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Volume IV — Fall 2008



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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...

Picture of donkeys taken in southern Illinois

by Circuit Rider Pat Gammill

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Nightmare on Elm Street

by Frank Dunmire, Executive Director

It is the middle of the night and your phone is ringing. As you try to shake the cobwebs out of your head the voice on the other end informs you that the water pressure seems to be getting low. Your first thought is that a watermain has broken and the pump is not able to keep up. After telling the person on the phone that you would check it out right away, you don your clothes and rush out the door. As you drive the short distance down Elm Street to the water plant, you keep scanning the roadside hoping that the water is surfacing in a location that will lend itself to a quick and easy fix. At the very least, you hope the pressure does not fall below that magic number of 20 PSI where you would have to issue a boil water order.

Where is the leak and how bad is it? Do I have all of the parts on hand to fix the leak?

Who all do I need to call in for assistance? What's my tower level? How long do I have before this spins out of control? These are all questions that are flying through your mind as you pull into the drive at the water plant. As you fumble in the dark to insert the key into the lock you are now chastising yourself for not replacing that light bulb over the doorway. But, as you open the door all of those thoughts quickly evaporate as your sense of smell is assaulted by the acrid odors of burnt wiring. You know right away that this problem is much more serious than you ever dreamed. In fact it will soon become a nightmare on Elm Street!

It is at this point you deploy your secret weapon and begin to pray. Pray that what you smell is coming from some control panel that can be easily bypassed, allowing the pump to start. You quickly look into the array of control panels and ascertain that there are no obvious prob-

lems in those. It's on to the pump motor. It just can't be that, it just can't be that is the thought that repeatedly goes through your mind. On your way to check out the high service pump you pass the pile of parts that once was the backup or stand-by pump. Once again, you chastise yourself for not getting the needed repair parts and putting that pump back in service. Then it happens – you see a blackened, burned out shell of a motor on the high service pump. Time to panic!



Hopefully, the scenario I have described above has never happened to you. But, I assure you, as far fetched as it might seem, at some point in time a very similar situation has befallen an operator somewhere in this state. Was it the operator's fault? How might this event been avoided? These are the questions that I will attempt to answer in this month's article. Let's begin with who was at fault. Being public servants, we all know that there is no such thing as equipment failure, an act of God, or mother-nature showing us her might.

No matter what the case might be, at one time or another we have all heard one or all of these famous nuggets being



uttered by inconvenienced citizens. You know – The city should have done this or that; It was never like that before the city changed this; or my all-time favorite, drum roll please, I'm going to sue the city. As they vent their angers, you are charged with the daunting task of assessing the situation and formulating a "game plan" that will bring some degree of normalcy back into everyone's lives.

Was the operator at fault? Given the limited facts that I spelled out, it would be easy to draw a conclusion that the operator, at the very least, was not very attentive to his maintenance duties. However, as we all are painfully aware, the operator has far more duties beyond those in the water department. More than the average person can even begin to fathom. Most small system operators are also responsible for wastewater, streets, alleys, parks, animal control, and any other job that the City or Village Boards can dream up. Depending on the individual, there is a threshold, when met, where they can no longer comfortably fulfill all of these unrealistic expectations. It is up to the elected officials or administration to recognize this and act accordingly. If this means hiring more staff, then so be it. In this case the operator can not be singled out as the sole factor for this failure, for the root cause should rest squarely on the shoulders of

continued on page 5

the administration. If it were not for the “overload” situation that they had placed upon the operator, he would have most likely been able to better prioritize his maintenance projects.

So, how do we avoid catastrophes in the future? The obvious answer is – you can’t. But what you can do is lessen the severity, frequency and, in some cases, eliminate service interruptions through preplanning. Although emergency response plans are an integral part of most major events, they, as their title indicates, are responses to an event that has already taken place and do little to prevent an emergency. To prevent an emergency from being created, you must practice a concept that is beginning to see some acceptance. That concept is asset management.

In a nutshell asset management can be defined as “a process for maintaining a desired level of customer service at the best appropriate cost.” For most us, when we hear the word asset we think of dollars and cents. If you have assets – you have money. But, as we will soon see, it is much more than that. To begin, we first need to know what an asset truly is.

When applied to the water and wastewater industry, assets are buildings, tools, any piece of equipment, pipe, or machinery used in the operation of a utility. Assets also include people, such as the utility operator. Managing these assets ensures that your system gets the most

value from each of your assets and has the financial resources to repair, rehabilitate or replace them when need be. As part of the managing process, development of a plan to reduce costs while increasing efficiency will be created.

Successful asset management will depend on knowing the system’s assets and regular communication with management. Don’t forget, the operator is your most valuable asset and a wealth of knowledge when it comes to developing an asset management plan. When practiced correctly, asset management will ultimately help you place irrefutable facts on the table during budget talks; increase the efficiency of your utility; **PRIORITIZE MAINTENANCE; SAVE TIME;** and ultimately improve customer service. For, at the end of the day, that is what we are all about – customer service. Through asset management, the above scenario would probably not have spun out of control.

A great deal of the decision makers out there has no idea what assets they have and to what degree their importance might be. Through the asset management process, these assets would have been defined and prioritized so that the

agreed upon level of service would have been maintained. With that little bit of knowledge they could have supported the operator when he requested that the backup pump be repaired or replaced instead of insisting that it wait until the new playground equipment is installed. They would have easily recognized that all other projects would need to be placed on the back burner until these critical issues have been dealt with.

That leads up to the question, how do I complete this thing called asset management? The answer is YOU don’t! Asset management is a team effort and must have all of the support of its members. As a minimum, the team should consist of at least one person from each of these areas: decision-makers, managerial, operational, financial, and customer service. As you work your way through the process, each person from these core categories will be able to offer valuable input from their areas of expertise and

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greatly enhance the end product. Knowing that major change does not happen over night, asset management is a process designed so that you can “ease” your way into it and begin to stretch your dollars. It will evolve over a matter of months and even years as you perfect the data being tracked.

To assist in the asset management process, many different software packages have been created to store, manipulate and create reports from the data that your team enters. USEPA has created the most affordable software package for small systems. Their *Check Up Program for Small Systems* (CUPSS) retails for \$0.00 and can either be downloaded from their website (www.epa.gov/cupss/) or requested via telephone (1-800-490-9198).



Another package that I have been looking at and will soon be evaluating is from SEMS. A lot of you might recognize the SEMS name from the software package that you utilized when completing vulnerability assessments for your water and/or wastewater systems. Over the past few years they have been adding modules to their original *SEMS Suite*.

One of the latest additions is that of an asset management module that appears to be quite a bit more “user friendly”. Unlike the *USEPA CUPSS* software, this suite is not free but is only available on a subscription basis. The monthly fee for this suite, which does much more than just asset management, will vary according to the size of your system. To see what all is available with the *SEMS Suite*, check out their website at www.semstechnologies.com.

Whether you use the *CUPSS*, the *SEMS*, or some other software package for asset management is not really important. The important thing is that you move in the direction of managing your assets. If not for your sake, then for the sake of your customers. 💧

NOTICE:

The Illinois Rural Water Association office will be closed the following upcoming holidays:

November 11—Veteran’s Day

November 27—Thanksgiving

November 28—Day after Thanksgiving

December 24—Christmas Eve

December 25—Christmas

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Looping of Water Mains in Distribution System

by Greg Bates, IRWA Board President

One important aspect of long-range water distribution system planning is looping dead-end water mains. This is important especially in large rural distribution systems because shut off valves may be several miles apart, thereby causing many customers to be without water service when mains have to be shut down to restore service to the remaining customers. For instance, record amounts of rainfall this year have caused several major creeks to flood and wash out existing water mains. Without looped lines, these major leaks would be an enormous problem to repair due to the area being flooded for a long period of time, as well

as the creek bed and the area surrounding it being saturated with water.

Looped lines will also allow water flow or feeds from both sides of affected areas such as creek beds or rocky terrain. The short term solution to getting water service restored when service is interrupted is to cut in gate valves or perform line stops on both sides of the creek in a more workable area. It is important to ascertain that valve locations allow all service connections to be in service. Due to having looped lines, we had water service restored to over 200 households within ten hours of being notified of three creek crossings that had blown out because we



had 6 inches of rain in 5 hours. Additionally, we saved our storage tanks from being drained, which would have affected approximately 5,000 households versus the 200 households that we were able to isolate the problem to.

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Looping of Water Mains in Distribution System

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The crucial planning of water main loops in a distribution system preserves feed areas from multiple directions and provides better flow rates in peak demand times and higher water pressure as well. Perhaps not as dramatic but equally as important is the ability looped lines provide to prevent dead-end lines and stagnant water, thereby allowing the distributor to provide much better water quality.

Throughout the last few years of diligently working to loop many of our dead-end lines, we are finding the benefits far outweigh the initial outlay. Planning for future emergencies makes looped lines necessary and the side benefit is a much better distribution system. 💧

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How to Improve Your Sampling Procedures

by Wayne Nelson,
IRWA Training Specialist/
Field Staff Coordinator

We take a lot of samples in this business. That putting it mildly, isn't it? We take samples for bacteriological, fluoride, lead, copper, volatile organics, synthetics organics, disinfection byproducts, radiological, nitrates, nitrites, and the list goes on and on.

Some of these samples are collected in a pretty straightforward matter. Turn on the water, fill the container, fill out the paperwork, and send it to the lab. Others take a little more work and often if the proper procedures aren't followed you got a "bad" sample.

As an operator I've always believed that all samples be collected the right way but none more so than our bacteriological

samples. To me this tells us if we're doing "Job #1"—that the drinking water that we deliver to our customers is safe for consumption. In the past we've always strived for satisfactory samples in our "Finished" and "Distribution" samples. But, in our raw water samples, maybe not so much. However, with the new Ground Water Rule we must do everything right in regard to our "Raw" water samples. If a raw (groundwater) water sample comes back "unsatisfactory" we want to be able to confidently know that the sample is bad due to a reason besides improper sampling procedures.

For that reason I hope that you will review the sample site locations selection and procedures that you use for your bacteriological samples and answer yes

to the following questions:

- Is my raw water sample site faucet clean, smooth, and with no apparent problems such as leaking packing, aerators, or threads that can hide tiny varmits?
 - Do all distribution sample sites also meet the above criteria?
 - Are my sample sites located in an area that is safe from contamination (these include outside faucets and yard hydrants)?
 - Do I have
- easy access to these sites during reasonable hours?
 - In the event that a distribution sample comes back unsatisfactory do you have sample sites upstream and downstream (within 5 services) that also meet the above criteria?
 - Have all sample collectors been trained in the proper sampling procedures?
 - Do you "flame" or disinfect the faucet before sample collection? (This is not required and it is not cheating.)
 - Do your sample submission procedures ensure that the samples will reach the laboratory before the 30 hour deadline?
 - Do you always check that the samples were analyzed and were satisfactory?
 - Do you always check any sample boxes that you receive to be sure that they are not for repeat sampling?

If you do change any of your bacteriological sample sites be sure to forward a new map and information to your IEPA regional office so that new sample site numbers can be provided. By following these procedures it's a pretty safe bet that you'll get good samples every time. ♠





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Would You Kiss My Dog?

by Chuck Lunsford

You might think twice before allowing a dog to give you a big wet kiss if you know what I know. I also want to apologize in advance to all dog lovers. I remain an admirer of dogs, just from a distance where my face is out of reach of their over-exuberant tongues.

As a child growing up in the boonies of Alabama we had a succession of dogs, some memorable and some I'd rather forget. One thing they all had in common is a trait all dogs everywhere participate in with gusto, one in which prevents me to this day from allowing a dog anywhere near my mouth.

Early on in life, while still blissfully unaware, I had no qualms in allowing the current family's dog the liberty of

indulging itself in a round of good-natured face-licking. After all this is for most people one of the most endearing aspect of canine ownership, letting the mutt shower them with doggie kisses for as long as the dogs owner could stand it. The pooch thinks it is showing its owner the proper display of submissive behavior and affection and believe me when I tell you that a dog will slobber all over you as long as you allow it.

As I said before, my early years were spent in blissful unawareness of Fido's hygienic tendencies. Thinking about that very aspect of doggie behavior today brings back the gag reflex I experienced when I finally discovered, far too late unfortunately, how the mutt went about its daily ablutions.

The dog we had at the time, if I recall, was a stray that sort of drifted in one day and decided to stay and see which way the wind blew. I saw him as companion for my many




explorations back into the hills and ridges of the Appalachians. To give credit where credit is due I will say that dog was a champion walker. He would accompany me as long and as far as I asked him too.

Now to the gist of this story. I remember it was a scorching hot August day. One of those kind of days where the air was thick and hard to breath. Anyway I was lounging on the front porch, enjoying a cold drink, and not paying attention to anything in particular. A movement caught my eye and I saw our dog coming down the road towards the house, returning from who knows what type of foray. About a block from the property I saw him stop suddenly and peer intently at something at his feet. Then he eased himself down onto the ground and started rolling around on his back, legs flailing the air, tongue lolling out, and appearing to be in a state of puppy bliss. Needless to say this aroused my attention. I stood up and wandered over to see what had gotten the dog all excited. Was there such a thing as dognip?

Arriving on the scene my eyes were met with the disgusting spectacle of the dog rolling in the partially decomposed remains of some poor creature that was

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n't able to dodge fast enough. The way the dog was carrying on you would have thought he had discovered the next greatest scent guaranteed to sweep the lady dogs off their feet. He spent a good ten minutes covering every square inch of his body with the essence of the carcass. He even belly-crawled over it a few times just to make sure no spot was missed.

Once he completed this gruesome task he stood up, shook himself off, gave me a sideways glance, and headed for the porch. I stood there in shock for a second, barely able to believe what I had just witnessed. Finally gathering my wits about me I decided it would be prudent to put as much distance between me and the dog as possible. My plan was to casually walk by him (holding my breath of course), enter the front door, and escape quietly out the back door and make for the hills as fast as my legs would carry me for the remainder of the day. My reasoning was if I was several miles away I wouldn't have to put up with the smell and best of all one of the other kids would have to give the dog a bath once the rest of the family caught wind of it.

Just about when I put my hand on the door handle to let myself in I noticed the dog engaged in yet another of the favorite pastimes of dogs everywhere. He had commenced licking himself over every inch of his body that he could reach. My stomach started doing flip-flops because I knew where he had been less than a minute prior, but for some unknown reason I was transfixed. I could not walk away. Some morbid part of me wanted to see just how far and how long this dog would go with this spectacle.

For a good half hour I bore witness as this dog slurped himself from stem to

stem, spending an inordinate amount of time in the stern area if you get my meaning. With disgust and fascination I watched the whole gruesome process, sitting down at some point to see if it would help the nausea I felt coming on.

Once his ablutions were over he licked his chops as if he had just finished a choice sirloin, set his sights on me, and before I could react, pounced towards me with a twinkle in his eye and a bounce in his step. Upon later reflection I finally reasoned he wanted to thank me for "sharing" the experience by offering me some of that love and affection dogs are famous for.

Instinct took over at that point and I engaged in a hasty retreat, crab-walking backwards with the dog getting ever closer, intent on showering me with attention. I stumbled slightly and he saw this as his chance. He lunged at my face with his mouth open and his tongue ready to give me the love and affection he felt I deserved as his master.

Things moved pretty much in a blur at this point which is understandable considering the speed in which I moved. I vaguely remember attempting to pull my head down between my shoulders like a turtle to prevent direct contact while at the same time levitating myself to the porch railing, just barely escaping the dog and his cesspool of a mouth.

Realizing he had missed his chance he looked a little contrite and hurt that I should deny him what he felt was his righteous duty. Between a fit of hyper-gagging and impaired vision

brought on by the fumes emanating wafting about the porch I managed to warn him off and escaped into the house.

After awhile I calmed myself down and started thinking about my previous escape plan and the possibility of putting it into action while I still could when I was overcome with a sudden sense of dread. I suddenly remembered that the previous day I had allowed this same dog, the very one who had just spent almost an hour in the most revolting display I had ever witnessed, kiss me square on the mouth.

I won't go into what happened next other than to say it took me about a week, three giant tubes of toothpaste, and a couple of king-sized bottles of Listerine before I got the taste out of my mouth.

Think about it folks. You might want to reconsider if PoochyPoo and his dog bad breath want to share with you where his tongue has been just before he came over to give you a smack on the lips.

About The Author

Chuck Lunsford is the owner and developer of EliminateYourBadBreath.com, a well-known source for dog bad breath cures and remedies. If you have more questions about other bad breath topics visit us at forbadbreath.com for bad breath products that work. 💧

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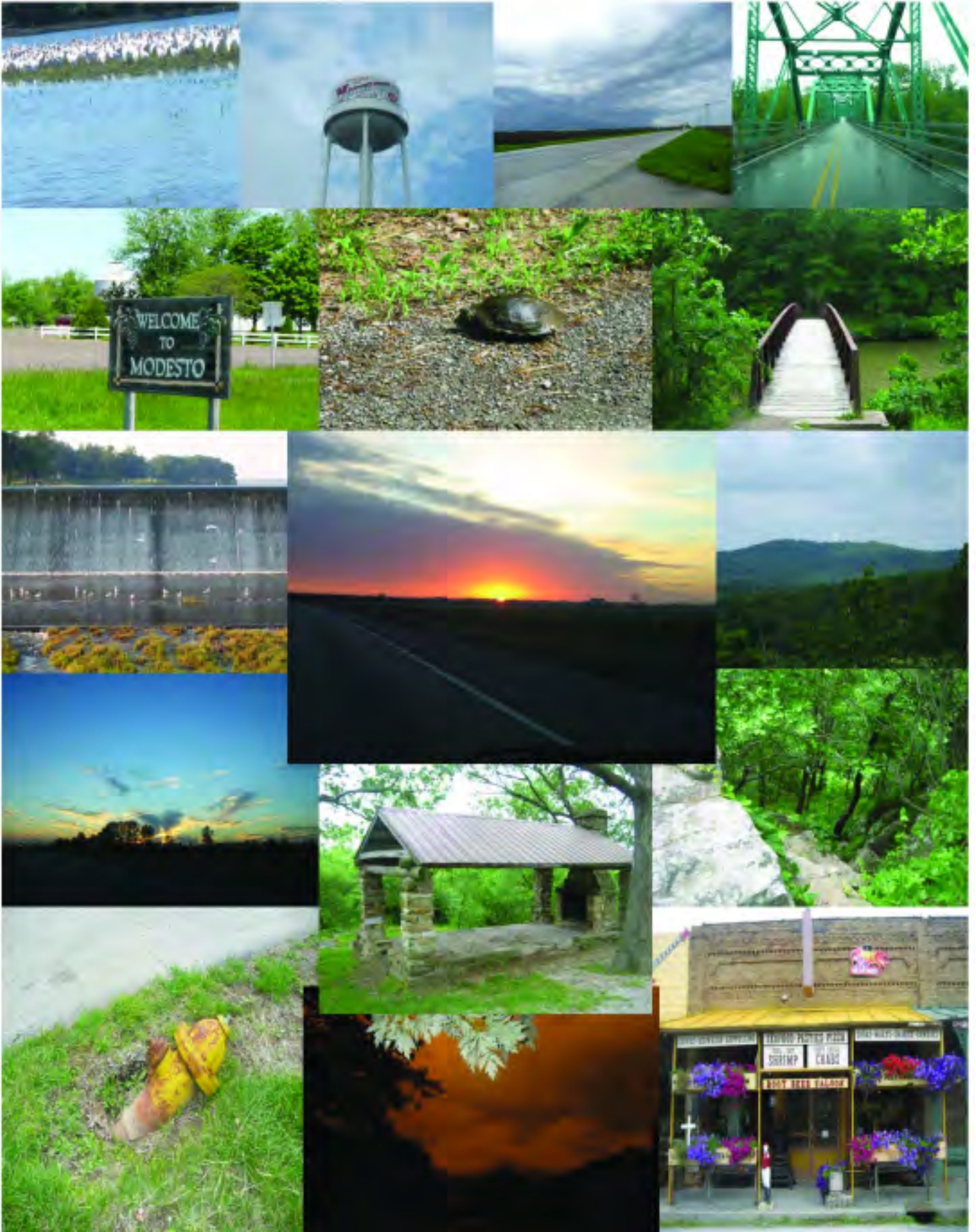
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Pictures from Around the State





Change of Address?

Please be sure to call and let IRWA know if you have a change of address. The U.S. Postal Service is requesting that everyone have a correct address so they can receive mail.

If a piece of mail is sent to an incorrect address, and is undeliverable, the piece of mail will be thrown in the trash.

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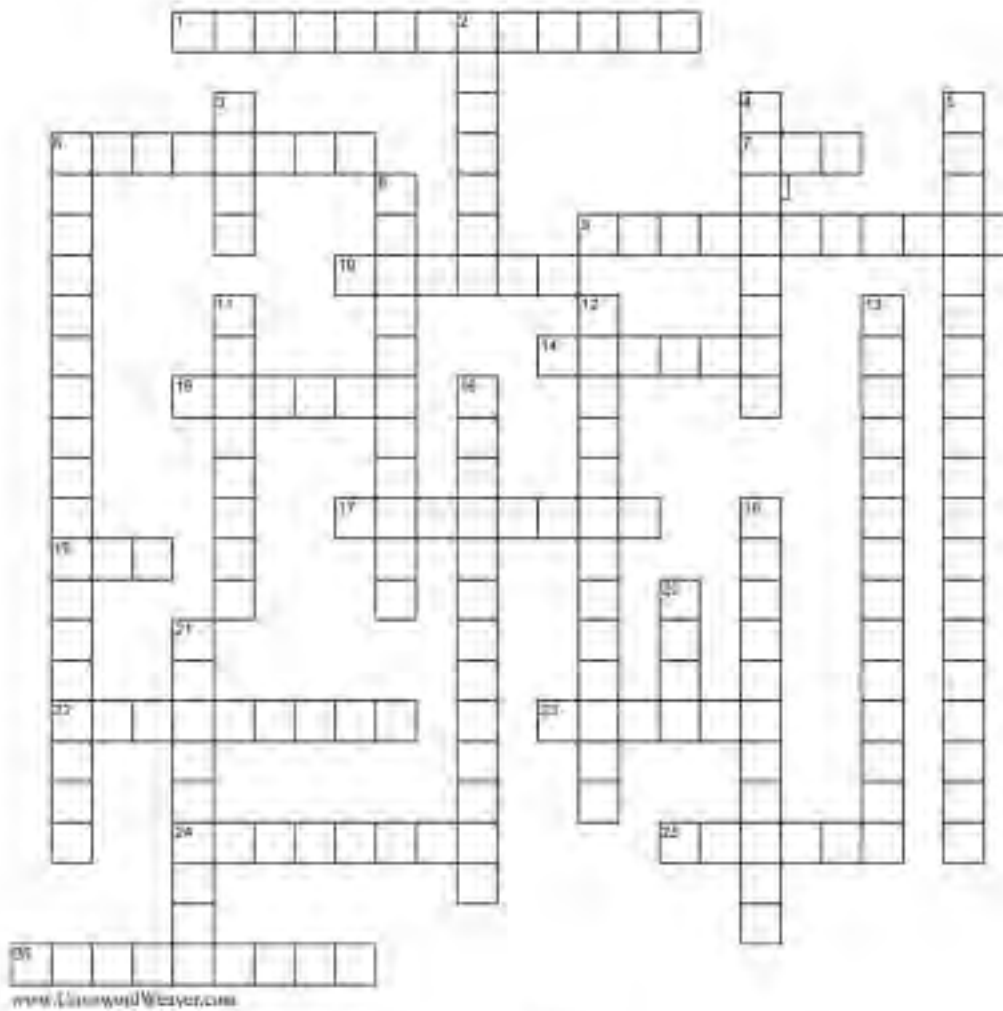
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Across

- 1 Players who catch the ball
- 6 First down distance (2 wds.)
- 7 One point kick
- 9 "Sweetness" played this position (2 wds.)
- 10 A sack in the end zone
- 14 Protective head covering
- 15 First year in the league
- 17 The cage in front of the helmet (2 wds.)
- 19 The AFC and NFC combined
- 22 The biggest game of the year (2 wds.)
- 23 Converted soccer player
- 24 The football field
- 25 Technique of taking a player to the ground
- 26 Out of bounds

Down

- 2 Touchdown area (2 wds.)
- 3 Big shoulders
- 4 Poles the ball is kicked between
- 5 Super bowl award named after Green Bay Packers coach (3 wds.)
- 6 Post touchdown scoring option (3 wds.)
- 8 Field general
- 11 Pigskin
- 12 Players trying to sack the quarterback
- 13 Two players defend the same opposing player
- 16 Players protecting the quarterback (2 wds.)
- 18 Defensive players covering wide receivers
- 20 Tackling the quarterback behind the line of scrimmage
- 21 Three points (2 wds.)



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Rural Water and the Farm Bill

by Walt Smith, NRWA

Congress recently completed consideration of the Food, Conservation and Energy Act of 2008, commonly known as the 2008 Farm Bill. This important piece of legislation will control all United States Department of Agriculture (USDA) programs for the next several years. Specifically, it provides the guidance from Congress to USDA on all the programs related to rural water such as the Circuit Rider Program, the Grassroots Source Water Protection Program and the Water and Wastewater Grant and Loan Program. While addressing the continuing need and growing demand for these programs, the Congress also included language in the bill that may provide increased opportunities for the cooperation between the Department and NRWA.

The main priority of NRWA under this Farm Bill was the inclusion of increased authorizations for our existing programs. An authorization is a hunting license, more or less, to go to Congress over the next several years and petition for the funding of these programs. These authorizations provide NRWA and the state associations the opportunity to educate Congress and ask for increased funding for the next 5 years. This effort was successful and increased authorizations were

acquired for both of these programs. Now it is the job of each of our state associations to educate their members and have them work for increased appropriations in the coming year from Congress.

Also a main priority, was the maintenance of the current Water and Wastewater Grant and Loan Program. Funding for the current backlog of projects in this program and protecting its authorizations were both important. There are currently over \$3.4 billion in approved projects waiting for funding. In the end, Congress provided \$120 million in funding to address the backlog of projects in the US, with funding being split between all the states with pending applications. No state may receive more than 5% of these funds, however, in September any unused funds will be pooled and redistributed to those states that still have need. The current program was also a target of some who would like to repeal certain provisions which provide protections to small rural systems. These protections, mostly relative to the 1926(b) protections in the bill were challenged by several groups, and Congress spoke loudly in roundly rejecting these proposed changes.



Congress also included in the bill several new programs which NRWA will be evaluating and monitoring over the next year. These programs, generally in conservation, may provide NRWA and the state associations the chance to build mutually beneficial relationships with the Department. Water conservation, watershed protection and planning, and water resource management are all priorities where rural water has great expertise, and those may prove needed by USDA to meet the requirements of many of their programs.

Overall the 2008 Farm Bill was a success for rural water and its members. By continuing our relationships with Congress and USDA, this success can only grow over the life of this Farm Bill. ♠

UPCOMING TRAINING SESSIONS

Water

November 19—Hydrant & Valve O. & M.—Decatur

Wastewater

November 6—Class 3 & 4 Overview—Woodhull

November 19—Wastewater A—Z (Math)—Monticello



Remember to check out
our website,
www.nrwa.org, for the
latest training sessions to
register for!!

IRWA Provides Clean Water for Marcala, Honduras

The 12,000 person town of Marcala, Honduras took possession of their newly renovated water treatment plant from IRWA on July 5, 2008. The occasion, covered by live radio and television, was marked by a community celebration, dedication and ribbon cutting ceremony.

The plant was redesigned by IRWA with support from Cornell University's AguaClara group and the engineering firm DeWild, Grant, Reckert & Associates of Rock Rapids, Iowa. The plant, formerly a failed upflow rock filtration plant, was redesigned to a flocculation/sedimentation plant with chlorine disinfection. IRWA and its partners were able to use the existing footprint of the plant creating a series of flocculation and sedimentation basins and finished water storage. Plate settlers were employed in the sedimentation basins to improve plant performance. Construction was

accomplished by local labor with oversight by IRWA and our partner organization in Honduras, Agua y Desarrollo Comunitario (ADEC).

The plant was designed to operate without power as electricity is not available at the site. The treatment process including chemical addition is accomplished through gravity flow. Nearly all of the materials used to construct the plant including the plate settlers were procured from sources in Honduras.

Total costs for the plant were \$64,000 which were shared by IRWA (\$36,000) and the town of Marcala (\$28,000). The town has hired two full time operators and has recently been notified by the Honduran national government of a grant to bring electrical power to the site.

Water quality has improved tremendously as a result of the plant. June through November marks the rainy season in Marcala during which the Chieflador River, source for the plant, becomes very muddy. The plant is operating at 500 gallons per minute and has been treating water with turbidity levels as high as 750 NTU. The community is extremely happy with the quality of the water and there is a real sense of excitement for the future.

For more information about IRWA, please visit our website www.intlruralwater.org or contact Bill Kramer at nrwabk@nrwa.org or 443-847-0129. 💧



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Village of Mackinaw — Water Treatment Plant

by Gale Moore, Circuit Rider #1

The Village of Mackinaw is located in Tazewell County, southeast of Peoria. Mackinaw is named for the Mackinaw River, which is first mentioned in the journal of Patrick Kennedy in 1773 as the Little Michilimackinac River, and the name evolved to Mackinaw. In 1999, the Village decided to implement major water system improvements. The \$3.4 million project was completed in 2004 with

improvements including two new wells, a new 500,000 gallon elevated tower, and a 700 gallon per minute treatment plant. The Public Works Department is overseen by Public Works Manager Randy Dabney and Maintenance Supervisor, Mike Schopp. The village's population of 2,944 uses an average of 233,000 gallons per day. Also, the design treatment rate for the projected population in year 2030



is 345,800 gallons per day.

Mackinaw's water supply is from two high capacity wells 300 feet deep from the Mohomet-Sankoty aquifer. Water from the wells are pre chlorinated, aerated, and

continued on page 24



polymer addition prior to softening/precipitation process. This process uses a Claricone with the addition of lime. Next the water goes to the stabilization basin with the addition of CO₂, then to sand filtration, addition of chlorine and fluoride, and last to the 100,000 gallon clearwell storage. 3 high service pumps then pump it to the distribution system. This is a very clean, well operated, state of the art plant that will produce finished water to The Village of Mackinaw for many years to come. 💧



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Just for Fun!

answer key from page 19



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