



## You Work for Who...???

By: Don Craig, Deputy Director

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RURAL WATER SYSTEMS ASSOCIATION

Many, many years ago, when I came on to Illinois Rural Water Association, that was the question I had to continually and endlessly (it seemed) answer to family and friends in my hometown, and the area I live in. To say that it got old is putting it lightly.

Honestly, I would try to tell people what organization I had just gone to work for, and the kind of things they did for small, rural water systems (no wastewater programs then), in the state of Illinois. Putting that information "out there", only left them with a facial expression that would stop a runaway train. They were stupefied, to say the least...and I felt 'stupid' for trying to go on and on, to explain just what the heck I did and what the Association was all about. It was exhausting and honestly made me feel so extremely frustrated, that I got to the point, I really didn't want to tell anyone...even though I loved (and still love) what I was doing.

And, at that time there weren't very many system personnel, which would ask the same question. Now, giving them the complete explanation about IRWA was not a problem at all, because it was part of the job. Also, those people were more knowing, receptive and inquisitive to the value and the benefit of such an entity, in helping out by providing free overall assistance on operational and management problems that rural systems incur on a daily basis. The look on their face was quite the opposite of those on my friends and family...usually a smile followed by the words..."really?" And, I would simply reply..."yes!"

So, to all of those laymen friends, family, and others out there, that have no idea what we do every workday, I can

only say... I understand, somewhat. Because, I came to the realization, that they wouldn't have a clue, because we were the only organization providing such services to rural communities and districts. Nobody else was doing or engaging into the overall work we were providing as a state rural water association, in Illinois. So, when they tried to conceive just what the heck we were and did...they couldn't do it, because there was nothing to compare it to. And, honestly, to some degree, that is still the same to this day.

Believe me, I went through years and years, of people saying "So, you work for the State of Illinois!", and I would relentlessly tell them that I did not, and never have. But, you could just tell by the look on their face.... It was flat out expressing "Whatever!!!", before the term was being used like it is today.

Also, those people were more knowing, receptive and inquisitive to the value and the benefit of such an entity...

Just a few short months ago, I was in the local gas station, and a guy I have known for years, came up to me and asked me if I was out of a job. I thought he was kidding at first, but then realized he was serious. So, I said "No, what makes you think I would be?" He replied back, "Oh, I just figured the state is out of money and that

a lot of state workers are being let go...so, I figured you probably were."

After correcting and letting him know, that I had never worked for the State of Illinois, I turned to walk out. As I did, I kind of laughed below my breath... then I sighed, and as I walked away, I literally said to myself.... After 31 years, is it never going to end!?!?

### IRWA'S MISSION STATEMENT

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



**THE IRWA OFFICE WILL BE CLOSED ON MONDAY, JULY 4 IN OBSERVATION OF INDEPENDENCE DAY. HAVE A SAFE AND HAPPY HOLIDAY!!!**



**Submitted By: Mark Mitchell, USDA Source Water Specialist**

Recently I had occasion to visit with a well driller and asked “What are the important factors from your perspective that Illinois Water Operations Specialists should know about the operations and maintenance of their source of water?” Following is what they kindly shared with me.

**Co- Authors: Darin Cahoy and Ernie Lilja of Great Lakes Water Resources Group**

The most frequently asked question our offices receive from water operators is “how do I make the airline gauge work properly?” It should be noted that the word “airline” in that question is usually substituted by a more colorful adjective. To that end, here’s the quick answer for all:

SLOWLY add air to the airline. The needle on the gauge should rise clockwise

Stop adding air when the needle is nearly maximized or stops rising

The needle should then slowly drift back counter clockwise and stop. If the needle drifts all the way back to zero you probably have an air leak in the system.

Subtract the gauge reading in feet and subtract this number for the airline length. This number is your static water level if the pump has been shut off for a period of time or this number is your pumping water level if the pump is rising.

### Use Your Senses:

Upon entering the well house be cognizant of your surroundings.

Touch- Are there any abnormal vibrations that can be felt upon entering the well house including in the plumbing or in the floor? Can you feel abnormal heat coming from an electrical panel or is the motor “hot” to the touch? Is it equally hot on the top of the motor as the bottom?

Smell- Is there any “burnt” smell in the air or any abnormal aromas upon entering the well house?

Sound- Take time to listen and see if there are any abnormal noises being emitted from the well, panel, or above ground motors. Is everything working as designed? Do you hear excessive air when the system stops? Are your run times longer in order to achieve the same GPM produced from last month or a year ago?

### Documentation:

Are you documenting air-line readings at least on a monthly basis (minimum)? If you are; you will be one of the guys that will get to “schedule” pump work versus being called out at 2 AM for a pump failure alarm.

The new SCADA systems designed today allows well operators to take and make changes to the pumping stations without ever having to go onsite. It only requires the operator to have a “smart” phone and anything can be done over the airwaves. One very important thing to remember is that even with all of today’s technology it still requires “boots on the ground” to

check your sites on a daily basis and check for any abnormalities.

### Security:

A growing concern among pump stations is security. All doors should be padlocked when exiting especially the chemical room. This will help ensure that children are kept as far away as possible. As operators you are the last defense against somebody getting into a building and causing thousands of dollars of vandalism or worse.

### Storage:

DO NOT use your well house or chemical room as storage for other equipment. Every time the well turns on it has to draw air in to replace the water sent up the column pipe. If you have a gasoline motor in the well house any gas fumes will be drawn into the well and could cause adverse conditions or contamination that you do not want.

The second most frequently asked question is “what is causing the decline in my wells production?” The first answer is always “are you sure the problem is your well and not your pumping equipment?” That answer aside the following is a list of the most common causes in the decline of a wells specific capacity.

### Mineral Encrustation/Bio-Fouling:

This scenario is probably the most common cause of a reduced specific capacity in a screened well. Bacteria are found naturally in all water well formations. As bacteria colonies grow and die they leave either a slimy substance or a harder, scaly formation in the well screen and gravel pack. Combined with the naturally occurring minerals in the water chemistry these can produce a rapid plugging of the screened area as well as the gravel pack and/or borehole wall. It should be noted that this can occur in open hole rock wells and when coupled with the calcium in the water the plugging effect can actually “cement” off water bearing cracks and fissures in sandstone and limestone formations.

### Sand, Silts, and Clay:

The naturally occurring sand, silt, and clay are probably the most overlooked issue when cleaning screened wells in an alluvial/unconsolidated formation. All unconsolidated geological formations have naturally occurring sand, silt, and clay in them. While most of these are broken down and removed during the initial development of the well, as time passes these sedimentary products found farther out in the formation will migrate toward the gravel pack and the well screen lodging themselves in this critical area of the well and thus providing blockage in the well-which in turn inhibits the ability of the water to enter the well during pumping. The lower the entrance velocity into the screen the better.

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By: Phil Donelson, IRWA Marketing Division



As Spring is in full swing with its abrupt weather changes, wind, rain, flooding, 30 degree daily temperature swings...I pray for some balance...not to mention that I live in a teaching household. My wife is an elementary teacher, summer can't come soon enough! Kids are crazy and want to be done, teachers are losing steam, and the spring bug has bitten! Summer is a much anticipated season at our house!! I have faith that we may all survive! With that said, this is also the time of year our annual administrative conference pops up!

IRWA's 4th Annual Spring Administrative Conference was held again, in Fairview Heights, on May 13th & 14h, 2016. The Four Points Sheraton has kind of become its home. The staff there has been fun and the area is loaded with great places to shop and have a good meal! Since we just had it recently and it went so well, I would like to recap for those of you did not get a chance to attend. First of all I want to thank those systems who participated; we met our record of 31 attendees this year! Obviously we would love to have more attendees,, so that we can continue to expand the event , with more benefits for our member and non-member utilities.

Once again the comradery was great! The networking with each other is always a big plus with this group. I heard some conversations this year that many of our returning attendees have made friendships at this conference that have grown over the years. So much so, that they stay in touch and reach out to each other all the time for advice and just to check in! That is a wonderful example of why we host this conference. This group, with their energy and fun spirit always seem to make this conference one that is memorable and well worth the effort to attend! I do want to thank the speakers and all of you in attendance for making it a very memorable conference once again. If you are unfamiliar with the conference or have not yet made it to one of these events, you really should attend one and see for yourself!

The Administrative Conference is a full day of speakers on Thursday, ending with a hospitality hour. Then on Friday, we

have a half day of speakers concluding by noon. All food and refreshments are provided throughout the two days. There are usually a number of giveaways and prizes awarded throughout the conference as well. The focus of this conference is on the administrative staff, board members, city officials, and any other clerical staff who work for municipalities or water systems. This year we had 9 speakers which presented on the following topics. -Audits, Using ArcGIS Online, IMRF Pension Plans, IEPA Forms and Documents, Insure from Water Loss, Manage Delinquency and Collections, Irate and Cranky Customers, Human Capital Management, and "Rural Water Impact" which is IRWA's new Web resource for members of our association.

So, if this is of interest to you and you want to have a good time learning about these and similar topics, push your system to send staff to the upcoming conference in November, or catch the one next spring in Fairview Heights! The next IRWA Administrative Conference is coming up in the fall! We are tentatively planning to go back to East Peoria and the ParaDice Hotel Casino on the 17<sup>th</sup> and 18<sup>th</sup> of November. Mark your calendar, and look to the IRWA website for registration material later this summer. Also, as we have done in the past, there will be a Buy One, Get One Half Off registration promotion. If a system pays for one regular priced registration, the second person from the same system is 1/2 off!! What a deal! Encourage your board to send a couple folks from your system. We really hope to see you there!

In closing, please keep checking our website, looking for the e-mails, and our fliers to register for upcoming sessions of all types. In the next few weeks, I will begin posting information for sessions for the summer and fall. Thanks again to all of you who support the training we do, whether it is through speaking or attending as a student! See ya soon in class!!

I wish you a safe and fun summer!!

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#### **Structural Failure:**

A breached or collapsed well screen or a hole in the well casing will obviously cause a tremendous loss of production in any water well since this allows foreign material to enter the well quickly and reduce the total depth of the well.

#### **Change in Aquifer Characteristics:**

This is usually the case when a declining static water level is detected and sustained for over a 12-month period of time. Shallow alluvial wells are usually suspect to this condition during sustained periods of low rainfall and recharge. Deeper wells can be affected by this if the withdrawal rate exceeds the recharge rate over very long periods of time. There is little remedy for this situation.

In summary, there are always multiple scenarios to consider when you detect a loss of production. Accurate and timely record keeping allow for early detection of an issue and the earlier a problem is detected the better the probability of being able to rectify the situation.

Written by:

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### GPS/GIS MAPPING SERVICES

Through the implementation of GPS & GIS technology, IRWA can effectively produce hard copy and digital maps. With this new service available from IRWA, utilities can attain new and accurate maps to better manage their infrastructure assets.

The printed maps can be large-scale wall maps up to 36"x48" showing major water and wastewater features with the desired layers (aerial photos, streets, topography, etc.). The printed maps can also be generated into a map book format. The map book is a bound 11"x17" book of high-detail maps printed at the best available scale.

The digital map file on a CD, can be viewed and printed with free software that IRWA will provide. The software allows you to click on a waterline with a leak and highlight which valves need to be closed to isolate the line. There are also tracing features to show the direction of water flow, and other useful features.

Payment for services is determined by a charge per each system feature located. The amount charged for a Map Book will be \$50 plus \$5 per page; and a wall map is billed at \$100 per map. More information is also posted on our website at [www.ilrwa.org](http://www.ilrwa.org) or you may call our office at 217-287-2115.

