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Volume III - Winter 2006-2007





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### IRWA's Mission Statement

"Protecting and preserving the water and wastewater resources of Rural Illinois through education, representation and on-site technical assistance".

### ON THE COVER

*Photo taken by Heather McLeod at Regions Bank in Taylorville, IL after the ice storm on November 30, 2006.*

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## A New Approach

By Frank Dunmire, Executive Director

January is now upon us and before you know it spring will be in full bloom. Along with spring comes the National Rural Water Association's (NRWA) annual Rural Water Rally held in Washington DC. This year IRWA would like to take an expanded role in how Illinois participates in this annual rally by encouraging more participation of our members. I will start this month's article off with a little history of the rally and its workings before closing with what IRWA proposes as an exciting new approach that we would like to roll out this year.

For many years now, NRWA has hosted a rally in Washington DC to bring to Congress' attention all of the success stories of rural water's efforts across the

country as well as asking our congressional delegation for their continued support in funding the multitude of programs that the rural water family brings directly to the door steps of rural systems throughout the nation. As you all are aware, these programs are offered free of charge to water and wastewater systems and I am sure that you are equally cognizant of the fact that someone has to pay the bills and that someone is the Federal Government. NRWA is the recipient of USEPA and RUS (Rural Development) funds by way of contracts and grants that are then passed through to all of the state affiliates such as IRWA who is the recipient of nine such programs. These programs include three circuit rider positions, three wastewater



technician positions, one each training technician, groundwater technician and source water specialist. In order for Illinois and all of the other state associations to continue providing all of this service at no-cost it is a fact of life that funding requests must be made annually. The Rural Water Rally is the culmination

*continued on page 5*

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## A New Approach

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of ongoing efforts made by the executive directors and board members throughout the year. It is at this time we take our message to the Hill.

This year's rally will begin on Sunday April 29th with registration from 1:00 PM – 6:00 PM and a welcoming social at the Hyatt Regency Washington on Capitol Hill from 5:30 PM – 6:30 PM. The welcoming social is a perfect opportunity to network with your peers and share strategies for upcoming Congressional visits on the Hill. After the social it is customary for the Illinois folks to dine together in one of the many fine restaurants in the area to discuss the game plan for Monday and Tuesday.

Monday morning will begin at the Hyatt Regency with NRW's President, Rodney Tart, welcoming all of this year's participants before discussing NRW's legislative goals for 2007. These goals will define the requested amounts needed to keep all of our current programs fully funded along with requests for additional funds to expand certain programs or add others. Requests will also be submitted for Rural Development loan and grant dollars that will be available to rural systems all across America for the next fiscal year.

For first time attendees of the rally, there will also be sessions held later in the morning on Monday that will discuss

different strategies that might be used on your visits to the Hill. These sessions are an excellent presentation that accurately depicts what will transpire during visits to Congressional offices and are presented by NRW's legal staff, John Montgomery and Mike Keegan, who are based in DC.

Monday afternoon and all day Tuesday are spent making Congressional visits taking our message to the entire Illinois delegation as other states are doing the same for theirs. It is of the utmost importance that the message is the same for all participants and this is simplified somewhat by asking

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# WELCOME NEW MEMBERS

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## A New Approach

*continued from page 5*

Representatives and Senators to sign a common letter addressed to the Chairs of the respective Appropriations Committees. This dear colleague letter will ask the committees to budget the requested funds to keep all of our programs in full force.

As an added benefit, during Tuesday's lunch on the Hill the 8th Annual Great American Water Taste Test will take place. This competition pits entries from all over the nation who are in hopes of earning bragging rights as the best tasting water in the country. Last year Illinois' entry from Murdale Water placed third in this prestigious competition and the event received ten minutes of coverage on CNN!

Enough with the history, what can IRWA do differently this year?

IRWA's long-range goal is to get at least one participant from each of the Congressional districts in Illinois to stand up for Rural America and take our message to Congress. That message being Rural Water's initiatives are THE most effective ones in helping systems with water and wastewater issues. This is where your stories and reflections of what the rural water family has done to aid your system can be very beneficial. Nothing carries more weight in DC than a success story. All Congressmen and Senators truly love to hear that the money they appropriate is actually doing its intended purpose and rural water demonstrates that each and every year.

We are asking that you seriously consider attending this year's Rural Water Rally so that Illinois can be seen as one of the leaders in the efforts to keep rural America's water safe and affordable. All you need to do is make travel arrangements and hotel reservations, IRWA will cover the cost of registration. We will also make all of the appointments with Congressional offices, attend meetings with you, and act as your personal tour guide for those few hours of "free" time. This is an opportunity for you and your system to make an investment in the future of rural water not only in Illinois but all across the country as well.

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## ***How Do I Find the Time to Protect My Source of Water?***

***By Mark E. Mitchell, Source Water Protection Specialist***

How many times have you said that you need more hours in a day, more days in a week and more weeks in a year..., to get everything done that is required and expected from you? As I write this, another year is fast coming to a close and as you read this a new year will be well under way. How many times this past year did you say, "When I get all caught up with all that is required of me, I want to take some time to do some things that I have needed to do, but have not had the time."? I know that has been the case all too often for me. Unfortunately it seems like "getting all caught up" seldom arrives and when it occasionally does, it doesn't last very long. Some pressing issue comes up and another fire as to be put out. So the best intentions go out the window and another year passes and we never got those little extras completed that we had such high hopes for.

I have also found that the things that I make my highest priority, I somehow find the time for them. I almost always find time for a meal, yet taking that walk for exercise... that is a little harder to "make time" for. I find time to go hunting, but taking the garbage out... "Can't that wait until in the morning?" I guess the lesson here for me is that I need to prioritize my responsibilities and those things I want to accomplish and make

sure the things that are most important are given the highest priority.

My thoughts, of course, as always are centering on finding or making the time to protect Illinois' precious source waters. I have said it before and will say it again... all those rules and regulations won't mean a thing if you do not have a source of potable water. If you no longer have a viable source for water, then a lot of the responsibilities that are piled on you now will be gone. Will you become an unnecessary liability as well?

I have read a series of articles this past year in the Wisconsin State Journal about loss of wells due to contamination and one of the answers to well contamination problems in Madison, WI is a renewed interest in wellhead protection. Oh, if only we could see the wisdom and fiscal responsibility of protecting our source, BEFORE the contaminants show up. All too often I have set up appointments to discuss Source Water Protection and they get put on the "back burner" because other things take or are given a higher priority.

I want to take a minute to remind all of you out there who have been wanting to get around to starting a Source Water Protection Program, yet just can't seem to find the time to do so. In Illinois in 2007;



some public water supply WILL discover some new contamination issue in their source water. It may not be serious or life threatening, but you can certainly bet it will only add exponentially to that already large pile of things that have to be done. It will cost that system in both direct and indirect costs. Those costs will include higher treatment costs if not the complete loss of the source water supply. Loss of consumer confidence will be an indirect cost that must be factored in. That system will find the money for treatment costs and will improvise as the industry always has, but they will pay dearly for many, many years, the debt of lost consumer confidence, and there will always be that little nagging doubt in the back of that operator's mind... "Should I have made Source Water Protection a higher priority?"

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## IRWA Scholarship Program 2007 By Tom Shrewsbury, District 2 Board Member

All voting members of the Illinois Rural Water Association are encouraged to take advantage of our scholarship program. We are pleased that there will be two scholarships given -- one to a young man and one to a young lady who will be attending college in the fall of 2007. The scholarships are for \$1,000 each.

Participation is encouraged by children of operators, village or city officials, elected members of boards or councils, and other officials, such as treasurers and clerks.

In past years topics have been somewhat general. The committee this year felt that we would choose a topic more related to the water and wastewater fields. We hope that more young people will take an interest in what we do,

because there will be many opportunities for young talent.

The topic for this year's essay is: Reclaimed Water -- the Wave of the Future?

Essays are limited to 500 words. All entries must be received by February 2, 2007. There is an application to be submitted with the essay in the packets sent out for the Technical Conference to be held in Effingham February 20-22. Winners will be announced at the conference. You may copy the application if more than one student wishes to participate from your community.

In previous years, we have been blessed to read essays that were very well thought out and inspirational. They have said a great deal about the quality



of our youth. The committee looks forward to reading the submittals. If it goes as has in previous years, there will be some tough decisions for the committee to make.

Please make sure that all employees and officials of your community are aware of this benefit, and encourage their young men and women to participate.

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## What is a Vertical Loop Reactor and Why Would You Use One?

By Gary Chase, Wastewater Technician

In the Fall of 2001 the Village of Orion started the second phase of a two-part 2.7 million dollar project to upgrade the existing sewer system and treatment plant.

The first phase was done in 2000 with an interceptor sewer that was run through the middle of the Village to collect overflow during heavy rains, instead of ending up in residents' basements. Besides not being able to handle the 1 MGD, that the plant was permitted to receive, the existing contact-stabilization plant did not reduce the ammonia-nitrogen to the permitted levels.

At this time, Orion had Beling Consultants as its Village engineering firm. One of the engineers was from Ohio and asked the Village to consider a new type of plant that had not been tried in Illinois. It was a Vertical Loop Reactor (VLR) plant and eventually it was approved by the I.E.P.A. This type of plant can best be described as an oxidation ditch, which has been turned on its side 90 degrees. In an oxidation ditch, the flow moves around the oval "ditch" giving the biomass and influent flow, time, air and mixing as it moves around the "ditch".

To utilize the plant as a VLR the existing contact and re-aeration tanks could be used.

In both 12-foot deep rectangular tanks,

a false bottom was installed about half way down and open at both ends. Influent flow that has already been mixed with the return sludge flow, from the clarifiers, enter into the first VLR at the bottom of the North end of the tank. The flow then moves along the bottom of the tank in a countercurrent flow pattern, where air is introduced by diffusers in the middle-bottom of the VLR. The flow then reaches the South end of the aeration tank and moves up the wall and back to the North end of the tank where it originally entered. The flow pattern is this way because of the action of the VLRs.

On the top of the tank, across the middle, is a shaft with 15 large plastic discs running parallel with the flow, the shaft holding the disc would be perpendicular to the flow. These discs are a little less than half way submerged in the tank and have a hard plastic cover over the discs. A 5 H.P. motor turns the shaft and drives the discs at 60 RPM.

This is not a high-speed shaft movement, until you observe the biomass mixing with the disc cover removed. The discs are approximately 4' in diameter and appear to be moving faster than 60 RPM, due to the size of the discs.

On each disc there are many raised molded triangular pieces which move the biomass from the South end of the aeration tank to the North end of the aeration tank, along the false bottom back to the



same side of the tank where the flow originated.

A pipe that is mid-way up from the 12-foot bottom connects the two VLR's. In the second VLR the process is repeated. The overall process operates in series, and then leaves the second VLR to the two-final clarifiers.

The Village Board decided to use this process for two reasons. One, it would remove the ammonia-nitrogen. An inorganic standard that the present contact-stabilization plant would not be able to meet, with the new standards being lower than the present. Secondly, they were able to utilize the existing tank, even though they were very small.

They did not want to have to rebuild the entire plant and have to destroy tanks that were structurally sound. By using this process and doubling the detention time, in each unit, the plant would be able to

*continued on page 13*

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## What is a Vertical Loop Reactor and Why Would You Use One?

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treat 1+MGD and satisfy the permit requirements. The tank size was always the limiting factor in the present system and this was the most inexpensive solution available.

As of Spring 2006, the Village of Orion has the only Vertical Loop Reactor plant in the State of Illinois. There are some in Indiana and quite a few in Ohio and other Eastern States.

The plant has been up and running since October of 2002 and has yet to have a violation of the N.P.D.E.S. Permit. The Village has also reduced the number of storm-water overflows through the storm lagoon, from approximately 120 days a year, with the old plant, to two-days a year, since installation of the VLR

Process. This is due to the added flow the plant is able to treat.



Two new clarifiers were also constructed, which replaced the old rectangular, under-sized clarifiers. The two old clarifiers were transitioned into additional digesters.

*Orion, Illinois, is located in Western Henry County, a present population of 1,800 residents, with 750 water and sewer connections.*

*Chris Lundburg is the Plant Superintendent. Chris is a Class 1 Wastewater Operator and a Western Illinois University graduate.*



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## Life is a Test?

By John Perry

I rarely ever remember a dream. Even when I can remember what I was dreaming about when I have to get up for a drink or bathroom break in the middle of the night, I have forgotten all about it by morning.

However, last night I had a dream that made me analyze my life and my thought processes on a day to day basis.

I was dreaming about taking a test. I am not sure the subject of the test. I do remember feeling under pressure and I was struggling a bit with the content of the test.

Now, I have taken my share of tests in the past and can recall having these types of dreams while in college; but, why now?

I jotted down a few notes before going

back to bed and did my best to decipher this brain spark this morning.

I am into several projects right now in which I am under the microscope, so to speak. But, am I? Is this all in my head? Do I bring all this pressure on myself?

Probably.

I try to be the best I can be; mentally, physically, and financially. I try to learn as much as possible to improve my abilities in these areas. This is great as long as I don't spend so much time trying to improve me that it harms my life in these same areas; i.e. stress, family, friends, health, etc.

We all see the "burn-out" in the self-improvement entrepreneur; the sacrifices made in the "important things" in life

such as relationships and peace of mind.

Peace of mind should be a top

priority for mental, physical, and financial success. Living life as some sort of constant test will hamper this process.

Realizing that progress is a "you vs. you" phenomenon and that you don't have to please someone else on a day to day basis is a great start.

Bryan Tracy, in his audio series from Nightingale Conant entitled "Action Secrets for Personal Achievement," talks about the need for certain people to get the approval of others. He calls this a symptom of Type "A" behavior.

Here are some of the other type "A" symptoms:

- Having a sense of urgency to do more and more in less and less time.
- Volunteering for more and more work at the office.
- Feeling under pressure to get activities accomplished.

*continued on page 18*



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- Being obsessed with your performance and having high standards for such performance.
- The type "A" personality can't relax and enjoy an accomplishment, they feel like they have never done enough.
- Compare self with others.
- More concerned with things than with people.
- Brings home work.
- Talks about the boss, what the boss said, what the boss did... wants to please the boss at all times.
- Has a sense of hostility towards those he or she feels to be competing against.
- Type "A's" cannot admit that they are not in control.

If you fall into any of the above categories, making a decision to change may be a great first step. This decision involves trying to relax and still be productive and effective without the added stress we type "A's" like to impart.

There are two things that have worked in the past for me (and my clients) that I am going to focus on after this "wake-up call."

One is a daily exercise plan. Even when I am on the road, I usually do some exercise daily, but, there are times I get in a rut and don't focus on my planning and execution of a said workout. A daily routine helps relieve stress and will bring out creativity and problem solving abilities like no other activity!

It is a "reality check" for me as well. Things are brought into a better perspective after a good workout, no matter how long the workout is.

This is Stephen Covey's take on exercise (from his book *The 8th Habit*): "I am convinced that exercise increases our own sense of self-control and self-mastery, which enhances the totality of our

lives and truly enlarges the space between stimulus and response."

The second concept is practicing daily solitude. This could be a twenty minute walk, a power relaxation/almost nap, hanging out on a park bench, etc. This is a time to let your mind "go" and let your subconscious work on goals, problems, and/or ideas that are filling your head - a "mind-cleansing" if you will.

I try to do two, one-hour solitude sessions per week to let my subconscious mind take over and do its thing for me. This is a time when I just sit back and take in the world, usually outside in a fairly secluded place without interruptions. I sometimes think about a couple of goals or issues in my life ahead of time, then sit back and let my brain work on things.

I tend to find some answers to problems as well as some pretty great ideas to take back to work with me. They not only help me achieve goals, but relieve stress at the same time. These two activities alone have probably added years to my life and helped me through some potentially stressful times.

Thus, the reason for my dream. I have been in situations recently in which I feel the need to "prove" myself. I am living my life as a series of tests... daily. I have felt out of sorts, not myself, lacking confidence.

All brought on by myself.

Life is not a test. To me, it is a series of learning experiences.

My goal is to strengthen the area between stimulus and response (see quote above and *The 8th Habit* by Stephen Covey) on a daily basis; mentally, physically, and financially. As that space continues to grow with experience and knowledge, my life and dreams will put a smile on my face.

Thanks for letting me think out loud today.

Sweet dreams.

### About the Author — John Perry

*Would you like to know how to fit exercise into your already busy schedule? How would you like to learn a time-efficient routine that can be done anywhere? Go to [www.hiptobefit.com](http://www.hiptobefit.com) to find out how.*

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February 20-22, 2007

ATTENDEE INFORMATION

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When booking your rooms, let the hotels know that  
you are with IRWA's conference.

### REGISTRATION

Registration is required for all conference attendees. Badges are required for all attendees.

Please register each attendee using the registration form which is included in this packet. Include the attendee's full name on the registration form as it should appear on his or her badge.

### Pre-Registration:

To pre-register just complete the registration form and mail with payment to:

IRWA  
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Pre-registration must be postmarked by February 9th, 2007.

### On-Site Registration

All conference attendees must obtain a name badge and conference material at the registration desk. If you do not pre-register, please make sure that you register as soon as possible after you arrive at the Keller Convention Center. (Please note that on-site registration is \$25.00 higher than pre-registration)

### Registration Hours:

Tuesday, February 20th	8:00 a.m. - 4:00 p.m.
Wednesday, February 21st	8:00 a.m. - 4:00 p.m.
Thursday, February 22nd	8:00 a.m. - 9:00 a.m.

### CANCELLATION & REFUNDS:

Refunds only in the event of death in the family or hospitalization. We must have a written notice of cancellation to issue a refund.

### EXHIBIT HALL

Over 70 companies will be bringing their products and services to you at this year's conference. Professionals from all areas of the water and wastewater industry will be on hand to help solve your problems and provide you with the information you need to make those crucial decisions. The exhibit hall is open during the following hours:

Tuesday, February 20th	10:30 a.m. - 4:00 p.m.
Wednesday, February 21st	8:00 a.m. - 3:30 p.m.

### EXHIBITOR SPONSORED HOSPITALITY NIGHT

Tuesday, February 20th      6:30 p.m. - 10:00 p.m.  
Join us in Conference rooms 3 & 4 for food & beverages provided by the exhibitors that you see at our conference.

### CASINO NIGHT

Wednesday February 21st      8:30 p.m. - 10:00 p.m.  
Test your luck at blackjack, roulette, red dog and craps. There will also be food, music, cash bar, prizes, and lots of fun!

### SPORTSMAN'S RAFFLE

IRWA is excited to bring back the sportsman's raffle to the conference this year. Attendees will have the opportunity to purchase raffle tickets for sports related prizes that will be donated by exhibitors. A portion of the proceeds from this raffle will go towards rural water lobbying efforts in Washington D.C. The winners will be announced at the conclusion of Casino night.



# CONFERENCE AT A GLANCE

## **Tuesday, February 20th**

Registration Open - 8:00 a.m. - 4:00 p.m.  
Exhibit Hall Open - 10:30 a.m. - 4:00 p.m.

### **Water Sessions**

9:05 - 9:30 - Rural Development Update  
9:30 a.m. - 10:30 a.m. - Chemical Safety & Handling  
11:15 a.m. - 12:00 p.m. - Pipe Locating  
1:00 p.m. - 2:30 p.m. - Well Rehab  
3:15 p.m. - 4:30 p.m. - Water Meter O & M

### **Wastewater Sessions**

9:05 a.m. - 9:30 a.m. - Enzyme Use  
9:30 a.m. - 10:30 a.m. - Enzyme Use (Cont'd)  
11:15 a.m. - 12:00 p.m. - IEPA Rules & Regs.  
1:00 p.m. - 2:30 p.m. - Ammonia & Fecal Coliform Tests  
3:15 p.m. - 4:30 p.m. - Sludge Land Application

### **Breakout Sessions - Support Staff**

9:30 a.m. - 10:30 a.m. - Long Range Planning  
11:15 a.m. - 12:00 p.m. - NPD - What?  
1:00 p.m. - 2:30 p.m. - Computer Security/  
Employee Benefit & Retention  
3:15 p.m. - 4:30 p.m. - Power Point Basics

### **Other Events**

12:00 p.m. - 1:00 p.m. - Lunch Buffet  
2:30 p.m. - Annual Meeting  
4:30 p.m. - Awards Ceremony  
Water Taste Test (Immediately following Awards)  
6:00 p.m. - 10:00 p.m. - Hospitality Night

## **Thursday, February 22nd**

Registration Open - 8:00 a.m. - 9:00 a.m.

### **Water Sessions**

8:30 a.m. - 10:00 a.m. - Stage 2 DBP Rule  
10:15 a.m. - 11:45 a.m. - DBP Solutions

### **Wastewater Sessions**

8:30 a.m. - 10:00 a.m. - Ammonia/Phosphorus Removal  
10:15 a.m. - 11:45 a.m. - eDMR's

### **Breakout Sessions**

8:30 a.m. - 10:00 a.m. - Storage Tank Selection &  
Maintenance  
10:15 a.m. - 11:45 a.m. - Lagoon Upgrading

### **Other Events**

7:30 a.m. - 8:30 a.m. - Breakfast Buffet  
11:45 a.m. - Closing Ceremony/Grand Prize Drawing

## **Wednesday, February 21st**

Registration Open - 8:00 a.m. - 4:00 p.m.  
Exhibit Hall Open - 8:00 a.m. - 3:30 p.m.

### **Water Sessions**

9:00 a.m. - 10:30 a.m. - Poly Pigging  
11:15 a.m. - 12:00 p.m. - Water/Sewer Rate Studies  
1:00 p.m. - 2:30 p.m. - Distribution System - Piping & Parts  
3:15 p.m. - 4:30 p.m. - IEPA Update/Groundwater Rule

### **Wastewater Sessions**

9:30 a.m. - 10:30 a.m. - Submersible Pump O & M  
11:15 a.m. - 12:00 p.m. - Submersible Pump (cont'd)  
1:00 p.m. - 2:30 p.m. - Centrifugal Pump Basics  
3:15 p.m. - 4:30 p.m. - Pump Basics (cont'd)

### **Breakout Sessions**

9:30 a.m. - 10:30 a.m. - NIMS IS 700/IS 100  
11:15 a.m. - 12:00 p.m. - Leak Locating - What do I do 1st?  
1:00 p.m. - 2:30 p.m. - Class C & D Math  
3:15 p.m. - 4:30 p.m. - Class III & IV Math

### **Other Events**

12:00 p.m. - 1:00 p.m. - Lunch Buffet  
6:30 p.m. - Casino Night  
9:30 p.m. - Announcement of Sportsman's Raffle Winners

13  
CREDIT  
HOURS!

# SESSIONS AT A GLANCE

## WATER SESSIONS

### Rural Development Update- (TBA) Rural Development State Office

In this session, hear about Rural Development's loan and grant program.

### Chemical Safety & Handling - Shawn Wiram, Ulrich Chemical

An accident involving chemicals is never pretty. Learn about many of the chemicals used in our industry.

### Pipe Locating

Come hear about procedures that will make it easier for you to find those elusive water mains and services.

### Well Rehabilitation- (TBA), Layne-Western

A well is a major investment. In this class you'll learn some ways to save and protect this investment.

### Water Meter O & M - Dave Wiegers, Sensus Metering Systems

This class will take a look at your system's "cash registers" from a different perspective.

### Poly Pigging/Flushing of Water Mains - Bob Manns, Haneghan & Associates

Hear about why it's a good idea to pig your new water mains and how to get more from less water during hydrant flushing.

### Water/Sewer Rate Studies - Don Craig, NRW

"Is my system charging enough for water to pay the bills?" Find out how you can answer that question.

### Distribution Systems - Piping & Parts - Maria Braun, JCM Industries, Inc.

How do you select the best water main and connections for your system? Hear how to pick the right material for your specific installation.

### IEPA Update/Groundwater Rule - Mika Crumly, IEPA

There's new rules and changes to some old ones. Come hear the latest about the regulations that affects our industry.

### Stage 2 DBP Rule - Miguel Deltoral, USEPA

This is one of those new rules that all public water systems will need to address. Hear what you need to do to comply with this regulation.

### Stage 2 DBP Rule Solutions - Nick Stanley, Water Solutions Unlimited, Inc.

What if the Stage 2 DBP Rule hits you hard? In this session we'll cover some solutions to get into compliance.

## WASTEWATER SESSIONS

### Enzyme Use - Kevin Ripp, AQUAFIX

Do enzymes really work? Find out the true answer.

### IEPA Rules & Regs - Bob Voss, IEPA

Find out the latest info on the elusive mandatory training regulations and lots more!

### Ammonia & Fecal Coliform Tests - Kurt Stepping, PDC Labs

Learn the proper procedures for testing for ammonia and fecal coliform.

**Sludge Land Application - John Stewart, Stewart Spreading**  
What is the proper way to dispose of the plant sludge? How is it done efficiently? Learn how land application affects the environment.

### Submersible Pump O & M - Mike Rynd, Vandevanter Engineering

Learn about the operation of your submersible pumps and lift station controls!

**Centrifugal Pump Basics - Mickey Bernard, Hydro Kinetics**  
Hydraulics, pump curves, and all the important info on pumps will be discussed.

### Ammonia/Phosphorus Removal - Joe Pisula, Donohue & Associates, Inc.

Some new permits are putting limits on nutrients. Find out how to treat the problem.

### EDMR's - Rich Pinnel - City of Mattoon

It's not that hard, and it will save you time! Computers are a fair 'ol so use this session to ease your pain when filling out those pesky DMR's!!

## BREAKOUT SESSIONS

### Long Range Planning - Frank Dunmire, IRWA

What is it and why do we need it?

### NPD What? - Frank Dunmire, IRWA

Find out what your operator is talking about when they say, NPD's, EDMR, CCR, etc.

### Computer Security/Employee Benefits & Retention - Denise Burke, IRWA

How to keep your computer running smoothly/How that you have good employees, how do you keep them?

### Power Point Basics - Frank Dunmire, IRWA

Learn how to make a basic Power Point presentation.

### NIMS IS-700/IS-100 - Wayne Nelson, IRWA

Information on both NIMS courses. The exams for these two courses will be offered during the class.

### Leak Locating - Pat Gammill, John Bell, & Gale Moore, IRWA

When you get a leak (and you will) what should be the first thing you do? Hear from IRWA's Circuit Riders on what they look for.

### Class C & D Math - John Bell, IRWA

Math got you down? John will show you how easy it can be!

### Class III & IV Math - Dick Rohr, IRWA

Wastewater operators - we didn't leave you out! Dick can make your math easy too!

### Storage Tank Selection & Maintenance - Dave Frederick, Carly Aquastore, Inc.

Learn storage tank facts & decision criteria on selecting the best one for your application.

### Lagoon Upgrades - John Hinde, Air Diffusion Systems

Simple upgrades you can make to your older lagoon without spending a lot of money.





## 25TH ANNUAL TECHNICAL CONFERENCE "REFLECTIONS" Registration Form

must be completed for all attendees - please photo copy for each attendee

Name for Badge: \_\_\_\_\_  
System Name: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Spouse's Name (if attending) \_\_\_\_\_

**FULL REGISTRATION:** (Includes technical sessions, exhibit hall, meals & activities for all 3 days)

☐ Member - \$110.00      ☐ Non-Member - \$175.00      ☐ Spouse/Non-Employee - \$110.00

**ONE DAY REGISTRATION:** (Includes technical sessions, exhibit hall, meals & activities for 1 day only)

☐ Member - \$90.00      ☐ Non-Member - \$125.00      ☐ Spouse/Non-Employee - \$90.00

**PLEASE CIRCLE WHICH DAY YOU WILL BE ATTENDING (for one day registration only)**

TUESDAY WEDNESDAY THURSDAY

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## WORD SEARCH ANSWER KEY

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C O B D E N Z A O M M P H A T U O C S A M M M P P E  
X N O N A L P Q K V Z W T A R T H U R W L J A L R L  
W N O T L I M A H L U C F M R V T D G T F N S Z S L  
S T O N I N G T O N A A N V O E L P A S O R O A W I  
A G O E N G W Y R N T N N Z C M T T K X N P N J N V  
P K F A M F J M K K Z K D R K Q M O T C L D C G O Y  
W K F H N L Z M R N E C M M F Z J N N Y W S I A T A  
F T E M D A M T O E W L A N O D V L R I P X T L H R  
H N L T Z R P R H F V C L B R P N G C R C K Y E T G  
H I L W P T B M C T O T P I D G R H I H G A R S I J  
T O I D Q E R L M N U C R L V U M N B R H Y K B M R  
D P V N H Z F O K L T O F E B Y G O U M X R N U S N  
L P I R U F P J L Y C F P M S C F E B W K Z O K R F C  
Y M O O E D I N B U R G I N J P S S R E L R K G R O  
X A L M N F M T W L Q R Q E O H P N R T A R O L P L  
L C Y E F Q X W Y Z R P L K T M N A P E P Q M L C  
W W A U C M W F L A C O L L H O R M N R J B U H V H  
N P I L G A T P H S R H E L G P U C I A R T E A K E  
B A P B R R L R X I I Y K E E J S B N V G V S F J M S  
B W J C A N E T T R Y R R N S M C P L U T I D G I T  
Z P G B F B E L O A N O M A O E C D L E D M L M G E  
B A M K T R N P P P N L K P T A L L R K R R O L Q R  
B W B T O X W K K L A K Q O K N I F N X M K R R U J  
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Find the words in the grid. Words can go horizontally, vertically and diagonally in all eight directions.

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X N O N A L P Q K V Z W T A R T H U R W L J A L R L  
W N O T L I M A H L U C F M R V T D G T F N S Z S L  
S T O N I N G T O N A A N V O E L P A S O R O A W I  
A G O E N G W Y R N T N N Z C M T T K X N P N J N V  
P K F A M F J M K K Z K D R K Q M O T C L D C G O Y  
W K F H N L Z M R N E C M M F Z J N N Y W S I A T A  
F T E M D A M T O E W L A N O D V L R I P X T L H R  
H N L T Z R P R H F V C L B R P N G C R C K Y E T G  
H I L W P T B M C T O I P I D G R H I H G A R S I J  
T O I D Q E R L M N U C R L V U M N B R H Y K B M R  
D P V N H Z F O K L T O F E B Y G O U M X R N U S N  
L P R U F P J L Y C F P M S L F E B W K Z O K R F C  
Y M O O E D I N B U R G I N I P S S R E I R K G R O  
X A L M N F M T W L Q R Q E O H P N R T A R O L F L  
L C Y E F Q X W Y Z R P L K T M N A P E P Q M L C C  
W W A U C M W F L A C D L I H O R M N R J B U H V H  
N P T L G A T P H S R H E L G P U C I A R T E A K E  
B A P B R R L R X I Y K E E J S B N V G V S F J M S  
B W J C A N E T T R Y R R N S M C P L U T I D G I T  
Z P G B F B E L O A N O M A O E C D L E D M L M G E  
B A M K T R N P P P N L K P T A L L R K R R O L Q R  
B W B T O X W K K L A K Q O K N I F N X M K R R U J  
F K C L N Z A C M H G S N W M N N N Q Q O B T L J S  
K M M L R W P H X X V J S M V I R G I N I A C L C M

ALTO PASS  
APPLE RIVER  
ARTHUR  
ASSUMPTION  
BLUE MOUND  
CAMP POINT  
CHENOA  
CHESTER  
COBDEN  
COLCHESTER  
EDINBURG  
EL PASO  
FLORA

GALESBURG  
GRAFTON  
GRAYVILLE  
HAMILTON  
HARRISBURG  
HEBRON  
JERSEYVILLE  
KEITHSBURG  
MACON  
MASCOUTAH  
MASON CITY  
MONMOUTH  
MOWEAQUA

NASHVILLE  
NAUVOO  
NEOGA  
NOKOMIS  
OAKLAND  
OREGON  
PANA  
PARIS  
PAWNEE  
PAW PAW  
PLANO  
PRINCETON  
ROCKFORD

SANDWICH  
SMITHTON  
SPRINGFIELD  
STONINGTON  
SULLIVAN  
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TONICA  
TROY  
ULLIN  
VIRGINIA

*Answer Key on page 25*



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