valve Box Risers** reduce costs and streamline adjustments



**I.D. Locator** allows for easy location of common utilities and aids in identifying striping



**Sewer Lid Seal Kit** eliminates lid vibration and reduces moisture penetration



**Rubber Adjusting Ring** protects sub-structure, eliminates noise and vibration



**EZ Lift** will unseat, lift, and set down a manhole cover in one smooth motion



### SAFETY RAMPS ELIMINATE

- Vehicle Damage Claims •
- Material Cost for Cold Patch •
- Labor and Disposal Costs •



Toll Free 1-888-272-2397 • [www.ahp1.com](http://www.ahp1.com) • e-mail: [sales@ahp1.com](mailto:sales@ahp1.com) • Free DVD/CD ROM

# PIPES THAT BEND. FOR BUDGETS THAT WON'T.



24" 4,400 LF - Johns Island, SC

## 4,000 FUSIBLE PVC™ DRILLS AND COUNTING...

Fusible PVC™ is today's choice for horizontal directional drilling (HDD), sliplining, pipebursting and restrained open-cut installations.

Our experience includes:

- Approximately 4 million feet installed in the U.S., Canada and Mexico
- Directional drill continuous pull-ins of greater than 6,000 feet
- Diameters of 4" to 36" available and in stock
- Unparalleled product quality testing and fusion technician training

Contact us today and start putting Fusible PVC™ technology to work in your community.

...Edmonton, AB...Gardnerville, NV...St. John, IN...Chula Vista, CA...Rio Rancho, NM...Fargo, ND...McKinney, TX...Shreveport, LA...Catawba, NC...Howard Lake, MN...Bradenton, FL...Norfolk, VA...Aurora, CO...Myrtle Beach, SC...Sacramento, CA...Cape Canaveral, FL...Evanston, WY...Irvine, CA...Xenia, OH...McAllen, TX...Forest Lake, MN...Highlands Ranch, CO...West Jordan, UT...Tampa, FL...Savannah, GA...Boulder, CO...Kailua, HI...Baytown, TX...Bouton, IA...Limon, CO...Terra Haute, IN...Baton Rouge, LA...Louisville, KY...Milpitas, CA...Thornton, CO...Oak Bluffs, MA...Half Moon Bay, CA...Traverse City, MI...Alexandria, MN...St. Augustine, FL...Newark, OH...Denver, CO...Natchez, MS...La Jolla, CA...Eustis, FL...Bolton, NC...Greenwood Village, CO...Mt. Dora, FL...Greensboro, NC...Davis, CA...Bismarck, ND...Fort Lauderdale, FL...Grand Junction, CO...Mandan, ND...Vancouver, BC...Cocoa, FL...Lincoln, NE...Napa, CA...Lakewood Twp., NJ...Orlando, FL...Albuquerque, NM...Indianapolis, IN...Destin, FL...Santa Clara, CA...Fernley, NV...Cleveland, OH...Sartell, MN...Lake Buena Vista, FL...Farmington, MN...Kissimmee, FL...Lake Charles, LA...Ottawa, ON...Annandale, MN...Palo Alto, CA...Panama City, FL...Freeport, PA...Beaufort, SC...Bennettsville, SC...Monterey, CA...Charleston, SC...Fremont, CA...Greenville, SC...Moorhead, MN...Johns Island, SC...Pensacola, FL...Walterboro, SC...Omaha, NE...Brookings, SD...Clay County, FL...Beaumont, TX...Ypsilanti, MI...Stow, OH...Brownsville, TX...Dallas, TX...Jacksonville Beach, FL...Port Isabel, TX...Clayton, NC...Green Bay, WI...Long Lake, MN...Bridgeport, WV...American Canyon, CA...Port Charlotte, FL...San Ramon, CA...Charlotte, NC...Lafayette, LA...Newnan, GA...Broomfield, CO...Lakeland, FL...Mesquite, NV...Bismarck, ND...Springfield, GA...Baltimore County, MD...Altamonte Springs, FL...Sheridan, CO...Leipsic, OH...Fresno, CA...Brigham City, UT...Fairmont, MN...Gainesville, FL...Springfield, GA...Minot, ND...Santa Fe, NM...Defiance, OH...Jacksonville, FL...

(858) 679-9551

[www.undergroundsolutions.com](http://www.undergroundsolutions.com)



Your Pipeline to Sustainability.™

# THE BATTLE OF NEW ORLEANS

Long after Hurricane Katrina, the city struggles to locate leaks that total millions of gallons per day. Sophisticated acoustic monitoring tools are key weapons.

By Peter Kenter

While Hurricane Katrina fades into the country's memory, its aftermath is a daily reality for the Sewerage and Water Board of New Orleans (SWBNO).

The board is working with the Federal Emergency Management Agency (FEMA) on proposals for a major main replacement plan, while an army of repair crews work to isolate and eliminate leaks.

Among their diagnostic tools is an acoustic technology that helps assess pipe degradation and locate leaks with precision.

Ongoing assessments by SWBNO staff indicate that the current condition of the mains is directly related to the flooding caused by Katrina, which struck in August 2005. "When the levees failed, it brought a flood of water through the city that tossed cars aside, tore houses from their foundations, and uprooted trees, which pulled up pipes along with their roots," says Joe Becker, general superintendent.

"The city is like a flat-bottomed bowl, so when you fill it with eight, or 10, or even 16 feet of water, and it sits there for weeks, it depresses the soil, crushing waterlines and traumatizing every pipe joint."

## Maintaining pressure

During the hurricane and flood,

**Crews use the GM Sounder made by Echologics to listen for leaks in the New Orleans water system.**



From left, Echologics senior field specialist Frank Hobbs; Sewerage and Water Board of New Orleans chief of networks Rudy August; and board senior engineer Steve Bass. (Photography by Sean Gardner)



**PROFILE:**  
Sewerage and Water Board of New Orleans (La.)

**ESTABLISHED:**  
1899

**AREA SERVED:**  
181 square miles

**POPULATION SERVED:**  
344,000

**CUSTOMERS:**  
120,000 service connections

**STAFF:**  
1,200 (sewer and water)

**INFRASTRUCTURE:**  
1,610 miles of waterlines

**ANNUAL BUDGET:**  
\$43 million capital, \$56 million operating (2011, water)

**WEBSITE:**  
[www.swbno.org](http://www.swbno.org)

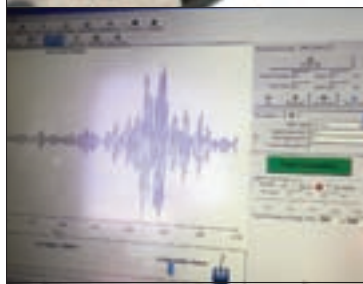




**“We clamp the sensors to either a valve or a hydrant for the best results. We know how fast the sound of a leak travels in water, so we calculate the time delays of the sounds between the two sensors.”**

**Marc Bracken**

**Steve Bass (left), senior engineer with the Sewerage and Water Board of New Orleans, and Echologics senior field specialist Frank Hobbs look for leaks using the LeakFinderRT system.**



**Screen displays make it easy for field crews to detect the locations of leaks.**

more than 200 million gallons for a population as close to zero as we were ever going to get.”

The only bright spot: the west bank levees held, sparing 10 percent of the population and its water system. The city’s two water treatment plants also survived.

On the east bank, crews worked to valve off water mains to maintain pressure in the most-affected lines, traveling by skiff and any vehicle that could ply the floodwaters.

“We were driving crew trucks that rode high enough above water, and closing off the valves in the largest mains to isolate different line segments,” says Rudy August, chief of networks. “That helped us to keep up the pressure in the critical lines. The communication was spotty, and we had no precedent for this, so we were working almost on instinct, identifying and prioritizing the worst of the leaks.”

The situation worsened during the cleanup as hydrants were torn loose by backhoes removing

debris, and home service connections were ruptured as buildings were demolished.

### **86,000 leaks**

The floodwaters were quickly pumped out by the city’s 24 massive drainage pumping stations – combined capacity of 30 billion gallons per day. But six years later, the water system continues to suffer Katrina’s effects. As of this year, the board had repaired more than 86,000 water leaks, replaced more than 8.5 miles of water mains, installed 74 new valves, and repaired and inspected more than 14,000 hydrants.

Leaks repaired since the worst aftermath of the hurricane amounted to 75 million gallons per day. Yet the water hemorrhage continues. SWBNO is fully funded by ratepayers, although various state and federal agencies have provided opportunities for grants and other assistance to the city.

FEMA continues to play a major role in daily water system operations and has funded about \$45 million in point repairs. Still, the city and SWBNO maintain that the damage caused by Katrina was so severe that wholesale line repair is the only way to revitalize the system. At issue now is how much of the system needs to be replaced and who pays.

FEMA is close to an agreement

## A RESPECT FOR HISTORY

New Orleans was established in 1718, making it one of the oldest cities in the United States. A lot has changed since then, but it’s the job of the Sewerage and Water Board of New Orleans (SWBNO) to make sure that wherever work is completed, everything is restored to the exact condition in which it was found.

Although the city is approaching the three-century mark, the water system is much younger. “There were numerous attempts by private companies to control flooding, to establish a sanitary sewer system that flowed outside of city boundaries, and to provide potable water,” says Joe Becker, general superintendent. “Each effort met with failure, and the growth of the city was being hampered.”

In the 1890s, the women of New Orleans circulated a petition and marched on the State Capitol in Baton Rouge demanding a comprehensive approach to providing fresh water, sewage services, and flood control. The result was the creation of the SWBNO in 1899, a state agency that has served the city for more than 110 years.

The water system in the French Quarter, the oldest part of the city, was largely constructed in the late 1890s and early 1900s. “Wherever we work, we work to the local ordinance,” says Rudy August, chief of networks. “If it’s asphalt, we put back asphalt. If it’s a cobblestone on a centuries-old street in the French Quarter, we number the cobblestones and put them back exactly as we found them.”

to fund replacement of some joint-to-joint line segments of about 1,000 feet each, provided that section has reported a specified number of leaks since Katrina. SWBNO is working to make the case that the flood caused more than half the damage to the east bank water distribution system and that the entire system should be replaced, at FEMA’s expense.

“Despite all the repairs com-

pleted over the last three to four years, we have not had much success in catching up on emerging leaks and point repairs,” says Becker. “We’re winning the daily battles, but I’m not sure about the war. We’re still putting out 125 million gallons of water a day at slightly reduced pressure, but for far fewer customers, so there’s still a significant water loss on the east bank.”

## Dig and replace

Repairs are all dig-and-replace on small sections of pipe, largely involving joint removal and replacement and clamp repairs. Although the board has examined some trenchless repair options, proceeding with them would require an extensive financial commitment within a program to revitalize the overall system.

While making its case for line replacement, the board has also sought a more effective method for locating and repairing leaks. Various technologies and third-party leak detection contracts had yielded limited results. “We were getting a lot of dry holes,” says Becker. “With limited resources, we couldn’t afford to keep sending repair crews to investigate false leak reports.”

Not that leak detection in New Orleans is easy. The city has an extremely high water table, sometimes only a foot below the ground after a heavy rain. Utilities are buried at three to four feet, so most leaks empty into pressurized water surrounding the lines. Safety for leak-repair crews is paramount, as each excavation must be carefully dewatered and shored before entry.

“That isn’t a recent problem,” says Becker. “It’s been a challenge to locate leaks since we first pressurized the system over 100 years ago. If you see a leak on the surface, is it a leak from the potable water system, or just ground water bubbling up?” Many leaks are diverted into the sewage system or through utility conduits also surrounded by groundwater. With some sections of the city still sparsely inhabited, even surface leaks may remain unreported for up to a month.

## Condition assessment

In late 2010, the board issued a new tender for a one-year pipe condition assessment contract, renewable for a second year. It selected Echologics Engineering, a subsidiary of Mueller Water Products. The company’s core technology is a proprietary acoustic-based leak detection system used to pinpoint leaks and assess the structural integrity of selected waterlines.

The company had impressed



Frank Hobbs (left) and Rudy August listen for leaks.

**“I believe FEMA is coming to grips with our position on the level of damage to the water system as a whole. In the meantime, it’s still our duty to make the best of the system we have and fight the daily battle to keep the leaks under control.”**

Joe Becker

members of the board during a four-day pilot program in which Echologics technicians located water main leaks that totaled 75,000 to 100,000 gallons per day.

“They just went out and identified the exact locations of leaks on line segments by marking them with an X on the ground,” says Becker. “They were significantly successful. One problem we faced was that before then, we would fix one leak along a line segment, and then shortly after, the next-weak-

est point became the weakest point and we had a new leak surfacing a few yards away. The Echologics technology finds all of the leaks in the selected line segment, not just the worst ones.”

Besides helping to locate leaks, the assessment accurately reports the condition of the lines. That helps the board in making its case to FEMA and helps to assess the defects as either pre- or post-Katrina.

“We initially developed the product to sense the subtle sounds

associated with leaks in plastic pipes, something that had evaded other technologies,” says Marc Bracken, vice president and general manager of Echologics. “The level of processing of the data we collect is also very sophisticated, so we can also detect leaks under backpressure from surrounding groundwater.”

The New Orleans contract provides three Echologics engineers which are available 24 hours a day. When a leak is suspected, the operators place two acoustic sensors on both ends of the suspected location. Typically, the sensors are placed 300 to 1,500 feet apart on distribution mains, and 2,400 feet apart on transmission mains.

“We clamp the sensors to either a valve or a hydrant for the best results,” says Bracken. “We know how fast the sound of a leak travels in water, so we calculate the time delays of the sounds between the two sensors. We crunch the data to calculate the specific location of the leak, then simply draw an X on the road to inform repair crews where to dig.

“If the leak is particularly large, we might check the line segment a second time on either side of the leak location for sister leaks.” While detecting leaks, the same technology also produces an accurate assessment of pipe degradation, which indicates wall thickness along the tested span and reports on the accuracy of inline district meters.

## Cameras too invasive

“The city is using this non-invasive method for pipe inspection, considering the condition of some of the lines,” says Bracken. “Any time you send in a camera you stir up sediment and risk chipping off buildup. And, while the cameras may see large leaks, they can’t see small ones. For the amount of information a camera can gather on leaks and line condition, we can do it faster acoustically.”

The SWBNO prioritizes the areas it wants Echologics to analyze, but also gives the contractor freedom to proactively analyze other areas identified by the board as high-risk. In the first two weeks of the contract, the Echologics crew identified leaks totaling 358,000 gallons per day.

“The biggest leaks we’ve found



# MAINLINE

BACKFLOW PRODUCTS

## Fullport Backwater Valve



- Clear Top for easy visual inspection and cleaning
- Fullport (Normally-open) Non-Flow Restricting
- No problems with Blockages
- Gate closes automatically when sewer starts to backup
- Cleaning-rod does not destroy the gate when feeding or retrieving cable
- Normally-open design allows the free circulation of air throughout the plumbing system to the municipal sewer
- Award-winning technology

## Extendible Adapt-A-Valve™



- Eliminates Manhole or Expensive Vaults
- Allows easy ground level access at any depths
- Removable seat and gate (Cassette) allows full servicing of unit
- Reflective sticker in body serves as guide for ease of cassette insertion
- Cassette locks in body
- Lightest gate in the industry offers next-to-no flow-restriction
- Double-hinge gate design keeps gate aligned to seat
- O-ring seal
- For SDR Pipe use SDR adapters

## 4" Extendible Adapt-A-Valve™ Inspection Chamber



- The cassette & receiver system is integrated into the inspection chamber.
- This system allows the use of removable & re-insertable pressure test gate, normally opened or normally closed cassette for backflow prevention.
- Cassettes are easily installed or removed from any depth with the extension handle eliminating the need for special tooling.
- The cassette features a revolutionary light weight gate that offers next-to-no flow restrictions. The double hinged gate design keeps the backflow gate aligned for a perfect O-ring seal.



[www.backwatervalve.com](http://www.backwatervalve.com) Toll free 1-877-734-8691

are the ones that are diverted straight into the sewer," says Bracken. "They never surface." The SWBNO has also used a SmartBall acoustic sensor orb designed by Pure Technologies Ltd. Surrounded by a foam-rubber wrapper, the ball is dropped inside a line segment and records leak information as it rolls along the pipe, driven by water flow.

"The ball itself records the acoustic information," says Becker. "You drop it in one part of the system and pick it up in another. It's limited to transmission lines larger than 12 inches. You have to make sure the line segment is isolated and that you can pick up the ball on the other end, or else it can take a wrong turn. It has found some leaks for us, and it's a viable product that we're willing to use in the future. It's an additional technology that isn't competing with the

work being done by Echologics."

For the foreseeable future, the pipe condition assessment will continue, in part so that the board can make an effective case to FEMA for extensive line replacement.

"I believe FEMA is coming to grips with our position on the level of damage to the water system as a whole," says Becker. "In the meantime, it's still our duty to make the best of the system we have and fight the daily battle to keep the leaks under control." ♦

### MORE INFO:

**Echologics Engineering, Inc.**  
866/324-6564  
[www.echologics.com](http://www.echologics.com)

**Pure Technologies, Ltd.**  
800/537-2806  
[www.puretechltd.com](http://www.puretechltd.com)  
(See ad page 18)

Dedicated to Municipal Wastewater Professionals

FREE subscription at: [tpomag.com](http://tpomag.com)

## Your One-Stop Shop

VIDEO PIPELINE INSPECTION EQUIPMENT,  
CONDITION ASSESSMENT, & REHABILITATION



Custom Truck,  
Van, ATV, &  
Trailer-mounted  
Systems are  
available!

- ➔ rugged, reliable equipment means a lasting R.O.I.
- ➔ cameras, transporters, and data decision support software to satisfy all condition assessment needs
- ➔ depth of resources; more regional sales managers & dealers throughout the world to better serve you
- ➔ unparalleled software functionality
- ➔ custom truck, van, ATV, and trailer configurations are available
- ➔ exceptional performance
- ➔ superior customer service & parts turn-around



PORTABLE  
SYSTEMS

LATERAL &  
MAINLINE INSPECTION

CAMERAS &  
TRANSPORTERS



CUSTOM  
REPORT CREATION

"The Standard of the Industry"



PROUDLY MADE IN THE USA

[www.cuesinc.com](http://www.cuesinc.com)

800.327.7791

© 2011 SPX



# RD5000™ WL

Easy to use, high frequency pipe and cable locator kit

- **ClearTRACK™:** Provides automatic rejection of adjacent bleed-over signals, leading to more accurate location in increasingly congested underground utility networks.
- **Single high frequency, 83kHz:** Jumps across the seals, insulators and gaps found in many water and gas pipes, enabling longer locates.
- **Compass:** Displays the orientation of the target cable or pipe, making it easier to follow, and ensures correct positioning for accurate depth measurements.
- **Single button operation:** Ensures intuitive ease of use, enhanced by Guidance Arrows, Signal Strength and Depth and Current readouts.

TEL: 877 | 247 | 3797  
Email: [rd.sales.us@spx.com](mailto:rd.sales.us@spx.com)  
[www.radiodetection.com/RD5000](http://www.radiodetection.com/RD5000)



**Radiodetection®**



**Keep It Flowing!**

- Reliable Products
- Excellent Delivery
- Incredible Support
- Personal Service

Manufacturing Drain and Sewer Jetting Equipment since 1985. Cold and hot water Portable, stationary and trailer mounted models for lines up to 24".

Custom built equipment to your specifications.

**CAM Spray**

520 Brooks Road      800-648-5011  
Iowa Falls, IA 50126      [www.CamSpray.com](http://www.CamSpray.com)

*Working with sewer professionals*

**STREET & SEWER PARTS SUPERSTORE**

**PURCHASE YOUR SEWER PARTS ONLINE:**

- ◆ Sewer Nozzles
- ◆ Sewer Hose
- ◆ Vacuum Pipe & Hose
- ◆ Quick Clamps
- ◆ Sectional & Continuous Rod
- ◆ Couplings & Valves
- ◆ Root Saws
- ◆ Root Cutters
- ◆ Tools For Manual Rod
- ◆ Lighting Packages
- ◆ Rear Vision Camera Systems
- ◆ Sewer Dye Tablets & Smoke Bombs
- ◆ Rental Equipment
- ◆ Used Equipment

**YOUR ONLINE PARTS STORE!**  
[www.StreetAndSewer.com](http://www.StreetAndSewer.com)  
1.251.285.SHOP (7467) • [sales@streetandsewer.com](mailto:sales@streetandsewer.com)

# RELENTLESS.



The Aries LETS (Lateral Evaluation Television System) sets the standard for productive, reliable and versatile mainline and lateral inspections. Feature-rich and customizable to serve your uniquely specific needs, the LETS is engineered to inspect a mainline up to a 36 inch diameter and lateral of more than 150 feet ... and that's just the start. Add the self-cleaning PE3600 Pan/Tilt camera and you have the most complete system available today for navigating and inspecting the toughest lateral line conditions.

Relentlessly pursuing **innovation**. Relentlessly ensuring reliable **performance**. Relentlessly dedicated to serving you with quality customer service. The Aries LETS. Relentlessly working with unmatched efficiency until the job is done. For more information, contact your Aries dealer or sales representative today.



Proudly Manufactured in the U.S.A. | [ARIESINDUSTRIES.com](http://ARIESINDUSTRIES.com) | (800) 234-7205

# TURNING TOWARD TRENCHLESS

Horizontal directional drilling gains momentum for sewer and water installation as municipal managers learn the technology and begin to appreciate the advantages

By Randy Happel

Municipalities have long embraced open-cut as the method of choice for installing water and sewer systems, but a growing number of officials are now abandoning the “we’ve always done it this way” mentality.

Leading the movement to challenge open-cut is horizontal directional drilling (HDD), an efficient and less disruptive approach that has significant advantages. The change has come as municipalities learn the benefits of trenchless technology and change their perceptions about its costs. As a result, they are adjusting the way they specify new projects and are updating their bidding processes.

“I think it had a lot to do with comfort level,” says Chad Van Soelen, trenchless segment business manager at Vermeer Corporation. “It’s often easy to become complacent when a system is in place and people are familiar with it. The other factor was a perception that HDD is more expensive than open-cut. Often neglected, however, is the cost for repairs and restoration on the surface. This should always be factored in to arrive at a realistic cost-per-foot calculation.”

HDD struggled in the mid-1990s, largely because of contractors who were inexperienced in bidding trenchless jobs. Since government customers must accept

the lowest bid, many contractors underbid jobs, and then in the middle of the projects found themselves losing money. An irresponsible few simply cut their losses and walked away from the projects.

“On the flip side, the actions of those few prompted more overall due diligence among municipi-

tions. There are situations when open-cut will be a better choice, at least from a production rate standpoint. A lot depends on the job site, the surroundings, and number of surface area obstacles.”

Cost has always played a significant role in the decision to go with open-cut. While most HDD enthusiasts will admit that open-

**“Perception is reality, and I think most city officials perceive open-cut as less expensive. That obviously depends on factors like depth of installation. The shallower the installation, the greater the case for open-cut. But in areas where lines are being installed at greater depths, let’s say in excess of 8 to 10 feet, I think it will swing in the direction of HDD.”**

Chris Brown

ties when reviewing bids and selecting contractors,” Van Soelen says. “It actually turned out to be a good thing for most installers. Project owners and municipalities now scrutinize bids more closely and are more receptive to looking at HDD as a viable option.”

## Merits of methods

Chris Brown, president and CEO of Verdeterre Contracting in Canton, Mich., says both open-cut and HDD have their places. Founded in 1980 as an excavation and earth-moving company, Verdeterre recently expanded into HDD.

“We feel HDD is a better option for most water and sewer installations,” Brown says. “Our experience has been that HDD is a more efficient approach, but it depends on a variety of condi-

cut has the edge in a bidding war, Brown feels project owners often overlook the bigger picture.

“Perception is reality, and I think most city officials perceive open-cut as less expensive,” Brown says. “That obviously depends on factors like depth of installation. The shallower the installation, the greater the case for open-cut. But in areas where lines are being installed at greater depths, let’s say in excess of 8 to 10 feet, I think it will swing in the direction of HDD.”

## HDD success story

Verdeterre Contracting recently completed an install where HDD was not the municipality’s first choice. The job was an upgrade to an aged waterline in a 40-year-old residential subdivision. The project was complicated, as the neigh-



Horizontal directional drilling is gaining favor for pipe replacement when examined in a “whole project” context that includes the costs of surface disruption and subsequent repair. (Photos courtesy of Vermeer Corp.)



**HDD can enable replacement of water and sewer pipes with a minimum of disruption to streets, sidewalks and landscapes.**

boring county and township were concerned about the costs to replace all the roads that would be damaged by open-cut replacement.

The project involved installing 32,000 feet of 8-inch TR Flex ductile iron water main as the replacement. Soil conditions — clay and silt — were of little concern, but Brown's team lacked information about the sanitary sewers in the area. They had to rely on residents' memories, along with repeated potholing, to zero in on exact service locations.

That proved inefficient, so Brown enlisted a subcontractor to inspect the line and all services with a camera. Equipped with a sonar device, the camera allowed the crew to detect the precise location of each service from above ground.

"The affected subdivision involved more than 500 homes," Brown says. "We knew the location of the mainline, but few records existed for the individual off-line leads. It also involved connecting the new line to each home with 1-inch copper water service lines. Having to complete each of these individual service lines using open-cut would have been horribly disruptive and costly to repair."

The municipality's project engineer had a previous relationship with an HDD contractor and knew about the process, and that helped greatly, especially when it became necessary to alter the original drill plan. Brown used a D36x50 Series II Navigator HDD unit from Vermeer to install the ductile iron mainline.

"The original plan was based

on the information available at the time, before we started the job," Brown says. "You can imagine the number of modifications we had to make along the way, since the locations of so many of the service lines had not been identified. Occasionally, we also found an identified line that was deeper or shallower than specified, so we had to adjust vertically or horizontally."

To complete the 1-inch service line connections, Brown used a combination of HDD and open-cut. For the longer runs, he used a Vermeer D7x11 Series II Navigator HDD to install service lines to 300 of the homes. The remaining 200 home connections were made using an open-cut approach due to the short distance from the mainline to the home.

"In this case, we ran the numbers, and the combination approach made the most sense," says Brown. "Horizontal directional drilling on the longer runs required less time from an installation perspective and reduced restoration to the established lawns."

### Credible counsel

Most advocates of trenchless technology acknowledge that open cutting is viable in some situations. The point is to avoid the assumption that a backhoe is the solution to every water and sewer installation. The approach to use typically depends on variables such as the type of utility, the type of project (new or repair), the size of pipe to be installed, soil conditions, and the depth and length of

the installation. Often, as in many large projects, a combination approach proves most efficient.

Municipalities with little experience in HDD may be well served to enlist a civil engineering firm that can provide an unbiased recommendation. HDD equipment manufacturers can also supply detailed information: They are experts at their business, and it would not be in their best interest to suggest an approach if the prospects for success were questionable.

"Our customers call on us all the time to provide insights and recommendations for installation projects," Van Soelen says. "We have experts with years of experience in HDD and open-cut who are well qualified to identify the pros and potential stumbling blocks of each method for a specific job, whether it's ground conditions, surface obstacles, local restrictions, confined access, you name it. If HDD is the best option, then, yes, we'll recommend it. If not, we will suggest another approach."

### Bidding

HDD has led a number of municipalities to amend their bidding protocols. Assuming trenchless is feasible and cost-effective, city officials may even specify that HDD be used exclusively, although variations in state laws may make that difficult.

Murv Morehead, right-of-way coordinator in the City of Overland Park, Kan., says bids for the city's utility installations are sometimes written with guidelines that outline expectations for project results, but do not specify what method the contractor must use.

"We reserve the right to encourage them to look at alternatives to open-cut, especially if digging up a street is involved," Morehead says. "We can withhold the permit until we're convinced that the contractor has done due diligence and has proved to us why there's no method available other than open-cut." Still other municipalities go so far as to word contracts to stipulate that a project must be "completed by a means other than open-cut," but stop short of specifying the technique.

### The green factor

Another factor moving munic-

ipalities toward HDD is air emissions, especially in non-attainment areas. "I think it's really starting to play a huge part in looking at all these projects," says Van Soelen. "The ability to prove the substantial reduction in emissions generated by HDD equipment compared to open-cut is a benefit. Generally, the carbon footprint of HDD can be up to 75 percent less than what you'll have using open-cut, and municipal officials I've spoken with are delighted there is an option that addresses this issue."

Brown feels the tide is beginning to turn more in favor of HDD. "It still isn't a large number, but each year there are more municipalities looking at HDD as an option, especially with water-line replacements," he says. "The more they learn about trenchless

**"We reserve the right to encourage them to look at alternatives to open-cut, especially if digging up a street is involved. We can withhold the permit until we're convinced that the contractor has done due diligence and has proved to us why there's no method available other than open-cut."**

**Murv Morehead**

technology, the more their comfort level increases. It is a lot like much of everything we encounter in life.

"People tend to avoid situations they have little knowledge about and stick with what they know and what's comfortable for them. As a contractor whose business was built primarily on open-cut, I know all too well the apprehension involved with opening up to HDD. But having done so, we are now able to inform more municipal officials about trenchless and promote more awareness of HDD.

"It isn't always the best option, but HDD is certainly worthy of viable consideration for nearly all sewer and water installations." ♦

 Made in the U.S.A.

# MyTana

Full Line Supplier - Factory Direct to YOU

Electronics from MyTana since 2000

Celebrating 10 Years of  
Innovation & Service



## Video Inspect Locate & Leak Detect Package

see page 44 of current full line catalog for details

Contact us for your **FREE** full line catalog today!

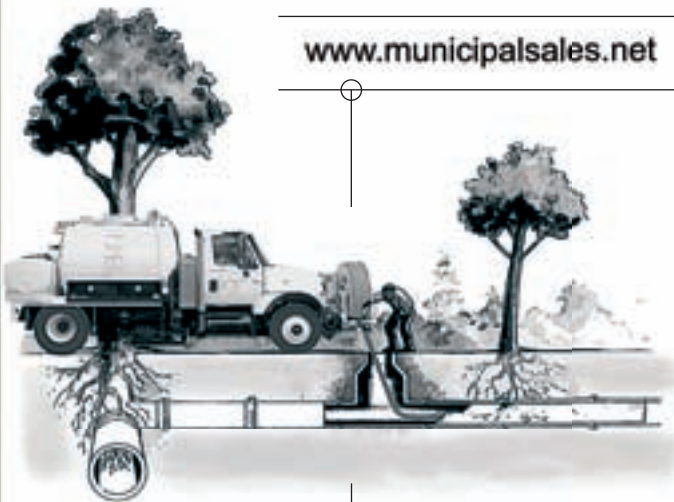
toll free: 800.328.8170 fax: 651.222.1739 **SHOP** [www.mytana.com](http://www.mytana.com)

Cable machines • Jetters • Push cameras for main lines & drain lines • Locators • Related parts • Accessories

## MUNICIPAL SALES

A Root and Grease Control Company

[www.municipalsales.net](http://www.municipalsales.net)

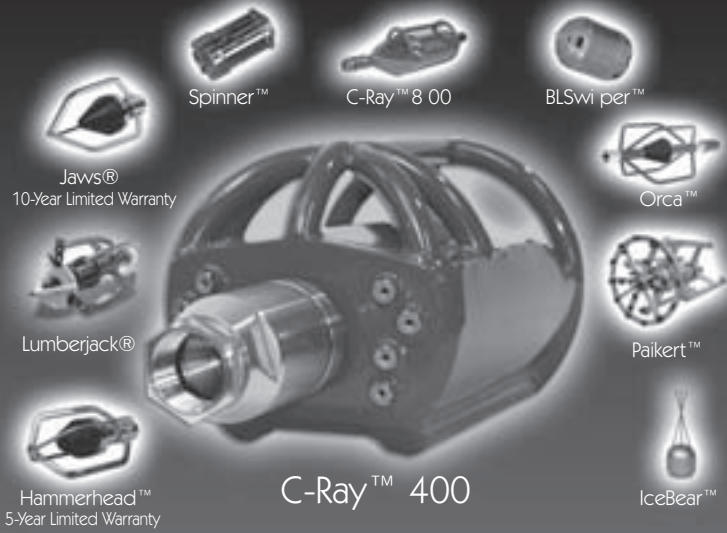


Professional  
Chemical Root  
Control Services

518.747.2044

fax: 518.747.5490

[mark@municipalsales.net](mailto:mark@municipalsales.net)



Equipment  
Engineered for Long  
Lasting Performance™

Rental and Leasing  
Services Available!

Call For **FREE DVD**

 Check out our  
online store at  
[cole-mart.com/nozzteq](http://cole-mart.com/nozzteq)



**NozzTeq**®  
Taking Science to the Sewer!™

[www.nozzteq.com](http://www.nozzteq.com)

Phone: **1.866.620.5915**

Fax: 603.413.6744



# BURSTING THE CONVENTIONAL WISDOM

An Oklahoma city is achieving success and saving big dollars by conducting a multi-year, \$90 million sewer rehabilitation program with in-house workers

By Suzan Marie Chin

**F**aced with a consent decree from federal and state environmental agencies and a compliance program with financial burdens, the City of Lawton, Okla., looked inward for a solution that would allow the city to save money and still meet the regulatory agencies' requirements for reducing sanitary sewer overflows.

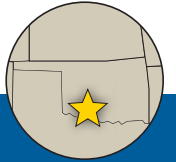
The answer was a dynamic construction and rehabilitation program, using in-house personnel to design and perform rehabilitation for the city's sewer infrastructure. Lawton has created a team that can compete with the private contracting sector along with a new mindset that has led to the city exceeding its production goals — reducing SSOs and inflow and infiltration (I&I) swiftly and beyond

expectation, while saving millions of dollars.

Pipe bursting has been a key to the rehabilitation program, as its simplicity enabled crews to learn the technique quickly, and the process minimizes site disruption and the costs of surface repairs and restoration.

#### Due diligence

Lawton, in southwest Oklahoma



#### PROFILE:

City of Lawton, Okla.

POPULATION:  
97,000

INFRASTRUCTURE:  
400 miles of sanitary sewer,  
6,000 manholes

EMPLOYEES:  
36 (sewer rehabilitation)

BUDGET:  
\$90 million (21-year program)

WEBSITE:  
[www.cityof.lawton.ok.us](http://www.cityof.lawton.ok.us)

Crew members Raymond Armstrong, foreground, and Justin Gilliland prepare for a sewer rehabilitation project by fusing lengths of sewer pipe using the McElroy TracStar 500 fusion machine. (Photography by Jeff Dixon)





Lengths of 8-inch HDPE pipe are pulled into a trench.



Members of the City of Lawton sewer rehabilitation crew include, from left, back row, David Wiedman, Arthur Griffin, Johnny Monroe; front row, Dusty Arrowood, Donald Dawdy, Billy Kemmer, and Eugene McCracken.



From left, Jerry Ihler, public works director/city engineer; Shannon Day, CAD technician; Sherri Poolaw, scheduler; Keith Duncan, SSTD engineer; Sima Khajeh, associate engineer; Britt Hubbard, construction inspector; Richard Gooch, survey technician; and Pratap Ganti, assistant director of sewer rehabilitation and collections.

## MANHOLES, TOO

As part of its sewer rehabilitation program, which includes replacement and rehabilitation of sewer mains with pipe bursting and other trenchless methods, the City of Lawton makes sure to provide loving care to its manholes.

When lines are scheduled for rehabilitation, sewer crews repair and rehabilitate all associated manholes using methods that include cementitious mortar containing aluminate cement and synthetic fibers. If needed, steps are removed, inverts are rebuilt, and lids are replaced. Anything necessary is done to bring the manhole to like-new or nearly new condition.

The work greatly reduced I&I through the manholes, contributing to the program's overall 40 percent I&I reductions systemwide.

with a population of 97,000, has 400 miles of sanitary sewers, mostly built from the 1940s to the 1960s. At the time, Lawton was home to two large concrete pipe manufacturing plants, and the community supported those businesses by installing mostly concrete sewers.

In time, hydrogen sulfide and aging began to contribute to numerous SSOs, putting Lawton on the radar at the U.S. EPA. In May 1995, the state Department of Environmental Quality (ODEQ) and the EPA issued a consent order for Lawton to perform a sanitary sewer evaluation study (SSES).

"The purpose was to identify repairs required to improve our collection system and to identify areas that required expansion as a result of undersized pipes in our collection system," says Jerry Ihler, director of public works and city engineer. "The main goals were to eliminate SSOs, reduce I&I, and improve our pipes' carrying capacity."

The SSES called for installation of 37 flowmeters scattered across the city's three large drainage basins, inspection of 6,000 manholes, and CCTV inspection of more than 111,000 linear feet of

pipe. System modeling was performed on all of the city's lines 10 inches and larger, and smoke testing was conducted on more than 75 percent of the system.

Once the study was complete, Lawton began negotiations with the EPA and the ODEQ, proposing a 21-year program in three seven-year phases, each covering one of the three drainage basins. The agencies accepted the proposal, but there remained the challenge of getting the engineering and construction done cost-effectively.

### Cutting costs

In 1996, the program costs were

estimated at \$61 million, and that has grown to \$90 million in today's dollars. In anticipation of rising costs, Ihler was asked to see whether the city could do the work with in-house labor instead of contractors.

Ihler was skeptical, but he agreed to take a look. The SSES provided cost estimates, so Ihler and his team looked at places to trim costs. For one thing, the city did not have to earn a profit, and so if the crew could be as efficient as the construction contractors, there would be some automatic savings there, Ihler decided.

"We had established relationships with our gas, telephone and



electric utilities, to where we thought we could get better response times from relocations or locates than a contractor could,” Ihler adds. “We also had a working knowledge of our system, so if there were going to be changes in the field, we could eliminate contract modifications and change orders and experience some savings through that.”

Altogether, Ihler and his team identified \$2.6 million savings in the first seven-year phase of the program if the work were brought in-house. The program was funded through capital improvement budget dollars raised through a 1 percent sales tax and through several state revolving fund loans from the Oklahoma Water Resources Board, being repaid through a sewer bill increase of \$2.35 per month per customer.

### Setting the tone

Before work began, the organization needed a new mindset and approach. The sewer rehabilitation program had to mesh design with construction and required teamwork between those functions. In addition, maintaining a regimented production schedule would be a new challenge for city workers.

Everyone had to agree that the team needed to accomplish a specified amount per day and that work would not stop on a given day until that happened. It was essential to work that way if the city was to stay on schedule and remain in compliance.

“This was going to be a long-term commitment, financially for the city and physically for the employees,” says Keith Duncan, engineer for the Sanitary Service Technical Division. “We had to do our homework to make our case that we could do it just as well as a contractor. To be successful, we had to develop a solid plan, a business plan of sorts, because what we were about to do in essence was to set up a contracting business within the city.”

One way to keep production on track and on budget was to establish remote construction yards close to project sites instead of bringing crews back to the central yard each day and losing the production time involved in moving employees and equipment.

**“The purpose was to identify repairs required to improve our collection system and to identify areas that required expansion as a result of undersized pipes in our collection system. The main goals were to eliminate SSOs, reduce I&I, and improve our pipes’ carrying capacity.”**

**Jerry Ihler**

The team also changed the way budgets were viewed, abandoning the typical “use it or lose it” approach for a given year. The finance staff agreed to review yearly budgets based on actual production rather than on what was budgeted for the previous year.

Lawton also drew on the experience and expertise of the employees who had the most background in construction programs, selecting leaders based on ability to coordinate crews, boost efficiency, and achieve the most productive hours per day.

The crews also received support from management and the city council. Even when the powers

that he did not understand fully what was being recommended, they accepted the team’s suggestions and allowed them to proceed.

### The best fit

Lawton looked at a number of trenchless technologies for its rehabilitation program and settled on pipe bursting as the primary solution. “With pipe bursting we would be able to use conventional equipment and construction methods, avoid proprietary technology, and do it ourselves,” says Duncan.

“Bursting was attractive for its price point, but also because crew members and new hires who may have had limited trenchless experience could be brought up to speed quickly through manufacturer training and ongoing support from more seasoned personnel.”

Lawton equipped its crews with everything they needed for an efficient and effective program. Equipment and machinery included track-

NOBODY DEALS  
YOU A BETTER  
HAND ON FELT.



When you combine our high-performance cured-in-place pipe (CIPP) liners with our world-class customer service, you have what it takes to go all in. A global leader with unrivaled 24/7 technical support, Applied Felts provides industry expertise, guidance in the field, and custom CIPP liners designed to your unique specifications—wherever in the world your installation may be. Play to win with Applied Felts, the industry’s leading independent manufacturer of quality CIPP liners. Visit [appliedfelts.com](http://appliedfelts.com) for more info.



# LEARN LOCATING IN LESS THAN AN HOUR.

## OUR LF2200 RECEIVER MAKES IT EASY!



“Today was the first day we have had a chance to try out your LF2200. I had a new assistant with me, a 25-year-old with no knowledge of cameras or the location equipment available today. So I gave him a 7 minute walk thru, left to pick up lunch. Within 20 minutes he had located the exact spot of the transmitter, and the depth was right on. I was so impressed with the ease of use I am going to update the 3 other units we have with you. One of my new guys used a number of your competitors’ products and he said by far yours was the easiest to catch onto. He especially liked the crossing signals your unit produces. Your technology is just the best.”

— Paul Veyna  
TV Plumbing & Sewer  
Los Angeles, CA



# Prototek

800-541-9123

Web: [www.prototek.net](http://www.prototek.net)

Email: [prototeksales@prototek.net](mailto:prototeksales@prototek.net)



**A HammerHead HG12 winch pulls a length of pipe on a Lawton sewer rehabilitation project.**

hoes, dump trucks, excavators and a variety of utility vehicles.

For pipe bursting, the city chose a variety of tools from HammerHead, an Earth Tool Company, including two HG12 winches on tracks, an HG20 winch, 7- and 8-inch air reverse hammers, and a 12-inch air impactor. This along with a 3650 boring machine from Vermeer Corporation, enabled crews to rehabilitate 8- to 20-inch lines. For larger lines, the city can rent bursting equipment as needed.

Lawton created many new jobs with its program: The city hired staff for four crews, each with six to seven permanent team members, and several temporary seasonal workers.

### Pattern for success

Crews follow a set procedure to ensure that each rehabilitation project has the best chance of success. A typical project consists of one run from manhole to manhole, averaging 300 feet. The first step is to clear the right-of-way and locate and mark all utilities.

Bypass pumping is set up so that customers are never without service during a project, and access pits are dug for each service tap. A pre-bursting CCTV inspection pinpoints any issues — such as extreme sags — that may make bursting difficult or inappropriate. If possible, where sags exist, crews may open-cut that portion of the line to correct the grade and “grease” the pipes to smooth travel for the bursting head.

As the crews feed the lead winch

cable down the line from the manhole entry point, the new HDPE pipe is fused and prepared. Once ready, the pipe is loaded onto the bursting hammer. The bursting equipment is then deployed. Once the pull is complete, the bursting head is cut off or removed in the manhole, the winch is cooled down, and the service connections are ready to be tied back into the new main.

At each service connection, holes are drilled and using electro-fusion equipment, a poly saddle is fused to connect the lateral to the main, creating a sealed connection. Once all the service connections are fused, the bypass can be removed and the line returned to service. The entire process for an average-size segment takes about one week. A final CCTV inspection is conducted for quality control.

### Long-term vision

As Lawton winds down Phase II, the crews have completed the rehabilitation of 214,000 linear feet of pipe at 4,200 to 4,400 feet installed per month, about 63,000 linear feet above what the initial program had identified.

At the start of the program, Lawton was experiencing an average of 250 wet-weather SSOs. During the last year of Phase I, overflows were down 95 percent. Monitoring by a third-party firm has shown a 40 percent reduction in I&I, beating the goal of 25 to 30 percent.

By doing its homework and staying committed to its team, Lawton has proven that a small municipality can bring a major project in-house and compete on a cost and production basis with the private sector. ♦

### MORE INFO:

**HammerHead, an Earth Tool Co.**  
262/567-8833  
[www.hammerheadtrenchless.com](http://www.hammerheadtrenchless.com)

**McElroy Manufacturing, Inc.**  
918/836-8611  
[www.mcelroy.com](http://www.mcelroy.com)  
(See ad page 55)

**Vermeer Manufacturing Co.**  
888/837-6337  
[www.vermeer.com](http://www.vermeer.com)

4th Biennial  
**SEPTEMBER FEST** September 14-15, 2011 in Rochester, Indiana

# You are invited to North America's Largest **FREE** Sewer Inspection Training Expo

**FREE Maintenance and Repair  
 TRAINING**



Product Demonstrations of NEW  
**INSPECTION TECHNOLOGIES**

**P.A.C.P. CERTIFICATION COURSES**  
 Fees apply for PACP only.



**FOOD • FUN • TRAINING • TECHNOLOGY**

**TECHNICAL TRAINING**

- Cable Retermination Courses
- Basic Maintenance of Equipment
- Camera Repair and Maintenance
- Tractor Repair and Maintenance
- Lateral Launch Repair and Maint.
- Control Unit Repair and Maintenance
- Cable Reel Repair and Maintenance

**TECHNOLOGY DEMONSTRATIONS**

- Mainline camera equipment
- Portable camera systems
- Lateral Launch systems
- PANORAMO mainline systems
- PANORAMO manhole systems
- Laser Profiling
- Data Logging Softwares

**FOOD AND ENTERTAINMENT**

Come and enjoy some of the best local food and beverages in Northern Indiana. **Beer, Brats and Bavarian Pretzels!**



**PACP Certification Courses**

September 12-14th, 2011 (prior to event)  
 2 Day PACP course: \$750.00  
 1 Day MACP/LACP course: \$150.00  
 Presented by Doheny Supply, Inc.



Join us Wednesday night, Sept.14th for RapidView's **CASINO NIGHT**  
 WIN great prizes and raise money for the NASSCO scholarship fund!

FOR MORE INFORMATION OR TO

**REGISTER ONLINE**  
[www.rapidview.com](http://www.rapidview.com)

4th Biennial  
**SEPTEMBER FEST**  
 in the Heartland

Call for more information  
**(800) 656-4225**



## BETTER MOUSETRAPS

### PRODUCT:

Flo-Dar flowmeters with Data Delivery Services program

### MANUFACTURER:

Hach Company  
800/227-4224  
www.hach.com

### APPLICATION:

Monitoring flows

### BENEFITS:

No up-front capital expense (users pay only for flow data)

### USER:

Big Bear Area Regional Wastewater Agency, Big Bear City, Calif.

Installed on a ladder rung above the Flo-Dar flowmeter sensor, the FL900 series cellular wireless flow logger uses FSDATA software to download data to a secure website every 15 minutes. (Photos and graphics courtesy of Hach Co.)

# ABOVE THE FRAY

A California agency gets a handle on its collection system flows using meters mounted in manholes over the wastewater stream

By *Scottie Dayton*

**“We did a capacity analysis on our sewer system to determine what flows we will experience on peak days. Such tools help us decide if improvements are necessary and when to implement them.”**

**Joe Hanford**

The Big Bear Area Regional Wastewater Agency in Big Bear City, Calif., had capacity issues where its sanitary sewers turned 90 degrees. The staff monitored flows at seven problem areas using meters from a company that later went out of business.

At that point plant superintendent Joe Hanford lost the ability to access real-time data through a Web server. Without a warning system, high-flow events led to occasional sanitary sewer overflows (SSOs).

The agency lived with the situation for two years as it investigated companies and solutions. “There didn’t seem to be a lot of

options at the time,” says Hanford. “Then a Hach Company representative demonstrated the Marsh-McBirney Flo-Dar flowmeters with a Data Delivery Services (DDS) program. They seemed suitable for our application, so I signed a three-year contract.”

The program uses Web-enabled radar velocity sensors with surcharge velocity sensors and cellular wireless flow loggers that transmit data to a secure website. Hach personnel installed and maintain the meters. Since enrolling in the program in November 2010, the agency saves \$600 per month in labor and materials and receives reliable, accurate, real-time data, according to Hanford.

### Comprehensive package

The 4.9 mgd Big Bear Area Regional Wastewater Treatment plant handles flows of 2.4 mgd from Big Bear Valley and three other member agencies. Each agency operates its own collection system but delivers wastewater via the regional agency’s interceptors. The agency maintains 15.5 miles of 6- to 21-inch sanitary sewers and interceptors.

Every week, Hanford’s crew checked the batteries in the original flowmeters and deragged fouled sensors as part of field work. The sensors, submerged in the stream, would send erratic velocity and depth measurements when material adhered to them.



The dashboard quick graph feature of FSDATA, the Web-based management software, displays the last seven days of level and velocity data in feet per second and gallons per minute.

“We never trusted the data completely because the flows jumped around a lot,” says Hanford. “We also had too many instances where the cellular wireless connection went down at a time when it was crucial to have real-time information.”

The DDS program enabled Hanford to obtain flow data from three critical sites using Flo-Dar meters with optional surcharge velocity sensors. The units are owned and maintained by Hach-certified personnel. The program also allowed Hanford to trade in three original sensors.

“Receiving credit toward the new units was one reason we selected Hach,” says Hanford. “They also check the batteries, calibrate the meters, and make certain that they read properly.” Hach technicians installed the units in less than two days. Hanford sent one of his team members to observe so that he understood how everything worked.

A four-bolt bracket mounted on manhole walls suspends the units above the stream. The 60-inch operating range from housing to the bottom of the pipe has an accuracy of plus-or-minus 1 percent.

The flowmeter combines digital Doppler radar velocity sensing technology with ultrasonic pulse echo depth sensing to measure flows.



A four-bolt permanent bracket mounted on manhole walls suspends the Flo-Dar sensor above the stream. The flowmeter combines digital Doppler radar velocity sensing technology with ultrasonic pulse echo depth sensing to measure flows.

Mounting units above the water eliminates sensor fouling and accuracy problems, including sensor disturbances, high solids content, and distribution of reflectors.

Meters operate accurately at 14 to 122 degrees F, in shallow and caustic flows, in large man-made channels, and at velocities up to 20 feet per second. When the surcharge velocity sensor becomes submerged, it sends an alarm while monitoring flows.

#### Peace of mind

The units download flow data via a FL900 series cellular wireless flow logger to a secure website. The technology is so reliable that the company guarantees the data or users receive a month of service free for a site.

“We had a major rainstorm with heavy inflow and infiltration just

before Christmas,” says Hanford. “It was a luxury to sit at the plant and receive real-time data through Hach’s Web server on the depth in problem manholes. Seeing a smooth flow transition assured us that the system was all right and we weren’t about to have a SSO.”

The program enabled the agency to improve its long-term planning for expansions or upgrades. “We did a capacity analysis on our sewer system to determine what flows we will experience on peak days,” says Hanford. “Such tools help us decide if improvements are necessary and when to implement them.”

The tools also help him identify the sources of surcharges. The agency has three meters hard-piped into lines to measure member agency flows for invoicing. “If we have a SSO, I can look at the data and pinpoint which member’s flow increased at which sec-

tion of pipeline to surcharge our pipe,” says Hanford. “That’s good data for the other agencies to have, so I gave them my username and password to the website.”

The dashboard mapping feature of FSDATA, the Web-based management software, uses maps with color-coded marker displays to indicate meter status. The quick graph feature displays the last seven days of level and velocity (fps and gpm) data.

“By selecting days and parameters, I can generate reports in spreadsheet or graph format, then export them as portable document files,” says Hanford. “When it’s raining, I especially enjoy logging on from my home computer and getting accurate, real-time information about sewer conditions.” ♦

*ultra*      *ultra*      *ultra*  
**LIGHT – VERSATILE – SAFE**

**ultraSHORE**  
**P R O D U C T S**



**Quick to Install.**  
As light as 130lbs.



**Roll Your Own.**  
Optional wheel kit.



**Stacks easily with**  
2' & 4' high panels.

**This is What Aluminum Shoring Was Meant to be!**



**1-800-683-8837**

**1-800-SHORING**

CALL TOLL-FREE NATIONWIDE • 1-800-746-7464

**www.shoring.com**

# GET IN, GET OUT

The QuickView pole-mounted inspection camera with Haloptic technology from EnviroSight enables fast inspections while yielding high-quality images

By Gil Longwell

As budgets make it necessary to do more with less, many municipalities are seeking ways to increase efficiency and reduce cost in sewer inspections. One solution is to replace some crawler-based inspections by using pole-mounted zoom cameras, which make it pos-

sible to look deep inside pipelines from the nearest manhole.

These inspections save time and enable assessment of infrastructure condition in a way that helps managers make sound maintenance decisions. While zoom inspection does not replace crawler technology, it helps to identify maintenance priorities and inspect hard-to-reach infrastructure without confined-space entry.

A new entry to the zoom inspection camera market is the QuickView camera with Haloptic technology from EnviroSight. Haloptic technology differs from traditional zoom inspection cameras, which use offset lamps with diverging reflectors and require continuous adjustment in viewing the full length of a pipe. Instead, Haloptic technology casts illumination axially aligned with the camera view and focuses it into a column to maintain intensity over long distances and allow inspection of the entire line without adjustment. Illumination is directed where it is needed most: along the

**Mike Vislay, EnviroSight regional sales manager, surveys a length of 18-inch pipe in Hershey, Pa.**



**The QuickView camera with Haloptic technology is connected to the upLink via a cable that runs through the positioning pole. The camera itself is connected by a lever-lock to the pole. (Photography by Gil Longwell)**

pipe walls and on targets at the center of vision.

Mike Vislay, EnviroSight regional sales manager, demonstrated the technology on a blustery spring day at the Derry Township Municipal Authority in Hershey, Pa. Observing were DTMA collection system technicians Don Fuller, Daryl Godwin, Rick Wilhelm and Scott Winters, and their supervisor Jeff Mylet.

## Walk-around

A hard-shelled, wheeled plastic case with telescopic handle stores all system components, including the one-piece bidirectional camera and lights, data recorder, control box, wireless monitors, cables and safety-yellow operator's vest with built-in battery pack (battery life four to six hours). The case has room for additional monitors, batteries, Micro SD cards and other items.

The system's 24-foot carbon fiber telescoping positioning pole is securely clipped to the outside of the case. The integrated camera and light are fabricated in a

## TECHNOLOGY TEST DRIVE

### PRODUCT:

QuickView zoom inspection camera with Haloptic technology

### MANUFACTURER:

EnviroSight, LLC  
866/936-8476  
www.envirosight.com

### LOCATION OF DEMO:

Hershey, Pa.

### DEMONSTRATED BY:

Mike Vislay, regional sales manager, EnviroSight; and five members of Derry Township Municipal Authority collection system crew

### LIST PRICE:

\$15,000 as demonstrated

single housing, pressurized with carbon dioxide to prevent internal condensation. The camera offers 36:1 optical zoom, 12:1 digital zoom, and 432:1 total zoom.

Resembling the hole in a doughnut, the camera is mounted in the center of 5-inch-diameter parabolic reflector that emits a focused beam of light. The reflector consolidates the beam from a single high-intensity discharge (HID) bulb so that at 1,000 feet, the beam is confined to a 6-inch-diameter pool of light. The lighting system can fully illuminate a 60-inch pipe at distances up to 400 feet.



The QuickView camera with Haloptic technology enables quick surveys of pipe segments with zoom features and highly focused lighting.

The model demonstrated came with a wide-angle, backward-looking camera with its own light system that lets users inspect manholes and similar structures without changing cameras or lenses, saving time and enabling near and far viewing at the flip of a switch.

The upLink digital viewing and recording system can capture JPEG and MPEG images on a standard Micro SDHC memory card. This device, clipped to the telescoping rod, includes a base station wired to the control unit via a BNC video cable and a portable wireless monitor that can work mounted on the pole or away from the base station in wireless mode.

No other cables are needed as the operator's video monitor is directly secured via slide-clip connections to the upLink. Up to five remote monitors can display the

camera's images at the same time via wireless connections to the upLink.

The operator typically uses a thumb to manipulate a mini-joystick to control camera zoom and focus. The joystick and all other controls are on an armored box

**Light from the custom-designed reflector surrounds the center-mounted zoom camera with Haloptic technology. Focusing the beam for up to 400 feet, the lens puts the light where the camera can take full advantage of the illumination.**



**The system can be deployed by car, van or pickup truck or from a dedicated inspection vehicle. Although it requires no supporting power or control systems beyond those on the operator's vest-pack, the data stream can be shared with a support vehicle. Everything a single operator needs for a day in the field is in the package.**

that slips into a pouch in the safety vest. The box is roughly positioned above the wearer's right hip pocket. An on-off toggle switch activates the entire system. The unit also has switches to turn the fixed-focus on or off, engage the image stabilization, and bring up common menu functions.

Still and video images captured present the same visual picture that a crawler camera delivers. Auto-imposed text may be selected; this displays time and date.

The system can be deployed by car, van or pickup truck or from a dedicated inspection vehicle. Although it requires no supporting power or control systems beyond those on the operator's vest-pack, the data stream can be shared with a support vehicle. Everything a single operator needs for a day in the field is in the package.

in diameter, but the "doughnut hole" was filled in with light.

After explaining each component's capability, Vislay repacked the case and moved the demonstration to an opened manhole on the plant grounds. It took about five minutes to unpack the case, connect the five system components, put on the operator's vest, and record the first images. Once the camera was in position in the manhole, Vislay demonstrated the find-and-capture routine that technicians quickly fall into. Using the upLink, the crew took turns watch-

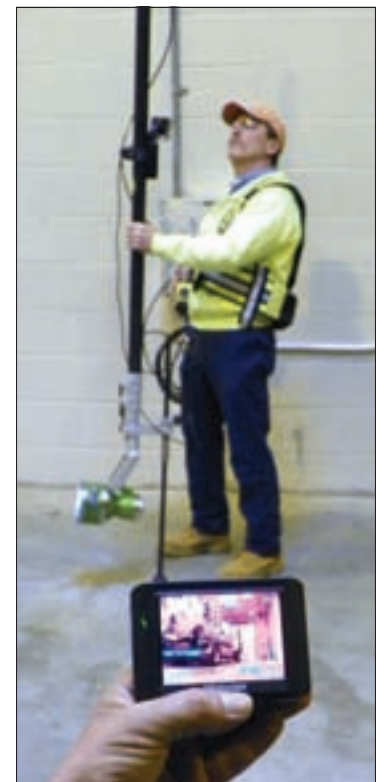
**An operator focuses the camera lights on a Vector sewer cleaner truck parked in an equipment bay, while Derry Township Municipal Authority technician Don Fuller watches the action on a remote monitor.**

## Operation

The demonstration began in a storage bay at the DTMA treatment plant. That environment enabled Vislay to show how the Haloptic reflector keeps the light beam tightly focused.

When focused on a close target, the beam's halo-like pattern and dark center spot were clearly apparent. In the equipment bay, at a distance of about 40 feet, the beam did not noticeably increase

**All of the controls are in easy reach.**



ing on a second wireless monitor as the inspection progressed.

Using the camera's zoom capability to look down the pipe, Vislay first found a defect. Operators have two Record options:

- Individual JPEG snapshots that capture details of each defect for later study.
- A comprehensive MPEG video recording of the entire pipe run.

During an inspection, an operator may encounter a pipe blockage or have the view to the next manhole otherwise unobstructed. In that event, whether starting at the next manhole or at a blockage, the operator uses the find-and-capture steps to capture information from that point back to the introduction manhole.

While users can select the capture method in advance, they can also instantly switch from video to still and back almost on the fly. This helps them quickly adjust to field conditions.

At the end of the shift, the upLink can transfer the day's data to a computer, from which it can be emailed to the client or to a pipe-condition analysis service provider, or simply saved to a hard drive. Using a separate software package, recipients can evaluate the electronic data in the same manner as data captured by a crawler-mounted system. Users can select evaluations compliant with the NASSCO Pipeline Assessment Certification Program (PACP) defect coding.

Breakdown and repacking of the equipment was as straightforward as setup. The spring-loaded pole-stabilizing fixture (or foot) is likely the only item that needs disinfection, and it never contacts the case interior.

### Observer comments

The QuickView camera with Haloptic technology can be introduced to almost any access point to which the operator can walk. Derry Township already owns an older-model camera and recording system. The new Haloptic



The positioning pole, two wireless monitors, upLink, Haloptic camera, control box, and the operator's vest rest in the transit case. The pole clips securely to the case exterior.

cameras interact with the older Sony GV-D1000 recorder, reducing the cost of upgrading.

Inspections with the system can be performed so quickly that setting up and removing traffic control and gaining access to the pipe may take more time than the actual surveying and documenting procedure.

### Manufacturer comments

"The individual monitors incorporate a glare-reduction technology that delivers brighter images with 75 percent less glare," Vislay observed. "The image seen on the monitor and on a computer monitor is rock-steady, thanks to image stabilization technology employed in the image-capturing and processing systems."

He noted that small vibrations introduced by the operator's hand on the positioning pole can be multiplied and degrade picture clarity. The software eliminates that issue.

He also stated that the upLink can receive and process any analog video feed, making it a versatile tool for receiving, storing and transferring inspection images. Vislay noted, "The Micro SD card is the smallest data storage device available anywhere." ♦

# 1 Great Event!

SAVE THE DATE!



SAVE THE DATE!

FOR MORE INFORMATION PLEASE CALL 800-236-6298



## OCTOBER 6-7, 2011

SUTTER CREEK, CALIFORNIA

A workshop for all you need to know about treating your own wastes

WATCH THE NAWT WEBSITE AND PUMPER MAGAZINE FOR UPDATES

# WWW.NAWT.ORG

## Sto-Away Power Cranes

*TAKE THE WORK, OUT OF WORK!*

*The faster, safer, and more efficient way to get the job done!*

A VERSATILE TOOL FOR MUNICIPALITIES AND SEWER PROFESSIONALS

Ask for the STO-AWAY POWER CRANES on your next bid

Compliments of King County Environmental Lab

- CCTV Launching/ Retrieval
- Confined Space Work
- Bulky Loads

Compliments of Best Equipment & Muscio Sanitary District

**Sto-Away Power Cranes, Inc.**  
 9306 Grand Blvd. • Crown Point, IN 46307  
 1.800.622.9797 • 219.942.9797 • www.stoaway.com

© 2009



Johnstown, PA

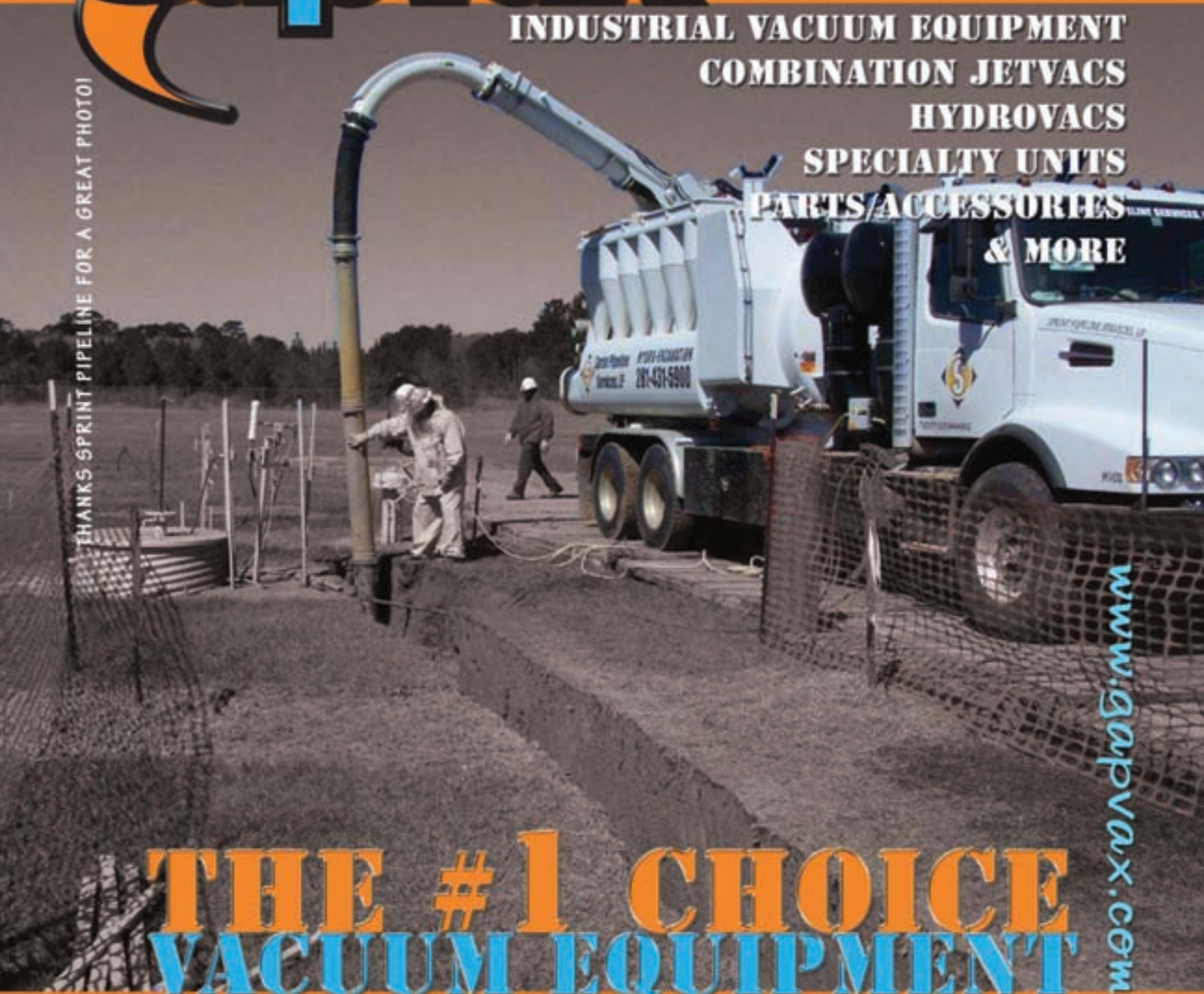
888-442-7829



# GapVax®

**INDUSTRIAL VACUUM EQUIPMENT  
COMBINATION JETVACS  
HYDROVACS  
SPECIALTY UNITS  
PARTS/ACCESSORIES  
& MORE**

THANKS SPRINT PIPELINE FOR A GREAT PHOTO!



[www.gapvax.com](http://www.gapvax.com)

# THE #1 CHOICE VACUUM EQUIPMENT



# TOUGH CONVERSATIONS

Here are four techniques to help you say what needs to be said, with integrity, when it's hard for you to say it and the other person doesn't want to hear it

By JoAn Majors

“I’d like to see you in my office at the end of the day.” This is one of those requests that just gives a person chills, a pit in the stomach, cold sweats, even nausea.

Often the one hearing those words is not the only one feeling the discomfort. What is it about a request like this that makes everyone involved just dread the moment? How can a simple request evoke such emotion?

Unfortunately, this is the way most people have learned to handle concerns, take care of business, lay down the law. When it comes to delivering tough conversations, starting with the right question and the right attitude can change everything about the encounter and the outcome.

Many people simply cannot handle these conversations well, but four guidelines will give even the most timid at heart, and the most brutally honest, a way to offer unpleasant information while maintaining integrity and having empathy.

First, a simple guideline. It doesn't matter if the exchange is from a manager to a subordinate, or from a subordinate to a manager. By starting with a question, you allow the other person to listen and participate at his or her rate of speed, not yours. Then you must be willing to wait for the answer. The simple act of asking a question allows the other party to choose to join the conversation.

**1. Ask permission to coach.** When you have an issue with a team member and need the per-

son to listen and respond, you must engage that person in the process. Consider calling the team member to your office and finding something to compliment — and then deliver the tough news about the issue at hand.

For example: “Susan, you are one of our best technicians. Do I have permission to coach you in another area?” She will most likely say yes, and you then have the freedom to discuss the troubling issue — be it constant tardiness or whatever else. She has involved herself by saying yes.

**2. Ask permission to be honest.** If you as a subordinate want to confront an issue with someone in

**When having tough conversations, don't assume you know everything about the person or the behavior that is creating the problem. It is often more than meets the eye.**

management, it works similarly, but the words are different. You don't want to make the other person look bad or foolish, so be discrete. Step into the person's office or schedule a time to go over your concerns.

You might say, “John, do I have permission to be honest with you?” John will respond with less concern about the outcome because you have been respectful in your request. Besides, who would say, “No, I want you to lie to me”?

The other person may seem puzzled when you ask. Don't fill in the silence — wait for the response. However uncomfortable this might seem, it will create the results you want. Once the

question is asked and answered, both parties will listen differently.

**3. Leave out the limiting terms.** When speaking to someone about habits, behaviors, or personal life, it is important not to sugarcoat. For instance, in discussing a sensitive area, people often use words like, “we,” “a little,” “sort of,” “kind of,” and others that tend to make the issue appear less impactful.

A manager may say to a team member, “Susan, we have a little problem with your tardiness.” And Susan may think: “If ‘we’ have a problem and it is ‘little,’ why are you talking to me?”

As a manager, you might instead

say, “Susan, there is a problem with your continuous tardiness. I am concerned and believe you should be too.” This phrasing allows Susan to hear the concern. You should only share the concern after asking permission to coach — that question allows the person to engage at a different level and cuts down on defensive responses.

**4. Assume innocence and avoid accusatory language.** When having tough conversations, don't assume you know everything about the person or the behavior that is creating the problem. It is often more than meets the eye.

When you ask for permission to coach or be honest, presume that the other party has no idea

**We invite readers** to offer ideas for this regular column, designed to help municipal and utility managers deal with day-to-day people issues like motivation, team building, recognition and interpersonal relationships. Feel free to share your secrets for building and maintaining a cohesive, productive team. Or ask a question about a specific issue on which you would like advice. Call editor Ted Rulseh at 800/257-7222, or email [editor@mswmag.com](mailto:editor@mswmag.com).

there is an issue or problem — assume innocence. The fact Susan is habitually tardy doesn't mean she disrespects you or the organization. Don't assume that you know why it is happening.

Susan could have a dying mother or a new diagnosis that is causing her to have blood work done often in the morning. Assuming that she is innocent is much more productive than accusing her. If you wonder what is happening, then just ask. But when you ask, don't do it with an attitude.

Remember: Manager to team member, ask permission to coach. Subordinate to manager, ask permission to be honest. Use words that don't limit the impact of the issue. Assume innocence and stay away from accusations.

These four techniques will cut down on the defense mechanisms we all have in our personalities when we know bad news is coming. Focus on the fix, not the flaw. It's an approach that can help you encourage others to excellence. ♦

## About the Author

JoAn Majors is a member of the National Speakers Association and the Global Speakers Network. For information on her seminars and her book, *Encouragements: 16 Attitude Steps for Building Your Business, Family & Future*, visit [www.joanmajors.com](http://www.joanmajors.com).

**SPARTAN TALKS TOUGH.**

**Bob Griffith, New Jersey**  
SPARTAN REP SINCE 2001

**“I WAS ABLE TO GET  
THERE AND GET HIM  
WHAT HE NEEDED.”**



**SPARTAN**  
FOR TOUGH CUSTOMERS.  
SINCE 1943

I remember a call I got a little while back. This customer had an UnderTaker and had it on a pipe replacement job, and his client happened to be holding an outdoor event the day he was there to do the job. On top of that, it wound up he needed help with a part unexpectedly or else he was going to have to go ahead and dig up the lawn. But I was close enough that I was able to get there and get him what he needed without ever disrupting his client's event.

**Tough Customer Preferred Product: The UnderTaker.™**

Lets you replace 4" – 6" pipes with minimal disturbance to trees, landscaping, streets and sidewalks. A compatible water-line splitter for replacing galvanized or copper water lines is also available.



# BADLY NEEDED — AND ALREADY HERE

The IPBA division of NASSCO works to promote pipe bursting through education and development of specifications

By Ted DeBoda, P.E.

**A**fter the 2011 Pumper and Cleaner Expo, I attended a roundtable breakfast meeting to evaluate and discuss the show.

I was fortunate to sit with several people who specialize in pipe bursting, and their conversation turned to the need for an association to support the pipe bursting industry. I quickly realized that many pipe bursting professionals don't know about the International Pipe Bursting Association (IPBA), a division of NASSCO.

IPBA's mission is to advance the acceptance of pipe bursting through education, training, marketing and governmental support and to promote the replacement of existing pipe infrastructure using

the most cost-effective method.

In practice, IPBA works to promote pipe bursting as a practical replacement method for water, sewer, storm and gas mains. Membership is made up of contractors, manufacturers, engineers, and utility system owners with a common goal: To promote pipe bursting technology through educational programs, and to provide an unbiased set of guideline specifications that can be used for those adding pipe bursting to capital improvement programs.

The IPBA specifications committee is working hard to release a current set of technical specifications designed to further NASSCO's mission to set industry standards for the assessment and rehabilitation of underground

pipelines, and to assure the continued acceptance and growth of trenchless technologies. Once a peer review is complete, the pipe bursting specifications will be posted on the IPBA page of the NASSCO website.

Other activity within the IPBA



Europe for more than 40 years and has matured to become a practical, safe, and affordable method to replace utility lines while reducing excavation and emissions by as much as 95 percent.

**IPBA's mission is to advance the acceptance of pipe bursting through education, training, marketing and governmental support and to promote the replacement of existing pipe infrastructure using the most cost-effective method.**

division includes the development of a series of technical articles that will address the ten most common misconceptions or myths associated with pipe bursting, a technology that has been widely used in

NASSCO was formed in 1976 with one goal in mind: To improve the success rate of everyone involved in the pipeline rehabilitation industry through education, technical resources, and industry advocacy. During our 30-year history we have made great strides, but our work is never done. We are constantly researching, evaluating and developing new methods to train our members and educate them about the importance of properly rehabilitated underground utilities.

One way we work to extend our efforts to achieve NASSCO's goal is through divisions like the IPBA, which is becoming more active than ever in 2011. I would urge all pipe bursting professionals to join and get involved in this association. For more information, visit [www.nassco.org](http://www.nassco.org). ♦

Ted DeBoda is executive director of NASSCO. He can be reached at [director@nassco.org](mailto:director@nassco.org). NASSCO is located at 11521 Cronridge Drive, Suite J, Owings Mills, MD 21117.

## STEP UP

Take a stand for better and higher quality CIPP installations.

Complete NASSCO's two-day Inspector Training Certification Program (ITCP) and expand your knowledge of CIPP technology, the fastest-growing method for sewer pipeline rehabilitation.

Why is this training important? Because it's critical to everyone involved in CIPP design and inspection. Consulting engineers know their reputation depends on successful installations, and municipalities can relax when they hire an ITCP-trained expert, knowing the job will be properly inspected. But most importantly, with NASSCO's ITCP, the industry's most rigorous and well-respected training programs, everyone wins by improving standards for higher quality CIPP installations.

Please call or visit our website for training dates and registration information.

NASSCO, Inc. (410) 486-3500 [www.nassco.org](http://www.nassco.org)





# THE *conductor* SINGLE SOLUTION

## New OmniEye 360

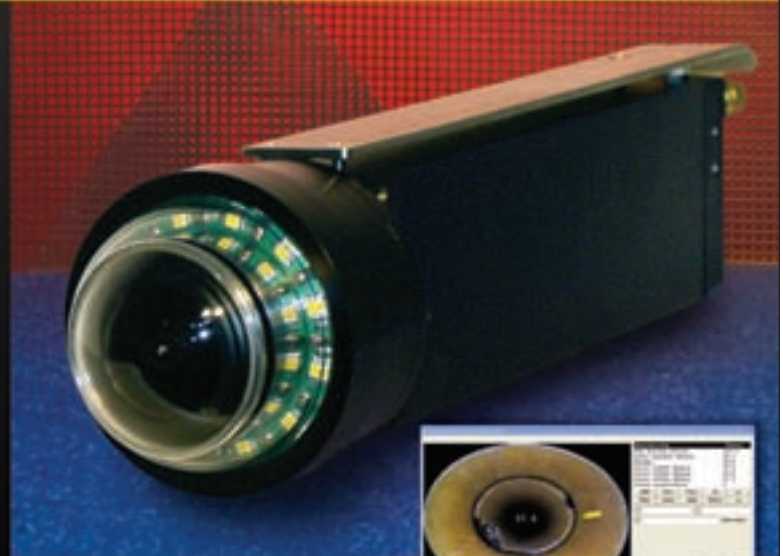
Increase production distances and defect identification accuracy with our **NEW panomorphic technology**

Simultaneously view live forward and unwrapped video footage. Precise, automatic measurement and distance recognition. Simplified inspection process—crews only need to clean the line and then run a continuous inspection. Post processing can be accomplished in the field or office.

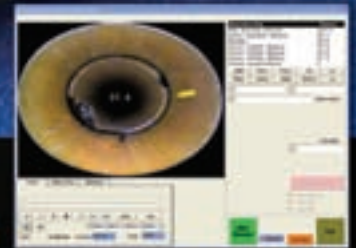
compatible with existing RST portable and mainline inspection systems and can be modified for use with most multi-conductor systems.

**Quick Specs:** 6 inch and larger Lines  
up to 2500 feet in length  
capture 30 to 70 feet p/minute

Call today for more information about the OmniEye 360 and our complete line of single conductor inspection solutions.



POWERED BY  
**POSM panomorph**



**RST** Technical Services Inc.  
Design and Manufacture of Video Pipeline Inspection Systems

800 767 1974  
WWW.RSTECHSERV.COM

GET MORE. DO MORE. RST.

## He tried reaching a support person *this doesn't have to be you.*

PIPELOGIX® Tech Support is a real person on the other end of the phone that talks you through your problem and gets you working as quickly as possible.  
**Your real time issues deserve real time answers.**

Call today to learn more about the industry's best after-sales support program for pipe survey pros.



esri Partner Network

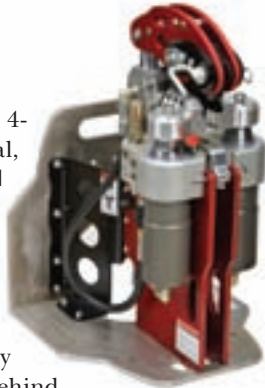
866.299.3150 | www.pipelogix.com

# PIPE BURSTING/ HORIZONTAL DIRECTIONAL DRILLING

By Peter Litterski

## Portable bursting system

With the ability to burst and replace 2-, 3-, 4- and 6-inch sewer pipes of virtually any material, the **UnderTaker System from Spartan Tool** includes a 30-ton puller unit, 4- and 6-inch bursting heads, a 2- to 6-inch fusion machine, a hydraulic power supply and a length of 3/4-inch swaged wire rope. The system breaks down into portable components, allowing its use in basements, manholes, and small entry pits. It pulls new HDPE pipe into position behind the bursting head, providing seamless transitions between old pipe and the newly installed line. **800/435-3866; www.spartantool.com.**



## Updated bursting unit

The **V24 pipe bursting system from TRIC Tools** is a low-pressure 2,500 to 3,000 psi unit that can be powered with a dedicated hydraulic pump or by a backhoe as an auxiliary attachment. It pulls the pipe-bursting cable in line with the pipe being replaced, eliminating the pulley base and separate resistance plate in the original TRIC configuration. The open cable path remains, allowing easy engagement and disengagement of the bursting cable. Designed to accommodate up to 3/4-inch cable and replace up to 6-inch sewer lines, the system also allows the bursting head to be pulled past the cylinder base plate for easier extraction at the end of a job. **888/883-8742; www.trictools.com.**



## Directional drill

The **EarthPro DD4045 horizontal directional drill from Astec Underground** delivers 40,000 pounds of thrust/pullback and 4,500 foot-pounds of rotary torque. Its two-speed carriage decreases cycle time when adding and removing pipe from the spindle at 140 feet per minute maximum. It has a Cummins QSB4.5 turbocharged Tier 3 Stage IIIA diesel and charge air-cooled engine that produces 156 hp.

A multifunction color LCD display provides a clear view of drill performance and functions even in bright sunlight. Dual joystick control helps reduce operator fatigue and increase efficiency. Cruise control is standard. **800/527-6020; www.astecunderground.com.**



## Slide rail system

The **Slide Rail Shoring System from American Shoring** can be used in a number of configurations, including for the bore pits commonly used to bore under roadways, streams or other obstacles. The sheeting system can be used at depths up to 30 feet and is installed with an excavator with no need for special equipment. The system can also be equipped with a doghouse panel to accommodate the casing pipe. **800/407-4674; www.americanshoring.com.**



## Lateral boring control

The **ON Target auger boring system steering head from McLaughlin Boring Systems** lets contractors control horizontal directional changes and also allows for lateral changes. Until now, steering heads offered only horizontal or grade (up and down) direction changes during the bore. Now they can also control the direction of the bore in a lateral (left to right) movement, providing more accuracy for difficult on-grade bores.

The cutting path (grade and lateral movement) of the steering head is controlled by hydraulic actuated panels that open and close to keep the head on the intended path. A control station uses a hydraulic power pack to control the movement of the steering head, and a built-in water level helps monitor grade throughout the bore. Two halogen lights in the control station indicate lateral steering head movements. **800/435-9340; www.mightymole.com.**



## Bit for rocky terrain

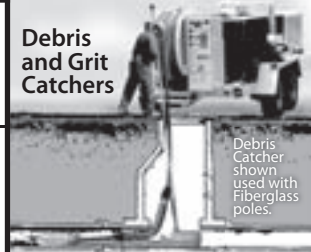
The **Eagle Claw HDD bit from Melfred Borzall** is made for hard, rocky soil conditions. Three hardened steel carbide cutter teeth on the front cut through hard soils, including sandstone and cobbles. The cutter teeth are quick and easy to change out, allowing different tooth styles to accommodate varied job conditions.

The bit body and carbide buttons precisely placed on the leading edge of the bit minimize wear. The conical steering face quickly reacts to directional pushes, and the beveled back-end with carbide protection make tripping out easier. The bit runs smoothly, cutting down vibration to the drill stem and drill rig. Wrench-flats make it easy to thread the bit onto side-load or high-flow housings. Available in 6 1/2-, 5-1/2-, 5-, 4 1/4-, and 3 1/2-inch cut sizes for rigs from 7,000 to 150,000 pounds. **800/833-1252; www.melfredborzall.com. ♦**

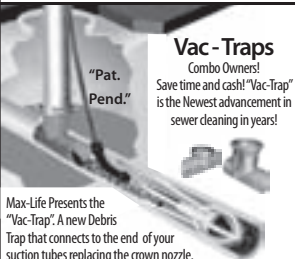


# MAX-LIFE<sup>®</sup> MANHOLE TOOLS

## Debris and Grit Catchers



Debris Catcher shown used with Fiberglass poles.



**Vac-Traps**  
Combo Owners!  
Save time and cash! "Vac-Trap" is the Newest advancement in sewer cleaning in years!

Max-Life Presents the "Vac-Trap". A new Debris Trap that connects to the end of your suction tubes replacing the crown nozzle. Sitting at the bottom of the invert in the sewer manhole, the Vac-Trap fills with debris as water is flowing through it. Once the trap is full, you'll see water backing up. Turn on the vacuum pump and suck up the contents then repeat the process. The Vac-Trap lets water flow downstream. Saves pump wear and fuel by eliminating the need to run vacuum pump continuously. Greatly reduces decanting time! Available for 6" to 24". Flanged to fit 6" or 8" tubes.

## Debris Catchers

Comes with 22' of Poly Rope. Available from 6" to 24".



## Debris Catcher for use with Poles

Debris and Grit Catchers both can be used with Fiberglass Poles. Provides for positive action of positioning, raising and/or lowering these catchers in manholes.

## Grit Catchers

Stops finer grit, black sand and smaller, loose debris.

## Grit Catcher for use with Poles

**Versi-Clam**  
Knock down design, easily assembled from 6' to 25'. One size can be used in different lengths. Ships UPS.

### Special Manhole Tools from Max-Life for Use with Fiberglass Poles.

- MGLC-1**  
Grease Log Chopper. Blade
- M3PG-1**  
Three Prong Grabber. Great for Rocks and Roots.
- MHG-2**  
Horse-Shoe Grabber. Great guiding hose into sewer lines.
- MDS**  
Debris Scoopers Heavy duty construction For 4", 6", 8" and 10"
- MCG**  
Grit Basket. For use with poles or rope. In sizes from 6" to 24".
- CH-1**  
Great for cameras or gaffing downstream tools.
- MCL-1**  
Claw with 25' ft rope. Used with quick connect poles.
- MBC-1**  
Nice 9" round paddle for general use.

### MPF-24 Quick Connect Fiberglass Poles

24' pole set used with above Tools and Debris Catchers. Each set Includes 3 ea. 6' male x female and 1 x 6' end pole.

### MDG-1 Debris Grabber 5' - 15'

Telescopic Extendable Debris Grabber with Steel body construction and articulating end fork. Rope opens and closes jaws for positive grabbing.

### MCLAW Max-Claw 7' - 15'

Telescopic Extendable Claw with fiberglass pole extension spring loaded end Claw for retrieval.

## Max-Life Mfg. Corp.

11580 Seaboard Circle Stanton, Ca. 90680  
Tel: 888-873-6295 | Fax: 714-897-2810  
www.flexmax.com | dhp@flexmax.com

# Laboratory Tested Safe LiquiSmoke<sup>®</sup>

A smoke producing system that is so unique and cost efficient, it is covered by two United States Patents!

HURCO provides all you need to manage a complete smoke testing program better and more profitably.



# Power Smoker<sup>™</sup> with LiquiSmoke<sup>®</sup>

**POWER SMOKER<sup>™</sup> 2**

**HURCO TECHNOLOGIES, INC.<sup>®</sup>**  
1-800-888-1436  
www.gethurco.com  
(Patents: 6,865,341, 7,050,709)

An epoxy patching paste for concrete repair (vertical, overhead and floors).

# Epoxytec CPP<sup>™</sup> GEL

- Structural (16,000 psi compressive strength)
- Superior adhesion (even for feather edging)
- Seals and protects (great for rebar, pipes, joints, etc.)
- Absorbs vibration
- Easy to mix 1:1 kits (100% solid, no solvents)
- Controlled thickness (ultra thin to high build - 1/2")



1.877.GO.EPOXY | epoxytec.com  
epoxytec.com/products/CPP\_Gel

\*High performance products that work where others fail\*



**Tom Draper**

## Grote Names Draper Marketing Manager

Tom Draper has joined Grote Industries as marketing manager. He will be responsible for all marketing activities, including corporate branding and advertising. Draper brings 35 years of experience to his position.



**Bethany McDonald**

## Pure Technologies Names McDonald Regional Manager

Pure Technologies named Bethany McDonald, P.E., west coast regional manager. She has 15 years experience in engineering consulting, infrastructure condition assessment and the oil and gas industries. McDonald has a Bachelor of Science degree in chemical engineering from Tulane University.

## KROHNE Posts Leak Detection Vodcast

KROHNE Inc. has posted a vodcast about leak detection strategies. The video explains how to select the correct leak detection system for a particular application. It can be viewed at [www.youtube.com/watch?v=aRXv-qqQnLo](http://www.youtube.com/watch?v=aRXv-qqQnLo).

## Workers Return at General Wire

Members of the United Steel Workers Union returned to work June 13 at General Wire Spring Co., parent company of General Pipe Cleaners, after a 14-week strike. David Silverman, executive vice president of Global Sales, thanked customers and sales representatives for their patience and support. Assisted by temporary workers, General continued to take and fill orders during the negotiations.

TREATMENT PLANT OPERATOR

**tpo** Dedicated to Municipal Wastewater Professionals

FREE subscription at: [www.tpomag.com](http://www.tpomag.com)

**One Complete Package**

[mswmag.com](http://mswmag.com)

[promonthly.com](http://promonthly.com)

[onsiteinstaller.com](http://onsiteinstaller.com)

[pumper.com](http://pumper.com)

[cleaner.com](http://cleaner.com)

[gomcmag.com](http://gomcmag.com)

[tpomag.com](http://tpomag.com)

[pumpershow.com](http://pumpershow.com)

[pumpertrader.com](http://pumpertrader.com)

[septicyellowpages.com](http://septicyellowpages.com)

[sewerpages.com](http://sewerpages.com)

**NEW in 2011**

**COLE Publishing | 1.800.257.7222 | 715.546.3346**



## RIDGID Promotion Raises \$8,000 for PHCC

RIDGID donated \$8,101 from its Invest in Your Future promotion to the Plumbing-Heating-Cooling Contractors

National Association Education Foundation. Proceeds were raised by selling customized K-1500 sectional drain cleaning machines on eBay. The Top Fuel Drain Eliminator raised more than \$4,500. It also was voted Best in Show by attendees at the Pumper & Cleaner Environmental Expo. The American Power machine raised over \$2,000 and the Venom machine raised \$1,500. Bruce Francisco of Pikeville, Ky., was randomly selected the winner of a K-1500 sectional machine from among the best machine voters.

## McElroy Adds International Distributors

McElroy has added OPD Solutions of Norway and Gulf Services and Industrial Supplies Co. LLC of Oman to its network of international distributors. OPD is a distributor of polyethylene pipe in Norway, Sweden, Finland and Denmark. Gulf Services, a division of Arabia Holding Group KSC, is a supplier of industrial equipment for the wastewater, gas and oil industries.



**Ka-Msiyara Corbett, executive director of Boys and Girls Clubs of Gloucester County, accepts a check from Anne Denny, CFO of Godwin Pumps.**

## Godwin Presents Check to Boys, Girls Clubs

Godwin Pumps presented a check to the Boys & Girls Clubs of Gloucester County, New Jersey. The clubs serve youths ages 6 to 18.

## Wachs Opens Canada Office, Adds Managers

Wachs Water Services opened a regional office in Burlington, Ont., Can. The office will be a regional hub for project management, field technicians, partner training and customer support. The company also named William Jappy region business development manager for Canada with a focus on the Atlantic, Central and Prairie provinces, and Doug Roy western region business development manager. He will be responsible for accounts in California, Arizona, Nevada, Oregon, Washington, British Columbia and Alberta. ♦



Now The Best  
Valve Turning Equipment  
Runs on  
**InfraMAP**  
with **Vitals**



Hands-Free Valve Exercising  
& Automatic Data Collection



GPS Navigation  
& Route Planning



Asset Forms for  
Valves, Hydrants,  
Meters, Sewer,  
Electric, & More



One-Click Reports

Contact us for a  
free demonstration.



**E.H. WACHS**<sup>®</sup>  
A Division of ITW

Superior Equipment. Complete Support.™

+1.815.943.4785 | sales@ehwachs.com  
ehwachs.com

**YOUR SOURCE FOR  
RIDGID**

CENTRAL OKLAHOMA  
**Winnelson**  
COMPANY

**6% ONE YEAR FINANCING AVAILABLE!**  
Longer lease rates also available. Call Keith for details.



micro CA-100  
Inspection Camera



CS10  
Digital  
Recording  
Monitor  
with Flash Drive



LT1000 Laptop  
Interface System



microDrain Reel



DVDPak

**BUYING A SEESNAKE?**

**CALL US FOR  
GREAT PRICING &  
FREE SHIPPING!**

**WE  
WILL NOT BE  
UNDERSOLD**

- Call Us Evenings and Weekends -  
Keith: 405-602-9155 &

Jim: 405-205-3974

CALL TOLL FREE: **888-947-8761**

5037 NW 10th  
Oklahoma City, OK 73127

[www.centralwinnelson.com](http://www.centralwinnelson.com)

# Product Spotlight

## Lightweight Pneumatic Shoring Simplifies Trench Safety

By Ed Wodalski

Prospan pneumatic shoring from Prospan Manufacturing Co. is designed to meet OSHA excavation standard 29CFR 1926.650 that governs the safety of workers in trenches five feet or deeper. While OSHA also recognizes sloping and shielding, those methods aren't always practical, says company president James Sullivan.

To meet OSHA sloping requirements, cities would have to remove the street on most digs, and the trench wall would extend to the front steps of homes, he says. Shielding or trench boxes provide a more workable option but can be time-consuming to install and at times, impossible to place.

"If they were the only utility in the trench there would be no problem," Sullivan says. "But a lot of times the sewer or water pipe runs one direction and the gas, telephone and fiber optics the other. You can't lower the trench box because it hits other utilities, especially in newer communities and subdivisions."

The use of timbers and hydraulics for shoring has been a safety standard since the 1970s.

"Shoring works by having direct contact with the trench wall," Sullivan says. The Prospan shoring uses an air-driven system. When brought up to pressure, the shoring compresses the earth, creating an arch effect (soil arching).

"It's like a shotgun blast that's very focused at the point of contact with the trench wall," says Sullivan. "For example, you put the shoring in at 120 to 150 psi, and it compresses the earth, and the compression rapidly fans out in all directions." As long as workers are between two columns of shoring, they are protected by this soil arch. Except for certain soil situations, the system does not require the use of plywood.

"We've taken away most of the excuses for not using a protective system," Sullivan says. Compressed air extends the system's internal piston. Once the system is locked in place with a steel pin, pressure is released, creating a fixed mechanical strut. The shoring installs in minutes.

Made of anodized aluminum and stainless steel, the shoring is available in four sizes, spanning 21.5 to 105 inches and weighing 15 to 32 pounds. A variety of extensions and end attachments are available for greater distances and various applications. **888/413-8100; www.prospanshoring.com.**



Prospan pneumatic shoring from Prospan Manufacturing Co.



### Vacall Introduces AllSmartFlow Control System

The AllSmartFlow CANbus control system from Vacall features a wired or wireless pendant and color LCD screen that enables operators to monitor such functions as engine performance,

water flow and vacuum, as well as precise boom and reel adjustments. An automatic water pressure compensator delivers precise jetting action. **800/382-8302; www.vacallindustries.com.**

### Myers Introduces Low-Profile Plunger Pump

The HPL 120-30 low-profile, reciprocating plunger pump from Myers Pentair Water is designed for mobile sewer jetting applications. The pump delivers up to 120 gpm at a maximum discharge pressure of 3,000 psi. Features include side-gear reduction, open cradle, independent and removable stuffing boxes, spin-on oil filter and pressurized power end lubrication. **419/289-1144; www.myersaplex.com/hpl120.**



### EDSON Offers Variable-Speed Electric Pump

The Model 2500 double diaphragm electric pump from EDSON International is rated for 25 gpm and can transfer up to 1-inch solids with low emulsion and no shear. The self-contained unit has a pushbutton stop-start and programmable variable-speed drive. The self-priming pump runs on single- and 3-phase power and can be operated remotely or integrated into a process system for operation on a time-run basis. It has a PVC body and polypropylene wetted parts. **508/995-9711; www.edsonpumps.com.**



### Parker Fluid Introduces Vortex Shedding Flowmeters

The Vortex Shedding line of flowmeters from Parker Fluid Control Division are made for water, water/glycol coolant and other low-viscosity fluids. The meters have no moving parts to clog or wear out, operate with NPT ports ranging from 1/4 to 2 inches in size and can handle

flows from 4 to 200 gpm with occasional over-ranging up to 125 percent of capacity. They feature 4-20 mA flow rate transmitters and can withstand working pressures from 10 to 300 psig and can operate at temperatures from 35 to 150 degrees F. **800/825-8305; www.parkerfluidcontrol.com.**

## Power Adhesives Introduces Hot Melt Bonding

The hot melt adhesive system from Power Adhesives is made for bonding all types of precast concrete, replacing double-sided tape, solvent-based adhesives, bolting, nailing, silicon or other fastening systems. The one-step process requires no priming and secures a strong bond that sets almost instantly. The system includes Casttec precast adhesive and one of three TEC heavy-duty hot melt glue guns. **704/334-2425; www.poweradhesives.com.**



## Lowell Introduces SureTork Wrench

The SureTork wrench from Lowell Corp. ensures nuts are properly torqued. The wrench has a click-type torque handle with a quick-release socket head that accepts Lowell's standard or extended reach sockets. The 20-inch wrench weighs 5 pounds with the head and one socket. Torque settings range from 30 to 150 ft-lbs. Torque values are field adjustable in 1 ft-lb increments. Extended hex socket sizes range from 7/8 to 1 1/4 inches. Standard hex sizes range from 5/8 to 1 1/4 inches. Standard square sizes range from 5/8 to 1 1/4 inches. Metric sockets are available. **800/456-9355; www.lowellcorp.com.**

## Coxreels Introduces DEF Hose Reels

Diesel exhaust fluid hose reels from Coxreels feature a stainless steel external full-flow swivel and chemical-resistant Viton seals for safe and reliable dispensing. The reel is available in heavy-duty, single-pedestal (SH Series) or supreme-duty, dual-pedestal (T Series) configurations that handle up to 75 feet of 3/4-inch or 50 feet of 1-inch I.D. DEF hose. Both designs have Super Hub dual-axle support systems for increased stability. Models are available with standard spring retraction and EZ-Coil controlled retraction systems. **800/269-7335; www.coxreels.com.**



## Condux Offers Duct Rodders

Cobra, Python and Mini-Cobra duct rods from Condux are made for light- to heavy-duty applications. All rods have a glass-reinforced composite core, jacketed in a rugged plastic coating to ensure long life. Rods come equipped with a threaded end fitting and tapered head on the outward end. Optional end fittings are available. **507/387-6576; www.condux.com.**

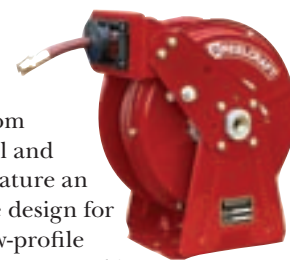
## CEAttachments Offers Skid-Steer Trenchers

The XR model line of trenchers from CEAttachments offer digging depths from 24 to 60 inches. The skid-steer and track-loader attachments feature a 50,000-pound digging chain, removable double-flighted spoil auger, self-aligning boom, sealed tapered roller bearings, high operating pressure capacity and optional hydraulic side shift. **866/232-8224; www.ceattachments.com.**



## Reelcraft Introduces Compact Dual-Pedestal Reel

The Series DP5000 dual-pedestal reel from Reelcraft Industries is made for air/water, oil and grease and up to 1/2-inch I.D. hose. Reels feature an interlocking, steel-formed and stamped base design for rigidity in truck-mount applications. The low-profile design enables it to be used in tight spaces or mounted in cabinetry. **800/444-3134; www.reelcraft.com.**



## ADS Introduces XiLog Pressure, Data Logger

The XiLog+ wireless pressure and data logger system from ADS LLC is designed to monitor water distribution networks and is available in single to nine-channel models for use with a variety of sensors. The logger can be programmed, downloaded and configured to alarm via wireless communication. Alarms also can be received via the included product software. Applications include district measurements, pressure measurements, water consumption monitoring, PRV performance monitoring and network modeling. The transmission period can be set from 15 minutes to 24 hours on demand. **800/633-7246; www.adsenv.com.**

## Gorman-Rupp Introduces Prime Aire Plus Pump

The Prime Aire Plus line of priming-assisted pumps from Gorman-Rupp are available with up to an 8-inch flanged discharge, flows up to 4,950 gpm and heads to 475 feet. The pumps are designed for clear liquids and liquids containing large solids. **419/755-1207; www.grpumps.com.**



## Radiodetection Launches Rechargeable Battery Pack

The rechargeable battery pack from Radiodetection is compatible with all RD5000, RD7000+ and RD8000 model cable and pipe locators. The battery pack fully recharges in three hours and can be topped off from vehicle lighter sockets with the optional DC charger. **877/247-3797; www.radiodetection.com.**

(continued)

## Pearpoint Introduces P340 flexiprobe Inspection System

The P340 flexiprobe pushrod video inspection system from Pearpoint features USB flash drive connectivity and 1- and 2-inch, high-resolution cameras. The weatherproof P340USB controller records high-quality digital video or images with a single key press and displays them on an ultrabright, 8-inch TFT screen. Users can zoom, pan and rotate images during recording and play back to focus on problem areas. Still pictures can be taken at any time. **877/247-3797; www.radiodetection.com/p340.**



## Highway Products Introduces Pickup Pack Storage System

The all-aluminum, weather-resistant Pickup Pack storage system from Highway Products includes one gull-wing box, two low-side rail boxes, headache rack, ladder rack and 2,000-

pound capacity slide-out cargo tray. The center hatch securely locks the entire unit. **800/866-5269; www.800toolbox.com.**

## Fluid Conservation Systems Offers Noise Loggers

The SoundSens "i" system of correlating leak noise loggers from Fluid Conservation Systems provides wireless monitoring of waterlines and leak detection. The system includes two to eight correlator pods that magnetically attach along a distribution system's pipelines. The pods activate at preprogrammed intervals and use an internal accelerometer to detect leak noise within the pipeline. Data from the pods is transmitted wirelessly via an infrared signal back to the SoundSens hub, where up to a week's worth of survey data can be stored before it is downloaded to a PC for analysis. Groups of pods can be connected for simultaneous programming and data downloading. Pods are completely submersible. **800/531-5465; www.fluidconservation.com.**



## M&M Offers Mia Root Cutter

Mia Root Cutter blades from M&M Enterprise are made to generate less heat for longer life. The high-velocity blades have an operating pressure of 800 to 4,000 psi and flow rate of up to 40 gpm. **865/603-0584; www.miarootcutter.com.**



## Fluid Metering Introduces Hypochlorite Injection System

The Chloritrol valveless metering system from Fluid Metering Inc. provides maintenance-free injection of sodium and calcium hypochlorite for the purification of municipal drinking water. The duplex pump system features a high-pressure pump head that injects the sodium hypochlorite into the water main. The second pump head removes out-gas bubbles from the inlet side of the high-pressure pump head. **800/223-3388; www.fmipump.com.**

## Paladin Introduces Government Automation Solution

The SMARTGov Community local government automation solution from Paladin Data Systems automates and expedites permitting, planning, inspections, code enforcement and citizen request activities for cities and counties. The software is made for deployment in Microsoft Windows Azure cloud. The modular solution leverages common parcel and contact databases, cashing functionality and management tools across all modules, including SMARTPermit, SMARTPlan, SMART CRM and SMARTInspect. **800/532-8448; www.smartgov.paladindata.com.**

## Rock Mills Introduces Manhole Lifter and Locking Cover

The magnetic Lifter from Rock Mills Enterprises Inc. safely and efficiently removes and replaces heavy manholes with the push of a button. Used with the Locking Cover, the Lifter securely locks down manholes in an automated process, eliminating the risk of manhole theft and unprotected openings while providing protection against unauthorized access to essential underground services networks. The Lifter is powered by a 12-volt system and mounts to the front or rear of a vehicle with standard 2-inch hitch receiver. The electromagnet delivers 5,000 pounds of lifting force and 7,000 pounds of down pressure. The wireless remote control, weatherproof camera and monitor system enables the system to be remotely operated from the cab. An optional arm attachment allows the user to swing the lifter and manhole cover out of the way. **712/451-6550; www.rockmillsent.com.** ♦



**MUNICIPAL SEWER WATER**  
Have you seen the **MUNICIPAL SEWER WATER E-Zine?**  
Go to **mswmag.com** to view the e-zine.

Dedicated to Municipal Wastewater Professionals

FREE subscription to Treatment Plant Operator at:

**tpomag.com**

# No Budget for New Equipment? Consider the next best thing.



Vector Manufacturing and their authorized dealers are offering the Factory Authorized Rebuild Program including:

- An all points inspection
- Genuine OEM replacement parts
- Repairs/rebuild completed by factory trained technicians
- Extended warranty on dealer installed parts
- 10% discount on parts\*

Call your local area dealer or visit [www.vector.com](http://www.vector.com)  
We will have you up and running...*just like new.*



\*Subject to dealer participation ©2011, Vector Manufacturing

## One Stop for all your

BUY ONLINE!



## Jetting & Vacuum Parts

866-448-5547  
[WWW.EPASALES.COM](http://WWW.EPASALES.COM)  
[INFO@EPASALES.COM](mailto:INFO@EPASALES.COM)

\*\* Custom orders welcome \*\*



Jetter & Vacuum Truck Hose

Pipe

Hydrant Hose

Tiger Tails

Hose Reel Swivel

Nozzles—100's of styles....

Clamps

Float Balls

Grit Catchers

Scrapers, Guides, Hooks, Grabbers etc...

Valves!!!!!!!

## Your Trucks.....Our Parts

Manhole Fiberglass Poles

## PEOPLE/AWARDS

**Robert R. McVicker**, District Engineer at Mesa Consolidated Water District (Calif.) received the Diplomate Water Resources Engineer credential from the American Academy of Water Resources Engineer Board of Trustees.

The **Village of Montgomery, Ill.**, received an annual Stormwater Management Award from the Illinois Association of Floodplain and Stormwater Management.

**Johnson County Community College** in Overland Park, Kan., had its stormwater treatment system recognized as a Sustainable Success Story by the Mid-America Regional Council.

The **American Public Works Association** announced that six professionals earned Certified Stormwater Manager credentials:

- Rebecca Dupont-Coutu, New England Civil Engineering, Salem, Mass.
- Robert Hanger, City of Norman, Okla.
- Errin Kemper, City of Springfield, Mo.
- Susan Landreth, Vickrey & Associates Inc., San Antonio, Texas
- Jason Roland Scott, Town of Farragut, Tenn.
- Todd Wagner, City of Springfield, Mo.

The **American Society of Civil Engineers** announced that 14 people earned Distinguished Membership recognition: Jacobo Bielak, John Breen, Ross Corotis, Robert Dalrymple, Chandrakant Desai, Sidney Dewberry, Mohammed Ettouney, Phillip Gould, Francis Griggs Jr., Neil Hawkins, Dallas Little, Robert Nichol, Robert Paaswell and Shamsher Prakash.

*MSW welcomes your contribution to this listing. Please send notices of new hires, promotions, service milestones, certifications or achievements to editor@mswmag.com.*

## LEARNING OPPORTUNITIES

### ASCE

The American Society of Civil Engineers has these courses:

- July 6 – Engineered Rain Gardens and Bioretention Facilities for Sustainable Stormwater Management, Webinar
- July 7-8 – Pumping Systems Design for Civil Engineers, Cincinnati
- July 26 – Sustainable Stormwater Hydrology: Concepts to Reduce Hydrologic Footprint, Webinar
- Aug. 18-19 – Storm Sewer Design Using SWMM, San Diego
- Aug. 29 – Stormwater BMPs: What Works, What Doesn't and What About Maintenance, Webinar



## CALENDAR

### July 31-Aug. 3

Water Environment Federation Energy and Water 2011: Efficiency, Generation, Management and Climate Impacts, Hyatt Regency McCormick Place, Chicago, Ill. Visit [www.wef.org](http://www.wef.org).

### Aug. 7-10

American Society of Agricultural and Biological Engineers Annual International Meeting, The Galt House, Louisville, Ky. Visit [www.asabe.org](http://www.asabe.org).

### Aug. 21-25

StormCon: The North American Surface Water Quality Conference & Exposition, Anaheim Marriott, Anaheim, Calif. Visit [www.stormcon.com](http://www.stormcon.com).

### Sept. 11-14

American Water Works Association Distribution Systems Symposium and Exposition and Water Security Conference, Nashville, Tenn. Visit [www.awwa.org](http://www.awwa.org).

### Sept. 18-21

2011 American Public Works Association Congress: The Best Show in Public Works, Colorado Convention Center, Denver. Call 816/595-5241 or visit [www.apwa.net](http://www.apwa.net).

### Sept. 21-23

Wisconsin Water Association Annual Conference, Kalahari Resort, Wisconsin Dells. Visit [www.wiawwa.org](http://www.wiawwa.org).

- Sept. 6 – Retaining and Recruiting Personnel, Webinar
- Sept. 7 – Introduction to Green Design, Webinar
- Sept. 13 – Release the Leader Within You and Others: The Seven Qualities of Effective Leaders, Webinar
- Sept. 22 – Sustainable Sites Stormwater Design and Water Efficiency Points for LEED Projects, Webinar
- Sept. 29-30 – Stormwater BMPs That Work: Effective Analysis, Design and Maintenance, Philadelphia  
Visit [www.asce.org](http://www.asce.org).

### AWWA

The American Water Works Association has a seminar on Financial Management: Cost of Service Rate-Making in Las Vegas Sept. 21-23. Visit [www.awwa.org](http://www.awwa.org).

### Wisconsin

The Wisconsin Department of Natural Resources is offering these courses:

- July 14 – Excavation Competent Person Safety, Plover
- July 14 – Treatment, Crivitz
- July 21 – Treatment, Westport
- July 28 – Permit-Required Confined Space Entry, Ashwaubenon
- July 28 – Collection Systems, Marshfield
- Aug. 18 – Confined Space Entry Hands-On Training, Plover  
Visit [www.dnr.state.wi.us](http://www.dnr.state.wi.us).

The University of Wisconsin Department of Engineering-Professional Development is offering these courses in Madison:

- Sept. 12-13 – Advanced Steady Flow Modeling Using HEC-RAS M714
- Sept. 14-16 – Modeling Unsteady Flow Using HEC-RAS M715  
Visit [www.epdweb.engr.wisc.edu](http://www.epdweb.engr.wisc.edu). ♦

*Municipal Sewer & Water* invites your national, state or local association to post notices and news items in this column. Send contributions to editor@mswmag.com.

# Control Grease—Before it Controls You!

**Eliminate stoppages, bad odors & service interruptions in your collection system!**

Jetfoam™, EHC-33™, Big Blue Bio-Blocks and Formula 52 Odor-Eliminating Enzymes form a powerful solution for system-wide grease and odor control. Together these products keep your lines running clean and odor-free to full capacity. For more information, USABlueBook offers a free training DVD/Video. Just call and request Stock # DVD to get your personal copy today.

Now, for a limited time, USABlueBook offers a 10% introductory discount on this grease control system. Just call 1-800-548-1234 and mention **Promo Offer CMW** when placing your order. Offer ends December 31, 2011.

**10% OFF**



Jetfoam



EHC-33 Bioenzyme comes in convenient drop-in packets!



Big Blue Bio-Block for Lift Stations



USABlueBook Formula 52 Odor-Eliminating Enzymes

DESCRIPTION	STOCK #	REG. PRICE	PROMO PRICE
Jetfoam Emulsifier, 5-Gal Pail	MS-48163	<del>\$134.95</del>	\$121.46
EHC-33 Bioenzyme, 25-lb Pail	MS-48165	<del>390.95</del>	359.96
Big Blue Bio-Block, 5-lb	MS-49828	<del>99.95</del>	89.96
Big Blue Bio-Block, 10-lb	MS-49829	<del>199.95</del>	179.96
Big Blue Bio-Block, 30-lb	MS-49831	<del>399.95</del>	359.96
Formula 52, 1-Gal Jug	MS-64702	<del>36.95</del>	33.26
Formula 52, 5-Gal Jug	MS-64703	<del>176.95</del>	159.26

**USABlueBook**

1-800-548-1234 • www.usabluebook.com

## The industry's most complete line of grease control products

USABlueBook is your one-stop shop for all of your collection system needs. We offer the equipment and supplies you need to not only clear current blockages, but to prevent future blockages from occurring.

With over 27,000 items in stock, we have what you need, when you need it.

**FREE!**

Call 1-800-548-1234 today to request your **FREE Master Catalog 121**

and receive a **FREE New Products Catalog!**



## Pipeline Cleaning & Maintenance Equipment for



### JETTERS & JET VACS



#### Penetrators

- 1/4"-15°.....\$24.00
- 3/8"-15°.....\$33.00
- 1/2"-25°.....\$46.00
- 1/2"-25°LT.....\$49.00
- 3/4"-12°.....\$55.00
- 3/4"-12°LT.....\$65.00
- 1"-12°.....\$69.00
- 1"-12°LT.....\$81.00



#### Aluminum Grease

- 3/4" or 1"-17° ..\$122.00



#### Truder

- 1".....\$345.00



#### Shark

- 1".....\$480.00
- 1" Big Shark...\$595.00

#### Stainless Steel Nozzles

- 1/8".....\$33.00
- 1/4".....\$37.00
- 3/8".....\$41.00
- 1/2".....\$57.00
- 3/4".....\$71.00
- 1".....\$105.00



#### Aluminum Sand

- 3/4"-24°.....\$139.00
- 1"-17°/24°.....\$153.00
- 1"-24°.....\$139.00



#### Swivel Joints

- T-M® Style
- 90° or Straight, 6000 psi
- 3/4" & 1".....\$188.00
- 1-1/4".....\$199.00
- 1-1/2".....\$495.00
- 2".....\$715.00



#### Ball Valves

- Dyna Quip® Style
- 3000 psi
- 1".....\$227.00
- 1-1/4".....\$243.00



#### Radial Bullet

- 3/4"-18° or 35° ..\$50.00
- 3/4"-18°/24°.....\$53.00
- 1"-18° or 30°.....\$66.00
- 1"-15° or 30°.....\$68.00
- 1-1/4"-18 or 35° ..\$85.00



#### Steel Sand

- 1"-12°.....\$70.00

#### NEW Storm/Culvert Floor Cleaner Nozzles

#### Parker & Piranha Jetter Hose

- 1/8"-1-1/4"



#### Saw Blades

**NEW** Chain Root Cutters 4"-48", All Stainless Steel, No Lubrication



#### Root Cutter Assemblies

- Skid Mounted
  - w/flat blades.....\$1125.00
  - w/concave blades.....\$1150.00
  - w/spiral blades.....\$1150.00
  - Donut Mounted
  - w/flat blades.....\$1105.00
  - w/concave blades.....\$1150.00
  - w/spiral blades.....\$1150.00
  - Lateral Mounted
  - w/flat blades.....\$1005.00
  - w/concave blades.....\$1065.00
- Assemblies come with one ea. of 6, 8, 10 and 12" blades, saw blades, hub, skids, etc.

#### Sewer Hose Guides

- TigerTail™ Style
  - 3" x 36".....\$40.00
  - 2" x 36".....\$34.00
- with 24' rope



#### Clamps

#### Power Clamps

- 8".....\$13.00
- 3"-6" available

#### King Clamps

- 8".....\$29.75
- 4"-6" available

#### Bandlock® Clamps

- 8".....\$24.00
- 3"-6" available

#### Quick Clamps

- 8".....\$26.50
- 3"-6" available



#### Hycon® Valves

2 & 3-way Ball Valves

- 5000 psi
- 1/2" 2-way.....\$65.00
- 3/4" 2-way.....\$89.00
- 1" 2-way.....\$119.00
- 1-1/4" 2-way.....\$226.00

- 4500 psi
- 3/8" 3-way.....\$115.00
- 1/2" 3-way.....\$160.00
- 3/4" 3-way.....\$180.00
- 1" 3-way.....\$190.00
- 1-1/4" 3-way.....\$440.00



#### HD Washdown Gun

- 25 gpm @ 850 psi
- 1/2" Inlet.....\$155.00

Pipe/Sewer Plugs • Hose Reels • Aluminum Intake Tubes  
Kanaflex™/Rubber Debris Hose • Full Line Of Warthog Nozzles



**Cloverleaf TOOL CO.**  
SARASOTA, FLORIDA • PHONE: 941-739-0707 • FAX: 941-739-0001

Toll Free: **800-365-6583**  
**www.cloverleaftool.com**

Full Catalog Online with Prices



MANY OTHER STYLES, SHAPES & SIZES AVAILABLE

CALL FOR OUR COMPLETE CATALOG WITH PRICES

MUNICIPAL  
SEWER  
&  
WATER

# Marketplace Advertising


**Tools Ready for Work!**

**Footage TOOLS INC.**

- Underground Piercing Tools
- Service Line Replacement Tools
- Pipe Fusion Tools
- Tapping Tools

Great SAVINGS On Now!

Call us toll free: 1-888-737-3668  
View our entire product line at: [www.footagetools.com](http://www.footagetools.com)



**Extend Your Budget - Buy Factory Direct**

Degreaser, Water Based Concentrate, Citrus, Bio-Based Solvents from

**\$4.95/Gal.**

**ENZYMES:**  
All Size Blocks, Liquid Concentrate, Powders.

**Instant Enzymes:**  
Liquefy Food Oil Grease in one hour.

Struvite Disolver • Water Tower Protectant  
Asphalt Releasing  
Non-Acid Rust Remover

**Aldran's Line Is Strong**  
*If you can't find it, we'll make it for you.*

Call 800-969-3378 for no charge samples and additional information

**ALDRAN MFG**  
36 years Manufacturing Industrial Chemicals  
**800.969.3378**  
AldranChemical.com



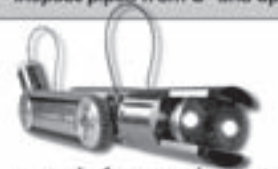
**Advanced Infrastructure Technologies**  
Tools That Work

[www.AdvancedWorld.com](http://www.AdvancedWorld.com)  
Enter Promo Code MS711 for \$5 DISCOUNT on next order

**"The Products You Use at the Best Prices, 24/7"**

**TV FERRET**  
Advanced Pipe Inspection Systems

- Full Pan&Tilt systems starting at \$40,000
- The only completely DC powered system
- Inspect pipes from 6" and up



more information at: [tvferret.com](http://tvferret.com)  
**518.399.2211**



**SEWERLOCK.COM**  
REPAIRS ALL TYPES OF MANHOLES (4" TO 36")  
(800) 742-5882

- SEWER
- STORM
- UTILITY
- GREASE
- HOMELAND SECURITY

Installs below & independent of frame in new & existing manholes, & prior to street overlay for safety, to catch debris, deter dumping & theft.

SEE "HOW TO GET STARTED" [www.sewerlock.com](http://www.sewerlock.com)

**It's A BIG FULL**



**mswmag.com**

- > Classifieds
- > Used Equipment
- > E-zines
- > Product Categories

**BUST BLOCKAGES!**



**safe-tee STC 300 heavy duty degreaser**

- 1 GALLON
- 5 GALLON
- 55 GALLON

- Used in high pressure jet cleaners to bust the toughest grease blockages.
- Safe for the environment and your crew.
- Eliminates H2S odors.
- Great for grease and oil spill cleanup.

**866-366-0587**

**safe-tee chemical**

[www.safetechemical.com](http://www.safetechemical.com)

**DYE TRACERS**

Solutions for:

- Infiltration
- Septic Systems
- Cross Connection
- Leaks and more...

**BRIGHT DYES**  
Division of Kingscote Chemicals

[www.brightdyes.com](http://www.brightdyes.com) FREE SAMPLE 1-800-394-0678

**"Your One-Stop Stopper Shop!"**

FOR 31 YEARS - HOME OF THE ORIGINAL  
**PIPE PLUG & NB BAG/ PILLOW DESIGN STOPPER**  
[ SINGLE SIZE OR MULTI SIZE PIPE STOPPERS 4" & UP ]

- » SINGLE & MULTI SIZE PASS THRU PLUGS
- » MULTI SIZE PLUGS & MULTI SIZE LEAK LOCATORS
- » SINGLE & MULTI SIZE TEST PLUGS
- » COMPLETE LINE OF SEWER & DRAINAGE TOOLS AVAILABLE

disc plugs | high pressure plugs | large inflatable pipe plugs | pipeline testing & acceptance plugs | pneumatic by-pass plugs

**SEWER EQUIPMENT Co. OF FLORIDA, INC.**

NEW SMYRNA BEACH, FL  
IN FL 800.225.2952 | OUT OF FL 800.635.2323  
IN CANADA 800.328.3318

[www.SewerEquipmentCo.com](http://www.SewerEquipmentCo.com)

**Coming in September**

MUNICIPAL  
**SEWER & WATER**

**Buyer's Guide**

A complete listing of all manufacturers and suppliers of sewer, water and stormwater equipment.

**Indy 2012**

Education Day: MON, FEB 27, 2012  
Exhibits Open: TUES, FEB 28 - THURS, MARCH 1, 2012


INDIANA CONVENTION CENTER  
INDIANAPOLIS, INDIANA

Scan this tag for more information



Get the free mobile app at <http://gettag.mobi>  
[visitindy.com/pumpershow](http://visitindy.com/pumpershow)





**VAN AIR**  
AIR POWER TO GO™

**Vehicle-Mounted**

- Air Compressors
- Generators
- Air N Arc® ALL-IN-ONE Power Systems®
- Welders
- Battery Boosters

YOUR MOBILE POWER  
EXPERT SINCE 1972™

800.526.8817  
vanair.com

IndustrialOdorControl.com

A broad and economical range of odor control solutions




- Manhole Odor Inserts
- Pollution Control Barrels
- Activated Carbon
- Vapor Phase Adsorbers
- Septic Vent Filters
- Custom Solutions

866-NO-STINK (667-8465)  
973-846-7817 in NJ  
IndustrialOdorControl.com

Simple Solutions  
DISTRIBUTING LLC  
Makers of the Wolverine Brand of Odor Control Solutions

The most reliable fusion machine rentals in the industry.



Visit  
[www.CertifiedMcElroy.com](http://www.CertifiedMcElroy.com)  
for more information.

**Superior® SMOKE**  
for **Sewer Testing**

Fast • Inexpensive • Easy



**Superior® Smoke Testing**  
the most cost effective method to find sources of inflow

Choose Candles or Fluid

800-945-TEST  
[www.SuperiorSignal.com](http://www.SuperiorSignal.com)

**THE ULTIMATE TRACTOR TRACTION PAD**

- Silicone carbide composite construction for long life
- Custom dependable double hole fabrication for any CUES, Aries or other style of tractor
- Chain assemblies
- Chemical/heat process to resist separation
- Competitive pricing
- Money back guarantee
- We are a 6/12 company
- For prices, questions or a sample please contact us

**PIPE TOOL SPECIALTIES**  
PHONE# 1-(503)-390-6794 OR FAX# 1-503-390-6670  
Email at [pts4422@yahoo.com](mailto:pts4422@yahoo.com)

TREATMENT PLANT OPERATOR

**tpo**

**Dig into our pages.**

Each issue shows you:

- New technologies that boost efficiency and drive out costs.
- Tips for building a stronger, more productive staff.
- Bargains on a wide range of tools and equipment.
- And much more.

Plus, you'll learn from other successful people in your industry – how they do it, and how you can, too.

**FREE Subscription – sign up today!**  
**800.257.7222**  
[www.tpomag.com](http://www.tpomag.com)




Every business owner needs advice. I find all I need in just one place.

Let's face it: One person can't know everything. When I need help, I turn to friends I've met at the Expo. My competitors? They just struggle along on their own. It's almost unfair! Extend your hand and meet someone new.

**PumperShow.com**

**THE "ORIGINAL" LIQUID SMOKE**




**Turbo Fog M45:**

- Versatile
- Light Weight
- Compact
- Creates Dense Smoke

**TURBO-FOG**  
Since 1977

[www.turbo-fog.com](http://www.turbo-fog.com) • 1-800-394-0678



**\$2,999**

**Confined Space Entry System**

- 7' Tripod
- 3-Way Fall Winch
- Work Winch
- Full Body Harness
- MSA Altair 4 Gas Monitor

Call for Catalog & Prices  
**800.365.6583**  
[www.cloverleaf.com](http://www.cloverleaf.com)



**CONFINED SPACE ENTRY PACKAGE**  
ONLY **\$2,995**

**The best package on the market includes:**

- 4-Gas Air Monitor
- 7' Tripod
- 3-Way Fall Protection
- Work Winch
- Full Body Harness



Add a **Blower** with 15' of duct for only **\$350!**  
Add a **5 Minute Escape Respirator** for only **\$500!**

**MTECH** 800.362.0240  
[www.mtechcompany.com](http://www.mtechcompany.com)

## BLOWERS

New Roots 27" 1021 PD blower. In stock, ready to ship or install. **www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648).** (M07)

**VFC200P-5T, FUJI** Pumps, Regenerative Blowers, Ring Compressors. All models, accessories. Authorized distributor. Authorized parts and repair center. Call 888-227-9822. [www.carymfg.com](http://www.carymfg.com) (MBM)

## BUSINESSES

**Well-Established and Profitable Texas Septic, Sewer & Installation Business For Sale. PRICE RECENTLY REDUCED.** Grossing in excess of \$600,000 annually, customer list of nearly 2,000 accounts and 430 contracted customers. Includes nice late model equipment, most are 2007, 2008 model years. Owner retiring after nearly 40 years in business. Real estate available upon request. Reduced to \$450,000. E-mail [jeffb@colepublshing.com](mailto:jeffb@colepublshing.com) or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing - www.BTwo.biz.** (MBM)

**Amarillo, Texas sewer, drain & plumbing business established in 1976.** Owner wants to retire, so take the keys to a 2004 Sprinter outfitted with all of the equipment you'll need to run this business. Price includes real estate with 80x100 shop/office on two city lots. Good gross, good profit, financials available with signed non-disclosure. Offered at \$495,000. E-mail [jeffb@colepublishing.com](mailto:jeffb@colepublishing.com) or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing - www.BTwo.biz.** (MBM)

**Chicago-Area Biosolids, Land Application, Dredging and Industrial Services Business.** Established in 1985, owner is retiring. Reputable business includes real estate servicing the entire Chicagoland area with sludge and biosolids disposal and treatment services. Real estate and shop included with sale valued at \$750,000, business grosses in excess of \$3 million annually, \$6.3 million in equipment and assets including several TerraGators, Vac Trailers, dump trailers, loaders and much more. Offered at \$4,900,000 - huge potential, good profit and priced right. Non-Disclosure Agreement required, all P&L statements, list of assets, and financials available to qualified buyers. E-mail [jeffb@colepublishing.com](mailto:jeffb@colepublishing.com) or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing - www.BTwo.biz.** (MBM)

## BUSINESSES

**Successful business with a large amount of equipment and inventory.** Profitable sewer and septic business in central Pennsylvania. Increasing revenue over the past 3 years and a large amount of equipment and inventory. Equipment is a mix of old and new, but all is working and making money. Selling price \$349,000. E-mail [jeffb@colepublishing.com](mailto:jeffb@colepublishing.com) or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing - www.BTwo.biz.** (MBM)

## CATCH BASIN CLEANER

2008 American La France Condor with a new VacAll VS10DC, 10-yd. debris body, dual steer dual sweep street sweeper and catch basin cleaner. (Stock #1791V) **www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648).** (M07)

## DEWATERING



**20-Yd. Dewatering Filter Box:** Complete rollover tarp system, filter media, loading manifold, drain ports and wash-out ports. interior epoxy coated, exterior polyurethane top coat. ....\$18,000  
Polymer system .....\$9,000

**Call for more info.**  
**863-984-8994 FL** (CMP07)

## JET VACS



**1990 Ford L8000 S/A Vac:** 7.4L diesel, jetter, 1,021 hours on unit, 59K miles, A/T, Vactor 2110 body, Model 4-764-180, s/n: 90-9-4016, 4000 cfm, 60 gallons gtm @ 2000 psi. ....\$39,500  
**715-546-2680 WI** (MBM)

1999 Sterling cab and chassis with a Vactor 2100 combination vacuum loader and high pressure sewer cleaning system. (Stock #2129V) **www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648).** (M07)

## JET VACS



**1996 Ford F800 w/Vactor 2103:** Cummins @ 175 hp, Fuller FS5306A, 177" WB, 9,000/17,500 axles, Vactor 2103-16 mini-vac 1600 cfm, s/n: 96-01V-5720. ....\$29,500  
**715-546-2680 WI** (MBM)

2008 Sterling LT7501 with a VacAll AJV1015, 10-yd. debris body, 1500 gal. water, combination vacuum/jetting unit. (Stock #13366) **www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648).** (M07)



**1988 Ford L8000 Vac:** Ford @ 210 hp, A/T, 81K miles, 6K hours, spring susp., spoke wheels, Vac-Con body, Cummins showing 1,292 hrs., s/n: V290T-0488186. ....\$22,500  
**715-546-2680 WI** (MBM)



**1998 Ford LT8501:** Cummins diesel, 147K miles. 237" WB, 2,824 hours on reel, Safe Jet vac body, push-bottom a/t, spring susp., disc wheels. ....\$59,500  
**715-546-2680 WI** (MBM)



**1998 Vactor PD2100:** 15 cu. yd. debris body; 1500 gal. water capacity, Holmes PD blower, 8' telescoping boom, 800' hose. Freightliner FLD112, tandem axle, N-11 Cummins w/Allison auto, 90,800 miles/12,820 hours, tires 90%. Call for more info. .... Asking \$85,000  
**608-835-7767 WI** (C07)

## JETTERS: TRUCKS

2006 GMC TC6500 cab and chassis with Pipe Hunter trunk mounted jetting unit, 3000 psi @ 50 gpm with a 1,000 US gal. water tank, rear mounted hose reel with JET EYE camera system. **6,800 original miles, like new. \$129,000 sale price. (Retail for \$210,000)** (Stock #13234V) **www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648).** (M07)

1992 Ford L8000 cab and chassis with an enclosed Sewer Equipment Co. jetting unit with a Myers D-65 hydraulically driven water-cooled pump. (Stock #1505C) **www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648).** (M07)

## PIPELINE REHABILITATION

4" Percussion Milling Cutter Enz Golden Jet for 3/4" - 1" hose version 14.100. LIKE NEW - used on one job! \$3,500. Plumbing Anytime, Inc. 307-733-3534 WY. (MBM)

## POSITIONS AVAILABLE

SALES REPS WANTED: Check details on our website [www.gapvax.com](http://www.gapvax.com) or send resume to [betty@gapvax.com](mailto:betty@gapvax.com). (M07)

## PUMPS

**Buy & Sell** all makes and models, **new & used** vacuum pumps & high pressure water pumps, and good used replacement parts. Call for an inventory sheet and save. **www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648).** (M07)

## RENTAL EQUIPMENT

Liquid vacs, wet/dry industrial vacs, combination jetter/vacs, vacuum street sweeper & catch basin cleaner, truck & trailer mounted jetters. All available for daily, weekly, monthly, and yearly rentals. **VSI Rentals, LLC, (888) VAC-UNIT (822-8648) www.vsirentalslc.com.** (M07)

## SEPTIC TRUCKS



**2006 Sterling LT9500 Vac Truck:** Acert C-13, Fuller 8LL, lockers, 18/40 axles, 4x6 drive, air ride, 24K miles, 208" WB, 227" frame behind cab, 22.5 tires, engine brake, disc wheels, 2006 Presvac tank, s/n: APV-4000-0705-7052, 4,000 gal. tank, Masport pump. ....\$89,500  
**715-546-2680 WI** (MBM)

## SEPTIC TRUCKS

1998 Mack RD6885 with a 3200 US gallon stainless steel vacuum tank unit. (Stock #6653V) [www.VacuumSalesInc.com](http://www.VacuumSalesInc.com), (888) VAC-UNIT (822-8648). (M07)

3200 US gallon stainless steel vacuum tank. (Stock #0488V) [www.VacuumSalesInc.com](http://www.VacuumSalesInc.com), (888) VAC-UNIT (822-8648). (M07)



**2004 Sterling Vac Truck:** Cat C-7 engine, 300 hp, Fuller 8LL, lockers, 222" WB, PTO, double frame, spring susp., 18/46 axles, cruise, 109K miles \$89,500  
**715-546-2680 WI** MBM

2010 Peterbilt 348 with new Presvac 3600 US gal. aluminum vacuum pressure tank with Masport HXL400WV vacuum pressure pump. (Stock #8808) [www.VacuumSalesInc.com](http://www.VacuumSalesInc.com), (888) VAC-UNIT (822-8648). (M07)



**1978 Mack Vac Truck:** Mack diesel, M/T, 10,500/19,040 axles, camelback susp., spoke wheels, 22.5 tires. \$24,500  
**715-546-2680 WI** MBM

## SERVICE/REPAIR

**Dynamic Repairs - Inspection Camera Repairs:** 48-hr. turn-around time. General Wire, Ratech, Ridgid, Pearpoint, Electric Eel, Gator Cams, Insight Vision, Vision Intruders. Quality service on all brands. **Rental equipment available.** For more info. call Jack at 973-478-0893. Lodi, New Jersey. (MBM)

## SHORING

Manufacturer Offering Modular Aluminum Shoring, Lightweight Steel or Aluminum Trench Boxes, Aluminum Slide Rail Systems, and OSHA Training. [www.americanshoring.com](http://www.americanshoring.com). 1-800-407-4674. (M08)

## TANKS

3200 US gallon stainless steel vacuum tank. (Stock #0488V) [www.VacuumSalesInc.com](http://www.VacuumSalesInc.com), (888) VAC-UNIT (822-8648). (M07)

## VACUUM EQUIPMENT



**2004 Vermeer E550:** 500 gallon evacuator, Duetz 4 cyl, 220 gal. water tank, triplex pump.....\$24,500  
**715-546-2680 WI** MBM



**2004 Vermeer E550 Vac Trailer:** 500 gallon evacuator, 725 hours, Duetz 4 cyl, 220 gal. water tank, mounted on 13' trailer.....\$24,500  
**715-546-2680 WI** MBM

## VACUUM LOADERS

1999 International with a Guzzler Ace 27" HG wet/dry industrial vacuum tank loader. **Demo/Rental unit.** (Stock #7390) [www.VacuumSalesInc.com](http://www.VacuumSalesInc.com), (888) VAC-UNIT (822-8648). (M07)



**2001 International 2674 Vac Truck:** C-10, 10-spd., shows 103K miles. 6x4, 258" WB, 20/44 axles, spring susp., disc wheels, 22.5 tires, 2000 Guzzler body, model ACE.....\$99,500  
**715-546-2680 WI** MBM



**1995 International Paystar 5000 Vac Truck:** Cummins M11, Fuller 8-spd., lockers, 340" WB, PTO, disc wheels, 22.5 tires, spring susp., 1995 Pesvac 3200 gal. tank, 32,000# max load, s/n: PVSDH-3200-0595.....\$89,500  
**715-546-2680 WI** MBM

## VACUUM TRAILER



**2007 Ring-O-Matic 750 High CFM Vac Trailer:** Cat 3024 @ 50 HP, 696 hours, liquid-cooled, 750 gallon cap., 850 CFM lobe style blower, 20,860# GVW.  
.....\$29,500  
**715-546-2680 WI** MBM

## WANTED

WANTED TO BUY: Any make/model GapVax. Email [inquiry@gapvax.com](mailto:inquiry@gapvax.com) or call 888-442-7829. (M07)

## WATERBLASTING

40,000 PSI sapphire nozzles, UHP hoses & replacement parts. Excellent quality & prices. 772-286-1218; [info@alljetting.com](mailto:info@alljetting.com); [www.alljetting.com](http://www.alljetting.com) (CBM)

**Gardner Denver TF-450 VSDT** 52 GPM max 10K max. **Gardner Denver T-450 w/Jet-stream fluid end transmission** 12K max 40.91 GPM max. **THE-500UH** 50K bare shaft pump. **Wheatley 165** 20K @ 17 GPM. **Wheatley 125** 10K @ 20 GPM. **Wheatley P-313** 10K @ 8.4 GPM. **Aqua-Dyne C 450-DS** 20K @ 33 GPM. **Allis-Chalmers 10x8x22** 700 HP. Boatman Ind. 713-641-6006. View @ [www.boatmanind.com](http://www.boatmanind.com). (CPBM)

# It's Quick and Secure!

View Latest Issue -

SUBSCRIBE NOW

NEW EQUIPMENT
CLASSIFIEDS
ARTICLES
ADVERTISING
INTERACT
SUBSCRIBE

**SUBMIT YOUR CLASSIFIED AD NOW at [www.mswwmag.com](http://www.mswwmag.com)**

Just click on "Classifieds" - "Place a Classified Ad" - Fill in the online form!

**Buying Back Capacity**  
Cover Story

**Sealing the Deal**  
Sewer

**Digital Edition**  
Current Issue in Ezine Format

**Classifieds**  
Buy and Sell Used Equipment

KEEP IT FLOWING!

- Quality
- Pressure Washers
- & Jetters

**Rates: \$25 minimum charge (up to 20 words). \$1.00 per each additional word.**

**Include a photo for an additional \$125.**

BUY IT - SELL IT - PLACE IT - [www.mswwmag.com](http://www.mswwmag.com) - AVAILABLE ANYTIME, ANYWHERE, ANY DAY

mswwmag.com July 2011 57



## The Root Intrusion Solution



**The Problem...**



**The Solution...**



**The Result.**

# Simple. Effective. Proven.



**1-800-844-4974**

[www.rootx.com](http://www.rootx.com)

[www.rootxperts.com](http://www.rootxperts.com)

Think. Big.



For more information on all of LMK's next generation trenchless products and equipment or to learn how you can become an installer contact [info@lmkenterprises.com](mailto:info@lmkenterprises.com) or call 815.433.1275

The Next  
Generation  
of Cured  
in-Place  
Trenchless  
Products.

LMK is a manufacturer and technology provider of cutting-edge trenchless products and equipment with a portfolio of over 80 patents worldwide.

LMK's Next Generation

- Pressure Pipe
- Cured in-Place Manhole liner
- Lined Main Tap™





The most intelligent operating system in the industry.

**EXPERTISE**

**TECHNOLOGY**

**RESPONSIBILITY**

## Knowledge is power

What makes the Omnibus Control System the most intelligent operating system in the industry? Because one simple control operates ALL the vacuum and water system functions of the Vac-Con Combination Sewer Cleaner. This coordination of systems allows you to use only as much power as is needed, saving time and fuel expended on the job.

The Omnibus Control System is precise, economical, and expandable. Not to mention it's backed by a worldwide network of trained distributors.

Omnibus is what happens when you blend the power of experience with the power of technology. For more information visit [www.vac-con.com/omnibus.html](http://www.vac-con.com/omnibus.html)

A HOLDEN INDUSTRIES Company