

MUNICIPAL

SEWER
&

WATER™

FOR SANITARY, STORM AND WATER SYSTEM MAINTENANCE PROFESSIONALS

February 2015

www.mswmag.com

HUMAN SIDE: PERSUASION IS BOTH ART AND BUSINESS SKILL

PAGE 10

BETTER MOUSETRAPS: CHEMICAL ROOT CONTROL REDUCES BLOCKAGES

PAGE 20

WWETT PREVIEW: COLE SWINDELL HEADLINING APPRECIATION PARTY

PAGE 24

MASTER OF HIS TRADE

Hard work, creative problem solving and a quest to continually improve bring honors for Oregon collections operator

PAGE 16

Mark James, wastewater collections system operator for the City of Redmond's Public Works Department, in Redmond, Ore.


wwett™

Water & Wastewater Equipment,
Treatment & Transport Show

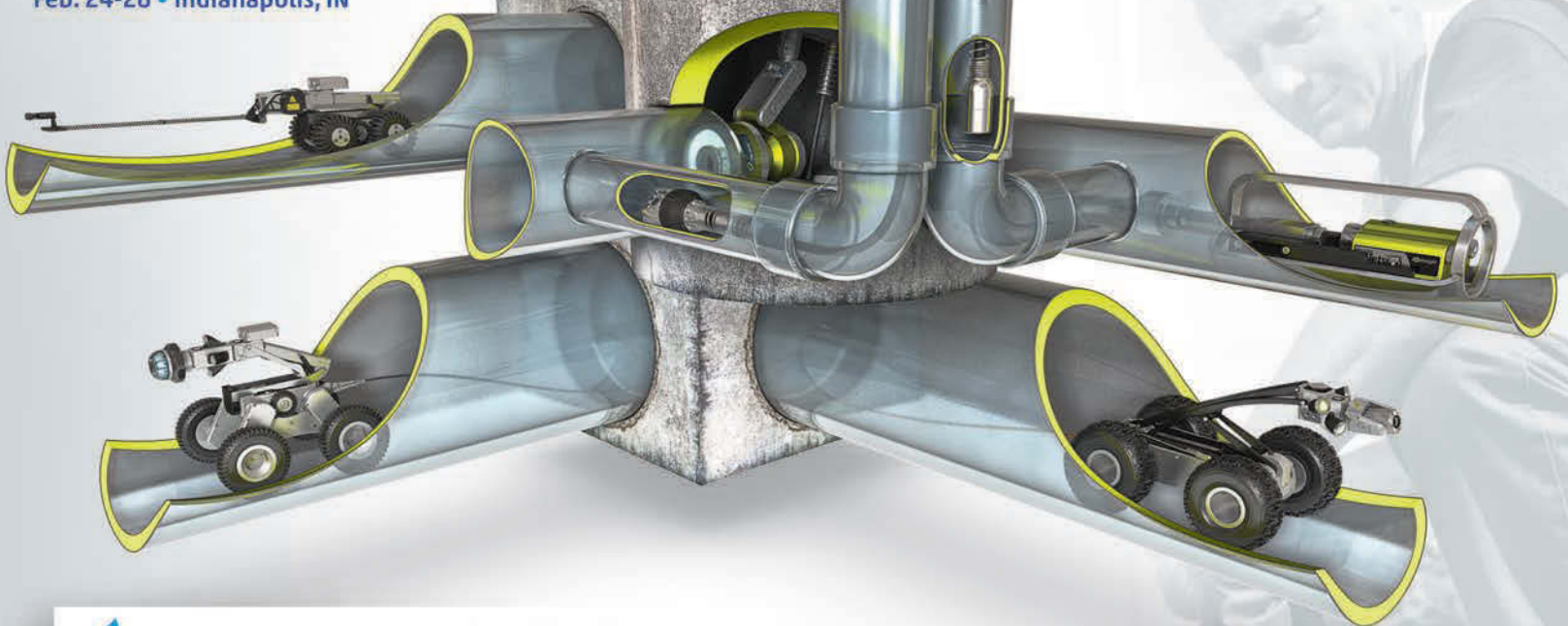
Feb. 23-26



booth
6018

Feb. 24-26 • Indianapolis, IN

underground
understood



new

preferred build-outs

We've analyzed the most popular inspection vehicle configurations and geared up to deliver them faster and more affordably. Order with confidence knowing your build-out reflects industry preferences.



new

crawlers

New large wheels adapt ROVER X 400 to the largest mainlines; heavy weight and narrow profile handle high flows. Pan/tilt SAT is updated with new controls, drive train and camera.



new

pan/tilt push camera

VeriSight Pro 360 tilts ±135 degrees and pans 360. Its articulated head detaches to accept a compact axial camera.



new

video nozzle

The industry's first HD video nozzle is now available for pipes as small as 6".



advanced capability

The battle to understand sewer condition is fought on many fronts. Winning takes an arsenal of inspection tools capable of meeting every challenge.

Envirosight arms you with advanced capability to inspect drains, laterals, mains, trunk lines and interceptors. See why more municipalities and contractors trust us to achieve ground superiority in the war on sewer deterioration. **Schedule a free on-site demo.**



Envirosight

www.envirosight.com • 973.252.6700

inspection technology • asset strategies



Some things age better than others.

Maintenance-free Flowtite® FRP won't corrode. Instead, they deliver clean drinking water to communities year after year. It's the dream of every municipal engineer. Other pipes may deteriorate, leak or even burst, but a Flowtite® pipe keeps its integrity under pressure. No waxing required.

Flowtite® FRP. Engineers know.

Don't miss Sliplining, the latest in our popular Webinar series.

More information and signup here: www.ThompsonPipeGroup.com/SlipLining



1-225-658-6166
www.flowtitepipe.com

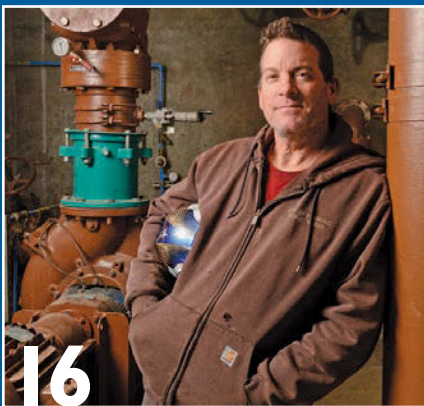
INSIDE:

MAINLINE TV INSPECTION



ON THE COVER:

Mark James, wastewater collections system operator for the City of Redmond's Public Works Department, stands in the city's Water Pollution Control Facility. James was honored as collections operator of the year by the Pacific Northwest Clean Water Association. (Photography by Joe Kline)



COMING IN MARCH 2015

Product Focus: WWETT Show Issue, Pipeline and Infrastructure

- ◆ HUMAN SIDE: Focused conversations engage employees
- ◆ BETTER MOUSETRAPS: SaniTite pipe solves H₂S problem
- ◆ SEWER: Virginia Beach, Va.

FEATURES

16 OPERATOR: Master of His Trade

Hard work, creative problem solving and a quest to continually improve bring honors for Oregon collections operator.

By Erik Gunn

20 BETTER MOUSETRAPS: Rooting Out SSOs

Regular root control an important part of compliance initiative to reduce blockages and costs.

By Sheila Joy

24 WWETT PREVIEW: On the Rise

Budding country music star Cole Swindell headlining the WWETT Industry Appreciation Party.

By Kyle Rogers

28 WATER: Nothing for Granted

Madison Water Utility takes a multipronged approach to improving infrastructure and sustaining water resources.

By Jim Force

40 TV/Video Inspection & Location Company Directory

44 STORMWATER: Protecting Local Waterways

Coralville's ambitious stormwater program uses green infrastructure to filter pollutants and reduce runoff and protect waterways.

By Dan Heim

COLUMNS

8 FROM THE EDITOR: Pushing the Industry Forward

Take advantage of opportunities to improve your operations and serve your customers better.

By Luke Laggis

9 World Health Organization talk slated for WWETT Show

10 HUMAN SIDE: The Art of Persuasion

Workplace influence is a valuable commodity that few know how to pull off, but these pointers will help.

By Ken Wysocky

12 GUEST COLUMN: Partner Up

Public-private partnerships can provide greater resources for utilities struggling with deteriorating infrastructure and growing debt.

By Michael Deane

14 @mswmag.com

Visit daily for news, features and blogs. Get the most from *Municipal Sewer & Water* magazine.

42 NASSCO CORNER: Expanding Resources

'Specification Guideline for Sewer Pipe Cleaning' now available online.

By Ted DeBoda, P.E.

48 PRODUCT FOCUS: Mainline TV Inspection

By Craig Mandli

56 CASE STUDY: Mainline TV Inspection

By Craig Mandli

58 PRODUCT NEWS

Product Spotlight: Pump slices through stringy solids.

By Ed Wodalski

62 WORTH NOTING

People/Awards; Learning Opportunities; Calendar

65 INDUSTRY NEWS

MUNICIPAL
SEWER
&
WATER

FEBRUARY 2015

PERMA-MAIN™

CONTINUOUS LINING TOP GUN

TRENCHLESS LINING, MANHOLE TO MANHOLE

OPERATES WITH AIR ONLY, NO WATER

COMPACT, LESS EQUIPMENT & TRAFFIC

QUICK INVERSION, UNDER 10 MINUTES

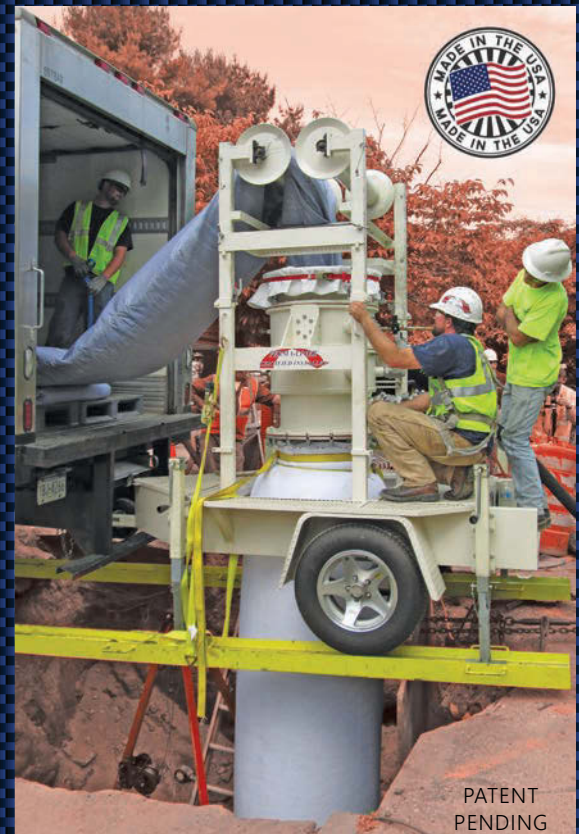
SAFE, USER-FRIENDLY

ELIMINATE EXPENSIVE GROUTING EQUIPMENT
FOR SEALING YOUR CIPP LINERS

#1 PREVENTATIVE MAINTENANCE TOOL
TO SOLVE INFILTRATION & INFLOW



COVERED BY US PATENT NOS. 8,240,341 AND
8,240,340. OTHER PATENTS PENDING.



PATENT
PENDING



BOOTH
3223

LIVE DEMOS

SECTIONAL POINT REPAIR

COMPLETE START-UP SYSTEMS FOR LESS THAN \$15,000.
INCLUDING ON-SITE TRAINING AT YOUR LOCATION, KITS AND
ALL EQUIPMENT.

MANUFACTURED IN KIT FORM, NO MEASURING OR WASTE

FIBERGLASS REINFORCED MATERIALS WITH A PU COATED FINISH

USED BY CONTRACTORS AND MUNICIPALITIES WORLDWIDE!

www.perma-liner.com

☎ 1-727-507-9749 Int'l 1-866-336-2568 Toll Free








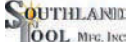
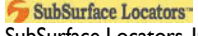





✉ info@perma-liner.com

PERMA-LINER™
INDUSTRIES, LLC.



ADVERTISER INDEX

COMPANY	PAGE
 American Highway Products, Ltd.	38
AP/M Permaform.....	26
 Aries Industries, Inc.	43
Avanti International.....	29
 Cam Spray	12
Cavallero Plastics, Inc.	22
 Central Oklahoma Winnelson	63
 Chempace Corporation	56
Cloverleaf Tool Co.	63
 Cobra Technologies	66
Cretex Specialty Products.....	60
 CUES	27
Doug Meadows Co., LLC.....	38
 Duke's Root Control, Inc.	13
Eaton	22
 Electro Scan Inc.	39
 Envirosight	2
 Enz USA, Inc.	31
 GapVax, Inc.	67
 HammerHead Trenchless Equipment.....	19
 InfoSense, Inc.	26
IIST - Innovative Sewer Technologies, LLC.....	8
LMK Technologies.....	53
 MyTana Mfg. Company, Inc.	31
 NozzTeq, Inc.	38

COMPANY	PAGE
 Perma-Liner Industries, LLC	5
 Pipeline Analytics	57
PIPELOGIX PipeLogix, Inc.	33
 Polston Applied Technologies	7
 Pronal-USA, Inc.	62
 RapidView IBAK North America	61
Rausch USA.....	23
 RootX	9 & 11
 RS Technical Services, Inc.	47
Sealing Systems, Inc.	56
 Southland Tool Mfg. Inc.	49
Spartan Tool, LLC.....	15
 SubSurface Locators, Inc.	59
 T&T Tools, Inc.	25
Terry Byrne, Inc.	54
Thompson Pipe Group.....	3
 Ultra Shore	38
 Vac-Con, Inc.	68
 Vactor Manufacturing	50
 VARCo	55
Vivax-Metrotech Corp.....	57
CLASSIFIEDS	65
MARKETPLACE	64-65



FOR SANITARY, STORM AND WATER
SYSTEM MAINTENANCE PROFESSIONALS

Published monthly by:



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



www.mswmag.com

© Copyright 2015, 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 / 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. To qualify, visit www.mswmag.com or call 800-257-7222.

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 subscribe, visit www.mswmag.com or send company name, mailing address, phone number and check or money order (U.S. funds payable to COLE Publishing Inc.) to the address above. MasterCard, VISA and Discover are also accepted. Include credit card information with your order.

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.

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 Bisnette 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 Bisnette

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

REPRINTS AND BACK ISSUES: Visit www.mswmag.com for options and pricing. To order back issues, call Nicole at 800-257-7222 (715-546-3346) or email nicole.labeau@colepublishing.com. To order reprints, call Jeff Lane at 800-257-7222 (715-546-3346) or email jeff.lane@colepublishing.com.

CIRCULATION: 2014 average circulation was 38,192 copies per month (U.S. and international distribution).

 www.facebook.com/MSWmag
 www.twitter.com/MSWmagazine
 www.plus.google.com
 www.youtube.com/MunicipalSewerWater
 www.linkedin.com/company/municipal-sewer-&-water-magazine



Water & Wastewater Equipment,
Treatment & Transport Show
www.wwett.com

Education Day: Feb. 23, 2015
Exhibits: Feb. 24-26, 2015
Indiana Convention Center, Indianapolis, Ind.

Remove Sand and Grit While Your Plant Remains On-Line

Visit us at
the WWETT
Show - Booths
1400 & 1407



Polston Applied Technologies trucks and grit removal systems clean sand and grit like no other – in wastewater treatment plants, large diameter lines, digesters, lift stations and other hard-to-clean environments.

Our revolutionary **COMBINATION^{3SM}** Technology provides a unique system of jetter, vacuum, and down hole pumping



that enables us to perform all cleaning operations without the plant being taken out of service. No shut down is needed and no bypass pumping is required.

With superior features like our extra-long, hydraulic knuckle-boom cranes, and 425 horsepower engines that pump water up to 2,500 gpm and enable cleaning to depths of 100 feet, Polston can handle cleaning situations that make others wilt.

This incredible equipment and technology is now available to solve your worst cleaning problems. We do it every day. Call us to see how we can help you. **Grit 'Er Done!TM**



www.polstonprocess.com

Call Toll-Free 844-POLSTON

CALL US TO DISCUSS BUSINESS ARRANGEMENTS!

PUSHING THE INDUSTRY FORWARD

Take advantage of opportunities to improve your operations and serve your customers better



FROM THE EDITOR

Luke Laggis

February has arrived and the 2015 Water & Wastewater Equipment, Treatment & Transport (WWETT) Show is just a few weeks away. We're gearing up for the largest event we've ever staged.

You'll find a preview of the annual Industry Appreciation Party in this issue of *MSW*. It's one of the highlights of the WWETT Show and you should plan to attend if you make the trip to Indy. There will be live music from Cole Swindell and Blackjack Billy, 25-cent tap beer and we're giving away a fully customized Chevy 4x4 pickup truck to celebrate our 35th anniversary.

This issue also features profiles on two utilities and one operator, all three of which reflect the spirit and mission of the WWETT Show in their own way.

The Madison (Wis.) Water Utility has found new ways to serve its mission. It was the first utility in the state to use

CIPP to reline old water mains. A new automated metering system and online water tracking feature are designed to make citizens aware of their water usage and to help the community reach its ambitious water-use reduction targets. The utility has also established a robust public outreach program to educate customers about water use.

Coralville, Iowa, has also taken a progressive approach, testing and implementing a variety of green infrastructure features to manage stormwater

problems. Green roofs, bioretention structures, permeable pavement and tree filter boxes are all playing a role in the city's efforts to mitigate stormwater runoff. The city has also enacted stormwater runoff requirements for new construction and has bolstered its outreach efforts.

Out West, Mark James is an award-winning collections operator in Redmond, Ore. His innovative approach to system maintenance has improved many of the utility's processes. In his time with the utility, it's gone from subbing out smaller repairs to doing the work in-house. He's taken lessons learned from other jobs, along with his growing list of certifications and accreditations, and pushed his utility forward.

Evolving, doing more and doing it better is a common thread between these three profiles and the WWETT Show. Like these utilities the show has evolved. What was once a small show for septic pumpers has grown to encompass so much more. It serves everyone in the water and wastewater industry, providing opportunities for your utility to grow, improve operations and expand into new services.

I'm looking forward to another trip to Indy and the opportunity to hear more of your stories. I enjoy talking to as many of you as possible, getting your feedback and gaining a better understanding of the issues you're facing.

And the WWETT Show is also full of opportunities for your utility. From the moment you leave your hotel room to the very end of the night, in the elevator on the way down to the lobby, at breakfast, on the walk to the convention center and all throughout the day, you'll have no problem striking up conversations with your peers. So take advantage. The insight you gain could make all the difference in your utility's operations.

There are also plenty of education seminars to help you expand your knowledge base, meet continuing education requirements and improve your operations. And of course there are tools and trucks – lots of them. Take it all in and enjoy the show.

If you haven't registered or begun planning your time in Indy, visit WWETT.com for all the information you'll need. It's a great way to help build your business and there's plenty of fun to be had, too.

Enjoy this month's issue. See you in Indy. ♦

I'm looking forward to another trip to Indy and the opportunity to hear more of your stories. I enjoy talking to as many of you as possible, getting your feedback and gaining a better understanding of the issues you're facing.

Lateral connection rehabilitation system



Install through cleanout

- Replace the lateral connection along with installing a new line inside the old pipe.
- Flexible and lightweight.
- Rehabilitate pipe as small as 1 1/4 inch.
- Economical and efficient solution to prevent excavation inside of the home or business.
- Rehab the entire sewer line instead of leaving sections that are not protected by re-lining.

Avoid the old way



For more information visit our website www.istamerica.com or call Phone: (702) 983.8030 We are U.S. Based Come see us at WWETT booth 2215



Comments on this column or about any article in this publication may be directed to editor Luke Laggis, 800/257-7222; editor@mswmag.com.



World Health Organization talk slated for WWETT Show

The threat of communicable diseases is real for everyone who handles or comes in contact with wastewater. Understanding the risks and taking the necessary precautions is the key to protecting yourself.

Since the ebola virus outbreak in West Africa made headlines, many in the wastewater industry have asked about the potential for a variety of communicable diseases to spread through contact with human waste during the cleaning, maintenance and repair of sanitary drain and sewer lines.

Those questions will be answered at the 2015 Water & Wastewater Equipment, Treatment & Transport Show. Dr. Adrianus Vlugman, World Health Organization senior advisor on water, sanitation and environmental health, will speak Feb. 26 at 1 p.m. in Rooms 133-135 at the Indiana Convention Center as part of an extensive series of WWETT Show speakers and seminars.

Vlugman will provide a general overview covering the survival and life expectancy of communicable diseases in water and wastewater. Among other topics, he will cover:

- Safety precautions to consider when handling water and wastewater.
- The likelihood of communicable diseases to be spread or passed through both centralized wastewater plants and decentralized onsite wastewater systems.
- Whether there is a concern for the spread of communicable diseases through land application of properly treated sewage, biosolids or septage.

The talk on the transfer of communicable diseases is free and open to anyone.

**If you would like to attend the WHO program,
fill out the online registration form at
www.wwettshow.com/who.**

**Water & Wastewater Equipment, Treatment & Transport (WWETT) Show
Feb. 23-26, 2015 | Indiana Convention Center, Indianapolis
www.wwettshow.com**



THIS CHANGES EVERYTHING.



THE ART OF PERSUASION

Workplace influence is a valuable commodity that few know how to pull off, but these pointers will help

By Ken Wysocky

What would it take to persuade you that the following statement is true: The ability to influence others is the most important skill you need to achieve professional success, greater wealth and personal happiness.

Feeling a little skeptical? Not surprising. But maybe these thoughts from Kurt Mortensen (www.kurtmortensen.com) — an author and consultant who’s an expert in persuasion, influence and negotiating — can persuade you to think otherwise.

“Research shows that 85 percent of business success stems from mastering the skill of persuasion,” says Mortensen, who’s studied the subject for more than 20 years and authored three books about it: *Maximum Influence*, *Persuasion IQ* and *The Laws of Charisma*.

“We may not realize it but we all persuade for a living, whether you’re a manager or a parent or a teacher. It permeates almost every aspect of our lives,” says Mortensen.

Unfortunately, persuasion these days is a tall order, about on par with cleaning and televising 2,000 linear feet of sewer line in one day. Every day the Internet, social media and advertising bombard us with hundreds of “persuasive messages.” As such, we’ve become numb to persuasion techniques. And since most people are generally better educated

these days, too, we also tend to be more skeptical and less trusting.

“Years ago, I think people generally looked for a reason not to trust someone,” Mortensen points out. “Now their mentality is, ‘I don’t trust you — give me a reason to trust you.’ So the ability to persuade is more important than ever before.”

To be clear, we’re not talking here about manipulating a col-

“Years ago, I think people generally looked for a reason not to trust someone. Now their mentality is, ‘I don’t trust you — give me a reason to trust you.’ So the ability to persuade is more important than ever before.”

– Kurt Mortensen

league into buying coffee or persuading a supervisor that free vending machine snacks is a great idea. Instead we’re talking about more practical applications: Convince your supervisor you need a day off — or a raise. Get a reluctant colleague to help you with a project. Compel a direct report to get along better with a colleague. Or persuade higher-ups that your department needs a new vacuum truck or more advanced pipeline inspection software.

The good news is that there are more than 100 persuasion tools at your disposal. The bad news: Most people only use three or four, Mortensen says. And to paraphrase noted psychologist Abraham

Maslow, if the only tool in your toolbox is a hammer, you’ll treat everyone like a nail. In other words, you need more than a few skills to become an effective persuader. The do-it-or-you’re-fired mentality may get short-term results, but in the long run this style of persuasion breeds resentment and mistrust, thus salting the ground for ensuing efforts at persuasion.

Becoming a great persuader starts with understanding human nature — the complex world of human egos and emotions. And Mortensen notes that there’s one universal truth about human nature: Even the best idea — a no-brainer by anyone’s standards — will likely meet resistance.

“We just don’t like to be told what to do,” he explains. “Having a better idea shouldn’t prompt resistance, but it does. It’s human nature. We all have egos. We’re not logical creatures. It’s how we’re hard-wired.”

So how do we become great persuaders who can surmount this built-in, knee-jerk resistance? Here are some things to consider:

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 Luke Laggis at 800/257-7222, or email editor@mswmag.com.

Underlying cues. Mortensen says that up to 95 percent of persuasion is tied to what he calls “sub-conscious triggers,” minute things such as words, gestures, smells or even colors that either help us or prevent us from being persuaders and influencers. If you think that’s baloney, consider these research-supported facts:

- Playing the right music in supermarkets makes people shop 18 percent longer.
- Darker colors, especially for guys, make you more credible.
- Facial hair decreases credibility (so ditch the beard before negotiating that raise).

Words matter. Every word we use has an impact, Mortensen says. For example, one study showed that just the mere use of the word “because” in a sentence lent more credence to what was said; when we hear that word, our brains automatically assume a valid reason will follow — even if the reason may be nonsensical.

Also consider how marketers persuade by substituting words like “pre-owned” for “used” and “marbled” instead of “fatty.” Since words do matter, say, “I will,” not “I’ll try,” and avoid weasel words like “may,” “possibly,” “hope” and “almost,” he says.

Personality issues. Consider who you’re trying to persuade and

prepare accordingly; figure out how to persuade them in a way they'd want to be persuaded, not as you'd like to be persuaded. For instance, if you're going to talk to a techno-geek staffer who's very analytical, be prepared to cite more statistics and cut to the chase instead of chatting and telling stories, Mortensen suggests. On the other hand, don't go into a meeting and do a total data dump on someone who's not analytical. "Put in the time up front and figure out how to approach people or you'll lose on the back end," he says.

Ask and ask some more. Influential people tend to ask three times more questions than the rest of us, Mortensen says. Why? By asking people about their concerns and feelings, instead of telling them what you want done, you're actually helping them to persuade themselves. "If you ask questions, they discover the answers themselves," he explains. "Then they're more likely to do what you want because they feel it's their idea. Let them find out what's in it for them."

Pick up the pace. While it may sound counterintuitive, research shows that a faster rate of speech is more persuasive than talking slow. "Most people talk at about 150 to 180 words a minute, but our brains can cruise along and handle 400 to 800 words a minute," he says. "People who talk faster with a high level of energy get rated as more charismatic."

Anticipate objections. When you try to persuade someone that, for instance, your crew needs an expensive vacuum truck, think about the logical objections that'll pop up and be prepared to refute them, Mortensen suggests. A little homework might reveal that a more technologically advanced vacuum

truck could increase efficiency enough to pay for itself within 10 years, for example.

Be likeable. If people like and trust you, there's a 90 percent chance you'll successfully persuade them, Mortensen says. "The challenge is that most of us think people like us and trust us," he points out. "Just because you think you're a trustworthy person doesn't mean people trust you."

Watch what you say. If you bruise someone's ego, perhaps by using the aforementioned hammer-versus-nail approach, the doors of influence slam shut. There's a better way to persuade people, as Mortensen notes with an anecdote about a job where he oversaw customer-service operations as a general manager.

One of Mortensen's direct reports was very belligerent and often yelled at fellow employees and customers. So he set up a meeting and when she arrived, he asked her to sit in his chair. Then he told her that because she'd been an employee at the company longer than him, he was interested in her insights into how she would handle an employee who acted the way she did.

"She said basically the same things I would've said," he recalls. "But this way I didn't have to say them and bruise her ego. In the end, she went ahead and made changes on her own because they were her own ideas. Truly influential people help other people persuade themselves [that something is a good idea]."

So now that you've got the tools, go ahead and negotiate that raise with confidence. Get that day off. Persuade your colleague to help you with that project, and go for that new vacuum truck. You have the tools to make it happen. ♦

THIS MARCH, FIND OUT HOW ROOTX IS CHANGING THE GAME.



www.rootx.com



PARTNER UP

Public-private partnerships can provide greater resources for utilities struggling with deteriorating infrastructure and growing debt

By Michael Deane

As water professionals, we know how difficult it is to explain complicated issues to elected officials and the general public.

Take, for example, one of the more high-profile problems we as water professionals have to deal with every day: water main breaks. According to the U.S. Environmental Protection Agency, there are more than 240,000 water main failures each year and it has projected a \$384 billion gap in funding that will be needed to maintain water infrastructure into 2020.

Another issue is the 7 billion gallons of treated water that never reaches the tap due to leaks. Those leaks cost approximately \$2.6 billion in losses that could be avoided. But when you talk to the decision makers who set your budget and agenda, they want solutions.

There is a way to meet the needs of your community and offset some of the costs. Consider public-private partnerships and how they can help upgrade

your infrastructure as you manage your challenging capital budgets.

Across our nation more than 2,000 communities have benefited from water-related public-private partnerships. These partnerships concentrate on sharing expertise, assets, risks and resources — including access to funding for capital-intensive improvements, modifications and maintenance of water systems.

Limited municipal budgets mean only a fraction of the investment needed for proper maintenance and replacement of our aging water infrastructure is invested at any one time. Public-private partnerships can reduce municipal costs, shift debt burdens and spread the risks. Private water contractors and municipalities can share the financial requirements for a time while ownership remains with the public sector and decreases costs for the community.

Two recent examples of these partnerships benefiting communities are in Bayonne, N.J., and Rialto, Calif.

Limited municipal budgets mean only a fraction of the investment needed for proper maintenance and replacement of our aging water infrastructure is invested at any one time. Public-private partnerships can reduce municipal costs, shift debt burdens and spread the risks.

The Bayonne Municipal Utilities Authority (BMUA) signed a 40-year concession agreement with United Water (and investment firm KKR) for its water and wastewater systems. In this concession agreement the BMUA retains ownership of assets and responsibility for setting rates while the private entity operates the system, invests \$107 million and retires \$130 million of debt for the community.

The City of Rialto signed a 30-year concession agreement with Rialto Water Services LLC, in which the city retains asset ownership while the private entity oversees a \$41 million investment in capital improvements and provides operation and maintenance of the water facility.

As you can see, these communities saw a positive gain with updated infrastructure and, in Bayonne, significant debt relief. They aren't the only ones either. According to an Oct. 13, 2014, Standard & Poor's Capital IQ report, "... the number of infrastructure P3s in the U.S. increased in 2013" and "in the U.S., interest in the P3 approach is growing and several states are developing programs."

Have the conversation with your elected officials, city manager, community leaders and opinion leaders. Talk to them about how these partnerships might help your water system operate efficiently while reducing the community burden and updating and improving your infrastructure.

Through public-private partnerships, you can make an even greater difference in your community. ♦

About the Author

Michael Deane is the executive director of the National Association of Water Companies (NAWC), located in Washington, D.C.

Working well under pressure!
CAM SPRAY

Pressure Washers and Drain Jetting Equipment

Skid and truck mount models up to 7000 psi

Portable Hot and Cold Water Diesel Powered Models

Hot and Cold Trailer Models
Up to 7000 psi
Flows up to 40 gpm
Powered Reels
Diesel powered models

We will custom build to your specifications
www.camspray.com 800-648-5011

wwett BOOTH 2300

DUKE'S to the rescue.

Sewer root control done right.



It's no coincidence our trucks are red. When it comes to saving the lives of sewer pipes, count on Duke's Root Control experts to be there, on the spot, with the best product and service available. Our exclusive Razorooter® II is the only diquat-based herbicide registered by the EPA for controlling nuisance tree roots in sanitary sewer lines. But sewer root control done right means more than using the best products. Our trained professionals apply Razorooter® II, keep track of treatments, remind you when service is due, and save you money, time and effort. Best of all? Our work is guaranteed. With almost 40 years of experience we have helped cities keep their pipes healthy, prevent sanitary sewer overflows, comply with CMOM regulations and eliminate headaches and disruption. Call on Duke's to rescue your system from sewer pipe failures with our guaranteed products and services. **800.447.6687 | www.dukes.com**



 **DUKE'S**
ROOT CONTROL, INC.
Product. Service. Guarantee.

Visit us at No-Dig Booth #427

Visit the site daily for new, exclusive content. Read our blogs, find resources and get the most out of *Municipal Sewer & Water* magazine.



PUMP & GO

Mobile Pumping Stations Are the Future

Historically, major storms along the East Coast have taken a toll on New Jersey's South Monmouth Regional Sewerage Authority pumping stations. But forward thinking and ingenuity led the utility to develop a series of mobile pumping stations designed to stand up to the test. Learn how this model, which has been praised by FEMA, can be the future of pumping stations in flood-prone areas. mswmag.com/featured

OVERHEARD ONLINE

“The proposed general permit is a prime example of regulations run amok. [The Connecticut Department of Energy and Environmental Protection] needs to go back to the drawing board and work with towns as partners in improving water quality.”

— **Municipal Leaders Oppose Proposed Stormwater Regulations**

mswmag.com/featured



FLOODED HOUSES

Early Detection Key To Preventing Frozen Pipes

Collapsed ceilings. Ice walls two stories high. Water pouring out from under doors. Madison Water Utility shares its worst ‘flooded house’ stories. A new and advanced metering system and a water usage tracking tool for property owners are used to help this Wisconsin utility identify and prevent frozen pipes before disaster strikes. mswmag.com/featured



NIGHT MOVES

Municipalities Weigh In On Working At Night

Whether it's for emergency repairs or routine maintenance, working through the evening hours is an unavoidable reality for many municipalities. There can be advantages to working nights, but those are leveraged with the obvious risks. Help ensure the safety of your crew, and don't get left in the dark. mswmag.com/featured

ON THE RISE

U.S. Among Most Attractive Markets for Infrastructure Investment

The United States is ranked as one of the top 10 most attractive markets in the world for investment in infrastructure according to a recent report. It's the first time the U.S. has cracked the top 10. Why did the U.S. jump three spots from 2012, and which country claimed the top spot this year? mswmag.com/featured



Join the Discussion

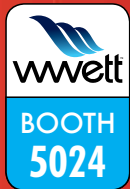
Find us at:
facebook.com/MSWmag
twitter.com/MSWmagazine



Emails & Alerts

Visit **MSWmag.com** and sign up for newsletters and alerts. You'll get exclusive content delivered right to your inbox, and you'll stay in the loop on topics important to you.

A SIGHT TO BEHOLD.



Now
Available for
Android



SPARTAN
FOR TOUGH CUSTOMERS.
SINCE 1943

The future is at your fingertips with Sparvision 200, a state-of-the-art pipe-inspection camera designed with you in mind. Featuring a wireless retina-display iPad® 4 as its screen, the Sparvision 200 offers full tablet computer features like instant snapshots, on-screen drawing and a touch keyboard for captions. With the Wi-Fi-enabled iPad, simply send the photo or video you shot directly to the customer and store your copy right on the tablet. The Sparvision 200 offers a self-leveling color camera, a 512 Hz locating beacon and a 200' high-efficiency, super-slick push rod. Plus, the entire unit is powered in the field with an on-board battery so you can take it anywhere. **If you're looking for the best, look no further.**

MASTER OF HIS TRADE

Hard work, creative problem solving and a quest to continually improve bring honors for Oregon collections operator

By Erik Gunn

Mark James has hauled hay, worked in construction and even spent time as an underwater welder and commercial diver.

But for sheer interest as well as benefit to the community, he'll put his current job up against all of those any day.

James, 48, is a sewer maintenance worker in Redmond, Ore. He loves the job for many reasons, but one is because of the good it does for the community.

"We're helping people every day and they don't know it," he says. For instance, people never think twice about using the toilet. "They don't realize there's a whole team of people on the other side of that flush that makes sure it gets where it needs to go."

Now, James might be just a little less invisible. In 2014 the Pacific Northwest Clean Water Association — covering Oregon, Idaho and portions of Washington state — recognized him as collections operator of the year.

He admits the recognition was "almost embarrassing," although he appreciated it. "I don't go to work every day to try to win an award," he says. "But it was nice that your work doesn't go unnoticed."

'Very deserving'

His boss says James was a perfect choice for the honor.

"Mark's a hard worker. He's been very deserving of this," says Bill Strait, Redmond's wastewater collections coordinator. "He's been very innovative in what he's done here and made a lot of our work processes easier. He has strong ownership of the system and works very hard to make sure it continues to operate how we want. He takes pride in the things he does to make it work better."

The City of Redmond has a population of 25,000. It's primarily residential, serving as a bedroom suburb of Bend, 18 miles away. It's also a heavily tourism-oriented community and is home to several craft brewers.

The brewing industry's volume is easily handled by the city's system, says Strait. Grease is another matter — a major highway that runs through the city and several restaurants along the corridor contribute to grease in the waste stream, necessitating a pretreatment program centered on each user's site.

Busy crew

The sewer collections system is relatively new, having been built in



Mark James, wastewater collections system operator for the City of Redmond's Public Works Department, stands for a photograph at the City's Water Pollution Control Facility. (Photography by Joe Kline)

"I didn't realize how much I actually loved this kind of work until I got into it. I just fell in love with what I do, so it was kind of a win-win."

— Mark James

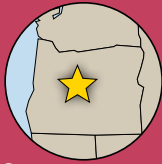
1976. It consists of 135 miles of sanitary sewer pipe, 13 lift stations and 3,254 sanitary sewer manholes. Equipment includes two Vector combination trucks and a CUES-equipped video inspection van.

Operation and maintenance of the collections system is the work of

five people — Strait, James and three other operators — who also provide extra help at the wastewater treatment plant. They also maintain a stormwater system consisting of 34 miles of storm pipe, 3,666 catch basins and 1,718 underground injection control structures (UICs).



Mark James sprays a pressurized stream of water from a Vector 2100 Series hydroexcavation truck while digging up a sewer line to make a repair. At Left: James at the controls of the Vector.



PROFILE:
Mark James

POSITION:
Collections Utility 3

EXPERIENCE:
9 years with Redmond, Ore., water and wastewater division

EDUCATION:
High School Diploma; Certification from College of Oceaneering

MEMBERSHIPS:
Pacific Northwest Clean Water Association (PNCWA)

CERTIFICATIONS:
Oregon collections 3 certification, Oregon wastewater 2 certification, Oregon water distribution 2 certification, California water distribution 3 certification, back-flow and cross connection certifications

AWARDS:
2014 PNCWA collections operator of the year

GOALS:
“Keep finding ways to do my job better, finding ways to make it easier and safer, and win a second Operator of the Year Award.”

“They’re big holes that can hold water and then slowly allow the water to seep back into the ground,” Strait says of the UICs. “Basically, it can look like a big manhole with holes in it, gravel around the exterior and fabric in it.”

Rock around the region is mostly old lava rock, which doesn’t absorb water the way typical soils do, Strait explains. It also makes digging difficult. Crews have to hammer open the ground to install the UICs, blasting the rock to fracture it.

Maintenance responsibilities

James has worked for Redmond going on nine years, working his way up from Utility 1 to Utility 3 in the city’s ranking system.

The job is fundamentally a maintenance position. “We’re charged with maintaining the sewer system to make sure that all wastewater gets to the plant,” says James.

That includes maintaining the lift stations, the collections system and the stormwater system. They do much of the repair work themselves, if the jobs can be completed in a couple of days. They clean and conduct video inspections of the entire sanitary sewer collections system on a five-year cycle and inspect and clean the entire storm system every year.

On the day he spoke with *MSW*, James and his co-workers were clean-



Mark James, right, gives direction to Mark Thacker as he attaches the Vector’s extension tubes prior to excavating a sewer line.

ing up a service line where it feeds into a terminal sewer main. “There’s nothing above it to keep it flowing,” he explained. “It’s a line that doesn’t get a lot of use. What will happen is the solids will separate out from the liquid, and if we don’t take care of it, it will plug up. If it backs up, it’s going to spill out on the street.”

A long-term solution will require a store located immediately adjacent to the problem line to reroute its service lateral, which in turn would demand digging up a parking lot.

Later the same day James and his team were scheduled to inspect the site for a newly installed sewer line. They were to round out the day with some routine cleaning.

That day’s agenda only hints at the daily variety that makes the work

so appealing to James. “You’re doing something different every day,” he says.

Lifelong learner, worker

James was born in Orlando, Fla., and moved with his family to San Diego when he was 2 years old. His father, a U.S. Navy man, owned a construction company after completing 25 years in the service, then finished out his career as a building inspector for the community of La Mesa, Calif.

At the age of 17, James went to work in the first of a variety of jobs. He credits his father for one of his first lessons in the world of work: “My dad taught me when you’re doing something, do it the best you can and then try to do it better.”

Fourteen years ago he got his



The City of Redmond Public Works wastewater collections staff includes (from left) collections system operator Dave Wegener, collections coordinator Bill Strait, collections system operator Mark James, and collections system operator Mark Thacker.

first municipal utility job. His goals were security and stability. “Health insurance was huge — I had never had it,” he says. “And I traveled a lot with my other jobs. This one I was able to stay at home.”

Pay was modest but steady. “You’re not getting rich off it, but you’re work-

ing every day.” What James hadn’t expected was how rewarding the work itself turned out to be.

Move to the Northwest

“I didn’t realize how much I actually loved this kind of work until I got into it,” he says. “I just fell in

“We’re helping people every day and they don’t know it. They don’t realize there’s a whole team of people on the other side of that flush that makes sure it gets where it needs to go.”

– Mark James

love with what I do, so it was kind of a win-win.”

The ability to learn on the job was another plus. “When you start off, you can just have a high school diploma,” says James. In California, he earned higher levels of certification in water distribution and wastewater collections.

James was working in Ramona, Calif., when by happenstance he and his wife found their way to Redmond. His wife’s family had moved from the San Francisco Bay Area up to Spokane in eastern Washington. When his own parents moved to Pennsylvania in retirement, James and his wife — parents of three children — decided they wanted to move closer to her family “so they could see their grandkids.”

They took a three-week vacation to the Oregon-Washington region in search of a place to live and found Redmond. “We bought a house

before we moved up here,” he says. “Then when I got work it was in [sewer] collections — something I was used to.”

Continuous improvement

Since arriving in Oregon he’s continued to upgrade his skills, earning a Level 3 collections certification for the state as well as a Level 2 wastewater treatment certification, which qualifies him to work at the Redmond wastewater treatment plant, where he puts in about one weekend a month as part of an on-duty rotation.

In his time there, the job duties have expanded. “We went from subbing out our minor repairs to doing it ourselves,” James says.

The job has its downsides, he admits: “Whenever something goes wrong and you get covered in raw sewage, that’s never fun.” And the winter weather of central Oregon has taken some getting used to after

A CREATIVE PROBLEM SOLVER

Mark James, 2014 collections operator of the year for the Pacific Northwest Clean Water Association, has shown himself to be remarkably inventive.

Working for the City of Redmond, Ore., James devised and built a metal support to hold a pump hose in place when stormwater is being pumped into a manhole. Normally, the pump would have to run at a low speed to prevent the water pressure from pulling the hose out of the manhole. James says with his contraption, “you can run the pump at full speed and it won’t budge that hose.”

He’s also devised and welded a variety of hooks, brackets and other tool mounts onto the municipal vehicles to make it easier to carry around the shovels and bars used on the job every day instead of simply piling them in the back of the truck.

“Like my dad said — find a way to do it better,” James says. “I’ve got the freedom here to do that. I don’t need to ask to try any of these things.”

a lifetime in Southern California. Then there's the hazard of working in the streets as traffic zooms by.

But he appreciates the small blessings of his workplace, such as being able to change out of work clothes before he goes home.

Strait says when he first saw James' resume, "I was a bit surprised he was looking to go into the wastewater field here. He has a lot of skills — some that can be applied to a lot of high-level jobs."

Capitalizing on experience

Those skills have made it possible for James to take the lead on field repairs, says Strait — everything from coordinating and managing the jobs to running the backhoe when crews have to dig.

While he's continued to earn specific technical certifications along the way, James has never forgotten the lessons learned in his earlier work. "Every one of those jobs taught me something," he says.

His construction career taught him how to drive commercial vehicles, qualifying him for a CDL, and as a commercial diver he learned welding — both underwater and topside.

"I do most of our fabrication around here," he says. "If we need something built to help me out somewhere else, I can build it."

James is focused on improving the system. "He's always coming up with ideas and thinking ahead, trying to make sure that things are being maintained properly," Strait says.

He's learned how to operate a wide range of equipment and makes it his business to understand the system in depth. James is the only collections-side employee to also serve on call at the wastewater plant, and he's knowledgeable about the details of the system's lift stations as well.

"He's an excellent troubleshooter," Strait says. "He leads by example. He does a lot of the training of current and new employees."

A surprise

Off the job, James admits he has "some fishing poles I haven't broken out in a long time." But he enjoys spending time with his wife and three children — two daughters, one with special needs, and a son who's getting into skateboarding. He tinkers with vehicles in a backyard

shop and plays golf less often than he'd like to. "If I could golf all the time, I would," he says.

The fact James was even nominated for the award — by Chris Miccolis, Redmond's wastewater division manager, who is also the Oregon president for PNCWA — was initially a surprise to James. But then he won that award and went on to earn recognition at a higher level for the Oregon region of PNCWA and then for the PNCWA as a whole.

And while he is grateful for the recognition, he got something else from attending the PNCWA meeting at which the award was granted: inspiration. That, he says, came from Dale Richwine, one of the speakers at PNCWA's Vancouver meeting in 2014.

"He said we're silent heroes — we save lives every day of everybody in our community just by keeping the raw sewage off the street."

It's a title that James takes to heart. ♦



TRENCHLESS is a puzzle we solve daily

WE CAN FIT ALL THE PIECES TOGETHER FOR YOU.

You could get your liner, epoxys and resins from one guy. Your wet-out table and inversion drum from someone else. Maybe another company has a pipe-inspection camera that looks like it would work, and yet another outfit has some cutters that you could use. Of course, if you need pipe-bursting equipment, you talk to a totally different guy... Or you could just let the Trenchless experts at HammerHead put it all together for you. The best products. Bonafide expertise. All from a single source that has been earning your trust for over 25 years.



HEAD ON OVER TO WWW.HYDRALINER.COM TO LEARN MORE ABOUT HAMMERHEAD'S COMPLETE TRENCHLESS LINE-UP.

MOLING | RAMMING | BURSTING | HDD ASSIST | WINCHES | CIPP



FEATURED PRODUCTS FROM:

CUES
800/327-7791
www.cuesinc.com
(See ad page 27)

Vactor Manufacturing
800/627-3171
www.vactor.com
(See ad page 50)

ROOTING OUT SSOs



Regular root control an important part of compliance initiative to reduce blockages and costs

By Sheila Joy

Virginia Beach, Va., has a land area of 249 square miles and a population of 248,000. To serve this growing city, the Virginia Beach Department of Public Utilities has over 400 pumping stations, nearly 1,800 miles of gravity pipe and 190 miles of force mains.

The city is located at the mouth of the Chesapeake Bay with little topographical relief, which results in design of shallow gravity sewers and a multitude of pumping stations to convey flow from its customers to the local treatment facilities.

Virginia Beach is also party to a Special Order by Consent, issued by the Virginia State Water Control Board to reduce SSOs, rehabilitate the sanitary sewer system, reduce inflow and infiltration, and make long-term improvements to provide adequate system capacity.

“In order to comply, we knew we needed to develop a Management, Operation, and Maintenance [MOM] program,” says Stephen Motley, regulatory compliance manager for the City of Virginia Beach. “In 2005 we hired Brown and Caldwell to assist us in the development of our MOM program. We quickly learned that we needed to be more proactive rather than reactive. A great example of this was our hotspot-cleaning program. Prior to MOM development, our crews would simply visually inspect through manholes and if the flow appeared to be impeded, we would clean the lines. We weren’t solving the problem before it happened — we were waiting until the problem had already developed. We modified this program to proactively clean the trouble lines at regular intervals of 30, 60 or 90 days. Today we clean about 70,000 feet per month as part of this program.”

Implementing a comprehensive MOM program and understanding the city’s main strategic goals was the first step, says Aaron K. Nelson, P.E., vice president of Brown and Caldwell in

Virginia Beach. “Next came the analysis phase to determine the cause of stoppages and overflows, maintenance history, the work process and system characteristics, including condition assessment. Inspections and thorough analysis showed that grease and roots were the No. 1 and 2 listed causes of SSOs, respectively, so we started there.”

Upon discovery of these findings, the city started a FOG program, inspecting food establishments for compliance. “We did an educational inspection at first,” Motley says. “It was very informal, but we wanted to educate the establishments about the things they need to do to maintain grease control devices, help them understand the records they need to keep and make

sure they understand what would be investigated during a compliance inspection. We changed our city ordinance to enforce compliance inspections and we now have a full-time city inspector dedicated to ensure compliance is met.”

In addition to the ongoing education and support of food establish-

ments to minimize grease in the sewer system, the city also maintains a grease control program using Jet Power II, a grease liquefier that leaves pipes virtually grease-free.

To tackle root obstructions in the sewer pipes, Brown and Caldwell recommended a pilot program with Duke’s Root Control to kill live roots in the system. “Our recommendation of Duke’s was based on our personal experience seeing positive results on other projects and the fact that environmental concerns were minimized with Duke’s,” Nelson says.

In order to apply chemical root control products in Virginia Beach, approval must be granted by the Hampton Roads Sanitation District. The HRSD issues a permit dictating how much root control can be done on a given day to ensure treatment plant limits are not exceeded. “Duke’s uses a product called Razorooter II, which is the only diquat-based herbicide registered by the U.S. Environmental Protection Agency for controlling tree roots in sanitary sewer line collection systems,” Nelson says. “Last summer the EPA also lowered the signal word on Duke’s diquat dibromide labels from ‘warning’ to ‘caution,’ giving us even greater peace of mind.”

Results

The city documented an instantaneous return on its investment via

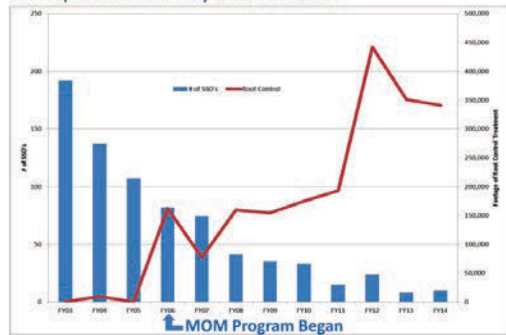
“You don’t cut your grass once and then forget it the rest of the summer. You don’t brush your teeth once a week, or shave once a month. You need to be continually on top of maintaining the high levels of service our customers desire, and this MOM program and all of its key elements is an essential ingredient.”

– Stephen Motley

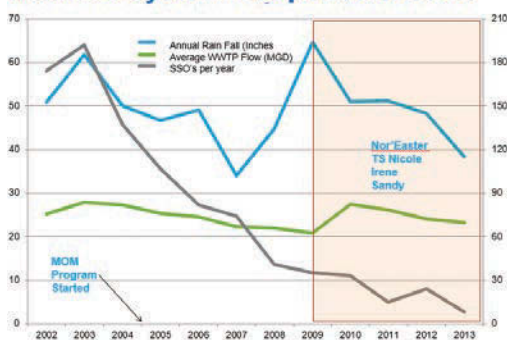


Root Control Program

Has helped reduce Sanitary Sewer Overflows



Minimal System Response to Rain



Comparable Program Element Costs

Activity	Program Cost Annual (\$M)	Estimated 20Yr Program Cost
Key MOM Program Elements		
FOG Program	\$0.3	\$6
Root Program	\$0.5	\$10
Wet Well Cleaning	\$0.3	\$7
SSES	\$0.5	\$10
Flow Monitoring	\$0.6	\$12
Engineering/Modeling	\$0.6	\$12
Find & Fix	\$5.0	\$100
MOM program costs	\$7.8	\$157
Consent Order Program		
SSES Field work		\$14
Engineering		\$5
Comprehensive Rehab Plan		\$350
Consent Order Program Costs		\$369

reduced frequency of SSOs after implementation of the MOM program. It is also notable that after the first year of the formal root control program, the number of SSOs dropped over 30 percent and have continued to drop substantially every year since. Motley attributes this to regular maintenance.

“Once we saw the positive results from the pilot root control initiative, we increased the program and it is now part of our ongoing maintenance for the entire system. The best part is that Duke’s comes in and takes care of everything. Our guys don’t want to do it themselves. It’s not their job. They don’t want to deal with chemicals, and they shouldn’t have to. So the Duke’s crew comes in, applies the product and helps us keep track of treatment history and when and where maintenance is due.”

The continued drop in SSOs as a result of ongoing MOM program efforts and ramping up of the root control component is especially impressive considering the city experienced 100-year storm events from 2009 to 2013, including tropical storms Nicole, Irene and Sandy.

“This comprehensive MOM program, which includes a sizeable root control effort, is a prime example of a success story that can be shared with other similar communities,” Nelson says. “It documents capacity assurance results and reductions in SSOs, which was our primary goal, without high cost of implementing traditional I&I reduction efforts.

“Since the city was initially put under the consent order we began collecting flow data, paying close attention to the root program, hotspots, cleaning and FOG. We began plotting data, including wastewater flow, rainfall accumulation and specific MOM program elements. We anticipated that root control might contribute to an increase in wet-weather flows, and result in a need for the addition of I&I-reducing MOM program elements. However, we noted little change in flow even during substantially wetter periods. This contradicts industry expectations, but the results were pretty clear in the data.”

Financial impact

“We calculated that if we simply followed the consent decree outline, for a traditional comprehensive find-and-fix program to reduce I&I, the city would spend about \$369 million and that program would take approximately 20 years to implement,” Nelson says. “But the MOM program we have implemented for the city, with refinements including ongoing root control, costs about \$7.8 million per year, not including potential escalations in the economy. All things being equal, over 20 years, the cost would be about \$157 million, significantly less than the nearly \$400 million estimated for a traditional once-and-done solution that would likely require a

reinvestment 20 years down the road.”

What’s next?

The MOM program was approved by the Department of Environmental Quality in August 2010, and the implementation has been executed with ongoing performance measurement assessments as well as prioritization and planning for a 50-year cycle.

“The next step for us is monitoring,” Motley says. “We now have a good, solid foundation, fewer environmental impacts and a process to continually get to the cause — grease and roots — instead of our previous reactionary approach to clean when the stoppages occurred. We have made great strides.

“Even with our many successes, there is still a lot of pressure to keep our MOM program effective and sustainable. For those areas where ongoing maintenance is required, such as root control, diligence is key. You don’t cut your grass once and then forget it the rest of the summer. You don’t brush your teeth once a week, or shave once a month. You need to be continually on top of maintaining the high levels of service our customers desire, and this MOM program and all of its key elements is an essential ingredient. The refinements to our existing program to include hotspot cleaning, a FOG program and root control really minimizes headaches for us and allows us to use our city resources to focus on other collection system areas of responsibility in the MOM program, including gravity sewer condition assessment, manhole condition assessment, force main condition assessment, right-of-way/easement maintenance, valve maintenance, private systems and vacuum systems.” ♦

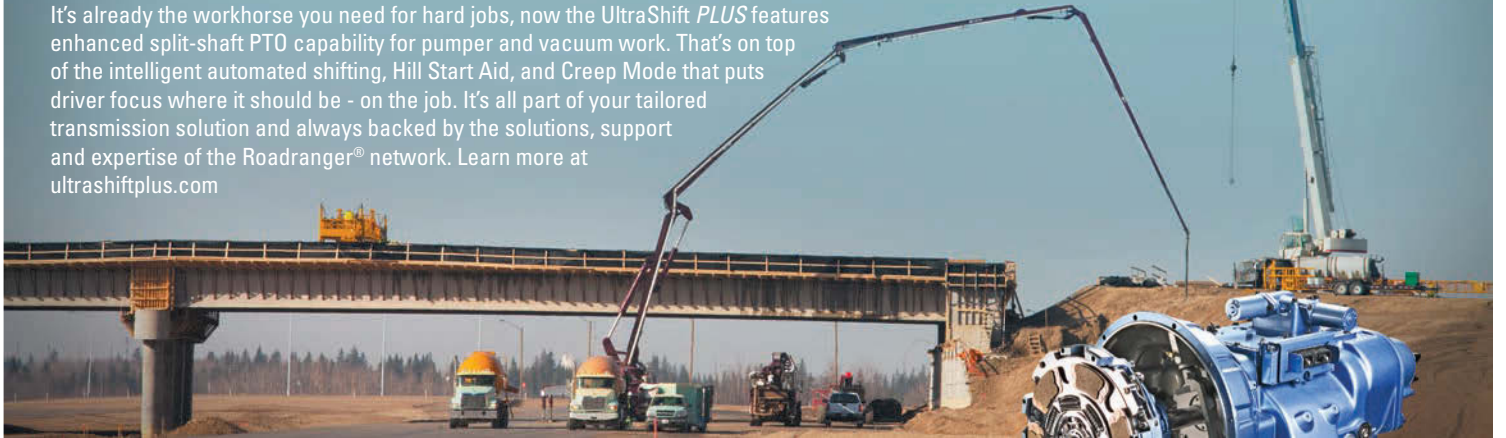
GET
EMAIL NEWS
ALERTS FOR
MUNICIPAL
SEWER &
WATER

Go to
mswmag.com/alerts
and get started today!

THE BEST TOOL FOR THE JOB JUST GOT BETTER

The Eaton® UltraShift® PLUS Series. Rugged. Reliable. Ready to work.

It's already the workhorse you need for hard jobs, now the UltraShift PLUS features enhanced split-shaft PTO capability for pumper and vacuum work. That's on top of the intelligent automated shifting, Hill Start Aid, and Creep Mode that puts driver focus where it should be - on the job. It's all part of your tailored transmission solution and always backed by the solutions, support and expertise of the Roadranger® network. Learn more at ultrashiftplus.com



Powering Business Worldwide

BACKED BY
Roadranger
SUPPORT

Pipe Inspection Camera Centering Devices and Accessories Self-Centering Protective Cases for All Push Camera Systems

The Universal Roller Skid:

Fits Any Push Camera and Pipes 6" to 12"

- Three pivoting arms dynamically adjust to keep the camera centered at all times.
- Six 2" wheels help the apparatus negotiate 6" x 45° elbows and 8" x 90° bends.



- Housing Protects Push Camera
- Safety Harness For Easy & Emergency Retrieval

MSW Readers Can Save 10%
With Coupon Code: **msw2015**
*One time only, valid through December 31st, 2015



Pro Kit:
\$729.99

Mini Roller Skid: For 4" to 6" Pipes



Only \$99

URS Only:
\$399



US Patent # 7505063

Get The Pro Kit Today! Includes The URS Skid, The Mini Roller Skid, The TrapMaster, The Pole Cat, and more...
Available Online: www.cplproducts.com

MADE IN USA
CPI Products
PITTSFIELD, MA

Expect beyond the expected.

**Mainline TV Inspection
Lateral Launch Inspection
Laser Pipe Profiling
Joint Pressure Testing
Point Repair**



With Rausch CCTV pipe inspection systems, things are looking up.

rausch USA

www.rauschusa.com



ON THE RISE

Budding country music star Cole Swindell headlining the WWETT Industry Appreciation Party

By *Kyle Rogers*

Country music singer/songwriter Cole Swindell is one of Nashville's newest stars and he plans to make some new fans when he takes the Industry Appreciation Party stage at the Water & Wastewater Equipment, Treatment & Transport (WWETT) Show in February.

The 31-year-old didn't gain prominence — or a record deal for that matter — until his independently released debut single, "Chillin' It," started climbing the charts in 2013. It eventually reached the top spot on the U.S. *Billboard* Hot Country Songs chart, but Swindell knows there's a good chance some people in the audience will be unfamiliar with his material. And he's fine with that.

"Sometimes it's good to get in front of a new crowd that might not know a lot about you," Swindell says. "You get to try to make them a fan by the end of the night. I love challenges like that.

"I'm going to get up there and do what I do. I'm looking forward to it."

Lessons from a fellow Georgian

Though still a newcomer to the country music scene, Swindell knows what it takes to put on a good show. He went on tour with Luke Bryan in 2014 and prior to that spent a considerable amount of time on the road with him, selling merchandise and writing songs for his fellow fraternity brother from Georgia Southern University as Bryan evolved into a country music star.

"For however long he's out there on stage, he's going to give it all he's got. That's something I've learned," Swindell says. "People spend their hard-earned money and their time to come see us, so you want to give them the best show you can."

He says Bryan was also a big influence on his decision to launch a career in country music in the first place.

"The first time I heard his music was over 10 years ago, and I thought he had it," Swindell says. "Even then I was like, 'This guy is going to be huge.' He's from the same part of Georgia but I didn't know him until I had gotten to college and he had already moved to Nashville. Having a guy from just a few minutes from where I grew up writing songs I thought were amazing, that gave me the confidence. 'Hey, if he can do it, maybe I can do this.' It really gave me the confidence to go after it and just focus and work hard."

From songwriting to stage

Swindell says he has been a fan of country music all his life but he didn't start singing until he was in college and began playing the local bars. After receiving the merchandise sales gig on Bryan's team after graduation, Swindell started to get into songwriting. He has written Bryan's "Just a Sip," "Beer in the Headlights," "Roller Coaster," "Out Like That," "I'm Hungover," "I'm

in Love with the Girl,” “Love in a College Town,” “Shore Thing,” “Shake the Sand” and “The Sand I Brought to the Beach.” He’s also written songs for Craig Campbell, Thomas Rhett, Scotty McCreery and Florida Georgia Line.

Following the success of “Chillin’ It” in 2013, Swindell received a record deal. The first single off his debut album, “Hope You Get Lonely Tonight,” which was co-written with Florida Georgia Line, also became a hit. It reached No. 1 on the U.S. *Billboard* Country Airplay chart.

“I didn’t even have a record deal when we wrote that song,” Swindell says. “I always thought they were going to record it. The second they said it was cool that I recorded it, I told them, ‘This will be a single for me one day if y’all let me record it.’ The writing process was fun. They’re good friends of mine and I’m so proud of all their success. It’s cool to get to have a little bit of each other’s success.”

With his first two singles each topping the charts, Swindell says there’s pressure to continue the trend, but he doesn’t mind it.

“You come out with a No. 1 single and then you have to follow that up and you get fortunate and have two No. 1’s. Then you have to follow that up. But I think that’s a good thing, you know? The streak’s not going to go on forever and I’m realistic, but we’re going to try. I want to give the fans and radio the best songs I can, and I think [reaching No. 1] is a good goal. If you don’t reach the No. 1 spot at least you gave it a shot.”

“Sometimes it’s good to get in front of a new crowd that might not know a lot about you. You get to try to make them a fan by the end of the night. I love challenges like that.”

Cole Swindell

The coming year

His debut album, two straight No. 1 singles and a nomination in the Best New Artist of the Year category at the Country Music Association Awards have made the past year quite the start to Swindell’s country music career. For the coming year, he’s already scheduled to join Jason Aldean for the second leg of the “Burn It Down” tour beginning in February.

“Jason is another huge influence and there’s another Georgia boy so, man, I couldn’t have picked anyone better to go on tour with. That’s going to be an awesome way to start off 2015,” Swindell says.

That same month he will be taking a break from the tour to play the more intimate Sagamore Ballroom venue at the Indiana Convention Center for WWETT attendees. Swindell says his hope is that he can add a little “pleasure” to the “business” that will undoubtedly

be a primary focus for many trade show attendees that week.

“They could’ve picked a lot of people [to play the Industry Appreciation Party] and for me to get to do it, that’s cool,” says Swindell. “It’s a different setting [than a tour stop] and there will be business folks in there, but I want to let them have a little fun that night. That’s going to be my goal — make sure they have a good time.” ♦

THIS PARTY AIN’T NO ONE-TRICK PONY

Cole Swindell may be the big draw at the WWETT Show’s Industry Appreciation Party on Wednesday, Feb. 25, but he won’t be the only highlight that night.

It all begins at 4 p.m. when the doors open to the party’s new venue, the Sagamore Ballroom on the second floor of the Indiana Convention Center. The 25-cent tap beers start flowing at 5 p.m. and the evening’s first musical act, Blackjack Billy, will take the stage an hour later. The four-member Nashville-based band is best known for their 2013 debut single, “The Booze Cruise.”

The winner of the WWETT truck giveaway will be announced shortly after Blackjack Billy’s set, at approximately 7 p.m. All registered WWETT attendees are automatically entered into the contest for the tricked-out 2014 Chevrolet Silverado 1500 4x4 Extended Cab, or alternately \$35,000 cash, being given away in celebration of the show’s 35th anniversary. Twelve contestants will be randomly selected beforehand and invited to participate in the event that will determine a winner.

The party will conclude with a performance from Swindell, who is set to take the stage at 7:30 p.m.

T&T Tools, Inc.
800.521.6893

Probes ▼ Hooks **T&T Tools, Inc.** Probes ▼ Hooks

Hooks...

- ★ Heat treat for long life
- ★ Manhole Cover Hooks
- ★ Septic Tank Lid Hooks
- ★ Many styles available
- ★ “T” handles for two hands or compact “D” handles

Probes...

- ★ Insulated, Standard and Specialty
- ★ Metal shafts: 3/8 round or hex
- ★ Replaceable hardened tips
- ★ Optional “slide” available to make your probe a mini-slide hammer

Call for a FREE Catalog
www.MightyProbe.com
Email: sales@tandttools.com Fax: 800.521.3260

wwett BOOTH 6000



AP/M PERMAFORM
The trenchless solutions company



Providing Trenchless Solutions Through Our Network Of Certified Applicators Since 1975.

Visit us at WWETT Feb 24-26, 2015 Indianapolis IN Booth #2113 • Territories available for qualified applicators

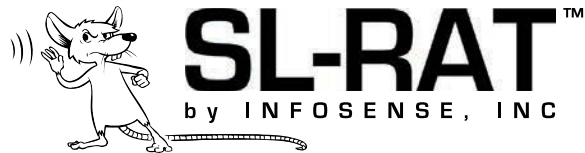
Centrifugally cast storm and sewer pipe rehabilitation



Centrifugally cast manhole rehabilitation



www.permaform.net • 800-662-6465 • www.centripipe.com



Sewer Line Rapid Assessment Tool

A new way to focus camera and cleaning resources.

- Less than 1/10th the cost of camera inspection
- Patented Active Acoustic technology
- No flow contact
- Reduce cleaning effort by 50% or more
- Screen over 10,000 feet of gravity-fed sewer per day
- Millions of feet inspected
- Train operators in minutes
- Rugged field-tested construction

"It is a revolutionary change to the way collection systems will be managed." – Major Utility Engineer

877-747-3245
sales@infosenseinc.com
www.infosenseinc.com

Winner 2012
WEF Innovative
Technology
Award



THE FINEST LATERAL SERVICE INSPECTION TOOLS

LAMP II LATERAL & MAINLINE PROBE WITH MINI PAN & TILT CAMERA

- Navigate through multiple "wyes", bends, and sweeps
- Self-leveling camera, 360 degree continuous pan and tilt capabilities
- Built-in wiper system keeps the camera lens clean
- Built-in multi-frequency sonde transmitter
- Traverse up to 1000 ft. to avoid multiple set ups



Launches in all laterals with or against the flow in 6" pipe and larger!



PORTABLE LATERAL & MINI-MAINLINE PUSH SYSTEM **MPlus+**

The CUES MPlus+ offers the most flexible and feature packed lateral and mini-mainline push system on the market. The advanced MPlus+ system with stainless steel frame integrates video titling, video observation coding, digital recording and portability with optional line tracing into an easy to use, compact package.

Contact CUES for a discussion & demonstration!



"The Standard of the Industry"



HGACBuy **NJPA** AWARDED CONTRACT

800.327.7791
www.cuesinc.com
salesinfo@cuesinc.com

NOTHING FOR GRANTED

Madison Water Utility takes a multipronged approach to improving infrastructure and sustaining water resources

By Jim Force

Madison Water Utility equipment operator Pat Reagan excavates material from the access pit on a water main rehabilitation project as Donald Smith prepares to clear the pavement. Access pits for these projects are typically only 6 by 8 feet, located approximately 500 feet apart. (Photography by Mary Langenfeld)

Even though the city is nearly surrounded by lakes, Madison, Wis., doesn't take water for granted.

To protect its water supplies and infrastructure, the Madison Water Utility is fully committed to water main replacement and rehabilitation, advanced metering and online water-use tracking, wellhead protection, water conservation and a unique public outreach program that supplies cold freshwater to attendees at area events and gatherings.

And while water usage dipped to 68.5 gallons per person per day in 2013, the utility's goal is a daily usage rate of 58 gallons per person by 2020.

"Sustainability is at the core of everything we do," says Madison Water Utility General Manager Tom

Heikkinen. "It's our responsibility to make sure our children and grandchildren inherit a water system that is as good or better than what we have today."

Madison's drinking water is drawn from a deep sandstone aquifer, pumped to the surface through

and fluoride to the supply at each wellhead. Then, seven pumping stations move 28.3 million gallons per day of finished water to the utility's 67,800 connections, which include residences and businesses as well as major medical facilities and the University of Wisconsin's main campus.



"Last year we had over 300 main breaks. These are catastrophic events with a lot of water loss and a significant amount of expense in time, equipment and materials. But in places where we've replaced or rehabbed the water mains, we haven't had a single break."

— Adam Wiederhoeft

22 wells. Naturally filtered, it's of such high quality that at most wells it only requires disinfection before being pumped into the city's 828-mile-long distribution system, which serves Madison, Shorewood Hills, Maple Bluff, portions of Fitchburg and the towns of Madison and Burke.

Small feed systems add chlorine

The Madison Water Utility crew discusses the day's project before setting off to its respective sites.

The utility tests the water from each well daily.

The system includes 10 pressure zones, six elevated towers and 24 ground-level reservoirs that provide 33 million gallons of total storage capacity.

Important infrastructure

Because the water infrastructure is so important to the community's high quality of life, Madison has *(continued)*



PROFILE: City of Madison, Wis., Water Utility

DATE FOUNDED:
1882

POPULATION SERVED:
Approximately 250,000

AREA SERVED:
City of Madison, plus a number of surrounding communities and townships

CONNECTIONS:
67,800 residences, businesses, universities and hospitals

FLOW:
28.3 mgd

INFRASTRUCTURE:
22 deep wells, 828 miles of water mains, 7 pump stations, 6 storage towers, 24 ground reservoirs, 33 million gallons total storage, 10 district pressure zones

ANNUAL OPERATING BUDGET:
\$13 million

WEBSITE:
www.cityofmadison.com



OUT OF SIGHT, OUT OF MIND

INFILTRATION IS OUT OF CONTROL

Every city battles groundwater migration in the sewer system. Infiltration attacks the integrity of underground infrastructure resulting in excess flow, reduced capacity, higher maintenance, shorter lifecycle, and greater expense to rate-payer. Unresolved, the cost to rehabilitate or replace increases exponentially.

Injection grouts are the low-cost, high-reward solution engineered specifically to mitigate infiltration at all four points of entry: mainlines, laterals, lateral connections and manholes. Acrylamide grout creates a positive seal outside the structure by forming a protective gel/soil matrix, and according to the U.S. DOE, has a 362 year half-life in soil.

Common sense leads to common practice. If you specify, manage, or rehab sewer systems, **Grout First** is the renewed battle-cry. Complimentary to all other trenchless technologies, grouting stops leaks and stabilizes soil. To restore integrity, chemical grouting remains the only proven method to stop infiltration.

Engage with Avanti. As the leading producer of acrylic, polyurethane, and ultrafine cement grouts, Avanti serves more engineers, contractors, and public works authorities than any other resource in North America. You will understand why when you visit www.AvantiGrout.com or call **800-877-2570**.



AVANTI

Stop leaks. Stabilize soil.
Control groundwater.
Permanently.



Chad Vox of Fer-Pal assembles the reinstatement cutter as assistant Nick Paul looks on.



Don Russell centers and levels a valve box prior to backfilling the access pit.

embarked on the daunting task of replacing nearly half its water mains — some 400 miles of pipe — over the next 25 to 30 years. Some of the mains date to the late-1800s; many other lines were laid during the 1930s, '40s and '50s and are made of spun cast iron, a brittle material prone to breaks.

Adam Wiederhoeft, the project engineer responsible for water main rehabilitation and replacement projects, says catastrophic main breaks have been completely eliminated where water mains have been rehabilitated or replaced.

“Last year we had over 300 main breaks,” he says. “These are catastrophic events with a lot of water loss and a significant amount of

ment and relining.

“We’ll do full pipe replacement where major street reconstruction is scheduled,” he says. “All city departments and utilities — sewer, stormwater, gas and electric — may be involved.” The utility is open to and has used numerous installation methods — from traditional open-cut trench installation to trenchless methods such as horizontal directional drilling, jack and bore, pipe bursting and more. Cement-lined ductile iron pipe wrapped in plastic sheeting is the choice for replacement.

Rehabilitation with pipe relining occurs in areas that have experienced major pipe breaks, but total street reconstruction is not scheduled. “We isolate areas where we’ve had breaks

“It’s our hope that at some point all of our customers — not just a few — will log on to see how they’re using water when they pay their bill online.”

— Amy Barrilleaux

expense in time, equipment and materials. But in places where we’ve replaced or rehabbed the water mains, we haven’t had a single break.”

Madison’s replacement/rehabilitation program is ramping up from 1 to 2 miles per year in the past, to 7 to 8 miles a year now. The utility plans to be working at a 10- to 12-mile-a-year pace by 2020.

It’s costly, averaging about \$950,000 per mile. “We spent \$7.5 million in 2013 and expect to be spending \$12.7 million annually by the end of this decade,” Wiederhoeft says.

He says the utility carefully prioritizes the projects between replace-

and where street resurfacing may be scheduled,” says Wiederhoeft. “If the pipes are adequately sized for fire protection and are safely away from sewer lines, they become top contenders [for relining].

“We started using structural CIPP to reline old water mains in 2011,” Wiederhoeft says, noting that Madison was the first water utility in Wisconsin to do so. A contract awarded to Fer-Pal, using the Aqua Pipe technology developed by the Canadian firm Sanexen, served as a pilot project in that first year.

In the Aqua Pipe system, the liner is pressed and held against the



Equipment operator David Laux removes boards from the access pit shoring system prior to backfilling and restoring the pit.

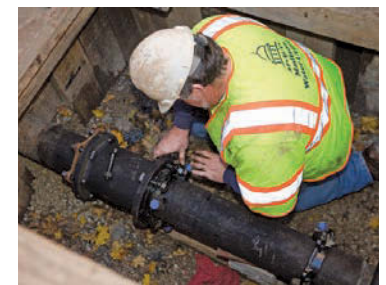
inside wall of the host pipe with water pressure. The water is circulated through a heater to raise the temperature and trigger the epoxy cure.

Since that first year, however, the utility has taken on more of the supporting tasks, including excavation, water main reconnections, hydrant and valve replacement, restoration and conducting all the necessary water quality sampling and testing procedures.

“We are looking at other cities to see how they are handling more and more of the work in-house,” says Wiederhoeft. “As we ramp up the number of projects, timing and scheduling become more critical.”

Don Russell, lead worker on the relining projects, says bringing more of the ancillary work in-house keeps the utility’s staff involved in the project and saves money.

Russell says that while specialty



Lead worker Bob Kempfer secures bolts on a ductile iron pipe connection located between two CIPP-lined water main segments.

tasks like tapping into the liner and arranging the temporary water systems are handled by the lining contractor, the Madison staff has been digging all the access pits, replacing connecting pipes to hydrants and handling the asphalt reconstruction. “It’s something we’re already familiar with,” he says, so no special training is required.

In addition to the CIPP method
(continued)

Next Generation camera systems feature Wireless Streaming Video to your iPhone, iPad or Android device via our MyTana Viewer App.

The Inspect, Locate and Leak Detect Package

One Package does it all!

Includes:

NGX10 Inspection System: Next Gen color, self-leveling camera, 200ft push rod and the CBX15 control box
LD30 Leak Detector

ACCU-STIC 512 Hz Locator
MSA-NG-PCAM: Next Gen color, mini fixed-position camera, 100ft push rod
PIPEHORN 800HL Dual frequency locator and more!



Made in the U.S.A.

www.mytana.com

800.328.8170
fax: 651.222.1739

MyTana

Contact us for your FREE full line catalog today!

CABLE MACHINES JETTERS PUSH CAMERAS FOR MAIN LINES & DRAIN LINES LOCATORS RELATED PARTS ACCESSORIES

ROYAL FLUSH!

Be the Big Winner with ENZ Flushing Solutions!

Whatever your unique flushing challenge, Enz has a nozzle designed specifically for your job. Whether you are removing mud and loose rubble in run-off drains, flushing enormous quantities of sand and gravel from surcharged older channel systems, or cleaning storm drains, culverts and pipes up to 100" in diameter, Enz has the solution for you.

Enz stacks the deck when it comes to the most efficient flushing systems on the market!

POWERFUL

EJECTOR NOZZLE
Amplifies water flow 5X
Max. Working Pressure:
3800 psi



VERSATILE

GRENAD-BOMB
Combines high performance & versatility
Max. Working Pressure: 4000 psi



DURABLE

FLOUNDER
Compact & aggressive water jet
Max. Working Pressure: 4000 psi



RELIABLE

BULLDOZER
Drastically reduces clean-up time & water consumption
Max. Working Pressure: 4000 psi



Got a Flushing Problem? We Have the Solution—
Call 877-ENZUSA1 (369-8721) for A Dealer Near You!



1585 Beverly Ct., Unit 115 • Aurora, IL 60502
www.enz.com



The Madison Water Utility crew includes (back, from left) Tom Rosemeyer, Pat Reagan, Donald Smith, Dan Wagner, John Zimmerman, David Laux, Tyler Dickens and Adam Wiederhoeft. Front: Dave Rodefelf and Bob Kempfer.



of relining, Madison is also exploring spray-applied structural lining systems. “The end result is about the same [as CIPP],” says Wiederhoeft. “It will enable more contractors the opportunity to participate on our relining projects.”

Whichever relining method is used, the utility saves about a third of the cost of water main replacement, Wiederhoeft estimates.

Metering and tracking

If Madison’s underground infrastructure is out of sight, out of mind, the city is trying to make water usage easy to see and top of mind.

A new automated metering (AMI)

system from Itron and online water tracking feature (Harris Utilities) are designed to make citizens very much aware of their water usage and to help the community reach its ambitious water use reduction targets.

“Until just a couple of years ago, we were reading meters by going from house to house,” says Amy Barrilleaux, public information officer for the utility. “But now we’ve installed the AMI system, enabling us to read water usage remotely and bill monthly. We share that data with our customers. They can see how much water they use without having to run down to the basement, take a reading, then shower and run back

down to the basement to see how much water they used. Customers don’t want to do that. Now they can view their usage down to the hour from a computer or smartphone.”

The utility conducted an extensive public outreach campaign to support the installation of the AMI system in each of 67,800 customer locations. The utility called the \$14 million effort Project H2O, and it took two and a half years to complete.

“It was a giant leap,” Barrilleaux says. “We went from the most outdated system to cutting-edge technology.”

The e-billing capability has led to another innovation — the ability

for customers to track their water consumption online. About one-third of Madison’s customers already use e-billing, and now they can access the tracking feature from the e-billing page and view their precise water consumption.

Barrilleaux says the utility installed the online feature at a cost of \$50,000 and put it into play last October. Barrilleaux says 1,200 customers signed up for the online tracking feature in the first month.

“It’s a great conservation tool for our customers,” says Barrilleaux. The feature shows water usage history for each account and can be set up with an alert that notifies customers by email when they have reached predetermined water usage amounts.

UTILITY TACKLES LEAD SERVICE REPLACEMENT

Madison water customers are not the only folks benefiting from the city water utility’s forward-looking programs.

Having recently completed an innovative lead service replacement program, Madison drew the attention of the EPA and could serve as a model for other U.S. utilities faced with high lead content in drinking water.

The Wisconsin utility broke the mold in the late 1990s and early 2000s when it successfully campaigned for replacing lead service lines instead of adding corrosion-control chemicals to comply with federal lead and copper rules.

According to accounts on the utility’s website, Madison would not consider using phosphoric acid to control lead corrosion because of concerns over phosphorus contamination of area lakes and groundwater.

After years of discussion, Madison convinced regulators to allow the utility to

skip chemical addition altogether and go straight to lead service replacement.

Convincing the public to pay for the replacement of lines on private property was another challenge, but it was offset somewhat by the utility’s incentive to pay half the property owner’s cost up to \$1,000.

In 2000, however, the Madison Common Council approved the program and the utility began the daunting task of replacing over 8,000 lead service lines. The project was finished in 2011 and the utility considers it a crowning achievement.

“Knowing that lead service lines are the principal source of lead in drinking water and doing what you can to remove lead services, certainly it’s something to be very proud of,” says Joe Grande, water quality manager for the utility. “In the end, I think this is where utilities are going to be pushed.”

He could be right. As the EPA considers revising its lead and copper rule, Madison is one of a handful of utilities the agency is looking to for information that might someday help others deal with lead.



Don Russell shovels loose gravel as backfill material is compacted in the access pit after reconnecting the newly-lined water main and replacing the existing valves and hydrants.

hood gatherings, sporting events and runs.

“There’s no better tool for public outreach,” says Barrilleaux. She says the Water Wagon helps demonstrate sustainability by promoting the local water source and cutting down on waste, such as throwaway water bottles.

“Plus, we always have a staff person there to answer questions about the water and hear the compliments we get about its quality.” ♦

Adam Wiederhoeft discusses the current status and provides a schedule update on a water main rehabilitation project with Kathleen Montgomery, a resident within the project limits.



Barrilleaux says the utility plans to publicize the feature aggressively next spring when customers begin watering lawns and gardens, activities that can push water usage to high levels.

“It’s our hope that at some point all of our customers — not just a few — will log on to see how they’re using water when they pay their bill online.”



Getting the word out

In Wisconsin, it’s not uncommon to see beer being dispensed from trailer-mounted taps. But you don’t often find fresh, cold drinking water being served up in a similar fashion.

Unless you attend one of the many summer events in Madison. There, you may well experience Madison Water Utility’s “Water Wagon,” a unique trailer designed to be hooked up to a fresh-water supply such as a drinking fountain, enabling kids and adults to fill up their reusable water bottles with some of Madison’s finest.

The Water Wagon was built from scratch by utility staff and features bold graphics, large tap handles and five bubblers in addition to the bottle refilling stations. It has a heat exchanger to keep the water cool yet is light enough to be pulled by a car or truck.

“Kids love it,” says Barrilleaux, adding that it’s in demand at summer camps, festivals, neighbor-







good decisions from great data.


You're responsible for helping manage your community's vital resources and services. Collecting pipeline inspection data is only the beginning.

PipeLogix's array of analysis tools and reports gives contractors and municipalities the insight to make good decisions and take action where and when it can do the most good. With built-in tools to share information across departments and other programs like GIS and popular asset management suites, your teams can manage systems more effectively.

Stop by and visit us at the expo or call for your free online demo to learn more about turning your data into good decisions.

866.299.3150 | 760.779.1700 www.pipelogix.com

Our Business Partners:      



FEATURED PRODUCTS FROM:

Harris Utilities

888/847-7747
www.harrisutilities.com

Itron

866/374-8766
www.itron.com

Sanexen Environmental Services, Inc.

800/263-7870
www.aqua-pipe.com



wwett™ 2015

Water & Wastewater Equipment, Treatment & Transport Show

To register or for
detailed information:

wwett.com
866-933-2653

FEBRUARY 23-26, 2015 INDIANA CONVENTION CENTER

Current Exhibitor List

558 companies - list current as of January 5, 2015.

- | | | | | | | | |
|---|---|---|--|---|---|--|---|
| <p>3T Equipment Company Inc.
A. Rhodes Wilson & Associates, Inc.
A.R. North America
Abbott Rubber Company, Inc.
ABCO Industries Limited
Absolute Ablutions
 Mobile Trailer Manufacturer
Acro Trailer
Advance Pump & Equipment
Advanced Containment Systems Inc.
Advanced Drainage Systems
Advanced Infrastructure Technologies
Advanced Pressure Systems L.P.
Advantage Funding
Aero-Tech
Airfeet
AK Industries Inc.
Alderon Industries, Inc.
All Star Sewer Equipment
Allan J. Coleman Co.
Allied Forward Motion LLC
Allied Graphics
Alpine Equipment Funding, Inc.
Aleris-SeptiCover
AlumaMATS, Inc.
Amazing Machinery, LLC.
Ameri-Can Engineering
American Express OPEN
American Melt Blown & Filtration Inc
American Pipe & Plastics, Inc.
Amesbury / Bandlock Products
Amthor International
Anderson Metals Corp., Inc.
Anup
AP/M Permaform
Aqua Blast Corporation
Aqua Male Technologies Inc.
AquaSales by V.P. Marketing
Arcan Enterprises Inc.
Aries Industries Inc.
Armal, Inc.
ART Company
 (A Restroom Trailer Company)
Arthur Custom Tank / Mid-State Tank
Arthur Products Co.
Ashland PolyTrap
Ashland Pump
Atlanta Rubber & Hydraulics Inc.
Avanti International
B Green Group
Bad Dog Tools
BakerCorp
Ball Brass and
 Aluminum Foundry Inc.
Banjo Corporation
Barnett
BASE Engineering Inc.
Bayco NightStick/
 The Jolly Group, Inc.
BDP Industries, Inc.
Benjamin Media Inc.
Benlee Roll Off Trailers
Best Enterprises Inc.
Best Equipment Company
Betts Industries Inc.
Biffs Pathfinders, LLC
Biolyneus
Bio-Microbics Inc.
Bionetix International
Bio-Systems International
BKP Beraloin Polyester
 GmbH & Co. KG
Black Tie Products</p> | <p>Blasters, Inc.
Blue Angel Pumps
blueflag Plumbing + Drain™
BODUS GmbH
Boeiger LLC
Brandenburger Liner GmbH & Co. KG
BRAWOLINER
Brenlin Company, Inc.
Bright Dyes
Bright Technologies Specialty
 Div. of Sebright Products, Inc.
Brothers Equipment
Brown Bear Corporation
Buckhorn Pumps, Inc.
Bucks Fabricating
Bulk Toilet Paper
Bull Frog Industries LLC
BW Technologies by Honeywell/
 Honeywell Analytics
C&E Plastics Inc.
C&H Services
C.I.Agent Solutions
Cam Spray
Canam Equipment Solutions, Inc.
Complas Industries Ltd
Cape Cod Biochemical Co.
CAPPELLOTTI S.P.A.
Cat Pumps@
Cavallo Plastics, Inc.
CEMTEC / A.W. Cook Cement
 Products
Champion Pump Company, Inc.
Chandler Equipment
Chelsea Products/Div. of Parker
Chempace Corporation
Chempure Products Corp.
Cheme Industries
CIPP Services, LLC
Clayton Industries
Aries Industries Inc.
Clearstream Wastewater Systems
Cloverleaf Tool Co.
Cobra Technologies
Comet USA, Inc.
Comforts of Home Services, Inc.
Concrete Sealants Inc.
Coneqtec-Universal
Consolidated Treatment Systems, Inc.
Containment Solutions
ConeBiologic, LLC
Cotta Transmissions
Cougar Vibration,
 Div of Martin Engineering
COXREELS
CPACEX
Crescent Tank Manufacturing
Cretex Specialty Products
CromFlow Inc.
Crust Busters/Schmitz Bros.
CUES
Cummins Power Products
De Neef Construction Chemicals
Del Val Chem Co.
Depth Ray
Ditch Witch
Dave Ventures Inc.
Downey Ridge Environmental
Dragon Products
Drainables Direct
DryLet LLC
Dulmeier Sales
Duracable Manufacturing
Dyna Flex Inc.</p> | <p>Dynablast
DynaLiner LLC
Dynamic Decals & Graphics, Inc.
Dynamic Filtration Limited
Dyna-Vac Equipment
E Z Onsite
Easy Kleen Pressure Systems Ltd.
Easy Liner
Eco Infrastructure Solutions
Ecological Laboratories Inc.
Eldon C. Stutsman, Inc.
Electric Eel Mfg.
EleMech, Inc.
Eljen Corporation
Envirologics Engineering Inc.
Environment One Corporation
Envirosight
Enviro-Tech of America, Inc.
Enz USA Inc.
Epps Products
E-Tank, Ltd. / E-Pump
Explorer Trailers - McKee Technologies
EZRAMR Systems
Farmhost Apps
Federal Signal Environmental
 Solutions Group
FerraTex
Fieldbook ERP
Fisher Labs
Five Peaks
FKC Co. Ltd.
Fleetmatics
Flo Trend Systems
FlowMark, LLC
FM Manufacturing Inc.
Forbest Products Co.
Ford Commercial Vehicles
Foremost
Forest River, Inc.
FORMADRAIN Inc.
Franklin Electric
Frutland Manufacturing
Fuji Clean USA, LLC
Gamajet, part of the Alfa Laval Group
GagVax Inc.
Gardner Denver Water Jetting
 Systems
Gardner Denver Wiring
GE Oil & Gas - Roots Blowers
GEA Farm Technologies, Inc. (USA)
General Pipe Cleaners
General Pump
Geoflow, Inc.
German Pavilion/Federal Ministry for
 Economic Affairs and Energy
GfG Instrumentation, Inc.
Giant Industries
Global Vacuum Systems, Inc.
Go Green Environmental Products
Godwin, a Xylem Brand
Goldalac Inc.
Goritz Sewer & Drain, Inc.
Gorman-Rupp Company
GPM Pump & Truck Parts, LLC
GPS Insight
Grease Guardian
Green Mountain International, LLC
GRU, LLC
H2 Technical Rescue Equipment
Hammelmann Corp.
HammerHead Trencless Equipment
Hannay Reels Inc
Happy Feet</p> | <p>Harben Inc.
Hart Industries
Hathorn Corporation
Hauler Agent
HCP Pumps of America, Inc.
Hedstrom Plastics
Helix Laboratories Inc.
Hella, Inc.
Hermann Sewerin GmbH
Hermes Technologie
Hibon, Inc.
 (a division of Ingersoll Rand)
Hino Trucks
Hi-Vac Corporation
Hot Jet USA
Hurco Technologies Inc.
Hydra-Flex, Inc.
Hydro-Tech Pumps
Hy-Flex Corporation
I.S.T. Innovative Sewer Technologies LLC
IBG HydroTech
Imperial Industries Inc.
Impreg International GmbH
IMS Robotics GmbH
In The Round Dewatering
Indiana Onsite Wastewater
 Professionals Association
Infiltrator Systems Inc.
InfoSense, Inc.
Infrastructure Repair Systems, Inc.
Infrastructure Technologies - I-Tpipes
Innovative Equipment, LLC
InSight Mobile Data Inc.
Insight Vision Cameras
Integrated Vehicle Leasing /
 Financing
ITI Trailers & Truck Bodies Inc
J&J Chemical Co.
J. Hvidved Larsen US
J.C. Gury Company, Inc.
Jack Doherty Companies
JAG Mobile Solutions
Jameson LLC
JD7
Jet Clean Tools USA Inc.
Jet Inc.
JeTech, Inc.
Jets Vacuum AS
Jetter Depot
Joe Johnson Equipment, Inc.
John Bean Jetters
Johnny's Choice by Chemcorp
Joins Couplings
KeeVac Industries Inc.
KEG Kanalreinigungstechnik GmbH
Keith Huber Corporation
Kentucky Tank, Inc.
Kewanee Screen Printing
Kfiro, Inc.
Kras International USA
Kroy Industries
Kuriyama of America, Inc.
LANSAS Products
 Mfd. by Vanderlans & Sons, Inc.
LaPlace Equipment Co Inc.
Lely Manufacturing, Inc.
Lanzyme/Trap-Clear Inc.
Liberty Financial Group, Inc.
Liberty Pumps
LIFTPLAQ
Linco-Precision, LLC
Liquid Environmental Solutions
Liquid Waste Industries</p> | <p>Liquid Waste Technology LLC
LMK Technologies
LMT Inc.
Lock America, Inc.
Loccus
Lodar Ltd.
Logan Clutch Corporation
Logiball Inc.
Longhorn Tank & Trailer
Ludwig Pfeiffer Hoch- und
 Tiefbau GmbH & Co. KG
MacQueen Equipment Group
Madwell Products Corporation
Mailhot Industries
Mainline Backflow Products, Inc.
Masport Inc
Masterliner, Inc.
Material Motion, Inc.
MaxLiner USA
McLaughlin Group, Inc.
Medit Inc.
Meese Orbitron Dunne Company
Merrell Bros., Inc.
Mid-State Tank Co., Inc.
Midwest Vac Products LLC
Miller Pipeline
Milkien
Millner-Haufen Tool Company
Milwaukee Pump
Milwaukee Rubber Products Inc.
Mi-Fi-Machine
Mobile Hydraulic Equipment Co., LLC
Mobile Restroom Designs
Money In Motion
MONOFORM by Infratech
Moro USA
Mr. Rooter Corp.
MTC
MTEch
Mud Technology International, Inc.
Murphy by Enovation Controls
Mylane Mfg. Co. Inc.
NASSCO, Inc.
National Precast Concrete Association
NJ07
National Truck Center
National Vacuum Equipment
Nature Calls
NAWT - National Association of
 Wastewater Technicians
Natafim USA
Nextair Network, Inc.
NLB Corp.
Northeast Industrial Mfg
Norweco Inc.
NovaFlex Hose
NOWRA - National Onsite Wastewater
Recycling Association
Nozzleg, Inc.
NSF International
Nu Flow
Oakmont Capital Services LLC
Oceanquip Cables, LLC
Ohio Electric Control, Inc.
Omega Liquid Waste Solutions
ONSI Transmissions, Inc.
One Biotechnology
Orenco Systems, Inc.
Orto Trading Inc.
PA Spa
Parson Environmental Products Inc.
Par's Pump & Blower
PC Scale Technologies
Pearpoint/SPX</p> | <p>Painemann Equipment
Penn Valley Pump Co., Inc.
Penny Packets
Pentair
People's United Equipment
Finance Corp.
Perma-Liner Industries LLC.
Peterson Products
Petrofield Industries
Phoenix USA Inc.
Picote Solutions
Pik Rite Inc.
PinPoint GPS Solutions Inc.
PipeHunter, Inc.
Pipeline Analytics
Pipeline Renewal Technologies
PipeLogix Inc.
Pipe-Robo-Tec USA
PipeTech Software
Piranha Hose Products
Polston Applied Technologies
Ponitron
Porta Pro Chemical Company
Portable Sanitation
 Association International
POSM Software LLC
Powertrack International Inc.
Pow-R Mole
Premier Oilfield Equipment Co.
Premier Tech Aqua
Presby Environmental, Inc.
Pressure Lift Corporation
Presvac Systems, Ltd.
PRIME DRILLING GmbH
Prime Resins, Inc.
PrimeLine Products
Proline Group AB
Pranot-USA, Inc.
ProPulse, A Schieffer Company
Protective Liner Systems
PSI Pressure Systems Corp
PUMPTeC
Qingdao Donghengli Industry
 Equipment Co., Ltd.
Quadee / Interfit
Quik-Lining Systems, Inc.
R. Nesbit Portable Toilets
Rain for Rent
Ram Commercial
RapidView IBAK North America
Ratex Electronics, Ltd.
Rausch USA
Ravo Sweepers
RC Industries, Inc.
RCS II Inc.
RecoverE
REED Manufacturing Company
Reckford Industries Inc.
Refractron
Reline America Inc.
Renssi
Resiplast US, Inc.
ReviewBuzz
RH20 North America Inc.
Rich Specialty Trailers
RIDGID
Rioned UK Limited</p> | <p>Ritam Technologies, LLC
RITEC GmbH
RKI Instruments, Inc.
Robinson Vacuum Tanks, Inc.
Robuschi & C.S.p.A.
Rochester Metal Products Corp
RODDIE Inc.
Roeda Signs & ScreenTech Imaging
Roll-Off Paris.com
RootX
Roth Global Plastics
ROTHENBERGER USA
RotoSolutions
RouteOptix Inc.
RS Technical Services Inc.
Rush Refuse Systems
Rush-Overland Manufacturing
Sabre Manufacturing
SAERTEX multiCom LP
Safety Sewer Drain
Salcor, Inc.
Satellite Industries Inc.
Saveresen, Inc.
Sawatch Corp.
Scorpion Protective Coatings
Screenco Systems LLC
Sealing Systems Inc.
SECO Truck Inc.
See Water Inc.
Septic Maxx
Septic Products Inc.
Septic Services Inc.
SeptiTech
Septronics, Inc.
Service Roundtable
ServiceTitan
Sewer Equipment
Shamrock Pipe Tools Inc.
Shenzhen Schroder Industry Measure
 & Control Equipment Co., Ltd.
Sherwin Williams
ShibeE
Sim/Tech Filter Inc.
SIE-HAMMER
Slewmaster Inc.
Slide-In Warehouse
SludgeHammer Group Limited
SnakeLiner
Solar LED Innovations, LLC
Sonetics Corporation
Source 1 Environmental
Southland Tool Mfg. Inc.
Spartan Tool LLC
Specialty B Sales
Spendier Fiberglass
Stamp Works
Standard Cement Materials, Inc.
Standard Equipment Company
Statewide Supply
StoneAge, Inc.
Strike Products
Sturgeon Tank & Equipment
Stutes Enterprises Systems
Subsurface Instruments
Sugina Corp.
Sunbelt Rentals
Super Products LLC
Superior Environmental Solutions
 (SES, Inc.)
Superior Signal Company LLC
Surpac 2000
Surco Portable Sanitation Products
Supressur 4S Inc.</p> | <p>SVE Portable Roadway Systems, Inc.
T & T Tools, Inc.
T4 Spatial
Tank Track LLC
Tank Transport Trader
TCF Equipment Finance
Terdylon Inc.
The Strong Company
Thiemann Tailgates, Inc.
Thompson Pump
Titan Logix Corp.
Toop Industries, Inc.
Trade-Serve
Trans Lease, Inc.
Transway Systems Inc.
Trellberg Pipe Seals
TRC Tools Inc.
Trillium Industrial Services
TRY TEK Machine Works, Inc.
TSF Co. Inc.
Tsurumi Pump
TT Technologies Inc.
Tuf-Tite Inc.
TurboFog,
 Division of Kingscote Chemicals
Turtle Plastics
U.E.M.S.I.
Udar USA
UHRIG Kanaltechnik GmbH
Ultra Shore
UltraLay by Wells Cargo
Uncle Freddie's Super Gloves
Under Pressure Systems, Inc.
US Jet Tracking
US Jetting, LLC
USA BlueBook
USB-Sewer Equipment Corporation
VAC2GO
Vacall
Vac-Con Inc.
Vacutrax Limited
Vacuum Sales, Inc.
Vacuum Truck Rental
Vaporooter
VAR Co.
Vermeer
Veyance Technologies, Inc.
Vivax-Metrotech Corp.
Vogelsang
Vu Hackney
Vu-Rite Video Inspection Systems,
Wachs Utility Products
Wager Company Inc.
Walex Products Company, Inc.
Wallenstein Vacuum Pumps -
 Elmira Machine Industries
Wastequip
WasteWater Education 501(c)(3)
Water Environment Federation
Waterblasting Technologies
WC Leasing
Webber Industries, Inc. (Webtroll)
We Engineer Inc.
Wells Fargo Equipment Finance
Western Equipment Finance
Western Mule (Cranes (D & S) Sales)
Westmoor Ltd.
Whitlygig, Inc.
Wiedemann & Reichardt GmbH
Wieser Concrete Products, Inc.
Wohler USA
Zhejiang Danou Industries Ltd.
Zoeller Pump Company</p> |
|---|---|---|--|---|---|--|---|



Education Day Sessions

Monday, February 23, 2015

NAWT

National Association of Wastewater Technicians
Room 234-236

- 8 a.m. | Pre-Trip Inspections
- 9:30 a.m. | Hours of Service (HOS) Overview
- 11 a.m. | Roadside Inspections
- 1:30 p.m. | Environmental Impact Study: Effects of Water Softener on Septic Tank Performance
- 3 p.m. | A Study of Microbiological Induced Corrosion
- 4:30 p.m. | Ask the Expert Q & A

WJTA-IMCA

Water Jet Technology Association
Industrial Municipal Cleaning Association
Room 140-142

- 8 a.m. | Hydroexcavation — Tools to Stay Current in a Changing Marketplace
- 9:30 a.m. | Maximizing Productivity on Vacuum/Air Mover Projects
- 11 a.m. | Waterblast Safety Can Enhance Productivity, Quality and Profits!

SSCSC

Southern Section Collection Systems Committee
Room 231-233

- 8 a.m. | Combination Vacuum Unit Operation Overview
- 9:30 a.m. | Been There, Done That, Got The T-Shirt (Small Business From a Hands-on Perspective)
- 11 a.m. | So You Think You Are the Best? CCTV Inspection In Its Highest Form
- 1:30 p.m. | Avoid the Pitfalls — Trenchless Pipeline Repair and Renewal
- 3 p.m. | NOZZLES, NOZZLES, NOZZLES!
- 4:30 p.m. | Ask the Experts Q & A

SSPMA

Sump and Sewage Pump Manufacturers Association
Room 243-245

- 1:30 p.m. | Sizing Guidelines for New or Replacement Sewage Pumps
- 3 p.m. | Backup Battery and Combination Pump Systems Evaluation and Installation
- 4:30 p.m. | Specifying Pumps: Why Do Pumps Fail?

NASSCO

National Association of Sewer Service Companies
Room 130-132

- 8 a.m. | Overview of Manhole Rehabilitation Technologies
- 9:30 a.m. | When, Why and How to Defeat Infiltration Cost Effectively
- 11 a.m. | New Opportunities in Small-Pipe Relining and Reinstatement
- 1:30 p.m. | Pipeline cleaning Best Practices
- 3 p.m. | Large-Diameter Pipe and Drain Rehabilitation Technologies
- 4:30 p.m. | Ask the Experts Q & A

NEHA

National Environmental Health Association
Room 237-239

- 8 a.m. | New Technologies for Non-Potable Water Use
- 9:30 a.m. | Rules & Regulations with New Technologies and Working with Regulators
- 11 a.m. | New Technologies for Non-Potable Water Use Part 2
- 1:30 p.m. | OSHA Regulations and Smart Business
- 3 p.m. | Sales & Marketing with New Technologies
- 4:30 p.m. | Ask the Experts Q & A

NOWRA

National Onsite Wastewater Recycling Association
Room 240-242

- 8 a.m. | Lobbying
- 9:30 a.m. | Field Inspections Part One
- 11 a.m. | Field Inspections Part Two
- 1:30 p.m. | Septic Tank Safety — Lethal Lids
- 3 p.m. | Time Dosing
- 4:30 p.m. | Ask the Experts Q & A

Portable Restroom Track

Beverly Lewis
Room 243-245

- 8 a.m. | Mastering the Busy Season
- 9:30 a.m. | A Great Customer Experience
- 11 a.m. | Employee Retention and Recruitment

Business Track

Kelly Newcomb, Ellen Rohr, Women's Roundtable
Room 136-138

- 8 a.m. | Grow or Go! Why Most Companies Fail to Grow Effectively and What You Can Do to Keep Your Company From Failing
- 9:30 a.m. | Target Marketing: How to Effectively and Efficiently Grow Your Sales
- 11 a.m. | Effective Branding and How it Can Help Your Business
- 1:30 p.m. | Business Basics 101
- 3 p.m. | Build the Business You REALLY Want
- 4:30 p.m. | Women in Wastewater Roundtable Discussion

Gil Longwell
Room 140-142

- 1:30 p.m. | Protecting Private Enterprise

Marketing Track

Susan Chin
Room 133-135

- 8 a.m. | Ladies and Gentleman: Create Your Personal Brand and Strategic Network for Success in 5 Easy Steps
- 9:30 a.m. | Effective Website Design and Engaging Customers in the Digital Age
- 11 a.m. | Tapping into the Power of Social Media and Content Marketing

Road Rules & Safety Track

John Conley
Room 133-135

- 1:30 p.m. | A Trucker's Guide to Washington Speak
- 3 p.m. | Cargo Tank Safety and Regulatory Report
- 4:30 p.m. | Compliance with Part 180 and Preparing for a Tank Truck CT Shop Audit

You can view the complete schedule of events along with an exhibitor list, floor plan, travel information and everything else you'll need to plan your trip to Indy at www.wett.com



Tuesday Sessions

Detailed session information available at: wwett.com

February 24, 2015

NAWT Track

Room 234-236

- 8 a.m. | Septage Processing Introduction:
Working with an Engineer
- 9:30 a.m. | Analyzing Your Resources:
What Goes on Around You is Important!
- 11 a.m. | Introduction to Odor Control

Onsite Installer Track

Room 231-233

- 8 a.m. | Soils, Design, O&M: What Every Installer
Should Know
- 9:30 a.m. | Best Installation Practices for
Trouble-Free Pump Controls
- 11 a.m. | Introduction to Effluent Filters

*MSW Track

Room 237-239

- 8 a.m. | Mapping Solutions for Repair and
Maintenance of Water Distribution Systems
- 9:30 a.m. | The Shift from Reactive to Proactive
Wastewater Management Best Practices
- 11 a.m. | Why Hasn't Your Sewer System Evaluation
Survey Testing Worked?

*MSW - Municipal Sewer & Water

Treatment Plant Operator Track

Room 240-242

- 8 a.m. | An Emerging Technology for Lagoon-Based
Nutrient Removal
- 9:30 a.m. | The New Wastewater: Collection System
Challenges Caused by Today's Modern Trash
- 11 a.m. | Wastewater Microbiology

Industry Safety Track

Room 243-245

- 8 a.m. | New Trends and Technology in Equipment
for Excavation Safety
- 9:30 a.m. | Best Practices: Use, Care and Repair of
High-Pressure Sewer Cleaning Hose
- 11 a.m. | Development and Execution of a Cross-Bore
Prevention Program

Business Track

Room 130-132

- 8 a.m. | How to Position Your Company in the Market Today
- 9:30 a.m. | Six Proven Tactics to Generate Leads and
Turn Them Into Revenue
- 11 a.m. | Growth by Acquisition or Exiting Gracefully:
Buying or Selling a Septic or Sewer Business

Drain Cleaning Track

Room 133-135

- 8 a.m. | Drain Cleaning Methods - Then and Now
- 9:30 a.m. | The Physics of Pipe Cleaning Tools and
How I Make it Work for Me
- 11 a.m. | Lateral Lining - Are You Using the Right Tool?

Industry Technology Track

Room 136-138

- 8 a.m. | How to Manage Septic Systems
using Remote Monitoring
- 9:30 a.m. | GPS Tracking: Hype Vs. Reality
- 11 a.m. | Wireless Controls in the Waterjet Industry:
Sacrificing Safety for Convenience

Septic Series Track

Room 140-142

- 8 a.m. | True Crime Scene Stories: How to Inspect
and Troubleshoot Suspect Onsite Systems
- 9:30 a.m. | One Man's Waste is Another Man's Treasure
- 11 a.m. | Dewatering Options for Roll-Off Containers



*Complete contest rules and details at: wwett.com/rules



Wednesday Sessions

Detailed session information available at: wwett.com

February 25, 2015

Septic Series Track

Room 140-142

- 8 a.m. Considerations in Building Your Next Vacuum Truck
- 9:30 a.m. Grease Collection and Treatment:
Raising the Bar Via Resource Recovery
- 11 a.m. Analyzing Common Onsite Septic System
Malfunctions and Options for Prevention & Correction

*MSW Case Study Track

Room 231-233

- 8 a.m. Retrofit of the Lansdowne Sanitary P/S
- 9:30 a.m. Huntington Beach Successfully Navigates
Emergency Repair of Fragile Storm Drain
Collection System Rehabilitation –
Alternative Technology
- 11 a.m. Collection System Rehabilitation –
Alternative Technology

*MSW Technology Track

Room 237-239

- 8 a.m. Implementation of Acoustic Inspection Technology
at the City of Augusta
- 9:30 a.m. Highlights from the 7th Edition of Operation
and Maintenance of Wastewater Collection
Systems Manual
- 11 a.m. Technological Advancements Fulfill the
Promise of Zoom Survey Paradigm

*MSW - Municipal Sewer & Water

Portable Sanitation Track

Room 136-138

- 8 a.m. Portable Sanitation - Special Events
- 9:30 a.m. Making Your Portable Restroom Business Lean
and Mean – How to Boost Productivity and
Increase Your Bottom Line
- 11 a.m. T.B.D.

Treatment Plant Operator Track

Room 240-242

- 8 a.m. Utility Regulation Basics for Grease Haulers
- 9:30 a.m. The Waste in Our Wastewater
- 11 a.m. Security Issues and Best Practices for Water/
Wastewater Facilities

Pipe Rehab Track

Room 243-245

- 8 a.m. Integrating Temperature Sensor Technology
within Lateral Pipeline CIPP Installations
- 9:30 a.m. CIPP Calibration and Vacuuming
- 11 a.m. Extending Life Expectancies with Corrosion-
Resistant Coatings and Linings

Business Track

Room 133-135

- 8 a.m. Team Building for Profit
- 9:30 a.m. Ten Commonsense Ways to Grow and
Improve Your Business
- 11 a.m. Setting Expectations – The Key to Sales
and Customer Satisfaction

Advanced Onsite Installer Course

Room 234-236

8 a.m. - 5 p.m.

- Introduction and Site Evaluation
- System Sizing and Basic Design Principles
- Pumping to Systems
- Installations of ATUs
- Installing for Management
- Troubleshooting Systems

To register or for
detailed information:

wwett.com
866-933-2653

Register Today and Be Entered to Win!

Register to attend the 2015 WWETT Show and you'll automatically be entered to win this Chevy 4x4!



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

ultraSHORE PRODUCTS



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

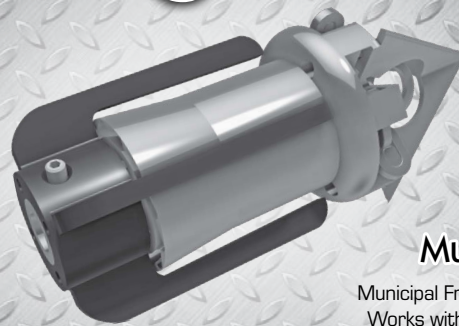
1-800-SHORING

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

www.shoring.com

Budget Friendly

NEW



**Lumberjack®
75 Series
Municipal Cutter**

Municipal Friendly Cutter 4", 6" & 8".
Works with 1/2", 3/4" and 1" Trucks.



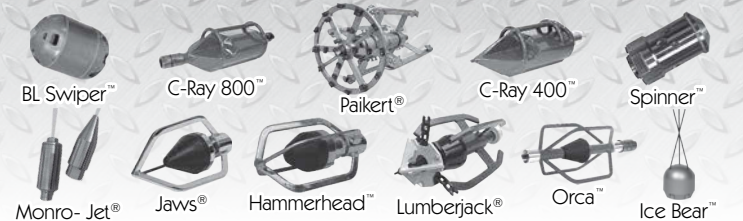
Equipment Engineered for Long Lasting Performance™

CALL
FOR A
**FREE
DVD**



NozzTeq®
Taking Science to the Sewer!™

www.nozzteq.com
Toll Free 1.866.620.5915



AMERICAN HIGHWAY PRODUCTS LTD.
RAISING AMERICA, ONE INCH AT A TIME

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

INCLINED MANHOLE RISER

Now you can raise and tilt the
manhole cover to match the grade
of the road surface.



Manhole Safety Ramp



Sewer Lid Seal Kit



Solid Rubber Adjusting Ring



Toll Free 1-888-272-2397 • www.ahp1.com • e-mail: sales@ahp1.com • Free Video/CD ROM

RHINO



"JAKE"

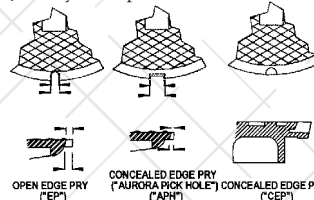
Manhole Cover Extractor

12 lb

"MARY A"

Manhole Cover Extractor

- 8 lb. and 12 lb. (4140) ASTM A148 cast steel head breaks frozen covers free easily. Serrated edge strengthens pick-end and eliminates possibility of tool becoming bottlenecked in the cover.
- Combination sledge hammer and pick/pry bar. Two tools in one enables a worker to carry only one piece of equipment into the street
- Tapered saw-tooth pick fits 5/8" or larger drain holes and most pick slots.
- Top quality handle constructed of fiberglass.
- "Mary A" is patented.



Distributed by:
**DOUG MEADOWS
COMPANY, LLC**
1.800.588.3684
Fax (325) 695-7954

Web site: www.dougmeadows.com

Online Course Now Available

For Directors, Field Operators, Consulting Engineers & Contractors

Help Your Sewer Agency Add Electro Scan to Your Upcoming SSES, CMOM & CIPP Projects.

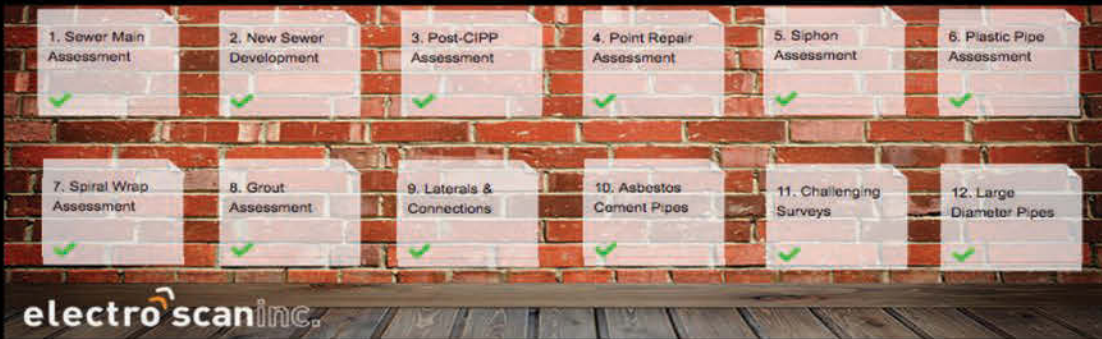
Get Certified on the web, not in a classroom.

\$495 per person, plus sales tax



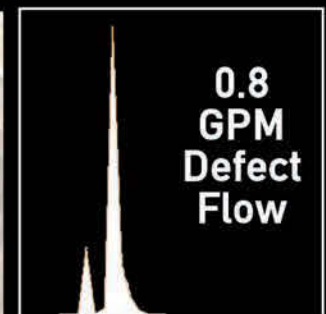
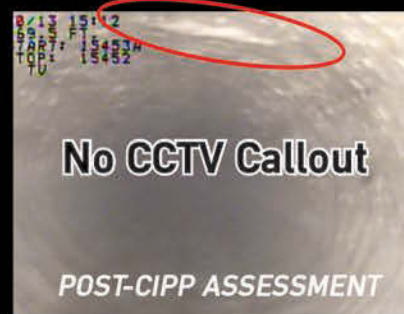
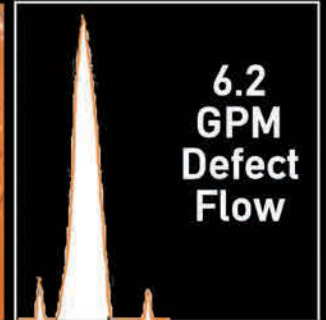
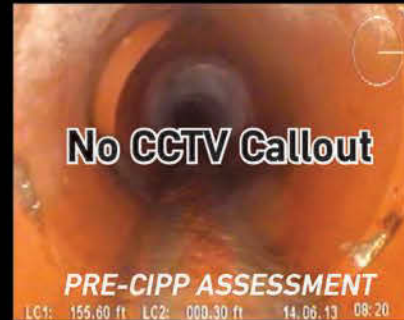
20% discount for five or more students from the same sewer agency.

Level 5 - Practical Applications

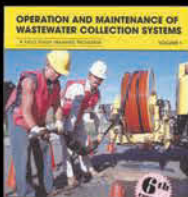


CCTV

electroscaninc.



“Get Certified in Electro Scan and Learn How to Find & Measure Defect Flows from Bad Joints, Defective Service Connections & Cracks **Missed By CCTV Inspection.**”



As featured in the 7th Edition, Volume 1, *Operations and Maintenance of Wastewater Collection Systems*

Chuck Hansen
Former Founder & CEO of Hansen Information Technologies & co-developer of CCTV inspection standards for the City of Houston's 1990 EPA Consent Decree & SSES Project. Used by over 250 TV Trucks.



Call 916-779-0660 or Email info@electroscan.com

www.ElectroScan.com

TV/VIDEO INSPECTION & LOCATION



DEALER/DISTRIBUTOR

PIPE DIAMETER

REEL SIZES

RECORDING METHODS

SOFTWARE DEALER

REPAIR FACILITY

REPAIR PARTS

ACCESSORIES

INSPECTION VEHICLES

LOCATION EQUIPMENT

 See ad page 43	Aries Industries, Inc. 550 Elizabeth St., Waukesha, WI 53186 Toll Free: 800-234-7205 • Phone: 262-896-7205 • Fax: 262-896-7099 www.ariesindustries.com • sales@ariesindustries.com	Aries	2" to 72"	100' to 2000'	Flash Drive/USB Thumb Drive SD Card	YES	YES	YES	YES	YES	YES
See ad page 22	Cavallero Plastics, Inc. 1250 North St., Pittsfield, MA 01201 Phone: 413-443-0925 www.cavallerooplastics.com • acavallero@cplas.com	Universal Roller Skid	4" to 18"	1' to 500'	HDD Flash Drive/USB Thumb Drive SD Card DVR CD DVD	YES					
See ad page 63	Central Oklahoma Winnelson 5037 NW 10th St., Oklahoma City, OK 73127 Toll Free: 888-947-8761 • Phone: 405-947-8761 • Fax: 405-947-1934 www.centralwinnelson.com • krjones@winnelson.com	RIDGID General Wire	3/4" to 12"	30' to 325'	Flash Drive/USB Thumb Drive DVD		YES	YES	YES		YES
 See ad page 66	Cobra Technologies 4806 Wright Dr., Bldg. C, Smyrna, GA 30082 Toll Free: 800-443-3761 • Phone: 770-435-8991 • Fax: 770-435-0402 www.cobrateg.com • sales@cobrateg.com	Cobra	6" to 200"	500' to 4000'	HDD Flash Drive/USB Thumb Drive SD Card Compact Flash DVR CD DVD VHS	YES	YES	YES	YES	YES	YES
 See ad page 27	CUES 3600 Rio Vista Ave., Orlando, FL 32805 Toll Free: 800-327-7791 • Phone: 407-849-0190 • Fax: 407-425-1569 www.cuesinc.com • salesinfo@cuesinc.com	CUES	2" to 200"	500' to 4000'	HDD Flash Drive/USB Thumb Drive SD Card Compact Flash DVR CD DVD VHS	YES	YES	YES	YES	YES	YES
 See ad page 64	Electric Eel Mfg. Co., Inc. 501 W. Leffel Ln., Springfield, OH 45501 Toll Free: 800-833-1212 • Phone: 937-323-4644 • Fax: 937-323-3767 www.electriceel.com • msperanza@electriceel.com	Electric Eel Mfg.	1" to 12"	125'	HDD Flash Drive/USB Thumb Drive		YES				YES
 See ad page 2	Envirosight 111 Canfield Ave. Unit B3, Randolph, NJ 07869 Toll Free: 866-936-8476 • Phone: 973-252-6700 • Fax: 973-252-1176 www.envirosight.com • office@envirosight.com	ROVER X DigiSewer QuickView JetScan VeriSight WinCan	2" to 120"	100' to 1640'	HDD Flash Drive/USB Thumb Drive SD Card Compact Flash DVR CD DVD VHS Cloud	YES	YES	YES	YES	YES	YES
See ad page 64	M Tech 7401 First Place, Cleveland, OH 44146 Toll Free: 800-362-0240 • Phone: 440-646-0996 • Fax: 440-646-9953 www.mtechcompany.com • sales@mtechcompany.com	CUES	2" to 96"	100' to 2000'	HDD Flash Drive/USB Thumb Drive SD Card DVR	YES	YES	YES	YES		YES
See ad page 31	MyTana Mfg. Co., Inc. 746 Selby Ave., St. Paul, MN 55104 Toll Free: 800-328-8170 • Phone: 651-222-1738 • Fax: 651-222-1739 www.mytana.com • mytana@mytana.com	MyTana Mfg. Co. Inc.	2" to 12"	100' to 400'	Flash Drive/USB Thumb Drive SD Card WiFi	YES	YES	YES	YES		YES



DEALER/DISTRIBUTOR

PIPE DIAMETER

REEL SIZES

RECORDING METHODS

SOFTWARE DEALER

REPAIR FACILITY

REPAIR PARTS

ACCESSORIES

INSPECTION VEHICLES

LOCATION EQUIPMENT

<p>See ad page 57</p> <p>Pipeline Analytics 200 Cedar Ridge Dr., Ste. 207, Pittsburgh, PA 15205 Toll Free: 877-626-8386 • Phone: 412-489-6229 • Fax: 412-489-6471 www.pipelineanalytics.com • wincan@pipelineanalytics.com</p>	WinCan Software					YES						
<p>See ad page 33</p> <p>PIPELOGIX PO Box 14014, Palm Desert, CA 92255 Toll Free: 866-299-3150 • Phone: 760-779-1700 • Fax: 760-406-6023 www.pipelogix.com • joan.stone@pipelogix.com</p>	Pipelogix MuniXS				HDD CD DVD Removeable Hard Drives	YES						
<p>See ad page 61</p> <p>RapidView IBAK North America 1828 W Olson Rd., Rochester, IN 46975 Toll Free: 800-656-4225 • Phone: 574-224-5426 • Fax: 574-223-7953 www.rapidview.com • info@rapidview.com</p>	RapidView IBAK North America	2" to 300"	200' to 2000'		HDD Flash Drive/USB Thumb Drive SD Card Compact Flash DVR CD DVD VHS	YES	YES	YES	YES	YES	YES	YES
<p>See ad page 23</p> <p>Rausch Electronics USA, LLC 4757 Innovation Way, Chambersburg, PA 17201 Toll Free: 877-728-7241 • Phone: 717-709-1005 • Fax: 717-709-1009 www.rauschtv-usa.com • reusa@rauschusa.com</p>	Rausch	5 1/2" to 60"	1000' to 1700'		HDD Flash Drive/USB Thumb Drive SD Card Compact Flash DVR CD DVD VHS	YES	YES	YES	YES	YES	YES	YES
<p>See ad page 47</p> <p>RS Technical Services, Inc. 1327 Clegg St., Petaluma, CA 94954 Toll Free: 800-767-1974 • Phone: 707-778-1974 • Fax: 707-769-8806 www.rstechserv.com • sales.info@rstechserv.com</p>	R.S. Technical Services, Inc.	2" to 200"	150' to 2500'		HDD Flash Drive/USB Thumb Drive SD Card Compact Flash DVR CD DVD VHS	YES	YES	YES	YES	YES	YES	YES
<p>See ad page 15</p> <p>Spartan Tool, LLC 1506 W. Division St., Mendota, IL 61342 Toll Free: 800-435-3866 • Phone: 815-539-7411 • Fax: 888-876-2371 www.spartantool.com • customerservice@spartantool.com</p>	Spartan Tool Sparvision 200	2" to 8"	100' to 200'		Tablet	YES	YES	YES	YES	YES	YES	YES
<p>See ad page 57</p> <p>VIVAX METROTECH 3251 Olcott St., Santa Clara, CA 95054 Toll Free: 800-446-3392 • Phone: 408-734-1400 • Fax: 408-734-1415 www.vivax-metrotech.com • info@vxmt.com</p>	VCAM Series	2" to 8"	100' to 400'		HDD Flash Drive/USB Thumb Drive SD Card		YES					YES

MUNICIPAL SEWER & WATER
MUNICIPAL SEWER & WATER
MUNICIPAL SEWER & WATER

Socially Accepted



facebook.com/MSWmag

twitter.com/MSWmagazine

plus.google.com

youtube.com/MunicipalSewerWater

linkedin.com/company/municipal-sewer-&-water-magazine

EXPANDING RESOURCES

'Specification Guideline for Sewer Pipe Cleaning' now available online

By *Ted DeBoda, P.E.*

As NASSCO continues to set standards for the assessment and rehabilitation of underground infrastructure and ensure the continued acceptance and growth of trenchless technologies, our library of resources expands.

The newest addition is the recently released "Specification Guideline for Sewer Pipe Cleaning." Developed to provide clarity on issues that have proven problematic for the procurement of pipeline cleaning services, the specification guideline encompasses all industry perspectives. The ultimate goal is to provide an understanding and knowledge base from which all parties can communicate in a clear and concise manner.

The specification guideline was created to provide a comprehensive, uniform and consistent template for the procurement of sewer line clean-

ing based on current industry services and technologies. Written and reviewed by a panel of 19 industry experts — including contractors, equipment manufacturers, municipalities, engineers, operators and

vide consistent understanding of the project requirements, benefiting both the owner and the contractor. Other sections include Scope of Services and Work Phasing, Compliance and Acceptance, Submittals, and

The ultimate goal is to provide an understanding and knowledge base from which all parties can communicate in a clear and concise manner.

field technicians — the specification guideline provides step-by-step guidance for the successful planning, implementation and completion of sewer cleaning projects.

Standardized work items with well-defined levels of effort and quality of work, including light cleaning, heavy cleaning and root, deposit and lateral cuts, are included in the guideline. Work items are defined in terms of PACP observations to pro-

Measurement and Payment, to name a few. A sample project bid sheet is also provided as well as a PACP Header Field Checklist identifying mandatory fields and those required for a specific cleaning project.

Created to allow flexibility for the end-user, whether it be the owner, engineer or municipality, the specification guideline is not intended to be simply cut and pasted into a specification. The flexibility

rests in the ability to customize the specification to specific budget and service requirements. Further, it requires the facility owner to make decisions while creating the document. This level of customization is necessary because specific services or technologies may not be applicable to all geographic locations or for each unique project.

Prior to release, the specification guideline was peer-reviewed and presented by NASSCO's Industry Standards Committee, which is composed of experts in the field including contractors, owners (public and private), equipment manufacturers, operators and engineers.

I encourage you to utilize the many resources available at NASSCO.org, including a variety of publications, technical manuals, white papers and — of course — free specification guidelines. ♦

NASSCO (National Association of Sewer Service Companies) is located at 2470 Longstone Lane, Suite M, Marriottsville, MD 21104; 410/442-7473; www.nassco.org

Get the EDge Training and Continuing Education Courses

PACP TRAINING

February 18-20, 2015
Conyers, GA

Includes Manhole and Laterals!
Recertifications Welcome
Trainer: John Jones
For more information or to register contact John Jones at 404-432-5584 or plumblinesconsultant@gmail.com

March 9-11, 2015
Marriottsville, MD

Includes Manholes and Laterals!
Trainer: Ted DeBoda
For more information or to register contact Dawn Jaworski at 410-442-7473 or email dawn@nassco.org

March 10-12, 2015
Twinsburg, OH

Includes Manholes and Laterals!
Recertifications Welcome
Trainer: Brandon Conley
For more information or to register contact the Camera Department at 248-349-0904 or email pacp@dohenycompanies.com

March 18-20, 2015
Conyers, GA

Includes Manhole and Laterals!
Recertifications Welcome
Trainer: John Jones
For more information or to register contact John Jones at 404-432-5584 or email plumblinesconsultant@gmail.com

April 15-17, 2015
Conyers, GA

Includes Manhole and Laterals!
Recertifications Welcome
Trainer: John Jones
For more information or to register contact John Jones at 404-432-5584 or email plumblinesconsultant@gmail.com

ITCP

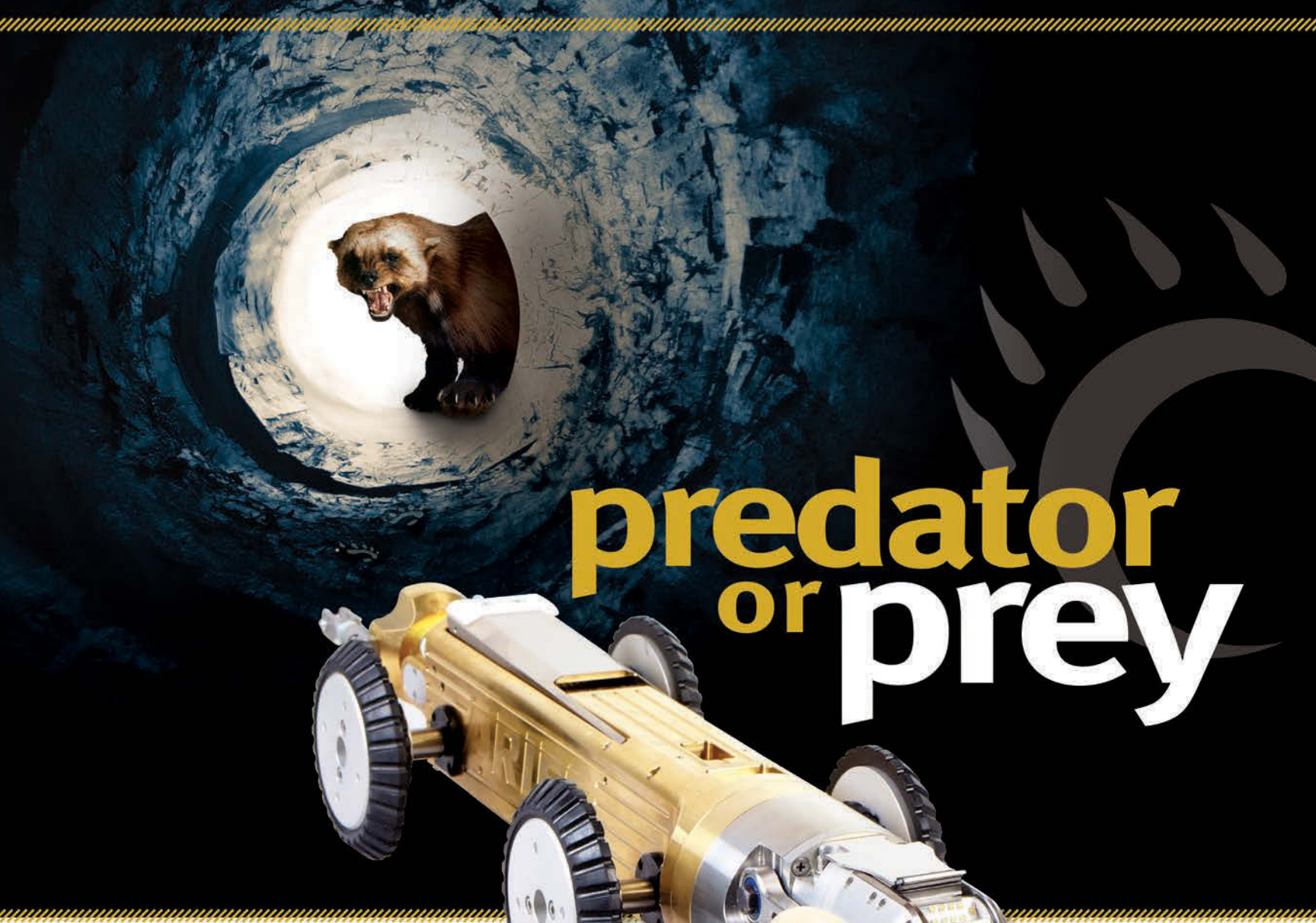
February 25-26, 2015
Indianapolis, IN

Cured In Place Pipe
8:00 am – 5:00 pm Day 1
8:00 am – 1:00 pm Day 2
Trainer: Gerry Muenchmeyer
For more information contact Gerry Muenchmeyer at 252-626-9930 or email gerry@muenchmeyerassoc.com

If you are interested in having a class at your facility or in your area, contact Gerry Muenchmeyer at 252-626-9930 or gerry@muenchmeyerassoc.com

NASSCO
PRO
TRAINING





predator or prey



WOLVERINE
CUTTING SYSTEM

Are your budgets getting eaten up due to long set-up times? Have you been a victim of low productivity due to poor cutter performance? Now you can attack the challenge of lateral reinstatement cutting with the Wolverine Cutting System.

Hunt down and reinstate your laterals rapidly and accurately with this self-propelled cutter. The Wolverine provides a feature-rich, powerful alternative to your current cutting equipment.

**Are you predator or prey when it comes to pipeline rehabilitation?
Call Aries today and start tracking your success.**



www.ariesindustries.com | (800) 234-7205



ARIES
INDUSTRIES, INC.

See what you're missing.

The Coralville Flood Protection System along the Iowa River was completed in 2014. The former power plant in the background is now the Iowa River Power Restaurant. (Photography by Mark Hirsch)

PROTECTING LOCAL WATERWAYS

Coralville's ambitious stormwater program uses green infrastructure to filter pollutants and reduce runoff and protect waterways

By Dan Heim

Heavy rainfall in 2008 inundated the Coralville, Iowa, area. Six inches of rain fell on already saturated ground over a 48-hour period in June. It wasn't the wettest year on record, but 2008 brought too much rain over too short a time. Damages and property loss were widespread and unprecedented.

"We're downstream of a U.S. Army Corps of Engineers flood control reservoir on a large watershed and adjacent to the Iowa River," says Dan Holderness, city engineer. "In most years the Coralville Dam does its job, but we had water coming over the spillways and the river crested 5 feet above that, so a lot of bad things happened.

"Same with the '93 floods: We had a lot of soil erosion, damage to buildings and infrastructure, closures of many public facilities, including University of Iowa Hospitals and Clinics, and the VA medical complex. Access from I-80 was cut off, and patients and staff couldn't get in. The UIHC had to be closed for nearly a week."

The 1993 event marked the genesis of their flood control program, but the 2008 event is what really triggered Coralville's efforts to mitigate stormwater runoff. Over 200 businesses and 400 residential units were damaged by that flood. The total commercial damage was \$21 million, with another \$4.4 million for residential and \$14.4 million for public facilities and cleanup costs. Flood control measures are now nearing completion. The stormwater program is a work in progress but is already yielding impressive results.

Green infrastructure

The Coralville area watershed suffered from both urban and agricultural runoff issues, with the usual mix of fertilizers, pesticides, petro-

Stormwater coordinator Amy Foster and city engineer Dan Holderness review construction documents for the Coral Ridge Avenue Improvement Project.

"Our goal is to put as much of that rainwater as possible back into the ground so it can feed our local water resources. Infiltration practices clean and cool the water while also recharging the aquifers. If we can do that, we can avoid the cost and complexity of mechanical treatment."

– Dan Holderness

leum products, animal waste and trash. With many riparian habitats under their watch and recreation and fishing a popular attraction for residents and visitors, these runoff issues had to be addressed.

Coralville's stormwater program requires infiltration practices on all new or redesigned development, including municipal projects. Engineered practices include:

- Addition of permeable paver systems
- Tree filter boxes and rock chambers
- Bioretention cells and bioswales along roadsides
- Detention basins in strategic locations, such as sandy areas where the design requires a smaller footprint or under parking lots
- Green roofs on municipal and commercial buildings
- Road deicing with a mix of salt and beet juice to improve

adhesion and delay the need for resalting

- Detection and elimination of illicit discharges, including concrete slurry
- Concrete washout facilities on construction sites

There are two green roofs in the city. The larger one is at North Ridge Pavilion, a recreation facility. It was Iowa's first municipal green roof, designed by Conservation Design Forum in Elmhurst, Ill. It's a high-profile feature, visible from the interstate, with 1,700 square feet of attractive green cover. "When you drive by on I-80, you can't miss it," says Amy Foster, stormwater coordinator.

Private construction of green roofs is virtually nonexistent. Retrofits on existing framing is constrained by load limits and funding, and the temperate climate eliminates much of the HVAC energy savings that you'd see in hotter climates.



“I really think Coralville’s stormwater program is one of the best and most advanced in Iowa. One reason for this is that we talk with other stormwater departments throughout the state. We learn what they’re doing, what works and what doesn’t work.”

Amy Foster

Workers install retainer wall blocks during the construction of a pedestrian and bicycle crossing under Coral Ridge Avenue.

Keeping the system split

Coralville has a single sanitary treatment plant handling about 2.2 mgd on an average dry day, with a total capacity of 6.6 mgd. “We’d like to keep it that way,” Holderness says. “We don’t want to add a stormwater treatment plant.

“Our goal is to put as much of that rainwater as possible back into the ground so it can feed our local water resources. Infiltration practices clean and cool the water while also recharging the aquifers. If we can do that, we can avoid the cost and complexity of mechanical treatment.”

There are many lakes and streams in the area, including the Iowa River and its tributaries, so minimizing stormwater runoff and making sure it isn’t harmful to the ecosystem is imperative.

One notable example is the system of bioretention structures along Coral Ridge Avenue, a high-traffic thoroughfare. “That was actually the result of an expansion from two lanes to four,” explains Foster. “We received grants totaling \$263,000 from the Watershed Improvement Review Board and from Rockwell Collins [a local aerospace contractor] to do that project.

“We used a combination of bioretention cells and swales on the sides of the road. But we needed more capacity in the middle since there are steep drop-offs along the

outside shoulders. So we engineered the center median swales with a good soil base and installed overflow to the sides to keep water off the road.”

The University of Iowa and the Johnson County Soil and Water Conservation District are working as research partners with Coralville on this project. They installed flowmeters to monitor overflow vs. infiltration rates. It’s an atypical design, but one that was dictated by existing topography.

“We got lucky on this project,” Foster says. “We ran into some natural pockets of sand. On top of that we used a combination of washed rock, tiles and engineered soil with mulch and native plants. We’re trying different combinations of engineered soil in the bioretention cells and swales because we really don’t know yet which mix works best in roadway projects like this.”

Residential and commercial efforts

At the residential level participation is voluntary, but there are incentives. Rebates are available at 50 percent, up to a maximum of \$2,000, to do any or all of the following:

- Gutter output diversion into porous paving systems, bioretention cells and swales and rain gardens
- Installation of cisterns to sequester on-site runoff

- Soil quality restoration (decompaction and addition of compost to the soil)

“We’ve got \$25,000 each year authorized by our City Council to make this program work and a formal application process for these rebates,” Foster says. “It’s been pretty popular with the public and a lot of our citizens are already on board.”

Builders and developers are encouraged to reduce roof footprints and road widths where feasible. To date, compliance has been good. Reconstruction of parking lots to include permeable paving and/or retention basins has been done on a limited basis. “I can’t say yet if we’re staying ahead of runoff, but I feel like we’re getting it done overall,” Foster says. “We do what we can with what we have to work with.”

Within the City of Coralville, the majority of runoff can be characterized as urban. But on the periphery of the city, especially along the 25 miles of Clear Creek (a tributary of the Iowa River), there’s the usual agricultural runoff. Ongoing communication with adjacent municipalities and farmers via the Clear Creek Watershed Board has helped reduce runoff of pesticides, fertilizer, animal waste and topsoil.

The stormwater ordinance

Coralville enacted a revised stormwater ordinance on Earth Day in 2014. All new development must

follow city guidelines for stormwater runoff, including infiltrating 1.25-inch rainfall events using proven stormwater practices. Those rainfall events represent 90 percent of the storms that cross Iowa.

Guidelines require use of bioretention cells and swales, detention basins, permeable paving and soil quality restoration to meet ordinance goals. They also require site plan design to take advantage of existing pockets of sandy soil where available and engineering for effective drainage and infiltration.

At the citizen level, Coralville promotes washing cars on lawns instead of driveways, or at a com-

PROFILE:

The City of Coralville, Stormwater Management Division



SERVICE AREA:
12 square miles

CUSTOMERS:
19,000 residential,
811 commercial

POPULATION DENSITY:
1,574 per square mile

INFRASTRUCTURE:
60 miles storm pipe,
95 percent RCP,
5 percent ADS or CMP,
2,900 stormwater intakes

EQUIPMENT:
1 street sweeper, with camera work, excavators, and dump trucks subcontracted as needed

ANNUAL BUDGET:
\$365,000, fiscal year 2013-14

EMPLOYEES:
1 authorized position using mostly outside contractors

AVERAGE RAINFALL:
38 inches per year

SOIL TYPE:
Primarily Fayette-Downs association, with some limestone outcrops, sand and gravel, slopes from 2-40 percent, water table highly variable from “surface” to “deep”

WEBSITE:
www.coralville.org/stormwater

“This is a wide-ranging program, and you don’t have to be a professional to participate. They’ve provided training for students, homeowners, landscapers and contractors. Everyone’s welcome. It’s like a club where everyone can learn from each other.”

—Amy Foster



Amy Foster inspects a culvert under the Coral Ridge Avenue Improvement Project.



mercial carwash where effluent is fed into the sanitary system. People are using the commercial carwashes more, but not many use their lawn. Still, the promotion raises public consciousness of the issue. “At least it gets people thinking about how, otherwise, all that soap goes into the river,” Foster says. “I always wash my car on my lawn.”

Education, examples, encouragement

Coralville Mayor John Lundell put in a porous pavement driveway at his home to serve as an example of what the average citizen can do. “Mayor Lundell, along with the rest of our City Council, has been extremely supportive,” Foster says.

Lundell won an award in 2013 from the Iowa Stormwater Partnership (ISP) for the work he did at his home and the leadership he provided to the City of Coralville over the past decade. A video of Lundell’s driveway repaving project is available to contractors and residents and is a popular download from the city website.

The ISP provides training and certification for professionals as well as resources for the public. “This is a wide-ranging program, and you don’t have to be a professional to participate,” Foster says. “They’ve provided training for students, homeowners, landscapers and contractors. Everyone’s welcome. It’s like a club where everyone can learn from each other.”

Recruitment programs are also

in force to offset the industry-wide problem of “graying personnel.” That happens at both university and high school levels through education and internship programs. Coralville currently hosts two interns from the university who are studying for careers in the field of water management.

The EPA provides additional training through its Brownfields Assessment Grants program, in which many local students have participated. EPA grant funds pay for a part-time Brownfields coordinator position that is filled through

recruitment from the UI Urban and Regional Planning Master’s Program. The coordinators perform day-to-day management of the Brownfields program.

“We were awarded our first Brownfields Grant in 1999,” Holderness says. “To date, we’ve been awarded 14 grants totaling over \$3.2 million and brought in 13 or 14 different coordinators from the UI Master’s Program.

“One of the things we do for outreach is, every spring, we bring in four classes of junior high students

to do things like wetland creation, restoration and planting. We try to get them involved in the environment. They get some ownership and pride, and we like to think we’re grooming the environmental stewards of the future.”

Keys to success

Foster proudly notes, “I really think Coralville’s stormwater program is one of the best and most advanced in Iowa. One reason for this is that we talk with other stormwater departments throughout the

THE GREAT FLOOD OF 1993

In 1993 there was major flooding all along the Mississippi River. The Iowa River, a major tributary, also experienced flooding. Coralville is located in east-central Iowa in Johnson County. Its watershed is drained primarily by the Iowa River with some help from Clear Creek. And so the stage was set.

When the Mississippi floods, reduced head at the confluence of tributaries causes the entire watershed to back up. That same hydrology is at play when a Gulf hurricane storm surge temporarily reverses the flow of the mighty Mississippi. When Katrina’s surge hit, the river’s (average) 600,000 cfs flow actually reversed for several hours throughout lower Louisiana.

So if it’s also raining in Johnson County, havoc will ensue. In the 1993 event, the tracks for the Cedar Rapids and Iowa City railroad were undercut by erosion, cutting off a critical transportation vector. Many highways were closed by the Iowa DOT, though

I-80, running through the north side of Coralville, remained open.

In the larger picture, this event was known as the Great Flood of 1993, which included both the Mississippi and Missouri rivers. That event caused \$15 billion of damage over 320,000 square miles, 300,000 of which were under water. Levees were breached in many locations. It was, by engineering standards, a 100-year flood.

In Iowa, where the Coralville dam holds back the Iowa River, spillways activated as Coralville Lake set a record-breaking crest of 717 feet. Water flowed over the 712-foot spillway, as it did again in 2008. Parts of Coralville in the flood plain were evacuated. Six million sandbags were deployed – a number exceeding those used along the Gulf Coast during Hurricane Katrina.

“We’re 5 miles downstream of an Army Corps of Engineers dam,” explains Dan Holderness, city engineer. “And it’s a well-built dam, but it was just overwhelmed back in 1993 and again in 2008.”

Coralville Dam, a 100-foot-high earth dam with



The Coralville Engineering Department staff includes (from left) Dee Marshek, Dan Holderness, Marnie Mahan, Brian Steenblock, Amy Foster, Ryan Foley and Scott Larson (not pictured).

state. We learn what they're doing, what works and what doesn't work."

Training is also an important component. Foster and Holderness attend seminars and conferences whenever they can, seeking to fill any gaps in their knowledge and looking for new state-of-the-art solutions to stormwater problems.

Support from the mayor, administration and City Council has also been crucial to their success. "We have a very supportive city administration and City Council," Foster says. "They understand the importance of protecting water quality in our community."

An additional tactic is to seek out all possible sources of funding at the state and federal levels,

rock faces, was completed by the Army Corps of Engineers in 1958. No repairs were needed after either flood. However, another dam upstream on Lake Macbride was topped by floodwaters in 2008, and as a result, that lake effectively merged with Coralville Lake.

"So 1993 was really what got us started on flood control," says Holderness. "And 2008 ramped it up even more. Over those years we've been able to secure and put in place over \$66 million in flood mitigation measures."

Those measures include earthen berms, concrete containment walls engineered for 100-year flood levels (plus 1 foot) and modular flood-wall panels for additional height as needed. The Iowa River is far from channelized, but at least in the Coralville area it's now more civilized.

as well as through NGOs. "We've got some great people writing grant applications," Holderness says. "Since the 2008 floods, we've been awarded over \$66 million in funding for flood mitigation projects, and we couldn't have accomplished what we have without that. We've been very aggressive about going out and finding funding."

Coralville expects to complete its flood mitigation efforts by 2017 with close to \$80 million in total investment. When that critical work is done, more resources will be diverted to green infra-

structure, always a work in progress. The future of Coralville looks both dry and green. ♦

FEATURED PRODUCTS FROM:

Conservation Design Forum
630/559-2000
www.cdfinc.com



conductor
THE SINGLE SOLUTION
www.rstechserv.com



Productivity + Power for all your inspection needs

- Cameras
Pan & Tilt, Zoom, JetCam, Pole, Well and Panomorphic
- Tractors / Transporters
Wheeled, Track and Steerable
- Vehicles & Trailers
High Cube, Step, Sprinter and Cargo Vans, ATVs and Trailers
- Lateral Launch
- Profiling
Laser and Sonar
- Software

also available thru
HGACBuy.com
THE TRUCK PURCHASING SOLUTION

For more info call or visit us online today

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



1 800.767.1974 ✉ sales.info@rstechserv.com

MAINLINE TV INSPECTION

By Craig Mandli

The inspection systems used in mainlines need to be portable to access difficult-to-reach areas and versatile to inspect various-sized lines. Here is an assortment of mainline TV cameras along with crawlers, mapping and data management software, and information systems to manage inspection results.

MAINLINE TV CAMERA SYSTEMS

Amazing Machinery Viztrac II AM240-200



The **Viztrac II AM240-200** pipe inspection camera from **Amazing Machinery** has 200 feet of 1/2-inch push cable with fiberglass rod inner core, a 20-inch cage reel and attached water-sealed case containing the controls, a high-resolution 7-inch LCD monitor and wheels to increase mobility. It also has a 1-inch powder-coated lay-flat frame with upright rolling stand; a 1 3/8-inch O.D. metal camera housing; nine dimmable high-output 5 mm

LED lights; high-resolution color camera with a self-leveling head; scratch-resistant sapphire glass lens; high-grade 512 Hz sonde locator with an average range of 12 to 15 feet; and an integrated digital video recorder with remote control, compatible with most standard SD cards. **800/504-7435; www.amazingmachinery.com.**

Cobra Technologies Transit High Top CCTV



The **Transit High Top CCTV Inspection Unit** from **Cobra Technologies** is ideal for situations where a step van or high-cube truck is too large. It is mounted in a 2015 Ford Diesel van and outfitted with a Cobra 806 steerable all-wheel-drive crawler for 8-inch and larger-diameter pipes. It includes Cobra Touch Pro

software and touch-screen technology that is PACP certified and GIS compatible. **800/443-3761; www.cobratec.com.**

EasyCAM E5150



The mid-size **E5150** sewer inspection camera from **EasyCAM** comes with a color camera head and a 512 Hz transmitter with 150 feet of heavy-duty pushrod nestled in a powder-coated aluminum frame. It is 22 inches around and 11 inches high, ideal for confined space and roof work. The unit has a standard 7-inch recordable monitor with sun shield, offering the choice of video or simple photo saved on a standard SD card. Voice-over and image inversion are standard. The monitor is held in place by a 360-degree swivel bracket for personalized view-

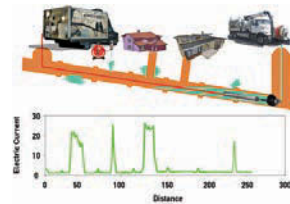
ing angles and can be removed from the bracket for any viewing angle. It has cordless, safe 12-volt operation and is designed with plug-and-play components that allow for easy repairs. **239/260-2056; www.easycamllc.com.**

Electric Eel Ecam PRO 2



The **Ecam PRO 2** pipeline inspection camera system from **Electric Eel** can quickly inspect 3- to 10-inch-diameter pipelines. It includes a rugged stainless-steel-housed 1.68-inch-diameter self-leveling color camera with sapphire lens, 20 LED light ring and high-resolution CCD element. A flexible camera spring navigates 3-inch P-traps. The auto iris adjusts lighting automatically. It provides a 512 Hz sonde with a 10.4-inch daylight-readable display with an on-screen footage counter. It enables 16 pages of text writing with memory saves and click touch controls with one-touch recording directly to a USB flash, with voice-over recording and audio/video out jacks, 8x zoom, adjustable light controls, a two-hour battery with a built-in charger, 200 feet of Kevlar 1/2-inch pushrod, and rugged powder-coated steel tube and bar construction with a secure-locking reel brake. It rolls on 8-inch wheels. **800/833-1212; www.electriceel.com.**

Electro Scan ES-620 for Sewer Mains



The **ES-620 for Sewer Mains** probe from **Electro Scan** is connected to an existing CCTV coax cable and behind a sliding funnel plug. To simulate a wet-weather event inside of the pipe, a jet truck and sliding funnel plug create a reservoir of water around the probe. The system is pulled down the sewer main at more than 45 feet per minute while the unit sends out a high-frequency, low-voltage electrical current. Anywhere the electrical current escapes the pipe wall a defect is recorded, providing the location, orifice size and an estimated gpm flow. Upon scan completion, the scan is available on the Critical Sewers cloud application. **916/779-0660; www.electroscan.com.**

Forbest Products FB-PIC3688



The **FB-PIC3688** pan-and-tilt pipe inspection camera system from **Forbest Products Co.** allows users to take panorama pictures with remote directional control for over 20,000 continuous hours. It comes with 400 feet of 9 mm fiberglass cable and a reel with meter counter and 2-inch waterproof 360/180-degree pan-tilt high-resolution color camera head with zooming that can work under the water no more than 30 meters. With the optional spring kit w/built in 512HZ sonde transmitter, the camera can work with Forbest locator FB-R2011. The heavy-duty waterproof control box includes a 10-inch LCD color screen with USB and built-in SD card for recording. The built-in rechargeable battery pack lasts about three hours. **650/757-4786; www.forbestusa.net.**

Hathorn Corporation Magnum DVR



The **Magnum DVR** command module from **Hathorn Corporation** has USB recording and a navigation menu that is simple to use and easy to learn. With its 10.4-inch daylight-readable monitor, images can be seen clearly in bright sunlight. The system has a full-size keyboard, 16 pages of text writing, 512 Hz sonde, on-screen

(continued)

SOUTHLAND TOOL MFG. INC.

Building Innovative Tools for Municipalities



SOLUTIONS TO SEWER CLEANING



Manhole Tools • Debris Baskets • Vac-Traps • Root Saws • Calcium Cutters • Sewer Rods • Handy Clams • Nozzle Extensions • Deep Vac Tube Holder • Grabbers
Claws and Hooks • Diamond Tap Cutters • Fiberglass Poles • Hydraulic Cutters • Top Manhole Rollers • Sewer Spoons • Continuous Rod • Carbide Saws



An ISO 9001-2008
Certified Company



1430 N. Hundley St • Anaheim, CA 92806 • ph: 714.632.8198 • fax: 714.632.8228 • www.SouthlandTool.com

Leading with Safety

The Vector® 2100 Plus was engineered with input from contractors and municipal workers. That's why we put the hose reel in front – so you can pull forward onto your worksite, with no need to back into traffic. And on the job, the truck is between you and oncoming vehicles. In other words, we lead with safety.

But that's not the only reason you want the Vector name on the combination sewer cleaner you use. With Vector, you get high air flow – enough to power an 8-inch hose, so you can suck up heavy debris, wet or dry. One more thing: Vector is made in America, so parts and service are available at a Vector dealer near you.

To see for yourself how the Vector 2100 Plus delivers safety and performance, call 800.627.3171 or visit www.vector.com.



Visit Vector at **Booth 5038a** at the Water & Wastewater Equipment, Treatment & Transport Show, Feb. 24-26, 2015, in Indianapolis.



©2015 Vector Manufacturing. All rights reserved.



footage counter, 8x zoom, microphone, speaker and two-hour built-in battery with smart charger. Several reel options are available, along with three camera head sizes. The command module can be programmed to work with other manufacturer's reels. **905/886-2835; www.hathorncorp.com.**

Insight Vision IRIS



The **IRIS (Insight Robotic Inspection System)** from **Insight Vision** is designed for mainline and larger sewer pipes from 6 to 20 inches. It comes standard with 1,000 feet of advanced-tether fiber-optic cable, a pan-and-tilt camera head and a 7-inch viewing LCD touch screen. It includes a hand-held wired remote, optional wireless Bluetooth, Intel Base PC Platform, ITX form factor, Windows 7 x 64, 8 GB Ram (with optional 16 GB), Dual Core CPU, 500 GB hybrid drive SSD and a wireless N300 network. The camera offers power and illumination, pan-and-tilt, rotate, focus, home, iris and zoom. **800/488-8177; www.insightvisioncameras.com.**

MyTana MS11-NG



The **MS11-NG** mid-sized video inspection system from **MyTana Mfg. Company** can inspect 3- to 4-inch lines with a 150-foot range. It comes with a 1 1/2-inch color self-leveling camera head, a built-in 512 Hz transmitter that allows location during inspection and a daylight-readable 6.4-inch monitor. Record or upload an inspection using the MyTana Viewer App, available for iPhone/iPad and Android products. Built-in Wi-Fi allows multiple viewers on relining/rehabilitation projects. External recording media connect through RCA jacks on the front of the unit. **800/328-8170; www.mytana.com.**

RapidView IBAK Pegasus HD



The **Pegasus HD** camera system from **Rapid-View IBAK North America** provides visual clarity in full 1920 x 1080 high definition. It has full pan, tilt and zoom capabilities, and includes built-in laser measurement for measuring defects inside the pipe. A 10x optical zoom and one-push, intelligent auto focus provides crisp, clear images of larger-dimension pipes. **800/656-4225;**

www.rapidview.com.

Ratech Electronics Pan n' Tilt Push Camera



The **Pan n' Tilt Push Camera** from **Ratech Electronics** can be used as a mainline camera, but has been redesigned to fit into lateral pipes as small as 4 inches in diameter. It can be purchased as a retrofit to existing systems or as a stand-alone unit. It rotates a full 360 degrees and 210 degrees up and down. An optional steerable gooseneck assists the camera in the direction needed. Combining it with a control unit gives recording capability using SD/USB drives and allows MPG video and JPG image capture of pipe inspections. The package includes a 512 Hz sonde, on-screen text display overlay system, electronic distance counter, time, date and eight pages of memory. It comes with 200 to 400 feet of Gel-Rod cable. **800/461-9200; www.ratech-electronics.com.**

RIDGID SeeSnake

SeeSnake standard video inspection systems from **RIDGID** offer a self-leveling camera head, providing a clear view to help locate and diagnose



problems in drain and sewer systems from 2 to 12 inches in diameter. The flexible camera heads can negotiate multiple hard 90-degree bends, and the fiberglass-reinforced push cable is flexible enough to easily travel through bends yet stiff enough to push the camera head up to 325 feet. Each system offers a durable 100 percent hardened stainless steel camera head spring assembly and long-life high-intensity LED lights. The integrated transmitter makes locating obstructions easy using a **RIDGID** locator. The system is compatible with any SeeSnake digital monitor or recorder. **800/769-7743; www.ridgid.com.**

Spartan Tool SparVision 200



At 25 pounds, the **SparVision 200** pipe inspection camera from **Spartan Tool** is self-contained in a single unit for easy on-the-job maneuverability. It comes with the choice of either an iPad Air or an Android-based Nexus 10-inch tablet as the viewing screen, or is compatible with a personal device. It comes with 200 feet of ultra-slick push-rod and a color self-leveling camera. It offers instant snapshots, an on-screen keyboard and telestration drawing ability, a 512 Hz locating beacon and distance counter. **800/435-3866; www.spartantool.com.**

Wohler USA VIS 350 Plus



The **VIS 350 Plus** visual inspection camera system from **Wohler USA** comes with a 1 1/2-inch, 360-degree pan and 180-degree tilt camera head, and a 1-inch straight camera head. Both are waterproof and have LED lights with adjustable brightness levels for a clear view. Follow the camera's path on a color monitor and watch as it glides around 90-degree bends up to 100 feet away. Its digital-distance measurement pinpoints the location of trouble spots. It can take still photos and record video via SD card or USB port. It is packaged in a durable self-contained carrying case and comes with two rechargeable batteries providing up to four hours of mobility. **978/750-9876; www.wohlerusa.com.**

CRAWLER CAMERAS

CUES DUC



The **Digital Universal Camera (DUC)** high-resolution, digital CCTV, side-scanning camera system from **CUES** can inspect and assess 5,000 feet or more per day. It produces a high-resolution digital video scan of internal conditions in 6- to 60-inch pipe, and a flat unfolded view of the pipe to facilitate rapid assignment of observations and for measurement purposes.

This low-maintenance camera has no moving parts and is driven through the pipe without the need to stop or pan and tilt. Drive the unit on cruise control to the remote manhole or through multiple manholes for maximum efficiency. **800/327-7791; www.cuesinc.com.**

Envirosight ROVER X 400

Jumbo wheels on the **ROVER X 400** crawler from **Envirosight** provide

(continued)



a wide stance to straddle debris, plus the capability to center in lines 30 inches and larger. They add more than 100 pounds to the crawler's weight, enhancing traction and travel range. The wheels are designed to add weight while maintaining a slim profile that lessens the effect of fast flows found in large interceptor lines. They mount with one bolt apiece and have key slots for positive traction. They are made of stainless steel and aluminum and have circular cutouts for the addition of more weight. **866/936-8476; www.envirosight.com.**

KEG Technologies Kleen Sight



The **Kleen Sight** inspection and cleaning system from **KEG Technologies** combines upright image video technology with fluid mechanics for inspection and cleaning. Only a jetter hose connection is required. It is engineered for mainline sewer inspection/cleaning and pipes down to 8 inches. The system is completely sealed with a magnetic on/off switch. The camera is powered by a long-life, quick-change, rechargeable lithium-ion battery. It has rugged stainless steel construction with replaceable skids that protect internal components, and a 16 GB onboard memory. Eighty LEDs ensure illumination and video quality. Video files are automatically date and time stamped for Wi-Fi downloading to a laptop or tablet. **866/595-0515; www.kegtechnologies.net.**

Pearpoint/SPX P350 flexitrax



The modular **P350 flexitrax** portable crawler system from **Pearpoint/SPX** has interchangeable main components to suit specific needs. Options include a manual or powered drum, three interchangeable cameras, a range of wheels and tires, and users can determine the cable length and crawler size. The command module is fully compatible with the P340 flexiprobe, allowing access to a range of pushrod reels, cameras and accessories. Survey data can be transferred from a compact flash to a PC or laptop via USB 2.0. FlexiSight Windows-based software edits video and converts reports to Word format. An integrated report writer creates inspection reports on site. It can fit in the trunk of a car or be van- or truck-mounted and wheeled on site using its ergonomic barrow design. **800/688-8094; www.spx.com.**

Rausch Electronics USA M-Series



The **M-Series** pipe inspection system from **Rausch Electronics USA** is designed around a four-wheel-drive steerable crawler/tractor platform L135. Each system is interchangeable via a quick-connect connector. The pan-and-tilt mainline TV camera mounts onto the electric lift of the crawler to inspect pipe diameters from 5.5 up to 60 inches. To upgrade the system to perform lateral launch inspections, remove the camera module from the crawler and attach the lateral launch module with the pan-and-tilt lateral camera. Lateral launch systems can push the lateral camera up to 160 feet and can negotiate branched laterals with a steering pin. **717/709-1005; www.rauschusa.com.**

MAPPING/DATA MANAGEMENT SOFTWARE

Aries Industries PipeOptix



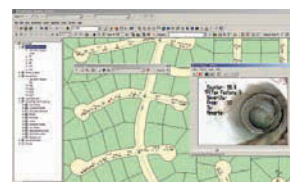
The **PipeOptix** field-based data management system from **Aries Industries** is ideal for small municipalities without extensive needs for ongoing data management. It provides automatic transfer of data from the field into the office for further assessment. It is PACP and LACP certified to ensure seamless data transfer between programs. It offers direct data migration into more robust systems for future flexibility. The system includes the basic tools to manage and use collected data, create reports and manipulate and query data to support rehabilitation recommendations. It can be used on a laptop or full-sized PC and is fully supported for use with Windows 7 and 8, 64-bit only. **800/234-7205; www.ariesindustries.com.**

Pipeline Analytics WinCan VX



WinCan VX pipe inspection and asset management software from **Pipeline Analytics** emphasizes a productivity-oriented, fully customizable user interface with cloud-based data access. It offers support for pipe cleaning, rehabilitation and leak detection, and augments existing functional areas like GIS, laser/sonar scanning, side scanning, image measurement and municipal database integration. It has been benchmarked on databases exceeding 5 million records. WinCan Analyst gives managers and engineers tools for understanding the maintenance needs of a collections system using WinCan VX data. It generates maps highlighting pipe material, size, rating, maintenance status and damage classification, and produces statistical reports listing assets by similar criteria. It contains tools for rehabilitation planning, inspection data validation and extended condition rating. **877/626-8386; www.pipelineanalytics.com.**

Pipelogix GIS



The **Pipelogix GIS** module added to ArcMap lets supervisors view all surveys performed on an asset. The toolbar filters survey data in the master database to highlight pipes with problems and also lets the user select the condition from an exported layer to jump the asso-

(continued)

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

Mainline CIPP Contractors:

LMK Does More Than Laterals



Talpa FSR 2060

We do Robots...

Save Time and Boost Productivity with a Schwalm CIPP Rehabilitation Robot.

German engineered Schwalm robots can significantly save time when compared to traditional winch-in-place robotic cutter systems.

The Schwalm robots are not only faster and extremely more efficient, but the capability of these robots has advanced the pipe renovation industry in North America to a level that offers truly trenchless options that until now were simply unavailable.

- Effectively and completely re-instate service lateral connections from one manhole access point at one time.
- The remotely operated cutting tools are engineered to remove protruding taps and cut open CIPP turnbacks.
- The multipurpose robots operate in 6 inch to 12 inch and 8 inch to 24 inch lined pipes. Each robot

is equipped with a color pan/tilt, zoom camera and a lens washing device, ensuring that the operator has a clean, clear view of the work being performed.

- The self-driven robot system can easily adapt to a mainline camera system, call LMK to ask how.



SCHWALM

...and End Seals, too!



INSIGNIA
End Seal

Stop Water Infiltration

- Before mainline lining use Insignia™ End Seals to guarantee a uniform, watertight seal at manhole penetrations.
- Due to the seamlessly molded, large 360° sealing surface and cylindrical shape, the End Seal is secure and stable once it is positioned within the pipe.
- Available in diameters ranging from 6 inches to 54 inches.



To learn more about LMK's Insignia Gasket Sealing Systems and Schwalm Robotics Systems visit www.lmktechnologies.com or call 815-433-1275.

Attend Live Demos at WWETT and Register for a Daily Giveaway

THE PLUG HUG



INCREDIBLE COST SAVINGS

- > Ready to paint in 60 seconds
- > No more Expensive Sand Blast Contracts.
- > Manual Labor and Man Hours SLASHED
- > Hand & Eye Injuries Eliminated
- > No Mess - No Clean up
- > HUGE SAVINGS, Time & Money



SPARKLE YOUR CITY AND MAKE YOUR WATER DEPARTMENT LOOK GOOD TOO

"I was very pleased with the performance of the Plug Hug in our fire hydrant maintenance program. The wear on the brushes in the Plug Hug itself was very minimal and my crew was very happy to not be using hand operated wire brushes to prepare the hydrants for painting."



John Barrett
Supt. of Public Works
Village of Avon, N.Y.

"The Plug Hug is the only tool on the market that takes the undesirable chore of cleaning and prepping a hydrant for painting to a paint ready hydrant in 60 seconds with no clean up, which ultimately increases productivity and job satisfaction."



Bill Bishop
Butler County Waterline
Maintenance Manager
Hamilton, Ohio

Terry Byrne Inc. • PO Box 444, Mansfield, OH 44901
www.theplughug.com • 419.564.9809

Patent Pending U.S. Patent and Trademark Office Serial No. 61/648,300

PRODUCT FOCUS MAINLINE TV INSPECTION

ciated movie to the condition for viewing. Seeing the problem where it exists on the pipe makes it easier to schedule repair and cleaning crews. The condition export can be done to a feature class in a geodatabase or to a shape file. A project of surveys in a database can be created in ArcMap using the toolbar. It prestarts the inspections and the CCTV inspector just completes them. The module is compatible with ArcGIS 9.3.1 through 10.2. 866/299-3150; www.pipelogix.com.

Vector Manufacturing VectorTRAK



The **VectorTRAK** data collection system from **Vector Manufacturing** monitors and reviews sewer cleaning operations on Vector 2100 Plus combination sewer cleaners equipped with the system. The system collects and transmits comprehensive, operational intelligence to a secure, hosted website where the public utility or professional contractor customer is able to access information from any Internet-connected device, such as a smartphone, tablet or laptop. The operator can enter the job work order number to correspond to the daily dispatch work list, allowing the operations manager or supervisor to view the activity performed for any specific job. 800/627-3171; www.vector.com.

INFORMATION SYSTEMS

InfoSense SL-DOG



The **Sewer Line Data OrGanizer**, or **SL-DOG**, from **InfoSense**, provides data downloading, cloud management and visualization support for the Sewer Line Rapid Assessment Tool (SL-RAT). The SL-RAT uses active acoustics to provide a fast assessment of blockage condition in gravity-fed sewers to focus sewer cleaning and CCTV inspection efforts. SL-DOG software is composed of two parts — one that resides locally on the SL-RAT user's Windows-based PC and allows the user to download field data, including the GPS coordinates where measurements have been made, and a cloud component that allows for management of users, validation of test results, workforce productivity measurement and generation of data files that are compatible with a variety of GIS and work order management systems. It is U.S. EPA validated. 877/747-3245; www.infosenseinc.com.

Vivax-Metrotech Corp. vCam-5



The **vCam-5** control module from **Vivax-Metrotech Corp.** comes preconfigured to work with Lateral Assessment and Certification Program and Pipeline Assessment and Certification Program software packages. By using the module's RS232 and video composite sockets, the needed two-way communication to run the software on a PC or CATV trucks computer is achieved. The communication between the control module and PC allows for the text overlay to be sent to the module and to control the distance counter. On the other end, the PC receives raw video, date, time and distance out from the control module. 800/446-3392; www.vivax-metrotech.com. ♦

Like what you see?

Keep it coming, subscribe at mswmag.com



INSTANT CREDIT FOR MUNICIPALITIES! PUMPER HOSE & ACCESSORIES



NOW 2 TYPES OF EPDM HOSE - AVAILABLE IN 4 COLORS!



1 DUTY-FLEX™ EPDM HOSE
Designed by Pumpers for Pumpers

3" X 20'	3" X 25'	3" X 30'	3" X 33'	BULK 100'
\$87.00	\$99.00	\$115.00	\$125.00	\$3.00 ft
\$74.78	\$88.98	\$103.98	\$112.48	\$2.79 ft

2 TIGERFLEX™ EPDM SUCTION BULK 100 FT ROLLS

2"	3"	4"	6"
\$2.10	\$4.00	\$7.00	\$12.60
\$1.79 ft	\$2.99 ft	\$5.25 ft	\$11.49 ft

TIGERFLEX™ EPDM SUCTION COUPLED MXF QUICK CONNECT

3" X 20'	3" X 25'	3" X 30'	3" X 33'
\$101.01	\$119.86	\$138.45	\$152.91
\$91.54	\$110.07	\$128.59	\$139.71

FREE CATALOG!
INSTANT CREDIT FOR MUNICIPALITIES!

BRASS COUPLERS & ADAPTORS
Connect to a Hydrant with any hose - even a garden hose.

DOUBLE MALE HEX NIPPLE MNH. x MNPT.

1 1/2" x 1 1/2"	2 1/2" x 2"
\$16.95	\$16.95
1 1/2" x 3/4"	2 1/2" x 3"
\$12.95	\$42.95

HYDRANT ADAPTORS FNH. X MNPT.

1 1/2" x 3/4"	2 1/2" x 3/4"
\$12.95	\$13.95
2 1/2" x 1"	2 1/2" x 1 1/2"
\$10.95	\$13.95
2 1/2" x 2"	3" x 2 1/2"
\$13.95	\$37.95

FEMALE TO MALE HEX NIPPLE

FNPT. x MNH.	FNH. x MNH.
2 1/2" x 2 1/2"	2 1/2" x 3"
\$21.95	\$37.95

2 OPTIONS FOR VAC TRUCK SEWER HOSE

1 NEW VARCO BRAND SEWER/JETTER HOSE
MADE IN THE USA!
ALL SIZES COME ON A REEL

2 GENUINE PIRHANA BRAND SEWER/JETTER HOSE
MADE IN THE USA!

NEW VARCO JETTERFLEX & SEWERFLEX LATERAL LINE/SEWER HOSE
The standard for the septic industry. Polyether-urethane cover provides exceptional cut, abrasion and fungus resistance. Components are bonded together to maximize fitting retention and wear resistance, and to provide smaller minimum bend radii. With sizes from 1/8" to 1 1/2" and maximum working pressures of up to 5000 psi, we can handle your need - whether you are a waterjetter or big municipal water plant. **ALL HOSE - ONLY RATED TO 122° F - CALL US FOR OPTIONS ON HIGHER TEMP HOSE**

SEWER HOSE

DESCRIPTION	1/2"	5/8"	3/4"	1"
Pirhana Orange 2500 psi / 6250 burst	-	\$2.78 ft	\$2.64 ft	\$3.13 ft
NEW Varco Sewerflex Orange 2500psi BEST VALUE!	-	-	\$2.48 ft	\$3.10 ft
Pirhana Blue 3000 psi / 7500 burst	\$1.80 ft	-	\$2.88 ft	\$3.67 ft
NEW Varco Sewerflex Blue 3000psi BEST VALUE!	-	-	\$2.45 ft	\$2.89 ft
Pirhana Green 4000 psi / 10,000 burst	\$2.28 ft	-	-	-
Pirhana Red 5000 psi / 12,000 burst	\$3.26 ft	-	-	-
Pirhana Black 4000 psi / 12,000 burst	\$2.93 ft	\$3.54 ft	-	-

NOTE 5% upcharge on lengths 600ft or longer.

MILL HOSE
Double Jacket
FROM \$6495

MILL HOSE
Single Jacket
FROM \$3995

ADJUSTABLE HYDRANT WRENCH
#AHW Fits 1 3/4" pentagonal nuts. The head will operate hydrant cap and adapter pin or rocker lugs. Handle is plated.
\$995

CAM & GROOVE FITTINGS REDUCERS, ADAPTORS
Aluminum, Brass & Stainless
FROM \$850

BRASS BALL VALVES
2" 3" 4"
\$3195 \$9495 \$14995

BRASS LEVER VALVES
3" 4" 6"
\$10800 \$15200 \$29900

PVC DISCHARGE HOSE
Red or Blue
FROM 34¢ foot

FOG NOZZLES
Plastic or Brass
FROM \$1365

FOOT VALVES
2", 3", 4"
FROM \$1532

STRAINERS FOR WATER SUCTION HOSE
FROM \$585

Televising equipment aides in infiltration reduction



Problem:

The Clear Creek Conservancy District in west-central Indiana began noticing a sharp rise in sewer system flows in the last five years, setting off high-level alarms in lift stations. The district sought a sewer-televising contractor to find the source of additional flow. It also requested the contractor locate and document any defects or causes of infiltration.

Solution:

Using the lateral launch camera system from **RS Technical Services**, Eco Infrastructure Solutions was able to find sewer mainline and lateral infiltration. The six-wheel-drive transporter with 90-watt drive system motor can maneuver through debris and use its pan-and-tilt camera to inspect defects and taps, and to line up the lateral launch camera. Once the system is in position, the dedicated 90-watt motor launches the self-leveling camera out as far as 150 feet. When a defect or infiltration source was identified, it was located with a Rycom 8869 locator. All inspections were logged into POSM Pro collection software.

RESULT:

Defective sewer mains and laterals were either repaired using Pipe Patch point repairs or by conventional excavation methods. Additional infiltration was reduced by injecting HyperFlex hydrophobic grout into manhole and structure leaks. **800/767-1974; www.rstechserv.com.**

POWERHOUSE MUNICIPAL SOLUTIONS

wwwet
BOOTH 1472

chempace corporation
www.CHEMPACE.com

CONTINUOUS TREATMENT!

bioFORCE BRICK
Bacterial treatment, controls odors & reduces grease

bioFORCE HEAVY DUTY GREASE PACKET
Biological grease control

ORANGE AID
Floating degreaser & deodorizer dissolves grease and sludge

SEWER FOAM
Dual-action, foaming cleaner with long-lasting bacterial treatment. Eliminates sewer line solids & hydrogen sulfide odors!

BEFORE AFTER
CALL FOR FREE DVD!

800-423-5350
BUYING DIRECT ALWAYS EQUALS COST SAVINGS!

MANHOLE INFILTRATION SOLUTIONS

wwwet
BOOTH 4122

FLEX-SEAL
Aromatic urethane rubber noted for extreme toughness, elongation, abrasion, resistance, acidic resistance and longevity

INFI-SHIELD® UNI-BAND
is an inexpensive and permanent method of externally sealing the grade adjustment ring area of a manhole

AQUA SEAL
is a dual component hydrophobic polyurethane water stop system designed to stop high infiltration in precast or brick lined structures

GATOR WRAP
forms a continuous rubber seal on a manhole joint which prevents water and soil from infiltrating through the manhole, catch basin or concrete pipe joint

MANHOLE INSERT
Stop the unwanted inflow of rainwater through manhole covers

f **S.S.I.** **Sealing Systems, Inc.**
9350 County Road 19, Loretto, MN 55357
800-478-2054 Fax 763-478-8868
www.ssisealingsystems.com

collaborate · understand · deliver

Demand More from Your Data.



It's what our industry has been waiting for—the power to share inspection results in real-time via the cloud, scale for big data, visualize system-wide condition with GIS, plan/track field operations via Google Maps, and generate high-level deliverables like heat maps, budgetary proposals, and 3D system models.



real-time insight

sold & supported by:
www.pipelineanalytics.com • (877) 626-8386



VIVAX METROTECH

vCam-5 Inspection Camera



- 8" Daylight Readable LCD
- Wi-fi and RS232 Interface
- Stainless Steel Construction
- Locatable Pushrod and Sonde
- Self-Leveling Color Camera Heads
- Internal Li-ion Rechargeable Battery

Training Provided Free of Charge

Please call us to schedule an on site, no obligation demonstration!

Vivax-Metrotech Corporation

3251 Olcott Street, Santa Clara
CA 95054, USA

Toll Free: +1-800-446-3392
Tel: +1-408-734-1400

Fax: +1-408-734-1415
Email: sales@vxmt.com

Product Spotlight

Self-priming, non-clog pump slices through stringy solids

By Ed Wodalski

The Dri-Prime NC350 pump from Godwin, a Xylem brand, delivers flows to 6,530 gpm and discharge heads to 160 feet. It can prime and reprime from dry to 28 feet without operator assistance. Applications include sewer bypasses at lift stations and gravity sewer lines.

“Dri-Prime NC Series pumps incorporate Flygt N-technology, providing self-cleaning reliability and sustained hydraulic efficiency,” says Michael Delzingaro, vice president and director of sales for Godwin. “The N-technology comprises an optimized, multivane impeller designed to achieve maximum hydraulic efficiency.”

The impeller has a back-swept horizontal leading edge that, together with the guide pin, slices stringy solids. The relief groove on the insert ring offers a self-cleaning mechanism and acts as a pump within a pump, pushing compressed solids through the pump and out.

“This sustained efficiency means clog-free performance,” he says. “With the wear resistance provided from our hard iron impeller and wear plate, this means less downtime and operator assistance. Reducing downtime minimizes the costs of using the pump for the operator or municipality.”

The pump has a 16-inch suction connection and 16-inch delivery con-

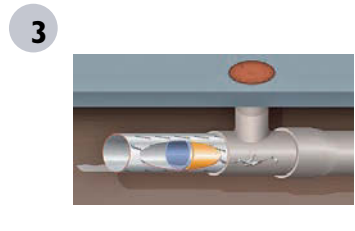


nection. Maximum operating temperature is 176 degrees F, maximum working pressure is 70 psi, maximum suction pressure is 58 psi and maximum operating speed is 1,200 rpm.

“Wear resistance is another critical piece where you look at the hardness of the materials,” Delzingaro says. “In our case we have a hard iron impeller and front wear ring that helps decrease wear from some of the abrasiveness that you see with water and wastewater over time.”

The standard Caterpillar C9 (T3 Flex) engine delivers 300 hp at 1,800 rpm and has a maximum fuel consumption of 15.1 gph at 1,800 rpm. The pump and engine have dry and wet weights of 16,020 pounds. It is 15.4 feet long, 6.9 feet wide and 8.25 feet tall. The optional John Deere 6090HFC94 (IT4) engine delivers 302 hp at 1,800 rpm and has a maximum fuel consumption of 14.7 gph at 1,800 rpm. The engine and pump have dry and wet weights of 16,880 pounds. It is 15.5 feet long, 6.9 feet wide and 6.9 feet tall.

The pump is also available with an electric motor or as a Critically Silenced unit (noise level less than 70 decibels at 30 feet) or as a Godwin DBS for pump station backup. **800/247-8674; www.godwinpumps.com.**



General Pipe Cleaners double U-cutter

The Spider double U-cutter from General Pipe Cleaners features front and rear blades. Cutting starts as the cable feeds into the line and continues as it retracts. Available in two models (double U-cutter and double heavy-duty side cutter), the tool is available in 3- and 4-inch sizes. It also can be adapted to sectional machines or other brands of cable-type drain cleaners. **800/245-6200; www.drainbrain.com.**

Armstrong pump selection app

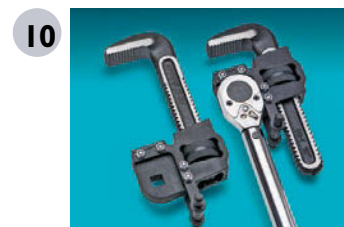
The ADEPT Pump Selection Software app for iPad and other mobile devices from Armstrong Fluid Technology enables engineers and end-users to select a variety of HVAC products, line drawings, multicurves, photos, voltage, motor size, seal operating limits and seal options. **800/356-9845; www.armstrongfluidtechnology.com.**

Valeron sewage pipe rehabilitation pre-liner

The Valeron IL pre-liner for CIPP rehabilitation from Valeron Strength Films, a division of Illinois Tool Works, is designed to prevent water in the soil from entering the liner. It also shields the environment from non-cured resins used in the hardening process. The pre-liner can be inverted by pressurized air or pulled into place and is suitable for deviating (oval) pipe shapes. **800/825-3766; www.valeron.com.**

Power Prime centrifugal pump

The skid- or trailer-mounted SiteMax centrifugal pump from Power Prime Pumps has a Kubota engine and 88.5-gallon fuel tank for 65 hours of continuous runtime. Features include a venturi or vacuum priming system that enables it to prime and reprime in less than 20 seconds and on long suction lengths (100 feet), standard sound attenuation of 69 decibels at 23 feet



and high-density polyethylene canopy for quiet operation and protection against tampering and vandalism. **661/399-9058; www.powerprime.com.**

Vermeer Hole Hammer piercing tools

5 The Vermeer VPT 250 Short model Hole Hammer piercing tool from McLaughlin is made for work in tight areas. The tool has a positive-turn reverse design with short body, enabling contractors to dig a concise entry and exit pit for a more effective job site and less impact on surrounding neighborhoods. Available in 2-, 2.5-, 3- and 4-inch diameters, the 2.5-inch diameter tool is 35 inches long and delivers 720 blows per minute. **864/277-5870; www.mclaughlinunderground.com.**

GSSI ground penetrating radar system

6 The UtilityScan ground penetrating radar system from Geophysical Survey Systems (GSSI) can locate metallic and nonmetallic targets, marking the depth and location of gas, sewer and communication lines. The scan offers real-time data collection with backup cursor and cross-hair cursor to accurately find targets. It can also store and replay data. **603/893-1109; www.geophysical.com.**

Reelcraft pressure wash hose reels

7 Pressure wash hose reels from Reelcraft Industries are rated to 5,000 psi. Designed for heavy-duty use, the hand-crank Series 3000 holds up to 450 feet of 3/8-inch I.D. hose or 325 feet of 1/2-inch I.D. hose. **800/444-3134; www.reelcraft.com.**

Wastequip roll-off container covers

8 Lockable roll-off container covers from Wastequip are designed to meet EPA regulations for stormwater exposure. Made of UV-protected, impact-resistant high-density polyethylene, the covers open to 90 degrees and are permanently mounted to the container. Covers are available in multiple sizes and configurations. **877/468-9278; www.wastequip.com.**


Guzzler vacuum loader chassis options

9 The Guzzcavator multipurpose vacuum truck and NX, NL vacuum loaders from Guzzler Manufacturing are available with the Kenworth T880 and Cat CT660 Class 8 model chassis. Shorter bumper and axle settings on the Kenworth chassis provide a tighter turning radius and greater maneuverability. The Cat CT660 chassis is built for operator comfort and features a sloped hood, wraparound windshield, heated mirrors and halogen headlights. **800/627-3171; www.guzzler.com.**

Lowell pipe wrench head adapter

10 The pipe wrench head adapter from Lowell Corp. can be attached to a breaker bar, torque wrench or other tool with a 1/2-inch male drive. The steel wrench weighs 3 1/4 pounds and has 280 ft-lbs torque capacity. Jaws open from 1 1/2 to 5 1/4 inches. When used with a ratchet, the tool's stop bar prevents unwanted ratcheting during repositioning. **800/456-9355; www.lowellcorp.com.**

ADVANCED WATER LEAK DETECTOR



The LD-18 Digital Water Leak Detector uses patented technology to significantly reduce ambient noises from dogs barking, footsteps, people talking, etc. The digital amplifier samples the sounds every few tenths of a second, rejecting intermittent sounds instantly.

See the LD-18 at www.subsurfaceleak.com.

SubSurface Locators™
(408) 249-4673
www.subsurfaceleak.com

100 MILLION IMPACTS



ZERO INFLOW

Make a positive impact on your bottom line with Cretex PRO-RING™, the most advanced concrete-alternative manhole grade adjustment system available today. Installed in over 200 cities on thousands of manholes, these lightweight rings are renowned for their exceptional strength-to-weight ratio, durability, chemical resistance and long service life under the most demanding conditions.



800-345-3764 info@cretexseals.com
www.cretexseals.com

PRODUCT NEWS

FEBRUARY 2015

11



12



13



14



Ditch Witch SK850 mini skid-steer

The SK850 mini skid-steer from Ditch Witch has a 37 hp Tier 4 Yanmar diesel engine, accepts attachments for a variety of underground construction tasks and has a 74-square-inch operator's platform. Dual-lever ground drive controls are standard with single-lever joystick available. An auxiliary control foot pedal helps operators maintain hydraulic flow to the attachment while freeing hands to control depth and ground speed. The unit has an 860-pound rated operating capacity, 83-inch hinge-pin height and 42-inch or 36-inch wide tracks. **800/654-6481; www.ditchwitch.com.**

Eaton telescoping light pole

The Crouse-Hinds V-Spring telescoping light pole from Eaton has a spring assist to offset the weight of the pole and light, enabling a worker to safely lower or raise the fixture. The pole is fully adjustable from 5 to 10 feet and travels vertically. It can be locked into any height position with pins or tethers. A 2-inch base is standard on all models. **866/764-5454; www.crouse-hinds.com.**

E.H. Wachs valve data controller

The HC-100 hand-held valve controller from E.H. Wachs is designed for operation and data logging using the ERV-750, TM-7 or TM-5 valve exercising machines. The controller has a 4.3-inch LCD display that can be navigated using a finger or stylus. It has a 1 GHz ARM Cortex A8 processor and 8 GB of storage. GPS equipped for locating valves, the controller can be paired with the submeter Trimble Pro 6T (79-412-01) or decimeter Trimble Pro 6H (79-412-02). Kits include controller, 12-volt DC vehicle charger, AC wall charger, USB sync cable, machine control cable, screen protector and Vitals Mobile software. **866/392-1060; www.ehwachs.com.**

Cavallero Plastics commercial division

Cavallero Plastics has announced the launch of CPI Products, the commercialization and distribution arm of the company's proprietary line of products. It is formalizing a segment of the business partnering with seasoned professionals in their industries who have identified a product or application disparity but are lacking the engineering, research and development, and manufacturing capabilities that we can provide. It will allow the company to actively market existing products to end-users, and identify and help people who may have great ideas, but lack the means to make them a reality. **413/443-0925; www.cplproducts.com.** ♦

Uncover the truth
about your underground utilities.



(800)-656-4225 | www.rapidview.com

PEOPLE/AWARDS

The **California Stormwater Quality Association** announced the award recipients honored at its 10th annual CASQA Stormwater Conference. They include:

- Outstanding Local Stormwater BMP Implementation Award — City of Aliso Viejo (Wood Canyon Emergent Wetland Project)
- Outstanding Regional Stormwater BMP Implementation Award — City of Ontario (Mill Creek Wetlands Project)
- Outstanding Programmatic Stormwater BMP Implementation Award — Orange County Transportation Authority (Orange County M2 Environmental Cleanup Program)
- Outstanding Sustainable Stormwater Project Award — City of Los Angeles (Echo Park Lake Rehabilitation Project)
- Outstanding Local Stormwater News, Information, Outreach and Media Award — City of Malibu (Keep it Clean Campaign)
- Outstanding Regional Stormwater News, Information, Outreach and Media Award — Bay Area Stormwater Management Agencies Association (Be the Street Public Education Program)

LEARNING OPPORTUNITIES

American Society of Civil Engineers

The ASCE is offering the following courses:

- Feb. 25-27 – HEC-RAS Computer Workshop, Manchester, N.H.

- March 5-6 – Leadership Development for the Engineer, Cincinnati
- March 12-13 – HEC-HMS Computer Workshop, Dallas
- March 12-13 – Pumping Systems Design for Civil Engineers, Baltimore
- March 19-20 – Financial Management for the Professional Engineer, Orlando, Fla.
- March 26-27 – Storm Sewer System Design Using SWMM, Las Vegas
Visit www.asce.org.

Wisconsin

The University of Wisconsin Department of Engineering-Professional Development is offering the following courses:

- March 23-24 – Using WinSLAMM v.10.1: Meeting Urban Stormwater Management Goals, Madison
- April 13-14 – Advanced Modeling Using HEC-RAS, Madison
Visit <http://epdweb.engr.wisc.edu>. ♦

CALENDAR

Feb. 11-13

American Society of Civil Engineers 2015 CI Summit, Henderson, Nev. Visit www.asce.org.

Feb. 17-20

American Water Works Association 2015 Utility Management Conference, Hyatt Regency Austin Hotel, Austin, Texas. Visit www.awwa.org.

March 30-April 1

American Water Resources Association Spring Conference: Water for Urban Areas, Los Angeles Airport Hilton, Los Angeles. Visit www.awra.org.

April 12-15

American Public Works Association North American Snow Conference, DeVos Place, Grand Rapids, Mich. Visit www.apwa.net.

June 7-10

American Water Works Association Annual Conference and Exposition, Anaheim, Calif. Call 303/347-6181 or visit www.awwa.org.

July 26-29

American Society of Agricultural and Biological Engineers 2015 Annual International Meeting, New Orleans. Visit www.asabe.org.

Aug. 2-6

StormCon North American Surface Water Quality Conference & Expo, Austin, Texas. Visit www.stormcon.com.

Aug. 30-Sept. 2

American Public Works Association International Public Works Congress and Exposition, Phoenix Convention Center, Phoenix. Visit www.apwa.net.

Sept. 28-30

National Rural Water Association WaterPro Conference, Oklahoma City. Visit www.nrwa.org.

Oct. 11-14

American Society of Civil Engineers 2015 Convention, New York City. Visit www.asce.org.

Oct. 13-16

American Water Works Association 2015 Water Infrastructure Conference and Exposition, Bethesda, Md. Visit www.awwa.org.

SMARTSHORE® INFLATABLE TRENCH SHIELD



- REGISTERED PE CERTIFIED: OSHA compliant
- EASY TO HANDLE: each shield weighs only 28 lbs
- QUICK INSTALLATION: set up by two people in 10 minutes or less
- FOR DEPTHS UP TO 6 1/2 FEET
- MADE OF EXTREMELY TOUGH MATERIAL RESISTANT TO PUNCTURES
- EASY STORAGE



And more:



PRONAL
USA, Inc.
Elastomer Engineering

Tel: 386-310-1558
info@pronal-usa.com
www.pronal-usa.com

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.



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°\$59.00
- 3/4"-12°LT\$69.00
- 1"-12°\$72.00
- 1"-12°LT\$84.00



Aluminum Sand

- 3/4"-24°\$141.00
- 1"-17°/24°\$156.00
- 1"-24°\$141.00



Swivel Joints

- T-M® Style
- 90° or Straight, 6000 psi
- 3/4" & 1"\$198.00
- 1-1/4"\$210.00
- 1-1/2"\$560.00
- 2"\$807.00



Aluminum Grease



Truder

- 3/4" or 1"-17°\$350.00



Shark

- 1"\$495.00
- 1" Big Shark\$610.00

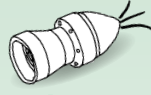
Stainless Steel Nozzles

- 1/8"\$37.00
- 1/4"\$41.00
- 3/8"\$45.00
- 1/2"\$57.00
- 3/4"\$91.00
- 1"\$116.00



Ball Valves

- Dyna Quip® Style
- 3000 psi
- 1"\$227.00



Radial Bullet

- 3/4"-18° or 35°\$50.00
- 3/4"-18°/24°\$53.00
- 1"-18° or 30°\$69.00
- 1"-15° or 30°\$69.00
- 1-1/4"-18 or 35°\$85.00



Steel Sand

- 1"-12°\$73.00

NEW Storm/Culvert Floor Cleaner Nozzles

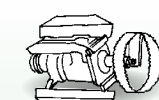
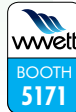
Parker & Piranha Jetter Hose

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



Saw Blades

- 4" - 18"
- NEW Chain Root Cutters
- 4"-48", All Stainless Steel, No Lubrication



Root Cutter Assemblies

- Skid Mounted
- w/flat blades\$1175.00
- w/concave blades\$1198.00
- w/spiral blades\$118.00
- Donut Mounted
- w/flat blades\$1125.00
- w/concave blades\$1160.00
- w/spiral blades\$1160.00
- Lateral Mounted
- w/flat blades\$1020.00
- w/concave blades\$1075.00
- Assemblies come with one ea. of 6, 8, 10 and 12" blades, saw blades, hub, skids, etc.

Sewer Hose Guides

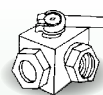
TigerTail™ Style

- 3" x 36°\$38.00
- 2" x 36°\$38.00
- 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
- 2" 3-way\$690.00



- 25 gpm @ 850 psi
- 1/2" Inlet\$185.00

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



Cloverleaf®
TOOL CO.

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

Full Catalog Online with Prices

SARASOTA, FLORIDA • PHONE: 941-739-0707 • FAX: 941-739-0001



MANY OTHER STYLES, SHAPES & SIZES AVAILABLE

CALL FOR OUR COMPLETE CATALOG WITH PRICES

YOUR SOURCE FOR RIDGID

CENTRAL OKLAHOMA

Winnelson

COMPANY

8% ONE YEAR FINANCING AVAILABLE!
Longer lease rates also available. Call Keith for details.

BUYING A SEESNAKE?

**CALL KEITH
FOR SHOW
SPECIALS**

**WE
WILL NOT BE
UNDERSOLD**

FREE SHIPPING!

- Call Us Evenings and Weekends -

Keith: 405-602-9155 &

Jim: 405-205-3974



LT1000 Laptop Interface System



CS10 Digital Recording Monitor with Flash Drive



microDrain Reel

SeeSnake® Compact 2 Camera Reel



DVD Pak



CS6 Digital Recording Monitor



SeeSnake® MAX rM200 Camera System



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

5037 NW 10th
Oklahoma City, OK 73127

www.centralwinnelson.com



**EXPENSIVE
SANDBLAST
CONTRACTS
GO 2**



THE PLUG HUG
TERRY BYRNE, INC.
419.564.9809
theplughug.com

\$SAVE THOUSANDS\$



**Inspected
by Us,
So it Works
For You.**

Choose a
**Better Fusion
Machine Rental
Experience.**

Learn more and find a
rental location near you at
www.certifiedmcelroy.com

**Industrial Grade
Pressure Washers**



**WATER
CANNON.com**
1.800.333.9274

**“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

Now That's Smokin'!

Tests up to 7500 cubic feet of pipe per minute

Turbo Fog MH75
• Easy • Cost Effective • Compact •



wwvett BOOTH 6116 **TURBO-FOG**
1.800.394.0678 www.turbo-fog.com


**MAINLINE
MACHINE!**

D-5 Key Features:

- Runs 5/8" or 3/4" Tri-Max Cable for added flexibility and longer life
- High density polyethylene drum and belt guard will not rust or dent
- Auto cable feed for ease of operation
- Heavy duty 1/2HP capacitor type motor produces more torque and plenty of power

Electric Eel
800-833-1212
ElectricEel.com

**Philmac
UNIVERSAL
TRANSITION
COUPLINGS
(UTC)**



Connecting pipe sizes
from 3/4" to 2"

- CTS PE & PEX • Steel
- PE IPS-OD • Copper
- PE SIDR 7 – 15 • Lead
- Galvanized Steel • PVC
- Stainless Steel • ABS

Rated 200psi @ 73°F
and 150psi @ 100°F
100% Lead Free

HARCO Fittings
www.harcofittings.com
(800) 825-7094

**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

Green Bison heavy duty degreaser

Superb product for grease control in collection systems. Emulsifies grease, improves high pressure cleaning performance. Highly recommended for cleaning/degreasing of tools, equipment and machinery.

With Green Bison you do not have to trade efficiency for safety. Green Bison is a certified environmentally responsible product that utilizes natural and bio based ingredients, delivers industrial strength cleaning power while keeping your cost down.

Call us today 866-366-0587

**safe-tee
chemical**
safetechemical.com

DYE TRACERS

**Solutions
for:**

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

**BRIGHT
DYES**
Division of Kingscote Chemicals



NSF Certified to ANSISF 69

wwvett BOOTH 6114
www.brightdyes.com • 1-800-394-0678

- BECOME MORE PROFITABLE
- NETWORK WITH PEERS
- WORK SMARTER, NOT HARDER

**Pumper & Cleaner
PROFIT
Series**

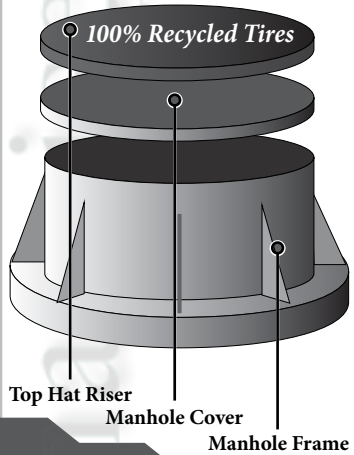
**3 DAYS OF HANDS-ON
BUSINESS BUILDING &
NETWORKING**

**ORLANDO, FLORIDA
GAYLORD PALMS
MARCH 25-27, 2015**

WWW.PUMPERPROFIT.COM
866-933-2653

top hat risers

Easy to use Manhole/
Water Valve Risers.



for more
information,
visit us online
tophatrisers.com
315-730-2588

Superior[®]

SMOKE

For SEWER TESTING

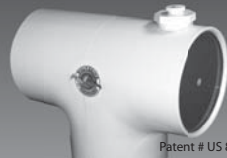
Superior Smoke Fluid Systems
Smoke Candles • Smoke Blowers



Superior Smoke Testing
The Most Cost Effective Method to
Find Sources of Surface Inflow

SuperiorSignal.com/MSW

A Broad and Economical Range of Odor Control Solutions



Patent # US 8,273,162

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

IndustrialOdorControl.com

866-NO-STINK (667-8465)
973-846-7817

Simple Solutions
DISTRIBUTING LLC



Let Us Build Your JETTER



Diesel
Propane
Gas

AMERICAN
JETTER.COM
866-944-3569

Aquam names head of research and development

Aquam Corp., parent company of Nu Flow Technologies, named Daniel Krywyj head of its research and development department. He will be responsible for locations in San Diego, Calif., and Derby, United Kingdom.

Nu Flow's water epoxy system receives ACS certificate

Nu Flow's potable water epoxy #7000 system received the ACS Certificate of Sanitary Conformity in France. The potable water system is used to restore water flow and prevent corrosion, which leads to pinhole leaks. The barrier coating also prevents harmful materials such as lead from leaching into the water.

SJE-Rhombus appoints board member

SJE-Rhombus appointed Lenny Newman to its board of directors. Newman is the chief financial officer for East View Information Services, provider of native and translated foreign language information products and services. ♦



Lenny Newman

Got News?

Newsworthy items can be expansions, honors and awards, new contract announcements, promotions, executive hires and new services.

Send your info to: editor@mswmag.com



classifieds

see photos in color at www.mswmag.com

TV INSPECTION

CUES K2 SYSTEM: Steerable Compact Pipe Ranger (CPR), OZ3 camera, 1000' gold cable, auto cable reel, CPU, CCU, wireless controllers, six different wheel sets, two different wheel spacer sets, tool and manual. Like new (app. 40 hours) at 20% off list. Call 866-936-8476 or email office@envirosight.com. (MBM)

PEARPOINT — Mainliner buying & selling used equipment. Canada & USA **PEARPOINT MAINLINE EQUIPMENT ONLY.** Will buy complete Pearpoint trucks. Will buy your old system. Do you need parts? 399, 599 reels; 420, 448 tractors; 494 digital and zoom 420 light heads. Call 1-800-265-4298 or mainliner2075@hotmail.com (M02)

NEED TRACTION? We make aftermarket more aggressive pads and chain assemblies for all chain-driven camera tractors. Custom, dependable, double-hole fabrication secured to high quality carbon steel chain, or just pads and rivets. Samples upon request. **Pipe Tool Specialties LLC:** 888-390-6794; Fax 888-390-6670; www.yourtractionpads.com or email pts4422@yahoo.com (MBM)

POSITIONS AVAILABLE

GapVax, Inc., a nationally recognized manufacturing business, is seeking a talented, highly motivated individual to fill a full-time Sales Position in the Midwest (Iowa based preferred) region. GapVax is the leading manufacturer of industrial and municipal vacuum units and hydroexcavation units in the United States. We provide the most reliable, comprehensive, and efficient mobile vacuum units in the industrial and municipal markets. Specifications of the position are listed on our website, www.gapvax.com, click on the Now Hiring link in the left hand column. Send resumes to Lthomas@gapvax.com or 575 Central Avenue, Johnstown, PA 15902. (CPMGBM)

SERVICE/REPAIR

Dynamic Repairs - Inspection Camera Repairs: 48 hour turn-around time. General Wire, Ratech, RIDGID, Electric Eel Mfg., 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)

WIN the toughest TRUCK in water & wastewater!



Register Today!
wwett.com

Complete contest details
and rules at: wwett.com/rules



February 23-26, 2015
INDIANAPOLIS



Custom Built Vehicles, Trailers, ATVs



Cobra Touch Pro Data Collection



Cobra Touch Pro module includes:

- > PACP/LACP Certified
- > Touch Screen
- > Quick Easy Entry
- > Grout Inspections
- > PACP Exporting
- > Affordable Upgrade to GIS, Asset Management Modules
- > Inspection Reports with grading
- > Pipe Graphic Report
- > Image Report
- > Cobra View Export

Available Systems:

- > 6 inch Crawlers
- > Auto up-right push rod systems
- > Camera & Utility Locator Packages
- > Portable, Transportable, Mainline
- > 6 Crawlers to choose from
- > Steerable and Elevator Options
- > Pan & Tilt Zoom Cameras



So Advanced... It's Simple!



800.443.3761

770.435.8991

www.cobratec.com



See you in Indy!
Booth 6004

wwett
Water & Wastewater Equipment,
Treatment & Transport Show

GapVax[®]



www.gapvax.com

#1 CHOICE

industrial vacuum equipment manufacturer



Custom Built - industrial vacuum loaders,
hydro excavators, jetvacs, skid-vacs, and more!

Want easy to use, reliable and durable
vacuum equipment that outperforms the others?
Then give us a call!

Texas office 281-884-8658



888-442-7829

ONE OF THE 1ST
VAC-CON TRUCKS - 1986

ONE OF THE LATEST
VAC-CON TRUCKS

BETWEEN
THESE
two TRUCKS ARE
6,500
OTHERS
STILL *running*
WORLDWIDE

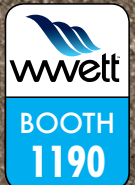


Each truck is supported by our robust dealer network, customer service and comprehensive on-line training.

Our manufacturing records date back to the first unit produced in 1986. We have the capabilities of providing you with technical service documents and parts for every single unit we have produced. Whether you have questions about parts or technical service, well-trained and dedicated personnel are standing by throughout the Vac-Con® network of dealers and service providers to assist you. [GO ON-LINE TO LEARN MORE.](#)

VAC-CON.COM/worldwide

VAC-CON IS A SUBSIDIARY OF HOLDEN INDUSTRIES, INC., A 100% EMPLOYEE-OWNED COMPANY.



VAC-CON
MORE POWER TO YOU

A HOLDEN INDUSTRIES Company