



## Warren Converts to Water Distribution System Model To Address Both Water Quantity & Quality Issues

By: Robert L. Davis – City of Warren

Vito A. Cimino – MWH Americas

### EXECUTIVE SUMMARY

The City of Warren is dedicated to providing its customers with adequate water quantities of the appropriate quality. *Three principal issues prompted the City to take the necessary steps to manage its distribution system in a more effective manner – Warren is:*

Converting from free chlorine to chloramines for maintaining a disinfectant residual in the City's distribution system – to reduce the levels of regulated disinfection by-products.

Constructing one new, elevated storage tank in the short term; and perhaps a second tank in the long term – to improve pressure and flow conditions throughout the City's distribution system.

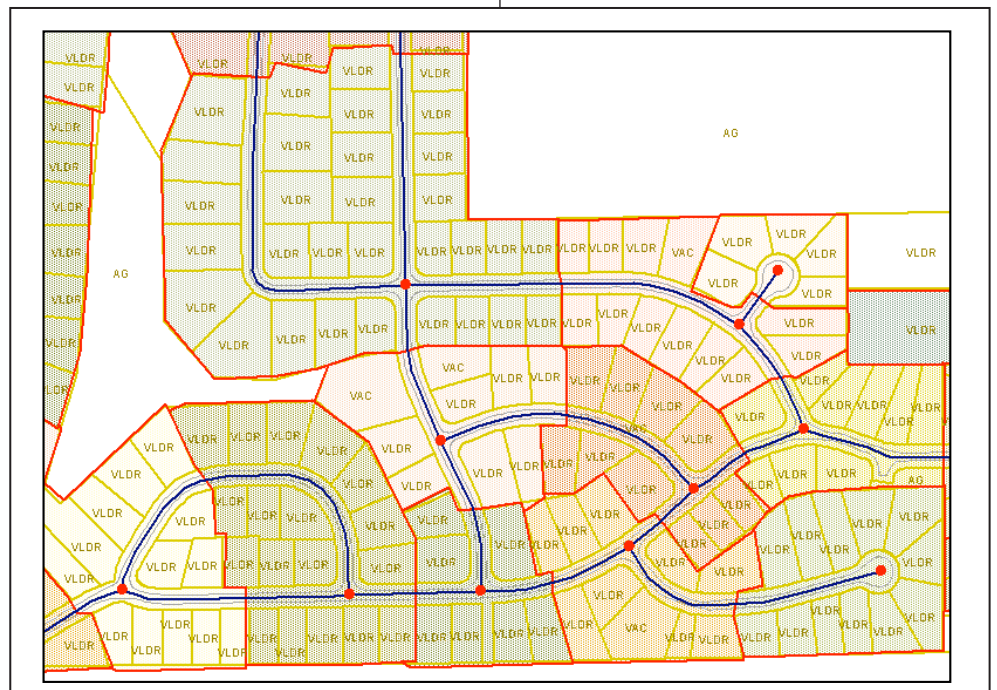
Preparing to comply with forthcoming regulations that will focus more on distribution system water quality – particularly following analysis of nationwide results for the initial distribution system evaluations (IDSEs) that will be conducted as part of Stage 2 for the Disinfection By-Products Rule.

The City realized an updated distribution system model would greatly facilitate proper management of chloramines as the secondary disinfectant in its distribution system. An updated model would also assist the City in selecting the most appropriate volume and location for additional elevated storage tank(s). Additionally, converting to

a water quantity/quality would position the City to better comply with the distribution system water-quality requirements of forthcoming drinking water regulations.

age tanks). Existing operations and controls were also documented and transferred into the City's distribution system hydraulic model.

In addition to converting to



**Figure 1 – Demand Polygon Generation Using Equal Distribution Allocation.**

The City's most recent water quantity model of its distribution system (i.e., KY PIPE) was converted to a water quantity/water quality model - H<sub>2</sub>OMAP. To complete the study that facilitated this conversion, site visits were performed at key existing distribution system facilities (i.e., water treatment facility, pump stations, and elevated stor-

H<sub>2</sub>OMAP, the City's KY PIPE distribution system model was updated to current conditions to account for modifications that have been implemented in the distribution system since the last update. A state-of-the-art approach was implemented for allocating water demands using GIS and database technologies. The H<sub>2</sub>OMAP model was equipped

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# Straight From the Chair

As I stated in the last newsletter, the Ohio Section has excellent representation on the national level. Ohio Section members continue to be recognized as active



**Rick Schantz, Chair**

leaders, as Christopher Jarrett our MAC Chair, was elected Service Provider Director-at-Large. Chris will serve a three-year term beginning in June 2005.

Also taking national office at the June conference is Marvin Gnagy with Arcadis-FPS. Marvin will represent Ohio on the national Board of Directors and will be a member of the Ohio Section Governing Board. He will be replacing Bob Stevenson whose term will expire in June. I would like to take this opportunity to thank Bob for his dedication and service to the Ohio Section. Bob has

served the Ohio Section in many different capacities over the years and I hope he will continue to stay involved in our activities.

Curtis Truss will be running for President-elect in 2006. The Ohio Section supports Curtis's nomination and wishes him well in the upcoming election.

I am very pleased to announce that Connie Roesch from the City of Cincinnati will be receiving the Kenneth J. Miller Founders Award for her service to Water for People at the national conference. Connie serves as our Water for People Chair and under her leadership the committee has received over \$15,000 in donations in 2004. I would like to congratulate Connie on this well deserved honor.

The Ohio Section has numerous members who are very deserving of award recognition by the national organization. The national awards require the nominee to be nominated by a member or by the section. If you know of someone you feel deserves special recognition, please contact Ron Schwarzwalder the Awards Committee Chair or any Governing Board member so we can work on getting our members the recognition they deserve.

In my Chair remarks at last year's annual banquet, I mentioned that the Governing Board was holding discussions with the Ohio Rural Water

Association on a cooperative agreement for a legislative education contract. I am happy to announce we have signed a joint contract with ORWA to have Capital Insights work with our organizations to educate us on legislative issues that might impact the water industry. I would like to thank Curtis Truss, Brian Bisson, Ramesh Kashinkunti, Bob Stevenson, Gerry Swanton, and Dick Lorenz for serving on the adhoc committee that helped develop the details of the contract and who will work with ORWA on the education process. The legislative education contract should prove to be a great benefit to the membership by alerting and educating members on legislative issues that could affect our industry.

An Operator Certification adhoc committee has been formed to meet with Ohio EPA to discuss our concerns on the proposed Operator Certification Rules. In this newsletter you will find a survey the committee is requesting utilities to complete to assist them in developing consensus on some of the issues arising from the proposed rules. I would like all of our members to complete the survey and take advantage of the opportunity to have their concerns addressed.

The strength of the Ohio Section is its members. I encourage everyone to be active and reap the benefits this organization has to offer!



**Bob Stevenson, Ohio Section Presents Abel Wolman scholarship contribution to Katie McCain, AWWA President**



**Bob Stevenson, Ohio Section, presenting contribution to Wally Bishop, Chair of AWWA Research Foundation.**

*Continued from page 1*

with simulated controls based on the City's current operations and was then calibrated to verify that the updated model represents actual field conditions.

After verification, the updated model was used to identify limitations in the existing distribution system - along with recommended improvements. The H<sub>2</sub>OMAP model was also used to size and locate an additional overhead storage tank. Both the old and new models were turned over to the City, and training was provided so the updated model can be used by City staff to manage its distribution system. Initially the new model can be used by the City to control chloramines as a secondary disinfectant by modeling water age. Ultimately, with additional distribution system data collected after the conversion from free chlorine to chloramines, the City plans to model the actual chloramine residuals throughout the distribution system.

This article describes the steps taken to convert the City's existing distribution system model to H<sub>2</sub>OMAP, and then up update and calibrate this new model. Also discussed is how the updated/calibrated model was used to select recommended improvements that address both the use of chloramines as a secondary disinfectant, as well as limitations of the existing distribution system. An overview of how the updated model was specifically used to size and locate an additional overhead storage tank is also provided.

## BACKGROUND

The City of Warren's water distribution system consists of one major and two smaller pressure zones:

Main pressure zone that encompasses most of the City,

Howland pressure zone that covers an area to the east, and

High-service, or Patchen, pressure zone that encompasses an area to the southeast.

The system components that affect operation of the City's distribution system include three pump

stations (not including pumps located at the water treatment facility, WTF), four elevated storage tanks and two standpipes. Pump station flows and pressures and tank levels are monitored in real-time and are continually displayed on a computer screen through Warren's supervisory control and data acquisition (SCADA) system. With decreases in distribution system water demands over the last few years, several hydraulic challenges can develop especially during peak demand periods.

Pressure limitations,

Low flows leading to stagnant water and poor turnover in elevated storage facilities, and

Less-than-adequate overhead storage capacity.

This project produced a calibrated H<sub>2</sub>OMAP water quantity/water quality model from the City of Warren's existing KY PIPE water quantity model. The converted model was updated to reflect current conditions in the City's distribution system. Limitations of the existing, aging distribution system were identified and several improvement alternatives were developed. Lastly, recommended improvements were selected including the sizing and location of an additional overhead storage tank. Initially, the updated model will be used to manage chloramine residuals in the City's distribution system by modeling water age. Ultimately, the new model will be used to manage actual chloramine residuals throughout the City's distribution system.

## MODEL CONVERSION & UPDATES

Information from the existing KY PIPE model was initially transferred into the new H<sub>2</sub>OMAP model neither geographically referenced nor accurately scaled. Since H<sub>2</sub>OMAP is built on a geographic information system (GIS) platform - H<sub>2</sub>ONet is built on a CADD platform - the model has the capability to display GIS data layers to be used as reference for properly locating features of the distribution system. Several base mapping layers,

obtained from Trumbull County, were incorporated into the H<sub>2</sub>OMAP model and the existing KY PIPE model was then manually transposed to properly overlay the GIS data.

A total of 320 additional pipes or more than 60 miles of pipe were added to the model. The resultant model incorporates all pipes 6 inches in diameter and larger. Updated pipe ages and materials essential for estimating current headloss coefficients were established for each pipe. In addition to completing the pipe network, several other updates to the model's exterior were also performed:

A comprehensive review by the City to ensure the most accurate and update-to-date data had been entered.

Inclusion of any closed valves that resulted in the delineation of the Patchen and Howland pressure zones.

Collection of available data and the conduction of a field review of all existing facilities within the City's distribution system.

Development of drawdown tables for each of Warren's storage facilities based on tank geometry and capacity.

Addition of current ground elevations for each demand node in the updated model.

## DEMAND ALLOCATION

Demands were re-allocated based on land use classifications and parcel boundaries obtained from Trumbull County. The demand allocation method selected consists of intersecting demand area polygons with land use polygons and water duty factors to create water demands for selected model nodes.

A GIS data layer of parcel boundaries was merged with a property ownership database for every parcel identification number within Trumbull County. Included within the database was a field for land use type that incorporated more than 160 different land use classifications, most of which were combined to produce 18 final land use classifications. Demand poly-

gons were digitized along parcel boundaries using the technique equal distribution allocation (EDA).

within the City's distribution system. Since each large user had such a high demand, these were each

at the finished-water pump station and continued through the distribution system. Completion of this task

POLYGON ID	AREA	AREA	EXISTING LAND USE				Total %	POLYGON ID	Demand Allocation
			Very Low Density Residential		Open Space/Vacant				gpm/polygon id
	ft <sup>2</sup>	acre	%	Area (acre)	%	Area (acre)			
2194	239157.884	5.49	54.02%	2.966	45.98%	2.524	100%	2194	1.19



Figure 2 – Demand Polygon Land Use Distribution by Parcel.

For example, if two model nodes are located 500 feet apart, a polygon line is drawn halfway between the two nodes to “equally divide” the demand allocation between the two nodes. This technique is demonstrated in Figure 1.

A total of 1,122 demand polygons were digitized to encompass Warren's entire distribution system. The total area corresponding to each of the land use types within each demand polygon was then summed so that each service area polygon could be broken down into land use area percentages.

Based on water production records provided by the City, 2002 distribution data was used to produce the water duties for the previously determined land use areas. Water duties provide a relationship between land use classification and water usage as a function of land area expressed in gallons per acre. Warren also provided large user data for the ten largest consumers

accounted for separately in the model.

The water duties for Warren were initially assigned based on previous water master plan and then adjusted to accommodate the land use types for Warren. Based on the demand polygons, the total area utilized for each of the land use types was determined for the entire system. Water duties were then used to calculate the total water usage for each type of land use. An example of how the land use types relate to their areas and corresponding demand polygon for model node 2194 is shown in Figure 2.

### MODEL CALIBRATION

Several critical tasks were conducted and data was input to prepare the model for calibration. The most important involved the acquisition of historical SCADA information which gathered data from each of Warren's active facilities starting

would not have been possible without the cooperation and innovation of the City's staff by developing a customized report from the SCADA system that recorded information in 15-minute intervals. Analysis of the collected data resulted in Tuesday April 27, 2004 being selected as the calibration day. The following remaining tasks were completed to prepare the model for calibration.

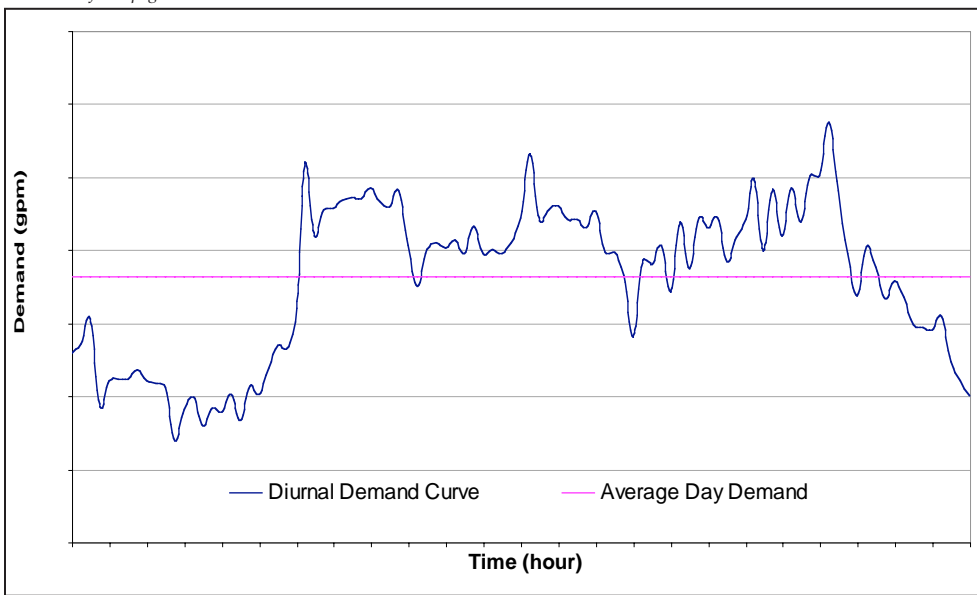
Analysis of Warren's largest water consumers for the development of unique usage patterns.

Development of diurnal demand curves for each of Warren's three existing pressure zones by utilizing SCADA data received including; pump station flows, elevated tank levels, elevated tank volume curves, and large user demand patterns (See Figure 3).

Development and assignment of loss coefficients ( $C_{HW}$  values) to all pipelines in the Warren model based on pipe age and material.

Inclusion of available pump

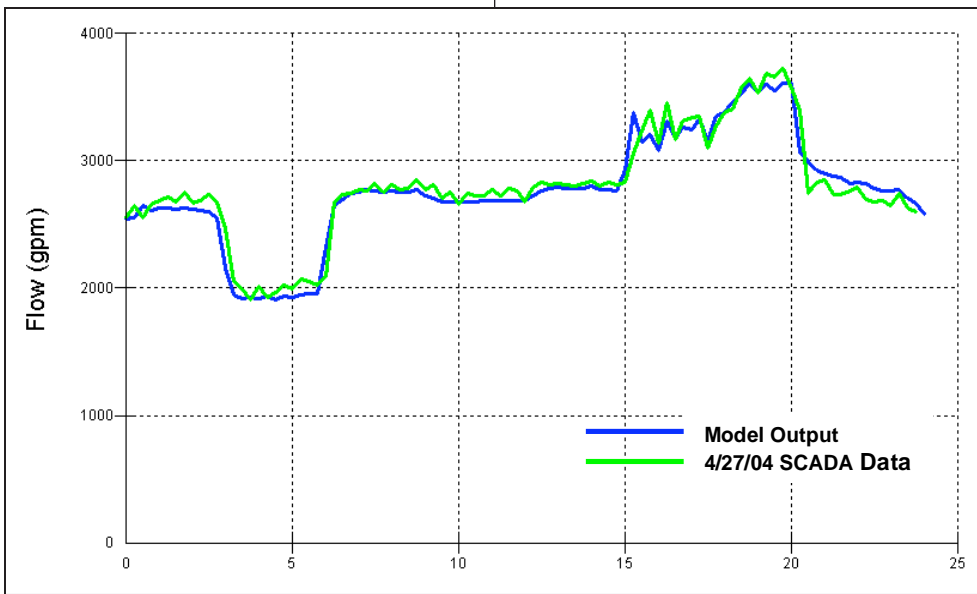
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**Figure 3 – Main Pressure Zone Diurnal Demand Curve for April 27, 2004.**

curves, clearwell levels, pump operations and all available operational controls.

calibration plot for a location at the Warren WTF high service pump station (HSPS).



**Figure 4 – Warren HSPS Discharge Flow Comparison Graph**

Development of DAT files which imported SCADA information directly into H<sub>2</sub>OMAP and allowed model results and historical data to be simultaneously graphed.

The objective of calibration was to verify that elevated tank elevations, pump station flows and pressures in the model matched as closely as possible to the actual data for the selected calibration day. The calibration goal was to match model data to within 5 percent of the actual data. **Figure 4** is an example of a

**EVALUATION OF EXISTING DISTRIBUTION SYSTEM**

Several hydraulic model criteria for pressure, maximum pipeline velocity, and elevated storage were selected to discover deficiencies in the system and to determine improvements or the need for additional elevated storage. **Table 1** provides a list of the

pressure and velocity criteria used to determine possible deficiencies in the system.

To account for actual peaking water demands during a Warren maximum-demand day, elevated storage requirements, or the minimum required elevated storage volume, was based on three criteria:

- operational storage (equalization storage to handle daily peaking),
- reserve storage (emergency reserve), and
- fire-fighting storage.

Combining these three criteria produces the total elevated storage requirements to meet the maximum-day demand. The calculated total elevated storage requirement was compared with existing elevated storage volumes to develop recommendations for any additional elevated tank facilities. **Figure 5** shows the locations where pressures fall below 45 psi at any time during the maximum demand day. As a result the main area of concern with regard to low pressures is the eastern portion of the main pressure zone.

Currently there are three overhead storage facilities within Warren’s Main pressure zone. The combined capacity is more than 2.6 million gallons (MG); however, the available operating storage under maximum-day conditions is less - mainly due to headlosses within the distribution system which in turn effect the hydraulic grade line (HGL). The HGL represents the elevation of the freewater surface within the system. The HGL is highest for tanks located closest to the City’s WTF’s high-service pump station and lowest for tanks located furthest from this pump station.

Even though all tanks within the

**Table 1: Hydraulic Criteria**

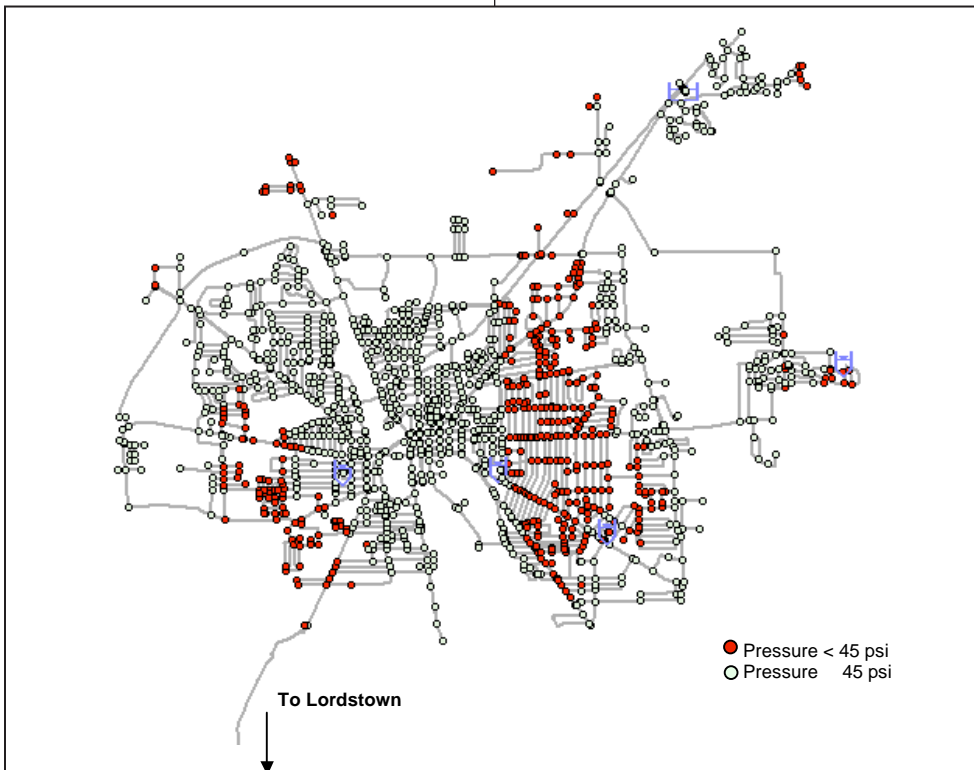
Criteria	Value
Maximum Pressure	100 psi
Minimum Pressure	45 psi
Maximum Pressure Fluctuation	30 psi
Maximum Pipeline Velocity	6 fps

main pressure zone were installed at the same overflow elevation and

Quinby's bottom bowl elevation is higher than Laird's by ten feet, neither Quinby nor Patchen can presently be filled to a level as high as Laird due to the drop in HGL.

finished-water pumps to determine the extent to which performance has changed since these pumps were originally installed.

Other operational improvements



**Figure 5 – Existing Pressure Deficiencies within the Warren Distribution System**

The effects of this are shown in **Figure 6** which shows the maximum and minimum HGLs (relative to Laird) through each of the overhead storage facilities within the main pressure zone.

This inability to fill the Quinby and Patchen elevated storage tanks results in less-than-desirable turnover and inadequate amounts of backup storage. Ultimately, increasing the the elevated storage volume by 2.45 MG would benefit the operation of Warren's existing distribution system.

#### IMPROVEMENT ALTERNATIVES

Several improvement options were evaluated as part of this project. Based on modifications to original pump curves during calibration, the finished-water pumps at Warren's WTF no longer perform as these pumps did at the time of installation. The first recommendation was to conduct a wire-to-water efficiency test on each of the existing

involve modification of the pump controls at the City's WTF to meet a maximum-day demand of 18 MGD. By controlling any auxiliary pumping based on the water level in the Laird tank, the HGL within the system could be maximized; helping to maintain maximum water levels within the Quinby tank. However, further analysis identified that Quinby tank could best be completely filled by independently raising its hydraulic grade line (HGL).

As mentioned, the operation of Warren's existing distribution system could be enhanced by adding up to 2.5 MG of overhead-storage capacity. Several other circumstances also could affect the reduction of available operating and emergency storage such as:

- Temporary removal of an existing tanks for rehabilitation.

- Conversion of the Patchen stand-pipe to an elevated storage facility.

- Additional demand supplied to Southington Township.

It was recommended that a new

1.0-MG elevated storage tank be constructed based on actual model results and Ohio EPA requirements. The following set of criteria were used to determine the most appropriate location of this new tank:

- ground elevation
- property ownership
- proximity to adequately sized water mains and pump stations
- aesthetics

The Parkman area was recommended for locating the new storage tank since it meets all criteria and because the west side of Warren's distribution system is supplied by only six water mains. The Quinby Tank is the only storage facility on the west side of the Mahoning River and has no capacity available for reserve storage. The addition of a new tank in the Parkman area greatly facilitates maintaining adequate storage in the event of an emergency.

Based on model results, for maximum-day demands, a large portion of the eastern side of Warren's Main pressure zone, known as the Genesse area, experiences pressures below 45 psi. To mitigate this situation, the recommended short-term solution is to locate the valve(s) that are suspected to be closed, and the potential long-term solution is to raise the HGL for this area to compensate for the increase in ground elevation. After several options were explored, results showed the optimal long-term solution to improve pressures in the Genesse area is to isolate a new pressure zone equipped with a new booster pump station and a 0.50-MG elevated storage tank.

#### Water Quality Analysis Using Water Age

In order to initially access chloramine residuals throughout the distribution system, a system water-quality analysis was performed by determining the water age at each node in the network. An evaluation of water age was also performed for Warren's storage facilities.

Initial model runs during minimum demand periods when modeling water age exposed several loca-

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tions of low flows leading to stagnant water which allows for the degradation of free chlorine residu-

age. The use of a universal mixing system does offer several other water-quality related enhancements by helping to eliminate the follow-

ence of autotrophs that feed on nitrogen, breaking down chloramines and possibly causing nitrification.

It has also been determined that the chloramine residual, under ideal conditions, would not decay to significantly low levels for nearly eight days. As a result, the current water age conditions do not require immediate improvements for the Warren system to use chloramines as a secondary disinfectant. This further reinforces the need for the development of a system wide flushing program. An adequate flushing program would be more effective in terms of both cost and water quality once the City has switched to chlo-

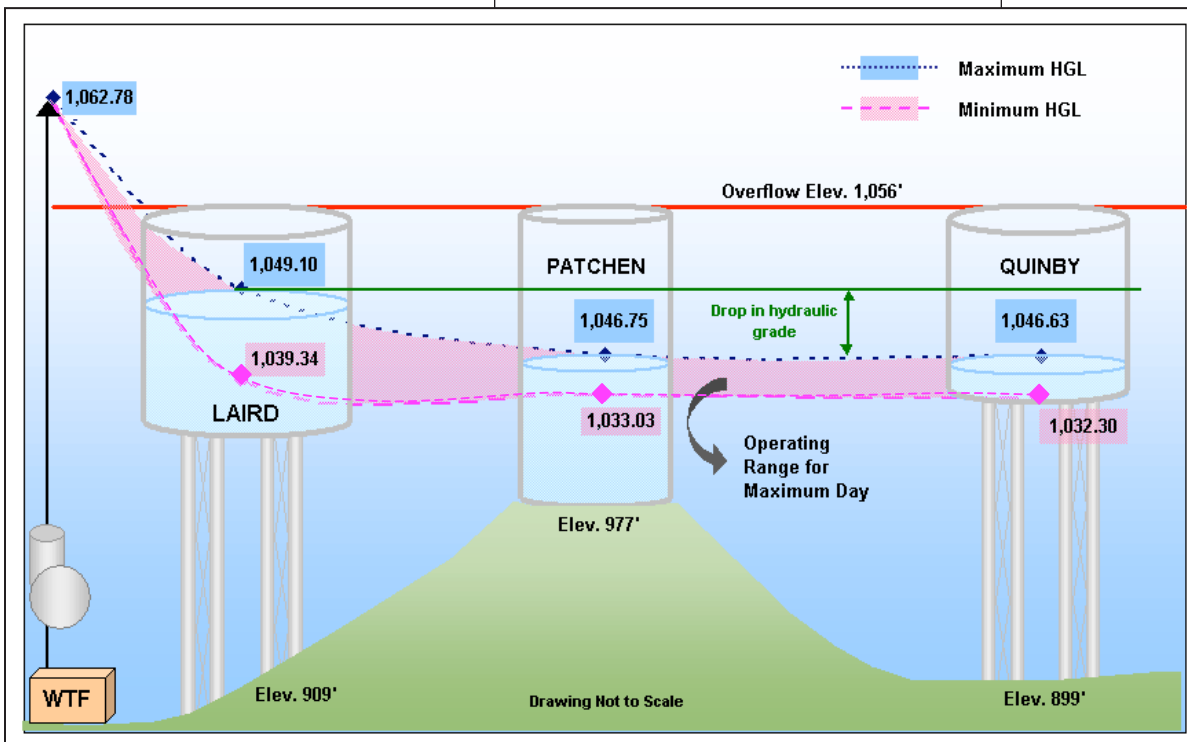


Figure 6 – Maximum and Minimum HGL for Main Pressure Zone Overhead Storage Facilities Under Maximum Day Conditions

als. Most areas of excessive water age are at dead end points within the system especially those with zero or minimal demand assigned. Results indicated that over 200 nodes within the system have a water age value greater than 96 hours, or four days, under minimum-day demands (see Figure 7).

The potential exists for the formation of disinfection by-products (DBPs), particularly within storage facilities, even after the City's conversion from free chlorine to chloramines. Aging of water in distribution system storage facilities can lead to deterioration of the water quality as a result of disinfectant loss and bacterial regrowth. Poor mixing in storage facilities can also worsen aging problems by creating zones of older water. One way to combat against these issues is to convert existing storage facilities to completely mixed reactors through the use of a universal mixing system. However, model results showed this conversion did not have a significant effect on water

ing concerns:

Stratification - upper layers (strata) of stored water "float" up and down during draw and fill cycles with little or no mixing.

Short-circuiting - influent water creates a stream directly from the tank's inlet to its outlet.

Stagnation - extreme water age with no mixing.

Winter ice - ice build up in tanks can result in significant internal damage.

Further analysis show that none of the previously recommended improvements neither significantly help nor hurt system wide water age, and the number of nodes with a water age greater than 4 days remained relatively the same. As a result, it was recommended that emphasis be placed on reducing the number of nodes that exhibit a high water age by enhancing the existing system-wide flushing program. More thoroughly flushing these areas will help scour the interior linings of water mains and remove biofilms. This will reduce the pres-

ramines.

## RECOMMENDATIONS

The Final Recommendations arrived at from this initial modeling performed with the updated and calibrated H<sub>2</sub>OMAP model include:

### Short Term:

Construct a new, 1.0 MG overhead storage tank in the Parkman area,

Enhance the existing system-wide flushing program,

Use water age as a parameter to monitor for potential low chloramine residuals when the City converts from free chlorine to chloramines as a secondary disinfectant, and

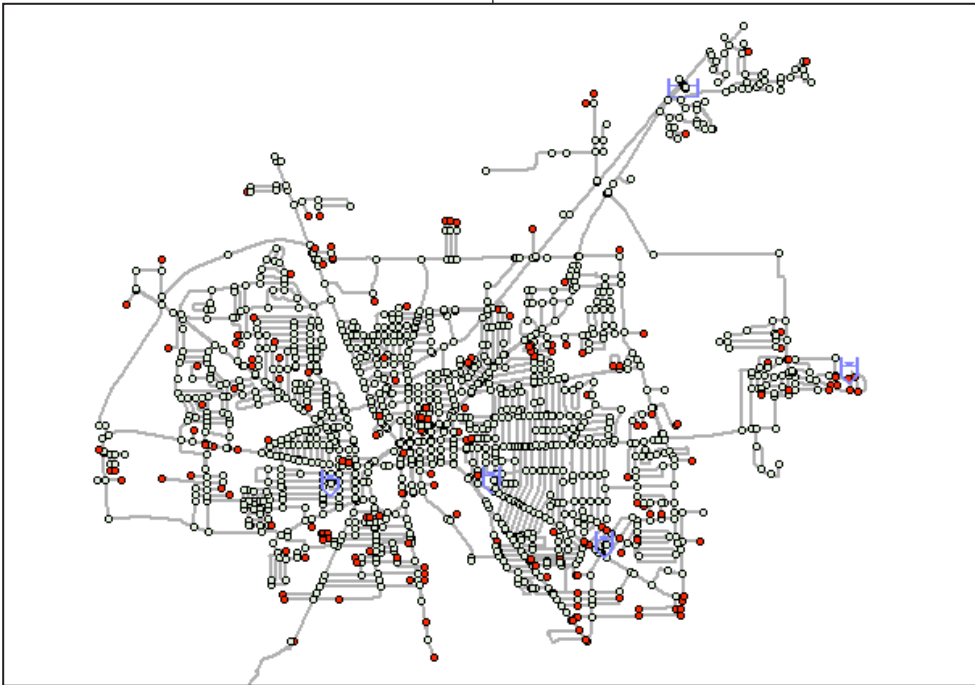
Search for likely closed valve(s) in the Genesse area to improve pressures and flows in this area.

### Long Term:

If the fourth, short-term recommendation does not lead to improved pressures and flows in the Genesse area, then: (a) create a new

pressure zone for this area, (b) construct a new, 0.5-MG tank to serve

new updated and calibrated model will serve the citizens of Warren in



**Figure 7 –Water Age Greater Than Four Days (Minimum Day Demand)**

this area, and (c) install a booster pump station to fill this new tank,

Modify the existing overhead storage tanks to improve turnover and reduce the overall water age of the distribution system,

Change, over a 5- to 1-year period, the existing system-wide flushing program to a uni-directional flushing program, and

Collect chloramine residuals, etc. data from the distribution system after the City converts from free chlorine to chloramines as a secondary disinfectant, and then monitor chloramine residuals by calibrating the water quality portion of the model for chloramines.

#### ACKNOWLEDGEMENTS

The authors would like to thank Mayor Michael J. O'Brien, the Public Service-Safety Director, Mr. Doug Franklin, and the Warren City Council for their support with this project. Converting an out-of-date distribution system, water quantity model to a current water quantity-quality model has identified several potential improvements that would benefit the City's existing distribution system. The

many ways as the City continues in the future to provide the best water quality possible to its customers. We would also like to acknowledge the assistance of Mr. Lance Ferland, Mr. Jim Bunsey and Dr. Tim Wolfe from MWH, who provided valuable in-sight to this project at the appropriate times.



## WATER QUALITY TECHNOLOGY CONFERENCE AND EXPOSITION

**November 6-10, 2005  
Quebec, Canada**

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visit the Web at  
<[www.awwa.org](http://www.awwa.org)>  
or call (800) 928-7337



American Water Works  
Association  
Dedicated to Safe Drinking Water

## DISTRIBUTION AND PLANT OPERATIONS

**Sept. 18-21, 2005  
Tampa, Florida**

Keep pace with the operational demands of your system through hands-on workshops; practical information and an exchange of successful distribution solutions through this dynamic conference geared toward operators and operator managers.

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information  
visit the Web at  
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American Water Works  
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Dedicated to Safe Drinking Water

# Jarrett Elected To Serve as Service Provider Director at Large



Christopher Jarrett, a senior sales engineer with American Cast Iron Pipe Company (ACIPCO), has been elected to the newly created position of Service Provider Director at Large, which represents the 48th spot on the AWWA Board of Directors. Jarrett will serve a three-year term beginning at this year's Annual Conference and Exposition. The position must be held by a representative of the Manufacturers Associates Council.

Jarrett, 32, graduated from the University of Tennessee in 1994 with a degree in Civil Engineering. He began his career with ACIPCO in 1995 in the company's Pittsburgh District Sales Office and is an active member of the Ohio and Pennsylvania Sections of the American Water Works Association, and the Ohio, Pennsylvania and New York member associations of the Water Environment Federation. He is a graduate of Cleveland High School in Cleveland, Tennessee.

"It is indeed an honor to have been chosen for this position within an organization with the high levels of professionalism that the American Water Works Association maintains," Jarrett said. "I very much look forward to making my share of contributions through this position for the good of both the organization and our industry."

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## THE TIME IS NOW

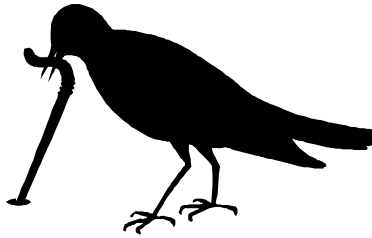
By  
Christopher S. Jarrett  
Ohio M.A.C. Chair  
Incoming Service Provider Director-at-Large

I am pleased to announce that the AWWA has opened its arms to the large community of manufacturing and associate members within the Association by creating a new position on the national board of directors. This move, at long last, gives our large block a voting voice and an opportunity to directly contribute to the direction of the organization. It is important to note that this monumental change would not have been possible without the efforts of numerous MAC members who worked closely with the AWWA leadership to achieve what, at one time, was not a possibility.

At the June 2005 Annual Conference and Exposition, I will officially begin serving my term as the newly elected Service Provider Director-at-Large. My job will be to represent the concerns and interests of the service providers within AWWA. Much of my direction will come from those who I represent, so I invite your input.

With such opportunity and representation now available within our AWWA, there has perhaps never been a better time or a better reason to become involved with the Association. We are all aware of the resources that the service provider membership can offer to the AWWA, and the organization has for some time provided conduits for us to play a part. Service on committees and councils within the AWWA at the district, section, and national level assures that our input will be heard and accepted. It is our responsibility to get involved, and we cannot afford to miss these great opportunities to take an active role in supporting helping to shape our AWWA.

I am a strong believer that we must invest ourselves in order to reap the rewards. We cannot expect to benefit from any endeavor unless we first contribute to its success. The AWWA is asking for your service and your voice...take us up on the offer.



# THE EARLY BIRD CATCHES THE WORM!

2005 OHIO AWWA CONFERENCE &  
EXHIBITION COLUMBUS, OHIO  
September 19th – 22nd, 2005

## *EXHIBITORS!*

DON'T MISS AN EARLY OPPORTUNITY TO RESERVE YOUR  
EXHIBIT SPACE FOR NEXT YEAR'S CONFERENCE

OUR GOAL IS 120 EXHIBITS, SO TAKE ADVANTAGE OF THE  
EARLY REGISTRATION DATES AND FEES BELOW

## *DON'T MISS OUT!*

REGISTRATION BEFORE April 29th, 2005 **\$450**

REGISTRATION Between April 30th, 2005 and August 19th, 2005 **\$475**

REGISTRATION After August 19th, 2005 **\$500**

**FOR REGISTRATION INFORMATION, PLEASE CONTACT:**

Christopher Jarrett (412) 851-1230 or [cjarrett@acipco.com](mailto:cjarrett@acipco.com)

RaShawn Truss (614) 265-3180 or [oawwa@ohiowater.org](mailto:oawwa@ohiowater.org)

*Booth Sales will be available at The Northern & Southern Expos*

# UV Disinfection Provides Cost-effective Pathogen Control

**Chris Cleveland, P.E.**, Project Manager and Technical Specialist, Metcalf & Eddy  
**Michael Pilutti, P.E.**, Water Treatment Specialist, Metcalf & Eddy

If your goal is to control *Cryptosporidium*, *Giardia* and other common bacterial pathogens and microbes, ultraviolet (UV) radiation is one of the leading and, in many cases, most cost-effective disinfection technologies available today for water treatment. While still a relatively new technology for water treatment in the United States, UV has been more broadly applied in wastewater treatment for more than a decade.

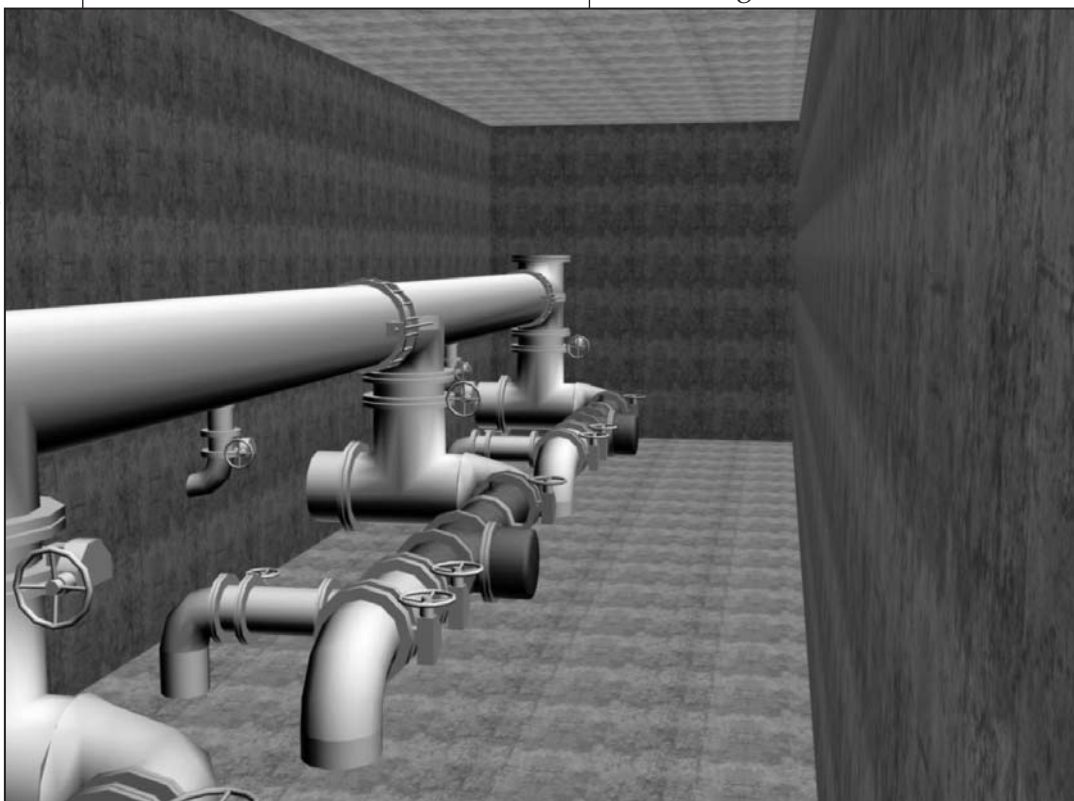
While chlorine has long been the disinfectant of choice for water treatment operations, upcoming regulations are driving many utilities to minimize chlorine addition and look at alternative disinfection technologies such as UV disinfection. Ozone can also be used as an alternative to chlorine, yet recent studies indicate that it is not as effective for inactivation of *Cryptosporidium*, and it requires higher dosages and longer contact times. However, studies of UV disinfection have demonstrated it to be more effective than previously thought for inactivation of *Giardia* and *Cryptosporidium*.

## UV Gets a Closer Look

A spurt of research on disinfection technologies resulted after new regulations limited disinfection by-products formed from the chlorination process (Stage 1 Disinfectant/Disinfection By-Product Rule) and an outbreak

of *Cryptosporidiosis* in Milwaukee, Wisconsin in 1993. A breakthrough occurred in 1998 when researchers discovered that although low doses of UV light did not kill *Cryptosporidium*, it did inacti-

requirements for those systems with elevated levels of the pathogen in their source waters. EPA estimates that almost 1,000 UV installations will be designed and constructed throughout the US as a



Many times UV systems can be retrofitted into existing filter galleries.

vate the pathogen, rendering it unable to reproduce and infect. This research supported the use of UV as a viable water treatment technology. To reduce the potential incidence of disease associated with *Cryptosporidium* and other pathogens in drinking water, the US Environmental Protection Agency (EPA) is proposing the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) to apply to all systems that use surface water or groundwater supplies under the influence of surface water. The LT2ESWTR will supplement existing regulations by targeting additional *Cryptosporidium* treatment

result of the rule promulgation.

## Benefits of UV Disinfection

Membranes, ozone, and UV are three advanced treatment technologies that will help water utilities comply with this proposed rule. Of the three, membrane technology can be the most expensive, but can also meet multiple treatment objectives. UV is typically less expensive than membrane or ozone treatment for *Cryptosporidium* control when upgrading existing water treatment plants. UV can be installed as part of a multiple barrier approach to public

health protection at new plants. It can be installed at plants with capacities from 60 gallons per minute to hundreds of million gallons per day (mgd). UV technology can be installed within a small footprint at water treatment plants, and typically costs about six cents to eight cents per gallon per day for treatment capacity constructed. An advantage of UV is its flexibility to meet varying treatment requirements. You simply vary the UV light intensity to vary the disin-

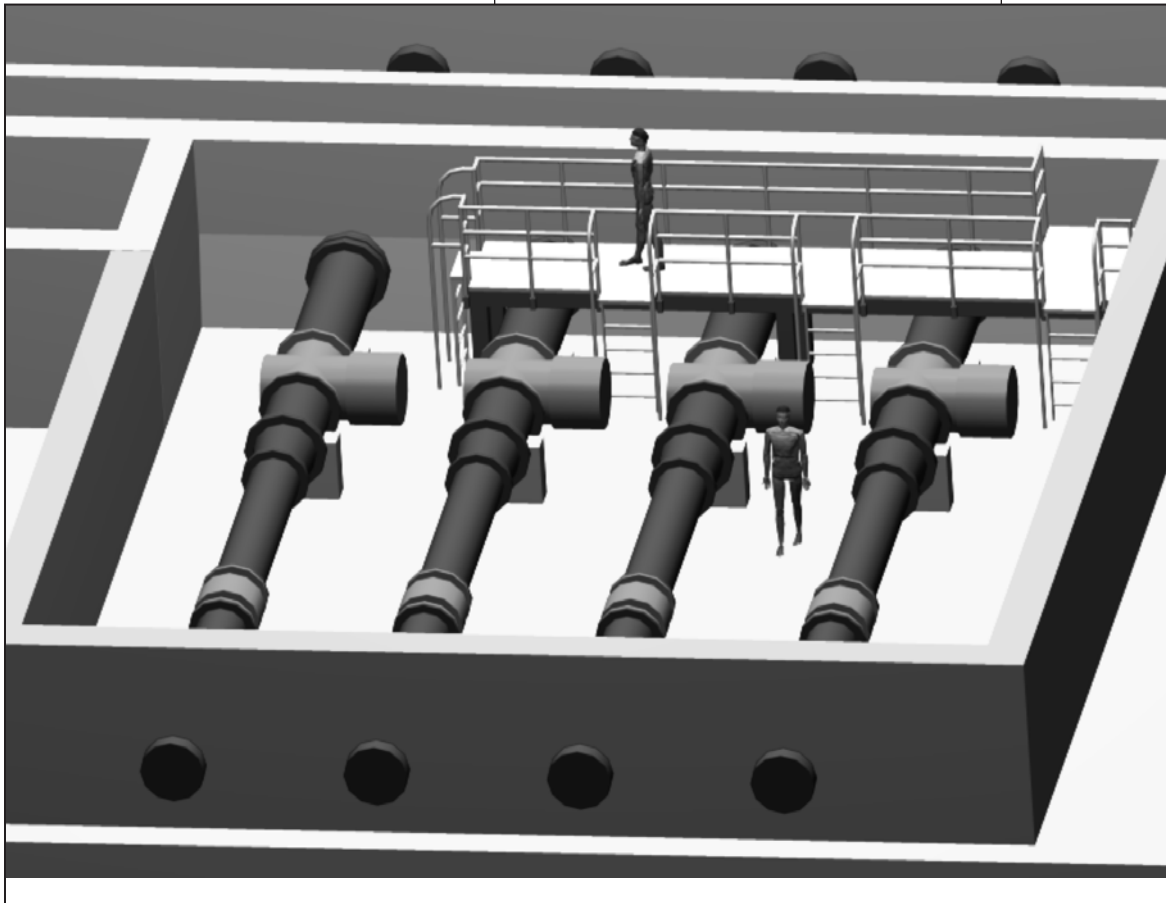
producing changes in DNA and RNA that either prevent replication or cause the cell to die. The distance over which ultraviolet light is effective is very limited; microorganisms that pass closer to an ultraviolet lamp receive a higher dose and are more likely to be killed or inactivated than those that pass through lower intensity fields. So typically, multiple lamps are grouped horizontally or vertically within an in-line closed vessel type reactor.

and will be the largest utility in its region to have UV disinfection. The WSSC recognizes the public health advantages of UV disinfection, so it decided to implement this technology at its plants ahead of EPA regulations.

### Is UV in Your Future?

As control of chemical disinfection by-products continues to be more tightly regulated, and as requirements for disinfection of chlorine-resistant pathogens are increased, UV disinfection will

see widespread application across Ohio and the rest of the United States. As the LT2ESWTR is promulgated and required source water sampling identifies concentrations of *Cryptosporidium* in water treatment plant source waters, many utilities will turn to UV disinfection as the treatment of choice due its significant advantages. These include the ability to retrofit into existing plants, small footprint, and low capital and operations and maintenance (O&M) costs compared to alternatives.



UV disinfection facilities can be designed with a compact footprint, as shown in this conceptual design with 30-mgd UV reactors in parallel.

fection level of *Cryptosporidium* and other pathogens.

### How UV Works

Ultraviolet light is a physical (as opposed to a chemical) disinfecting agent, typically generated by a mercury lamp that's been charged by striking an electric arc. It penetrates the cell wall of the microorganism and is absorbed by cellular materials

### WSSC Proactively Implements UV Disinfection

M&E is working with the Washington Suburban Sanitary Commission (WSSC) in Maryland, to implement a UV disinfection system in an existing water treatment plant capable of treating up to 120 mgd. The WSSC is one of the ten largest utilities in the country

### About the Authors

Chris Cleveland and

Michael Pilutti are water treatment specialists with Metcalf & Eddy with experience in pilot testing of advanced treatment technologies and treatment plant design. For questions regarding UV disinfection or other advanced treatment technologies, contact Chris at 215-399-4376 or [Chris.Cleveland@m-e.com](mailto:Chris.Cleveland@m-e.com), and Mike at (614) 890-5501 or [Mike.Pilutti@m-e.com](mailto:Mike.Pilutti@m-e.com)

# World's largest well. ....the Ohio connection

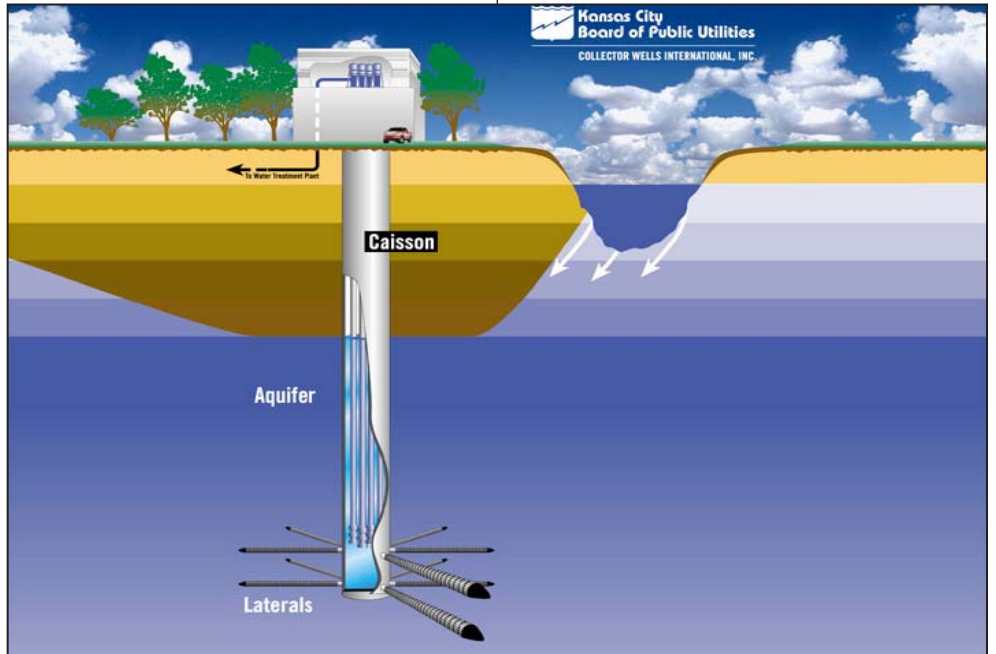
James A. French, Jr. Vice President • Collector Wells International, Inc.

The Board of Public Utilities, Kansas City, Kansas are the proud owners of two of the worlds largest Collector Wells. Each of the Collector Wells has the capacity to pump 50 million gallons of water per day (mgd) each. Prior

When the oil fields in Texas and Oklahoma were discovered and the price of crude dropped, this system of drilling horizontally for oil was ended. This new technology was then directed toward the acquisition of water.

lector wells have been installed in Europe and across the North and South America continent. Many of the new manufacturing and ammunition facilities constructed during the 40's and 50's installed collector wells in lieu of intakes so that they would not have to

As a result the first collector



to 2000 the Kansas City Utility treated water from its Quindiro Surface water treatment plant. Subsequently their first Collector Well was installed and made operational in 2000. This single well has produced as much as 47 (mgd) while maintaining over 50 feet of water reserve in the Caisson. Since it's completion in 2000 this well has been producing an average of 1 billion gallons of water every month.

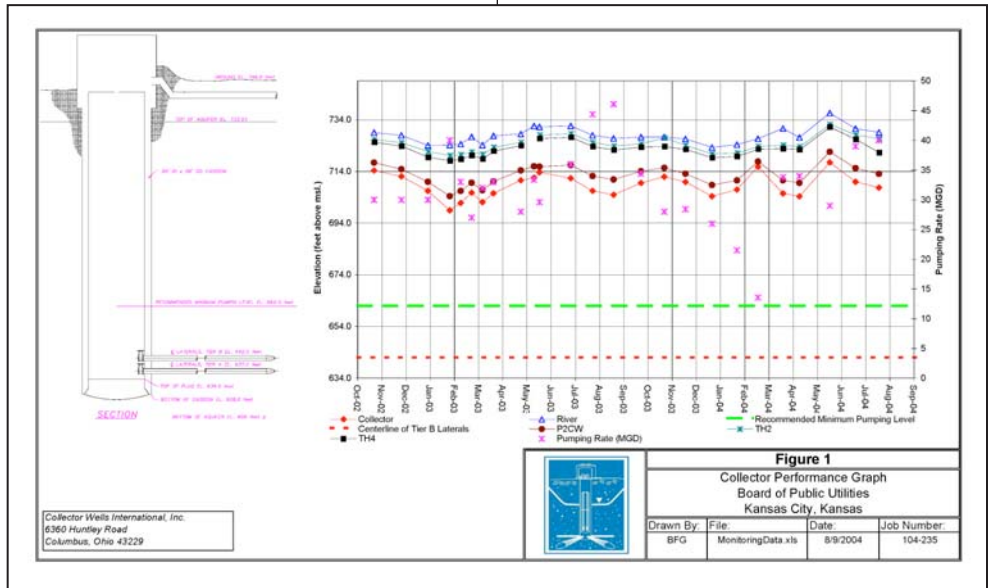
well for water was developed for the Metropolitan board of London, England in 1933. Timken Roller Bearing of *Canton, Ohio* was the location for the first well of this type in the United States (1936). Since then over 500 hundred col-

remove the turbidity from the water. Municipalities such as *Columbus, Ohio, Oxford, Ohio, Mt.Vernon, Ohio, Canton, Ohio, LeAx Water District, Galesburg, Illinois, Independence, Missouri, Lincoln, Nebraska, Olathe,*

This was earlier reported the largest Collector Well in the world. An operational graph of this well is shown above with a plot of the river, pumping rate, and nearby observation wells. Also shown are the location and elevation of the horizontal laterals to illustrate *the* added capacity that is built into this type of well.

Collector Well technology, or the art of drilling horizontally into the strata, started in the late 1920's near *Malta, Ohio* and was originally developed for the Oil industry.

Leo Ranney and first horizontal drilling crew-circa.1920's Malta, Ohio



Kansas and Boardman, Oregon are just a sampling of collector well owners that started using this technology for drinking water. Don Gray, manager of water operations, stated in an article for the U.S. Business review dated

Step 1 – 7,000 gpm – 2.87 feet of draw down  
 Step 2 – 9,700 gpm – 4.18 feet  
 Step 3 – 12,500 gpm – 5.49 feet  
 Step 4 – 15,300 gpm – 6.81 feet

The final constant rate test consisted of continuous pumping at 15,300 gpm and produced a draw-down of only 7.5 feet.

Therefore the capacity of this well is almost identical to their first well. Both wells are designed to produce 25 mgd continuously with the



January/February 2004, "the well uses the riverbed to naturally filter water before it is treated. This unique well helped BPU deliver lower rates by reducing the cost to produce potable water".

As BPU's demand increased it was decided to look for a second site. A design/build award was made to Collector Wells International, Inc. to construct their second large well. Construction was started in the spring of 2003 and the final pumping test was completed in August 2004. A four-stage (2hr) step test produced the following results:

peaking capacity of 40 mgd. The two wells in combination, capable of producing 100 mgd may very well go into the record books again as the largest two well capacity in the World.

This well is located on property owned by BPU near the Nearman power plant at the north end of 55<sup>th</sup>. Street in Kansas City, Kansas. International Water Consultants, Inc, a subsidiary of Collector Wells International, Inc, conducted an extensive hydrologic evaluation. As a result of this survey the second well was located approximately 1,000 feet downstream of Well No. 1 adjacent to the Missouri River.

The central caisson is 20 feet inside diameter with 2.5-foot thick concrete walls. A total 1,330 cubic yards of concrete was utilized in the construction of this giant of a well. The central caisson extends above grade 17.69 (765.69msl) feet to prevent flooding



and the bottom of the caisson is set at elevation 622.34, for a total overall length of 143.35 feet.

An 8 ft. thick reinforced concrete bottom seal is installed in the bottom of the shaft. A weight-assisted sinking method was utilized in the construction process adding as much as 1 million pounds of pressure to the top of this large caisson to insure sinking to the specified depth.

Two tier of horizontal lateral screen was installed in the bottom of the Caisson at elevations 632.80 and 640.08. Seven 12-inch diameter stainless steel lateral screens were installed in each tier approximately 200 lineal feet in length each. This represents more that ? mile of screen exposed to the formation. In this way a large amount of water is able to be pumped form the well while maintaining an extremely low (less than 2feet/minute) entrance velocity through the slots of the screen.

By locating the Collector Well near the Missouri, the yield is increased due to water being induced into the aquifer and the quality of the water more closely resembles that of the Missouri only filtered. Now BPU has the flexibility of running one or both wells to supply their water needs into the future.



# 2005 NORTHERN OHIO 22TH ANNUAL EXPO

## By

### WATER, WASTEWATER CONSULTANTS & SUPPLIERS

WHERE?.....Wayne County Fairgrounds, Wooster, Ohio  
 WHEN?.....Thursday, April 21st, 2005  
 TIME?.....Registration 8:30 A.M./Expo ends 3:00 P.M.



Jim McGrew, Expo Chair P.O.  
 Box 107  
 Orrville, Ohio 44667  
 330-684-5131  
 Fax: 330-684-5134  
 Email: mcgrew@orrville.com



*Many new exhibits. All displays indoors.*

# 18th Annual Southern Ohio Utility Expo

Sponsored by SW District American Water Workers Association

**EXPO  
2005**

Tuesday, April 19th  
 10:00am to 3:00pm



**Roberts Convention Center • Wilmington, Ohio**

*Exit 50 at I-71 & SR-68*

Please Contact: Leslie Ostrozny  
 Montgomery County Sanitary Engineering Department  
 1850 Spaulding Road  
 Dayton, Ohio 45432  
 1-937-781-2628  
 E-Mail ostroznyl@mcoho.org



**2005 OHIO SECTION AWWA CONFERENCE  
GOLF OUTING - MONDAY, SEPTEMBER 19, 2005  
COLUMBUS, OHIO**



The City of Columbus is honored to host the 2005 State Conference. The golf outing will again kick off the conference and we are asking for your continued support. This year's event will be held at Foxfire Golf Club just minutes south of downtown Columbus. In order to cover the cost of the outing, we are soliciting corporate sponsors. To become a hole sponsor your \$200.00 donation will give you the following:

Your name on the recognition poster to be displayed at the registration table and again at the awards gathering.

Individual poster displaying your name at each of the hole(s) you sponsored.

The satisfaction that you assisted a worthwhile association and event.

Your generosity and pride in our industry has always been appreciated and is a large reason for past conference success. If you are interested in assisting us to make 2005 a success, please complete the form below.

**Make checks payable to Ohio Section AWWA and mail to:**

**Ohio Section AWWA  
3972 Indianola Avenue  
Columbus, Ohio 43214-3158**

It is essential we receive everyone's assistance as early as possible to ensure we meet our financial commitments. If you have any question regarding payments, please contact RaShawn Truss at the above address or you can call him at (614) 265-3180. Should you have additional questions, please contact Craig Charleston by phone at (614) 645-7020

**\* 2005 AWWA GOLF OUTING SPONSOR REGISTRATION \***

NAME: \_\_\_\_\_ COMPANY: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_  
CITY / ZIP: \_\_\_\_\_ FAX: \_\_\_\_\_

\_\_\_\_\_ I would like to sponsor a hole for \$200.00

\_\_\_\_\_ I am choosing not to sponsor a hole, but want to assist with a \$ \_\_\_\_\_ donation.

**Make checks payable to Ohio Section AWWA**

Mail this form with check to RaShawn Truss,  
Ohio Section AWWA, 3972 Indianola Avenue  
Columbus, Ohio 43214-3158

# Top Ops Competition

The Top Ops committee will soon begin to prepare for the summer district competitions. We would like to encourage all plant operators to consider taking a shot at Top Ops. You do not necessarily need to have a whole team together. You District representatives will be glad to hook you up with other interested operators. District winners will go on to compete at the State AWWA meeting in September.

Managers are encouraged to allow at least one member of their staff to participate in the Top Ops competition at the District level.

A study manual is available for those interested, and five contact hours can be gained by completion of the study guide along with participation in the district competition.

Anyone interested can get more information from their Top Ops District Reps:

### Northwest District

Russell Bales  
419/221-5170

### Southwest District

Herb Nagel  
937/781-2677

### Northeast District

Tom Loren  
216/664-3190

### Southeast District

Michael Burris  
614/888-4953

***Please register by May 31, if at all possible! Send the completed application form to:***

Verna Arnette, Top Ops Chair  
Greater Cincinnati Water Works  
5651 Kellogg Avenue  
Cincinnati, OH 4522

## Top Ops Application Form

Member(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

District: NE    NW    SE    SW    (Please Circle)

Individual or Team: (Please Circle)

Team Captain: \_\_\_\_\_ (if registered as a team)

Detailed Information:

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
Work Address: \_\_\_\_\_ Phone #: \_\_\_\_\_  
Job Description: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
Work Address: \_\_\_\_\_ Phone #: \_\_\_\_\_  
Job Description: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
Work Address: \_\_\_\_\_ Phone #: \_\_\_\_\_  
Job Description: \_\_\_\_\_

# Arsenic Training

## Ohio EPA, Division of Drinking and Ground Waters, Southwest District Office

On February 16, 2005, the Ohio EPA, Division of Drinking and Ground Waters, Southwest District Office (SWDO) and the Ohio Section AWWA Small Systems Committee hosted 110 area operators and regulators at the first regional training session for 2005. The topic: Arsenic: Geology, Occurrence, Regulations and Treatment. The two-hour training session was held at the Greene County Career Center near Yellow Springs, Ohio. The training was offered to those water systems which were identified by Ohio EPA as near or above the new Maximum Contaminant Level (MCL) for arsenic.

Mr. Rich Bendula, Geologist and Unit Supervisor for the Ground Water unit at Ohio EPA, SWDO, presented an introduction to arsenic occurrence in ground water and some other basics in geology relating to arsenic-bearing formations. Ms. Kathy Pinto, Ohio EPA Central Office, presented the new arsenic rule for Ohio and the regulations governing compliance. Mr. Darren Lytle, research scientist with the US EPA, Cincinnati, Ohio, presented Approaches and Considerations for Reducing Arsenic Levels in Drinking Waters. Future free training opportunities for Southwestern Ohio may be found at <http://swdoweb.epa.state.oh.us/ddagwtraining.html>

## 2005 Ohio AWWA Tapping Contest

The Ohio Section AWWA Tapping Committee would like to invite all Ohio Water Utilities to send a tapping team to the State Tapping Contest to be held in the Exhibit Hall on Tuesday, September 20th 2005. This contest originated in Ohio and has grown to become a feature of the National conference. The winner of the state contest will be given the opportunity to represent the Ohio section at the national conference in SanAntonio in June of 2006.

**Time: 10:00am to 12:00noon**

**To register a team for this event, please complete this form and return by July 29 to:**

**Pat Crumley**

Columbus Division of Water • 910 Dublin Road • Columbus, Ohio 43215

### Tapping Contest Form

Name Of Utility \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone # \_\_\_\_\_

Contact Person \_\_\_\_\_

**Please Return This Form By July 29, 2005.**

Any questions should be directed to Pat Crumley at Columbus Division of Water

## Ohio Section American Water Works Association (AWWA) 2005 Student Paper Competition Oral and Poster Presentations

### RULES OF COMPETITION

**New for 2005:** This year's student paper competition *will again be extended to engineers who have graduated within the past year and are now in their first year working in an engineering field.* Applicants should indicate the forum in which they prefer to present their papers. The top three oral presentation abstracts and the top poster abstracts will be selected for presentation at the 2005 Ohio Section AWWA Annual Conference. Cash awards of \$300 each will be presented to the three speakers and \$200 will be awarded to the best poster.

**This year, all abstracts that do not comply with format guidelines (i.e. word and figure/table limits) will NOT be considered!**

**Topic:** Any paper discussing source water protection, drinking water treatment, analytical methods, water distribution and storage, or other water-related concern is invited.

**Abstracts:** The abstract and competition application (see below) should be submitted to Ohio AWWA by **June 30, 2005**. Applicants should indicate whether they would like to present their abstract as either a poster or an oral presentation. All students who submit abstracts will receive free registration to the Ohio Section Annual Conference. The conference will be held in Columbus, Ohio, in September 2005. All submitters will be notified by July 31, 2005 about the status of their abstract.

**Selection Criteria:** Abstracts will be judged on their relevancy to the drinking water industry and the originality of the ideas, concepts and solutions presented.

**Oral Presentations:** The authors of the three selected abstracts will give a 20 minute presentation followed by a 10 minute discussion period. All oral presenters will be given a \$300 cash award and a certificate.

**Poster Presentations:** The authors of the abstracts selected for the poster session are invited to prepare a poster about their topic. The posters will be displayed and judged at the conference. A "Best Poster" award of \$200 will be given at the end of the poster session.

**Authorship:** Only current or recently graduated (within approximately one calendar year of May 2004) undergraduate and graduate students are eligible for this competition. Faculty advisors cannot be listed as co-authors. However, they may act in an advisory capacity.

In addition, awards for the best papers and poster will be announced in the official publication of the Ohio Section, the *Ohio Section Newsletter*.

**For questions or abstract submissions contact:**

Dr. Isabel C. Escobar  
Chemical and Environmental Engineering Department  
The University of Toledo  
Toledo, Ohio 43606-3390  
Telephone: 419/530-8267  
Fax: 419/530-8086  
Email: isabel.escobar@utoledo.edu

## Ohio Section American Water Works Association 2005 Student Paper Competition Application

<b>Name</b>		<b>Date</b>	
<b>Address</b>			
<b>Email</b>			
<b>Phone</b>			
<b>School</b>			
<b>Abstract Title</b>			
<b>Abstract submitted for (highlight/circle one):</b>			
Oral presentation		Poster presentation	
<b>If you are not selected for an oral presentation, would you be willing to present your work in a poster session (highlight/circle one):</b>			
yes		no	

**Instructions:**

1. Abstract should be 500 to 1,000 words in length and double-spaced. Pages must be numbered.
2. Two pages of figures and/or tables can be appended to abstract.
3. Abstracts may be submitted by regular mail or by e-mail. The abstract title page should include the title and whether you prefer an oral or poster presentation. All information that identifies you personally (including your name, address, phone number, e-mail, school name, etc.) should be omitted from the title page of the abstract and sent on a separate page. This assures that an unbiased decision, in regard to the winning abstracts, will be made by the judges who review your abstract.

Abstracts should be submitted by e-mail, and must be in Microsoft Word or PDF format.

4. Abstracts must be received by **June 30, 2005** to be considered.

**Send abstracts to:**

Dr. Isabel C. Escobar  
 Chemical and Environmental Engineering Department  
 The University of Toledo  
 Toledo, Ohio 43606-3390  
 Telephone: 419/530-8267  
 Fax: 419/530-8086  
 Email: isabel.escobar@utoledo.edu



# OHIO SECTION AWWA

## 2005 DARCE Fund

(Diversity Award Reinforcing Continuing Education)

**Objective:** To encourage diverse participation through continuing education in the drinking water profession.

**Applicant Eligibility:** Must be currently employed in the drinking water industry. Examples but not limited to: meter readers, lab technicians, maintenance workers, customer service representatives, clerks, and operators. Need not be a member of AWWA to apply. Women and minorities are encouraged. Previous winners of the Darce Fund are ineligible.

**Awards & Luncheon:** A maximum of three vouchers may be awarded annually:

1-\$600.00    1-\$400.00    1-\$300.00    1-\$200.00    1-\$100.00

*(All awards non-transferable. Limited to 1 voucher per person per year.)*

**Training Eligibility:** Vouchers are to be used for registration only for AWWA sponsored training. Examples: Registration for AWWA Customer Service Workshops, Safety Committee Seminars, State or National Conferences, Teleconferences, District Meetings, Study Review Sessions or OTCO Training Courses. All other expenses to be paid for by recipients (travel, meals, etc.).

**Requirements:** Must be nominated by an AWWA Ohio Section member. Must complete the 2003 DARCE Fund Application Form. Final applicants must be willing to meet with representatives of the DARCE Fund to discuss personal career objectives.

**Application Deadline:** All applications must be postmarked no later than June 17, 2005

**Award Deadline:** Award recipients will be notified no later than August 27, 2005

Awards will be presented at the AWWA Ohio Section Annual State Conference in Columbus, Ohio. A one day Conference Registration will be provided for the acceptance of the award.

Please return applications to:    **Ohio Section AWWA**  
  **3972 Indianola Ave.**  
  **Columbus, Ohio 43214**  
  **614-265-3180**

*(NOTE: Applications must be mailed individually. Facsimiles or e-mails will be excepted.)*

# 2005 DARCE Fund Application Form

Please PRINT or TYPE the following information:

Name: \_\_\_\_\_  
first middle last

Job Title/Classification : \_\_\_\_\_

Current Employer: \_\_\_\_\_

Years in Current Position \_\_\_\_\_ Years in Water Industry \_\_\_\_\_

Business Address:

City: \_\_\_\_\_ State \_\_\_\_\_ Zip Code: \_\_\_\_\_

Daytime Phone: (\_\_\_\_) \_\_\_\_ - \_\_\_\_ Evening Phone: (\_\_\_\_) \_\_\_\_ - \_\_\_\_

Name of Immediate Supervisor:

Daytime Telephone of Supervisor: (\_\_\_\_) \_\_\_\_ - \_\_\_\_

AWWA Member Endorsee Signature:

Endorsee Member # \_\_\_\_\_ Daytime Phone: (\_\_\_\_) \_\_\_\_ - \_\_\_\_

In fifty words or less, please complete the following (must be printed or typed):

The DARCE Fund is important to me because:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

No Attachments Please

Application Deadline: June 17, 2005

\_\_\_\_\_  
Signature of Applicant

\_\_\_\_\_  
Date

Please Return Application to:

Ohio Section AWWA  
3972 Indianola Avenue • Columbus, Ohio 43214  
(614) 265-3180

(Note: Applications must be mailed individually. Facsimilies or emails will not be accepted. )

# Funding for Source Water Protection Partnering with Ohio's Natural Resources Conservation Agencies: US Department of Agriculture

by Rick Shamblen

Ohio's water utilities are challenged to maintain compliance with the Federal Clean Water Act (CWA) for wastewater discharge permits or, the Safe Drinking Water Act (SDWA) for drinking water purveyors. With an average rainfall of 39 inches per year, Ohio has abundant water resources with more than 29,113 miles of rivers and streams, and 262 miles of shoreline along Lake Erie. Yet, Ohio's water resources and, consequently, drinking water purveyors are often impacted by non-point source pollution runoff from land use activities such as urban development and agricultural production. Ohio EPA estimates that more than 84% of Ohio's assessed watersheds are impaired because of pollutants from nonpoint sources (OEPA, 2004).

US EPA seeks to manage the nation's water resources regionally using the "watershed approach" (US EPA, 1995). For example, federal programs such as total maximum daily loads (TMDLs) and source water assessment and protection programs (SWAPP) address water resource concerns holistically that assess the impacts from both point and nonpoint sources of pollution. Although discussions, debates, demonstration projects, and programs have occurred where water utilities engage with "upstream" communities to address nonpoint source pollution runoff, critical questions remain for Ohio's water utilities before they can justify comprehensive financial support programs that reduce the non-point source pollution runoff.

Until these knowledge gaps are filled, a low-cost, minimum risk, and practical solution is for Ohio's

drinking water utilities to foster collaborative partnerships with those entities that can affect land management practices and, subsequently, improve source water quality.

The intent of this article is to provide you information about: the US Department of Agriculture in Ohio, who can significantly affect agricultural land use management; available natural resources conservation programs; and, how you can partner with USDA to reduce nonpoint source pollution runoff and protect your community's drinking water resources. It is important to note that USDA has a long history of successfully collaborating with other state agencies in Ohio such as the Ohio Department of Natural Resources, Ohio EPA, and Ohio State University Extension to deliver local natural resources conservation programs. Subsequent articles will discuss how other State natural resources conservation agencies, through partnerships, can assist Ohio's drinking water utilities attain water quality compliance.

## US DEPARTMENT OF AGRICULTURE - USDA

In 1862, President Abraham Lincoln founded the U.S. Department of Agriculture when 58 percent of the Nation's citizens were farmers who needed good seeds and information to grow their crops. Today, the Department continues serving the Nation through various programs that include:

Responsibility for the safety of meat, poultry, and egg products; Food Stamp, School Lunch, School Breakfast, and the WIC

## Programs:

Housing, modern telecommunications, and safe drinking water for rural communities;

Researching topics from human nutrition to new crop technologies that enable farmers to grow more food and fiber using less water and pesticides;

Helping ensure open markets for U.S. agricultural products and provides food aid overseas;

***Today, more than \$400 million are available from USDA for Ohio's farmers to implement land management practices, riparian buffers, wetlands, and stream restoration that, when coordinated, can improve and protect Ohio's drinking water resources.***

Stewardship of the nation's 192 million acres of national forests and rangelands; and,

Conservation of natural resources by encouraging voluntary efforts to protect soil, water, and wildlife on the 70 percent of nation's privately owned land.

## USDA IN OHIO

To achieve natural resources conservation goals in Ohio, USDA supports state, regional, and county-level offices. Staff with these offices possess existing relationships and already partner other state and local agencies, communities, and private enterprises to implement locally defined natural resources conser-

vation goals. We present these USDA agencies for you to collaborate and to ensure the implementation conservation programs that will help your community meet your water resource needs. Contact information is available at the end of this article.

### **Farm Services Agency - FSA**

USDA Farm Service Agency in Ohio is primarily responsible to help stabilize the state's farm income, provide financial credit, and assist farm operators recover from effects of natural disasters. Ohio FSA collaborates with the NRCS, and other natural resources conservation agencies, for technical assistance delivery to individual farmers. Since 1985, Ohio FSA has helped farmers conserve the state's land and water resources by managing some of the Nation's largest natural resources conservation programs. These programs will be discussed later in this article.

### **Natural Resources Conservation Service - NRCS**

Ohio's USDA Natural Resources Conservation Service has nearly 70 years of experience assisting owners of Ohio's private lands conserving their soil, water, and other natural resources. NRCS collaborates with local, state and federal agencies and policymakers who rely on their technical expertise. In collaboration with the county-level Soil and Water Conservation Districts (SWCDs), Ohio NRCS deliver local technical assistance based on sound science and suited to a landowner's specific needs.

### **Resource Conservation and Development Program - RC&D**

In 1962, Congress passed the Food and Agricultural Act authorizing the Resource Conservation and Development program. The purpose of the program is to expand opportunities for conservation districts, county governments and individuals to improve their communities in multi-county areas through the formation of

regional non-profit organizations. The premise of the RC&D program is that local people know what is best for their communities. Local communities create and organize their own RC&D areas, define their own goals, and work with a broad range of public and private entities to achieve their objectives.



### **HOW TO PARTNER WITH USDA IN OHIO**

The first step toward partnering with USDA representatives in Ohio is to contact your local county Agricultural Service Center. (Contact information is provided at the end of this article.) Through these local service centers, Ohio's drinking water utilities can access professional staff, technical resources, and federally funded conservation programs to help address your community's water resources concerns.

A successful approach toward collaborating with USDA is to begin with what you know. Compile and evaluate existing information about your utility's water resources that quantify and document specific issues of concern. For example, review existing Ohio EPA studies, engineering

reports, and your own water quality data collected during routine operational procedures. In some cases, you may need to increase the location and frequency of water quality sampling – especially raw water from the well field or upstream of the water intake. This additional water quality data will be critically important to characterize the frequency and occurrence of the nonpoint source pollutant runoff.

Providing clearly defined water quality concerns will better enable you to communicate your issues with Agricultural Service Center natural resources conservation professionals. Each service center hosts local work group meetings where natural resource concerns are identified and prioritized. Typically, local work group participants include representatives from USDA agencies, Ohio Department of Natural Resources, Ohio State University Extension, and other natural resource management experts. Your water quality data can provide critical information about which best management practice (BMP) or set of BMPs will best address your water quality concern. Moreover, your water quality data can provide quantifiable justification for federal conservation programs to finance the implementation of best management practices.

We present an overview of some of USDA's conservation programs currently available in Ohio. Although much of USDA's conservation program funding is available for Ohio's farmers and landowners, these conservation programs, when carefully developed and implemented, have great potential to improve and protect the source of your community's drinking water supply.

### **2002 FARM BILL**

The Farm Security and Rural Investment Act of 2002, also known as the Farm Bill, contains unprecedented support for environmental stewardship and con-

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servation to ensure the Nation's farmland remains healthy and productive. The 2002 Farm Bill represents the single most significant commitment of resources toward conservation on private lands in the Nation's history. This federal legislation responds to a broad range of natural resource concerns such as soil erosion, water quality, wetland and wildlife habitat enhancement, and farmland protection. Landowners will benefit from a portfolio of voluntary assistance, including cost share, land rental, incentive payments and technical assistance. Moreover, this Farm Bill also ensures greater access to programs by making more farmers and ranchers eligible to participate. The goal of the Farm Bill conservation provisions is to provide programs that seek to build long-term sustainability.

The following provides a brief overview of a few conservation programs now available through Ohio's USDA conservation agencies. For additional information regarding these and other programs, please contact your local Agricultural Service Center.

### **Conservation Reserve Program - CRP**

Established in 1985, the Conservation Reserve Program is the federal government's largest single environmental conservation program. CRP provides technical and financial assistance that encourage farmers, who voluntarily enroll, to convert highly erodible cropland or other environmentally sensitive acreage to a perennial vegetative cover. USDA pays farmers and landowners "rent" for a period of 10 to 15 years that remove critical areas from agricul-

tural production that includes highly erodible cropland, pastures, wetlands and streamside acres.

Typically, farmers apply for participation in CRP during designated "sign-up" periods under the General CRP program. Producers remove whole-fields from produc-

Continuous CRP throughout Ohio.

### **Conservation Reserve Enhancement Program - CREP**

In 1996, Congress authorized the Conservation Reserve Enhancement Program which is an adaptation of CRP. It is a results-oriented, water quality, and water-



tion and are required to plant long-term resource-conserving covers that control soil erosion, enhance wildlife habitat and improve water quality. Currently, more than 275,269 acres are enrolled in the General CRP program in Ohio.

Similar to General CRP, Continuous CRP encourages high priority practices on environmentally desirable and sensitive land. However, a natural resource conservation need must be identified by the local work group; this is where your utility can communicate your water resource need. Unlike General CRP, producers may enroll land at any time. More than 40,593 acres are enrolled in

shed-based program designed to address specific locally identified environmental concerns attributed to agriculture. The CREP program enables the integration of CRP with state and local programs to provide a framework allowing USDA to work in partnership with state government and local interests.

To secure CREP in your watershed, USDA will require twenty percent of the program's total cost to be provided by state and/or local match. This contribution can be cash, in-kind services or combination of both. Since CREP also requires water quality monitoring to help document program's effectiveness, this provides a great

opportunity for your water utility to leverage the value of your water quality monitoring program.

In Ohio, USDA in collaboration with state and local partners, support three separate Conservation Enhancement Reserve Programs. These locally driven water quality

financial assistance to eligible producers who address soil, water and related natural resource concerns. EQIP funds cost-share payments for implementation of eligible conservation practices and incentive payments for implementation of best management practices. Examples of BMPs funded

The goal of WRP is to protect and restore wetlands for wildlife habitat and water quality that help reduce turbidity, nutrients and pesticides in Ohio's waterways. Nationwide, the 2002 Farm Bill increased overall acreage caps from 975,000 to 2.275 million acres for WRP. In Ohio, more than 20,000 acres are currently enrolled in this program. In 2004 and 2005, USDA will provide more than \$7.2 million for additional wetland restoration throughout Ohio.

### Conservation Security Program - CSP

New in the 2002 Farm Bill, the Conservation Security Program promotes the conservation and improvement of natural resources on privately owned agricultural land uses such as cropland, grassland, prairie land, pasture, and range land, as well as forested land that is an incidental part of an agriculture operation.

However, unlike other USDA programs that provide farmers financial and technical incentives to modify their operations that improve the environment, CSP provides financial and technical assistance to farmers and landowners who have previously been voluntarily performing natural resources conservation management.

Beginning in 2004, Ohio NRCS is implementing the CSP program incrementally on a watershed basis throughout the state. Farmers in eight watersheds are currently eligible to enroll in CSP and include: Auglaize, Grand, Hocking, Huron-Vermillion Little Muskingum, Raisin, St. Joseph and Upper Maumee watersheds.

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programs are available in the Lake Erie Drainage Basin in Northwest Ohio, Upper Big Walnut Creek Watershed in Central Ohio and, most recently, the Scioto River Watershed. Today, more than \$371 million are available in these watersheds for riparian corridor restoration and protection with stated goals of improving and protecting water resources for Ohio's water utilities

### Environmental Quality Incentives Program - EQIP

Begun in 1996, the 2002 Farm Bill reauthorized the Environmental Quality Incentives Program through 2007. This program provides technical and

by EQIP include: conservation planning, structural and management practices, manure storage, drainage control, conservation tillage, pesticide and nutrient management. Funding is available to help your watershed. Statewide, \$10,622,800 was allocated to farmers in 2004 and an additional \$10.5 million is available in 2005.

### Wetlands Reserve Program - WRP

The Wetlands Reserve Program is USDA's premier wetland restoration program. It offers landowners an opportunity to obtain financial and technical assistance for restoring and protecting wetlands on their property.

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Additional watersheds will continue to be enrolled in future years. To advocate that your watershed should be eligible for this program in 2006, contact your county NRCS agent for more information.

utility to tap into USDA's conservation programs that can improve and protect your community's water resources.

**CONTACT INFORMATION:**

Ohio's USDA Service Centers

<http://www.usda.gov/farmbill>.

A fact sheet called "Conservation Provisions Overview" and detailed information on conservation programs are available at <http://www.nrcs.usda.gov/programs/farmbill/2002>.

**REFERENCES**

Ohio EPA. 2004 *Integrated Water Quality Monitoring and Assessment Report*. Ohio Environmental Protection Agency, Division of Water. Columbus, OH.

ODA. 2003 *Ohio Department of Agriculture, Ohio Agricultural Statistics Annual Report*. Ohio Department of Agriculture. Columbus, OH.

US EPA. 1995. *Watershed Protection: A Project Focus*. US Environmental Protection Agency. Office of Wetlands, Oceans and Watersheds. Washington, DC.

**CREDITS**

All photos and images courtesy of USDA Natural Resources Conservation Service.

**ACKNOWLEDGEMENTS**

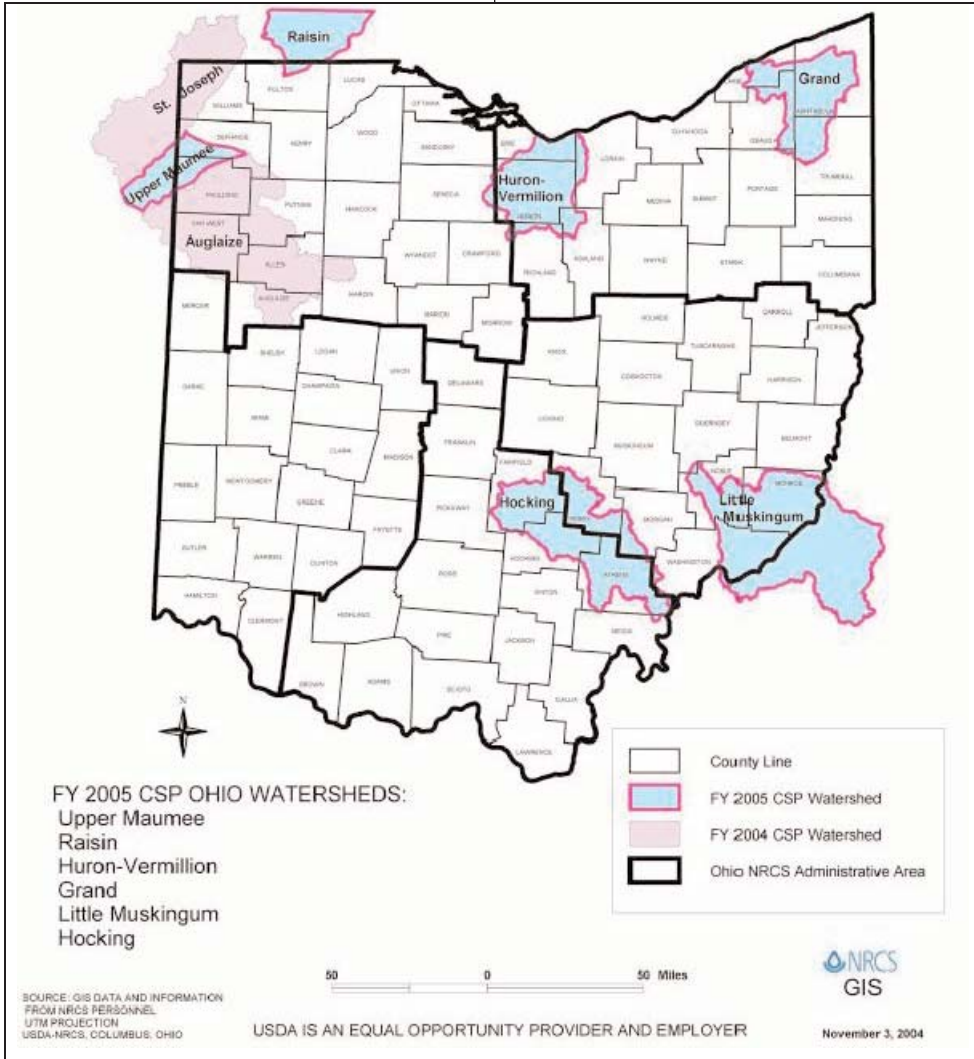
The author would like to thank Todd Brace, Supervisor of USDA Farm Services Agency Conservation Programs, and Jon Warner, Assistant State Conservationist of Programs for the USDA Natural Resources Conservation Services for their review and comments to earlier drafts of this article.

**AUTHOR**

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**AUTHOR'S NOTE:**

A similar article will also appear in the Spring 2005 Edition of the Ohio Buckeye Bulletin.



**SUMMARY**

The US Department of Agriculture is focusing its natural resources conservation programs toward restoring and protecting the Nation's air, soil and water resources. Local USDA offices, in collaboration with other Ohio conservation agencies, possess professional experts, technical and financial resources to assist Ohio's water utilities. USDA seeks to foster partnerships with Ohio's drinking water purveyors and expand their water quality-based conservation initiatives. The opportunity exists today for your

[http://oip.usda.gov/scripts/ndC/GI.exe/oip\\_public/state?state=OH](http://oip.usda.gov/scripts/ndC/GI.exe/oip_public/state?state=OH)

Natural Resources Conservation Service • (614) 255-2472  
[www.oh.nrcs.usda.gov](http://www.oh.nrcs.usda.gov)

Farm Services Agency  
 (614) 255-2542  
[www.fsa.usda.gov/oh](http://www.fsa.usda.gov/oh)

Resource Conservation and Development  
<http://www.oh.nrcs.usda.gov/programs/RCD/index.html>

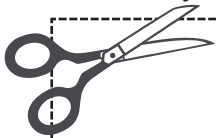
Information about the Farm Bill can be found at USDA's website

## 2005 AWWA Committee Chairs

Awards and Recognition	Ron Schwarzwaldner 614-237-3179 ron_schw@yahoo.com
By-Laws Review and Update	Robert Stevenson 419-245-1235 Robert.Stevenson@ci.toledo.oh.us
Computer Applications	Donald Houchins 513-591-7969 don.houchins@gcww.cincinnati-oh.gov
Conference Management 2005	Dave Bornino 614-644-2752 dave.bornino@epa.state.oh.us
Conference Management 2005	Mike Spnggs 614-645-7677MASpnggs@columbus.gov
Continuing Education	Larry Valentine 330-328-2137 lvalentine@neo.rr.com
Customer Service Activities	Linda Nelson 419-245-1847 Linda.Nelson@ci.toledo.oh.us
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Richard F. Melick Award	Ron Schwarzwaldner 614-237-3179 ron_schw@yahoo.com
Sadzewicz Award	Ron Schwarzwaldner 614-237-3179 ron_schw@yahoo.com
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Technical Program	Marvin Gnagy 419-473-1121 mgnagy@arcadis-us.com Tony Kohler (614) 645-3227 AWKohler@Columbus.gov
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Top-Ops	Verna Arnette 513-624-5624 verna.arnette@gcww.cincinnati-oh.gov
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Youth Education	Gary Dursch 513-425-7864 GaryD@ci.middleton.oh.us

## Council Chairs

Manufacturers/Associates Council	Chris Jarrett 412-851-1230 cjarrett@cipro.com
Water Utility Council	Ramesh Kashinkunti 513-624-5622 Ramesh.Kashinkunti@gcww.cincinnati-oh.gov



## Volunteers Make a Difference We cannot do it without you!

The active participation of the Ohio Section members has been a key ingredient in our organization's success. Each member can make a significant contribution. Interested in getting involved? Committees and corresponding chairs are listed above. Please call the chair listed, or circle the areas in which you are willing to contribute your time, skills, and experience to benefit the entire membership.

Name: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Employer: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City, State, Zip \_\_\_\_\_

*Please send the Willingness to Serve form to:*  
**Steve Heimlich/Ohio Section Secretary-Treasurer**

Ottawa County Regional Water  
 1405 West Fremont Road  
 Port Clinton, Ohio 43452  
 (419) 734-7312

# Announcements

## H.R. GRAY PROMOTES EXECUTIVE TO VP OF MARKETING

**Columbus, Ohio** – H.R. Gray, a Columbus, Ohio-based construction management and consulting firm, recently promoted **Thomas B. Merritt** to



VP of Marketing. With his new position comes the dual role of overseeing the strategic marketing and planning and managing the firm's busi-

ness development strategies. Merritt is also responsible for administering the company's client relations' initiatives, which are key to maintaining H.R. Gray's high customer relationship standards.

Prior to joining **H.R. Gray** in March 2003, Merritt worked for more than 18 years in the public sector where he served as the City of Columbus' Deputy Director of the Department of Public Utilities and as Director of the Department of Public Service.

"Tom can draw upon his public sector experience to help our clients address their needs. He provides a great degree of insight into the public sector client' requirements and has a keen understanding of construction and engineering practices," said James P. Joyce, P.E., president of **H.R. Gray**. "His dedication to our clients and to developing relationships with potential clients has been a factor in our recent growth."

Merritt is a member of the Ohio Water Environment Federation, chair of the City of Dublin's Community Service Advisory Commission, and is past chairperson of ITS Mid America. He

remains actively involved in community and industry initiatives. Tom also coaches in the Dublin Youth Athletics programs.

Merritt earned a bachelor's degree in education and political science from Ohio Dominican University and a master's in public administration from The Ohio State University.

Founded in 1979, H.R. Gray is a unique management and consulting firm serving the construction industry offering responsive, cost-effective, quality, construction management services for complex projects and resolution of construction disputes. By utilizing its unique skill set and proactive approach, H.R. Gray's mission is to help each client successfully manage its construction project from conception to completion. Based in Columbus, Ohio, H.R. Gray also has offices in Akron, Ohio, Lexington, KY and Austin, Texas.

## Sharon Metz retires from City of Columbus

The following includes the career history of Sharon Metz by Sharon Metz prepared for the retirement luncheon on November 19<sup>th</sup> at Salvi's Bistro in Columbus, Ohio. From the current Customer Services Activities Committee members, it was obvious that, "We couldn't have said it any better".



So, fond farewells are extended to such an accomplished AWWA member. Here is what Sharon wanted to tell everyone about her 34 year working

career...

I began my career (which, at the time, I believed to be just a "JOB, not a CAREER!") working for the City of Middletown over six years, with a little over five years giving me PERS credit. I came to work at the City of Columbus in March of 1975 in the Department of Finance, moving to the Department of Public Service in 1979 and then to the Division of Water in 1985. I will be one month short of 35 years of service when I retire on November 30, 2004 (but who's counting!)

I started my AWWA service in 1983 while working with Director Parkinson in Public Service. I have been involved ever since with the support of Jack Holt, John Doult and Jeff Hubbard, all past Administrators of the Division of Water, and support from Rick Westerfield, our new Administrator. It has been both a very intense and rewarding experience. I have been involved on various committees, as Section Secretary-Treasurer and Assistant Secretary-Treasurer and have served on the Governing Board. I Co-Chaired four Section conferences with the strong help and support of many of my co-workers. I will continue to sit on the National Technical and Education Council until June of 2007 (so I don't go brain dead and only talk baby talk!).

I have enjoyed my time with all of you and treasure many friendships I have made both at work and through my time with AWWA. I wouldn't trade them for anything and don't intend to forget them or give them up. My future looks so incredible that I almost can't believe it.

I moved to Lawrenceville, Georgia to live with her daughter, Kristi, who started the journey to adopt a little boy from Kazakhstan. Kristi received a referral in October, and now I am the proud grandmother of Jackson. I

will miss you all very much. If you would like to stay in touch with her, you can reach me at:

Sharon Metz  
1970 Wildcat Cliffs Way  
Lawrenceville, Georgia 30043  
678-985-1476 (Home)  
678-787-0251 (Cell - Verizon)  
email address: sharonsmetz@hotmail.com

**Visitors are not only WELCOME, they are EXPECTED!!**

Thanks for all the memories and  
God Bless All of You!!  
Sharon

### Ellis DeWell Appointed Superintendent

Ellis DeWell was appointed Water Treatment Superintendent for the City of Springfield. Ellis has been employed for 27 years beginning his career as a Custodian/Maintenance Worker for the Water Treatment Plant. He worked in the water meter repair shop for the Water Distribution Department. Ellis was hired as a Plant Operator in 1981 at the Wastewater Plant and remained there for 13 years. Ellis returned as Maintenance Supervisor at the Water Treatment Plant in 1995. In 2000, he was appointed Assistant Plant Superintendent and on December 1st, 2004, he was appointed Water Treatment Plant Superintendent. Ellis Holds a Class 3 Water Supply Certification, a Class 3 Wastewater Certification, and a Total Coliform/E-Coli by MMO-MUG Laboratory Analyst Certification.

Ellis served as Assistant Treasurer for the Southwest District OAWWA from 1997 to 2000. He is a standing member of the AWWA, NGWA. Ellis has had the pleasure of meeting many highly skilled professional individuals involved in the environmental profession. He has been a resident of Springfield his entire life, and has 4 children and 3 grandchildren.

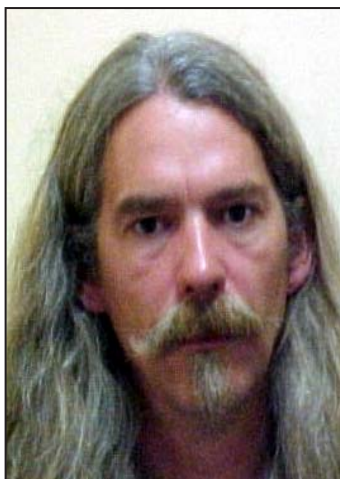
**Please join us in saying good-bye to  
Herb Nagel  
who is "pensioning" after 30  
years of service.  
at the  
Montgomery County  
Sanitary Engineering  
Department  
1850 Spaulding Road  
Kettering, Ohio**

*Still around the corner there may  
wait*

*A new road or a secret gate;  
Anf though I oft have passed them  
by;*

*A day will come at last when I  
Shall take the hidden paths that run  
West of Moon, East of Sun.*

*The Return of the King  
J. R. R. Tolkien*



## Southwest District Meeting Notice

The Southwest District summer meeting will be hosted by the City of Hamilton on July 21. Technical sessions, water plant tour, Top Ops competition, and a golf outing will be available. More information will be mailed out this spring. Hope to see many of you at the meeting!

## AWWA ANNUAL CONFERENCE AND EXPOSITION

**June 12-16, 2005  
San Francisco  
California**

Don't miss the important drinking water event in the world — the AWWA Annual Conference and Exposition. You'll learn about the latest research, technology, and regulatory and legislative issues; experience numerous valuable networking opportunities; and get expert insight and hands on demonstrations by more than 500 exhibitors.

Join more than 14,000 drinking water professionals from around the world's at the industry's largest and most comprehensive event!

For more  
information  
visit the Web at  
<[www.awwa.org](http://www.awwa.org)>  
or call (800) 928-7337



American Water Works Association  
Dedicated to Safe Drinking Water

# Operator Certification –

As most of you are aware, OEPA is proposing revisions to their operator certification regulations. There are significant information on water and wastewater utilities operations across the State encompassing all types of plants, small, medium, and fundamental mission of proving safe drinki

## OAWWA Ad Hoc Operator Certification Committee and Water Utility Council 2005 Survey for Operator Certification Rule Comments

Objective: The primary objective of this survey is to provide OEPA with some real world information on how water and wastewater utilities are operated in the State of Ohio, including information on staffing.

Name of the Utility (Optional): \_\_\_\_\_

Water Plant: Yes: \_\_\_\_ No: \_\_\_\_

Wastewater Plant: Yes \_\_\_\_ No: \_\_\_\_

Does your Utility operate multiple WTPs and/or WWTPs?

Yes: \_\_\_\_\_

No: \_\_\_\_\_

If Yes, complete the following for all the plants. If No, Complete for the appropriate plant(s) only.

Note: Size in MGD and Class as designated by OEPA

### WATER PLANTS

- 1. Size: \_\_\_\_\_ Class: \_\_\_\_\_ Treatment: \_\_\_\_\_
- 2. Size: \_\_\_\_\_ Class: \_\_\_\_\_ Treatment: \_\_\_\_\_
- 3. Size: \_\_\_\_\_ Class: \_\_\_\_\_ Treatment: \_\_\_\_\_
- 4. Size: \_\_\_\_\_ Class: \_\_\_\_\_ Treatment: \_\_\_\_\_

### WASTEWATER PLANTS

- 1. Size: \_\_\_\_\_ Class: \_\_\_\_\_ Treatment: \_\_\_\_\_
- 2. Size: \_\_\_\_\_ Class: \_\_\_\_\_ Treatment: \_\_\_\_\_
- 3. Size: \_\_\_\_\_ Class: \_\_\_\_\_ Treatment: \_\_\_\_\_
- 4. Size: \_\_\_\_\_ Class: \_\_\_\_\_ Treatment: \_\_\_\_\_

Do you personally operate more than one plant?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

If yes, provide #s: Water: \_\_ Wastewater: \_\_ Class: Water: I \_\_ II \_\_ III \_\_ IV \_\_ Wastewater: I \_\_ II \_\_ III \_\_ IV \_\_

License level of the one OEPA designated Operator In Responsible Charge (ORC): \_\_\_\_\_

Is the ORC responsible for reporting to OEPA for both Water and Wastewater TPs? Yes: \_\_\_\_\_ No: \_\_\_\_\_

Is the ORC responsible for reporting OEPA on multiple plants of Water and/or Wastewater Yes: \_\_\_\_\_ No: \_\_\_\_\_

If Yes to either of the above two questions, identify frequency of visits: Daily: \_\_\_\_\_ Weekly: \_\_\_\_\_ Monthly: \_\_\_\_\_

And, provide TOTAL number of hours spent by the ORC at the FREQUENCY identified above:

Water TP: 1: \_\_\_\_\_ 2: \_\_\_\_\_ 3: \_\_\_\_\_ 4: \_\_\_\_\_

Wastewater TP 1: \_\_\_\_\_ 2: \_\_\_\_\_ 3: \_\_\_\_\_ 4: \_\_\_\_\_

Is the ORC responsible for more than one Class III or Class IV TP? Yes: \_\_\_\_\_ No: \_\_\_\_\_

If Yes, please provide daily hours spent by the ORC at each plant. Class III   /  /  /   Class IV   /  /  /

# - Proposed Rule Change

disagreements between OEPA and water/wastewater utilities. In order to express a collective voice, we need some concrete input from all large alike. Your response to the survey will be very valuable in preparing responses so that regulations are made with a functioning water and adequate sanitary services.

# of Assistants your ORC has (designated backups to serve the role of ORC): \_\_\_\_\_ License levels \_\_\_\_\_

Total # of operators (part-time, fulltime): Licensed: \_\_\_\_\_ Unlicensed: \_\_\_\_\_

Do you have around the clock coverage at your TP (when operational) by On-site operators?

Yes: \_\_\_ No: \_\_\_. If Yes, # of operators and their license levels: Shift 1: \_\_\_ Shift 2: \_\_\_ Shift 3: \_\_\_

If No, how many hours of On-site coverage do you have? (Check one)

\_\_\_\_\_ <4 \_\_\_\_\_ 4-8 \_\_\_\_\_ 8-12 \_\_\_\_\_ 12-16 \_\_\_\_\_ >16\_\_

What is the highest level of the certified operator(s) available On-site when ORC or assistant is not available?

Shift 1: \_\_\_\_\_ Shift 2: \_\_\_\_\_ Shift 3: \_\_\_\_\_

Do you use SCADA for your plant operations? Yes: \_\_\_\_\_ No: \_\_\_\_\_

If yes, please identify the use of SCADA for:

Complete unattended Plant Operation: \_\_\_ Hrs: \_\_\_\_\_

Partial unattended plant Operation: \_\_\_\_\_ Hrs: \_\_\_\_\_

Dose changes: Yes: \_\_\_ No: \_\_\_; Pump/Valve operations: Yes: \_\_\_ No: \_\_\_; Others: \_\_\_\_\_

Please provide any additional comments that you think may be valuable in addressing the regulations governing water and wastewater treatment operations in the State of Ohio:

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Results will be posted on the Ohio Section AWWA website by August 31, 2005. Additional copies of this form are available on-line at [www.ohiowater.org/awwa](http://www.ohiowater.org/awwa)

Please return completed survey to:

2005 Operator Certification Rule Survey, Ohio Section AWWA, 3972 Indianola Avenue, Columbus, OH 43214

Phone: (614) 268-3244

Fax: (614) 268-3244

Email: [2005Survey@ohiowater.org](mailto:2005Survey@ohiowater.org)

WE WILL MAINTAIN THE CONFIDENTIALITY OF YOUR RESPONSES. YOUR RESPONSES WILL MAKE A DIFFERENCE ON HOW WE PROVIDE WATER AND WASTEWATER SERVICES TO THE CITIZENS. THANK YOU VERY MUCH FOR PARTICIPATING IN THIS SURVEY.

Curtis L. Truss, J., Class III W & WW Operator  
Chair, Ad Hoc Operator Certification Committee  
(614) 268-6826  
[curtis@ohiowater.org](mailto:curtis@ohiowater.org)

Ramesh D. Kashinkunti, P.E., DEE, Class IV W Operator  
Chair, Water Utility Council  
(513) 624-5622  
[Ramesh.Kashinkunti@gcww.cincinnati-oh.gov](mailto:Ramesh.Kashinkunti@gcww.cincinnati-oh.gov)

# Ohio Section – Customer Services Activities Committee (CSAC)

by: Linda Nelson, Chair

*National Customer Service Nominee - Keith Hunsberger*

City of Columbus Manager, Keith Hunsberger has recently been nominated to serve on the National Customer Service Activities Committee. This committee's main focus is to provide workshop and conferences to help city employees, particularly in the water division, deal with customer service issues nation wide.

"I was not so much surprised that I had been nominated, as I was approached before the nomination," Hunsberger said "however, I was very surprised that I had been accepted. The others who had been nominated had much better credentials when it came to education. On the other hand, I would hold my resume of experience up to any one of the other nominees."

During his freshman year at Ohio State University, he realized that he had no idea what he direction he wanted to take with his college career. "I wasn't sure what I wanted to do, and I was given a decent job opportunity, so I took it," Hunsberger said.

The job opportunity was a position working in the automotive retail industry. There Hunsberger learned the golden rule of customer service, "the customer is always right".

After six years learning the ins and outs of customer service and working his way up to a management position in the automotive industry, Hunsberger began looking at other career paths. As luck would have it, Hunsberger found an entry-level position working for the City of Columbus as a radio dispatcher. After a little over a year, he proved his worth to the city and was offered a position as the manager of customer services. Today he holds the position of Customer Service Manager of the Division of Water for the City of Columbus where he supervises 58 employees

in several different departments.

Hunsberger has been a member of the Ohio Section Customer Service Activities Committee (CSAC) since 1991. And it was a nomination from Alison Posinski this year that earned him a seat at the national level.

"Keith has been a very big part of the Ohio Section CSAC. He has done so much work in Ohio that I felt he would be a great benefit to the National Customer Service Activities Committee," said Posinski, the Assistant Superintendent of the Commercial Services Division at the Greater Cincinnati Water Workers. Posinski has worked with Hunsberger since he became a member of the Ohio Section CSAC.

With his position at the City of Columbus, Hunsberger holds a membership in the American Water Works Association (AWWA). As most water utility employees know, the AWWA is an organization that has dedicated itself to the improvement of drinking water quality and supply.

Every year the Ohio Section of AWWA holds its annual conference and invites city employees and independent water companies from around the area. At this conference, people attend lectures, workshops, seminars and round table discussions that are focused on improving the company both internally and externally. According to Hunsberger, customer service is always a popular topic at the conference. And, he takes advantage of the opportunity to lead several workshops that educate people on the delicate art of handling customer complaints.

"Keith is one of those presenters who is so knowledgeable that he can address almost any customer service topic," says Linda Nelson, current Chair of the Ohio Section

CSAC. "He has the ability to get the audience involved in discussions so that everyone benefits from each other's knowledge and experience." This was obvious when Keith coordinated the Customer Service Round Tables in Columbus on November 5, 2004.

The 2005 Ohio Section AWWA Conference will be held in Columbus, Ohio from September 19 through the 22. Hunsberger is already planning his presentation in the Cycle of Service Workshop that will be offered by CSAC. He highly recommends that anyone in the customer service industry attend.

The most valuable thing he has learned throughout his experience, says Hunsberger, is something that Alison Posinski once said to him, "Customer Service is not a place in the organization, it is a state of mind for the organization." He tries to instill this idea in the minds of every one of his employees as well as everyone who attends the workshops.

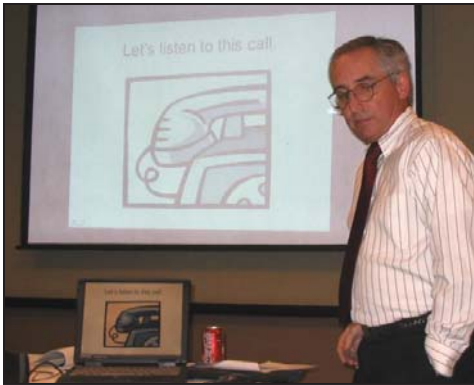
## *CSAC Meetings 2005*

Members from (CSAC) continue to rotate quarterly meetings throughout member cities in 2005 to share information with guests about CSAC activities. Columbus hosted the January 22<sup>nd</sup> meeting with local arrangements provided by CSAC member Keith Hunsberger. The next quarterly meeting is scheduled at the City of Fairborn on April 22. Eric Ross will handle local arrangements. (See contact numbers listed below for attendance or additional information.)

AWWA CSAC Workshops can be made available upon request at a reasonable cost. Workshops, e.g., "Cycle of Service" and "Surviving

Customer Service" credit attendees with contact hours. To host a session at your facility or join the committee, please contact Chair Linda Nelson at 419-245-1847 or Vice-Chair Pam Whited at 937-233-329.

Amanda Hadsell, Co-Editor,  
City of Toledo Utility Line  
Publication with input from Linda Nelson



At the 2004 AWWA Conference Keith Hunsberger presented during the Cycle of Service Workshop. His segment included customer service calls...the good, the bad, and the ugly. Pictured above, Keith shares a customer call and leads discussion on the finer points of positive customer impact.



## WATER FOR PEOPLE COMMITTEE

by: Connie Roesch, Chair

The final tally on Water For People (WFP) fundraising for 2004 is complete and once again our Section exceeded its goal. The Ohio AWWA Section raised \$16,353.00 in 2004 and combined with Ohio Water Environment Association, Ohio water professionals raised almost \$20,000. This places us in an elite category of AWWA Sections that demonstrate significant support for safe drinking water and adequate sanitation for people throughout the world. Water For People continues to be the charity of choice for both AWWA and WEF.

Thanks to all of our committee members who volunteer their time and talents throughout the year; if you're interested in being part of this team, please contact me [connie.roesch@gcww.cincinnati-oh.gov](mailto:connie.roesch@gcww.cincinnati-oh.gov) or Vice-Chair Kristen Atha [kristen.atha@tetratech.com](mailto:kristen.atha@tetratech.com)

Thanks to all of the other volunteers, OAWWA members and associates for another terrific year. Included among our major donors for 2004 is our ever-generous Manufacturer's Advisory Council, the employees from the Greater Cincinnati Water Works and the Butler County Department of Environmental Services, the Lang Foundation, Tetra Tech, and HDR.

In 2005, the WFP Committee will continue with our usual fundraising and educational efforts, but also focus on a major project to encourage corporate and workplace gifting.

We are also coordinating events for World Water Day on March 22 along with other Water For People AWWA Sections throughout the country. Those of us attending the AWWA Annual Conference in San Francisco will also be very

involved in Water For People fundraising and educational awareness activities. If you are attending ACE, please check out all of the WFP activities on the AWWA Conference website and plan to lend your support.

In response to the December 26, 2004 tsunami disaster, Water For People has established a tsunami development fund to assist in the long-term rebuilding of water and sanitation infrastructure in the areas of Southeast Asia and India. Although WFP is not an agency set up to be an emergency responder, it has been acting as a facilitator for communications, volunteer efforts, and in-kind cash donations for victims. The need has never been greater, so our resolve to help with these solutions continues to strengthen.

Please check out our WFP Committee website [www.ohiowater.org/oawwa](http://www.ohiowater.org/oawwa) (Click on Committees) for a listing of our current committee members. Please contact any of them if you'd like more information about how to be involved in this rewarding and vital work. I also encourage you to visit the national WFP website [www.water4people.org](http://www.water4people.org) to learn more about how the funds raised in Ohio are being used for projects to help people around the world obtain safe drinking water, adequate sanitation, and hygiene education.



# Coming Together, After All This Time

By Gene Oliver Technical Director, American Cast Iron Pipe Company

## The Ductile Iron Pipe Industry and Corrosion Engineers Set Aside Differences to Find Common Ground

For many years I have attended the National Association of Corrosion Engineers (NACE) annual conferences to listen and



learn from the technical presentations. Wide ranges of topics have been discussed at these meetings, but corrosion protection of underground piping has always been of particular interest to me.

I recall one presentation at a panel discussion where the two presenters were so adamant in their views and opinions regarding corrosion protection of ductile iron pipe that neither was willing to compromise. During the subsequent question-and-answer period, a pipeline owner stated that two groups with such strongly held positions needed to get together and talk. This was an excellent idea, but getting to "Yes" among groups with strongly differing beliefs, philosophies, and opinions is difficult.

After expressing my interest in corrosion control of ductile iron pipe, it came as no surprise that I was asked to become a member of a newly formed NACE committee that was to develop a state-of-the-art paper on the subject. So, instead of observing

these discussions from a distance, I was suddenly right in the middle of them. As a result, I had an opportunity to work with numerous corrosion engineers, several of whom were invited to tour our plant in Birmingham what a great opportunity for us to get to know each other better.

During this process, it became evident that not all corrosion engineers carried pitchforks, had horns, pointed tails, and carried a hip pocket full of zinc anodes. Some were reasonable people. We said, "Let's talk." So we talked and talked and talked.

Over a two-year-plus period numerous meetings were held at the Ductile Iron Pipe Research Association (DIPRA) headquarters between technical representatives of the DIPRA member companies and corrosion engineers from Corpro Companies to discuss corrosion protection of ductile iron pipe. We performed statistical analyses of pit depth measurements on more than 1,300 gray and ductile iron pipe dig-ups from test sites located throughout the United States. Much of the pipe had been in the ground 20 to 50 years.

We performed field polarization studies, soil analyses, and laboratory tests to determine the significance of pertinent factors. In areas where we held differing opinions or philosophies we would say, "Let's look at the data", or we would perform additional appropriate tests to support or invalidate a particular factor.

After many months of meetings and data analyses, a new methodology emerged as to how to determine the appropriate level of corrosion protection to achieve the desired design life for new ductile iron pipeline installations. This methodology is a matrix approach that includes numerous factors related to the "likelihood of corrosion" on one

axis of the matrix and the "consequence of corrosion" on the other axis.

Once determined, these factors are plotted onto the matrix, which maps to one of five different types of corrosion protection. These methods are:

- Ductile Iron Pipe "As Manufactured with Shop Coat"
- Ductile Iron Pipe with "Encasement"
- Ductile Iron Pipe with "Encasement and Joint Bonding"
- Ductile Iron Pipe with "Life Extension Cathodic Protection with or without Encasement"
- Ductile Iron Pipe with "Cathodic Protection"

The matrix and the five different types of corrosion protection are collectively known as the "Design Decision Model™" or the DDM™.

Getting to "Yes" when different philosophies are involved is often a difficult process, but by establishing a common goal of providing ductile iron pipe users with a practical, effective, and economic solution to corrosion concerns, DIPRA, its member companies, and Corpro Companies have been able to develop a methodology to achieve this goal.

Several statements can be made that define the philosophy and guidelines inherent in the corrosion protection system identified as the Design Decision Model™. They are:

The program comprehensively addresses external corrosion of ductile iron pipe.

When the program is followed, no external corrosion allowance is required when determining pipe class.

Polyethylene encasement is a cost-effective and technically sound method for corrosion protection of ductile iron pipe.

Bonded, dielectric coatings for corrosion protection are inherently incompatible with the heavily peened, textured outside surface of ductile iron pipe. For many technical reasons, those coatings do not provide a cost effective solution for corrosion protection of ductile iron pipe and are never required when the program is followed.

Cathodic protection improves the effectiveness of polyethylene encasement in certain environments. The systems are not exclusive of each other and can be used in combination where appropriate.

An important element of the program is the use of polyethylene encasement (when called for) that meets all the requirements of AWWA C105, including proper installation of the corrosion barrier such that it can provide the expected protection.

While the details of this program are proprietary, the program does not invalidate the 10 point system as defined in the Appendix of AWWA C105. Rather, this program is considered an enhancement or refinement of the 10 point system.

Three years ago, I would have said that it would be very unlikely that a group of engineers from ductile iron pipe manufacturers and engineers from a major corrosion engineering firm would ever sit down, discuss, and agree to anything with regard to corrosion concerns. But it happened.

It is very important to realize that the result of this effort was not a compromise, but the development of a technically sound, economically feasible, corrosion control program for ductile iron pipe that is based on the analyses of more than 1,300 pipe dig-ups in corrosive soils, and numerous field and laboratory studies to validate the program. As we move forward with the introduction of this methodology, we are confident that our customers and users of ductile iron pipe will be the beneficiaries.

## Northwest District News

The Northwest District is looking forward to having another successful and fun filled year of events that include spring and fall study sessions and spring, summer and fall technical session meetings. Meeting dates and locations for meetings can be found on the back cover.



Speaking of study sessions, the Northwest District is looking for a volunteer to be the district's Study Session Coordinator. The coordinator's responsibilities include coordinating the study session locations, dates, instructors, flyer and delivery of study materials to the sessions. The coordinator, if interested, could also be a study session instructor. This is a great opportunity to get involved in your district's activities! If you may be interested, please contact Chair Larry Huber at 419-221-5175 or Secretary/Treasurer Kurt Smith at 419-473-1121 for more details.

Get to Know Your Chair,  
Larry Huber

We are proud to have Larry Huber as our Chair for 2005. Larry has over 20 years of experience working for the City of Lima in Water Distribution. His job has expanded this year as the city has combined the Water Distribution and Sewer divisions and he is now manager of the new Utility Field Services division.

Larry has class II licenses in water distribution and waste water collections. He has also been certified through OTCO in backflow prevention. Larry has been an instructor for OTCO in water distribution since 1989.

Larry has been an AWWA

member for almost 20 years, presently serves on the Ohio Section distribution committee and has participated in the tapping contest in his younger years.

Larry has a BS degree in Agriculture from The Ohio State University. He stays busy by farming with his twin brother Terry. Larry is involved with his church and enjoys working with youth. Larry is following in Terry's footsteps as Terry was the district chairman in 2000.



## Ohio's AWWA Safety Committee

Here is a quick safety tip taken from a past AWWA Safety Talk.

### Tornado Season Again!

Most people look forward to the renewal that spring brings. But for many areas of the United States and Canada, spring means tornado season. Tornadoes have appeared in all 50 of the United States and in all provinces of Canada. Tornadoes are one of the most devastating natural events on earth. They have twisted 10-story buildings, flattened bridges, and destroyed communities in a very short period of time. Your best defense against tornadoes is to be prepared and to have a survival plan. Features of your survival plan should include:

1. Keep informed about the weather. Tornadoes come from thunderheads. If you suspect a thunderstorm, listen to the radio for tornado alerts. Treat every tornado alert as if a tornado were going to strike you.
2. When a tornado warning is issued, go to the building's lowest level. Stay away from windows. If you are at home and have no basement, crawl under a sturdy table in the middle of the house.
3. If you are in your car and see a tornado coming toward you, go into the nearest sturdy building. If there is no building, try to park under a bridge or overpass. If you are in open country with no shelter available, abandon your car and find a ditch or depression in the ground. Lie down in it and cover your head with your hands.
4. Never try to outrun a tornado with your car. Forget your possessions; save your life first.
5. Have the proper equipment handy. You need a flashlight with good batteries, blankets, and a portable radio.
6. It is a myth that you can save your home by opening your windows to "equalize pressure." Don't waste time doing this. Protect yourself first.



**REMEMBER**  
**SAFETY STARTS WITH YOU!**  
*Have A Safe Day*



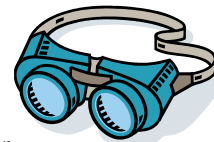
# Ohio's AWWA Safety Committee

## March - Eye Safety

### See your way clear

Have you brushed up lately on the use of eyewash stations and safety showers? More than 13,000 people suffer chemical-related eye injuries each year, and foreign objects hurt another 5,000. If you get something in your eye, you need to start flushing it out immediately.

Please make absolutely sure you know how to do that - how to hold an eyelid open and how to prevent contaminated water from flowing into the other eye, for example. Everyone should be nothing short of an expert on the rules and the procedures. If you're at all uncertain, please ask for training.



## April – PPE

### Are you up to date?

How persnickety are you about maintaining your safety gear? More to the point, how persnickety are you about your life - or about your family? You could have the best-quality hardhat, or earmuffs, or safety shoes, or goggles, or face shield. But you can't stop there. Liners may tear or rupture, goggles and hard hats may crack; shoes may wear out more quickly than you would have guessed. Be careful not to take equipment

for granted. It may seem like yesterday that it was new, but it may be old hat by now. Please check all your gear **every** day. Maintain it like there's no tomorrow. If it's in bad shape, there may BE no tomorrow.

No matter how brief a job may be, don't tempt fate - ALWAYS wear your safety equipment. Injuries just take a second.



## May – Seatbelt Safety

### Human missiles

Are you keeping yourself, and your family, safe while out on the road? Seatbelt use continues to rise. Still, only 71 percent of us use them, which means that nearly three out of ten don't! To make matters worse, now comes a report saying that those who sit unbuckled in the back seat can pose a deadly threat to those in the front.

In fact, 80 percent of deaths among front-seat riders wearing seatbelts may have been avoidable. The reason: the people in the back became human missiles during accidents and raised the death risk for those up front by almost fivefold. "Unbelted rear-seat occupants...are forced forward into the back of the front seat, and this impact is immense," researchers wrote. They suggested that seatbelt use be mandatory for *everyone* in a vehicle. Sounds like a good idea. Next time people say belts are too confining, tell them what it might feel like being confined to a hospital bed for weeks, months or longer!



## June– National Safety Month

### Identifying job hazards

You can slip on water near the drinking fountain or even on a paperclip dropped along a waxed floor. Freight can fall, tools can slip, and electrical hazards are everywhere. Please - take the initiative and help identify hazards: Train yourself to observe co-workers and to look for unsafe items and acts. Correct problems yourself and point them out to others. Report unsafe situations or acts. Recommend ways to prevent recurrences. With safety, the watch words are "**communicate**" and "**participate**".



# Welcome New Members

New members and sponsors of the AWWA from October 2004 through January 2005 are listed below. If you know the new member, please give a call or take time to personally welcome them to the next function

## October 2004

Keith Bledsoe, Oregon  
 Anthony Fristachi, Cincinnati  
 Greg Davis, Lebanon  
 Deborah Mason, Canton  
 Stark Ceramics, Inc, Canton  
 Anthony Chesser, Logan  
 Robbie DeVol, Lancaster  
 Michael LaMonica, Cleveland  
 Terry McClain, Westlake  
 Natalie Williams, Milford  
 Greg Norris, Rushsylvania  
 Clifford Leeder, Apple Creek

*Jim McGrew*

Colen Rhoades, Hamilton  
 Rick Schomaker, Columbus  
 John Charest, Cincinnati  
 Aaron Brigham, Dayton  
 Michael Degens, Whitehouse

*Kurt Smith*

Eddo Latievarya, Lakewood  
 Adam Zolciak, Toledo

*John Walthall*

## November 2004

Edgar Chavez, West Salem  
 Doug Cade, Ironton  
 Pamela Davis, Cincinnati

*Terry Bock*

Steven Drees, Cincinnati  
 Pat Tierney

*Melinda Raimann*

Jeremy Pijor, Elyria

*Bill Simon*

Charles Drake, Piqua  
 Rick Omlor, Yellow Springs  
 Bill Prior, Newbury  
 Thomas Parker, Akron  
 William Bezts, Cincinnati  
 Rita Hyatt, Columbus  
 Mark Hemmerich, Lewisburg  
 Rhonda Boyd, Kent

*David Merleno*

Earl Smith, Cortland  
 Robert Cullen, Sandusky  
 Larry Thompson, Mansfield  
 Steven Durall, New Carlisle  
 Bob Mount, Lebanon

## December 2004

Ellis Dewell, Springfield  
 Richard Ciminello, Circleville  
 Milan Steiner, Wooster  
 Priscilla Blanchard, Hudson  
 Jeff Macomber, Cincinnati

*Dick Schlemmer*

L. Platt, Warren  
 Tarik Sawaged, Hinckley  
 Gary Schmitt, London  
 Dan McElhatten, Tiffin  
 Jim Davis, Wintersville  
 William Wills, Lancaster  
 Jan Dwiggin, Bowling Green  
 Gary St. John, Stryker  
 Joseph Tracey, Ashland

## January 2005

Kirk Helmandollar, Quincy  
 Holly Kaloz, Columbus  
 Lyndon Johnson, Columbus  
 Stewart Dreier, Reynoldsburg  
 Stephen Hardesty, Kent  
 Alayna Blakely, Toledo  
 Jesse Morris, Toledo  
 David Gruet, Put In Bay  
 Derek Haynie, Pleasant Grove, Utah  
 Ann McGhee, Mason  
 Gregory Mise, Columbus  
 Jeremy Cook, Columbus

*Robert Shoaf*

Jim Collins, Hamilton

*Cliff Shrive*

Nicole Holder, Cleveland

*Jose Hernandez*

Joe Johnson, Dayton  
 Darren Drumm, Lancaster

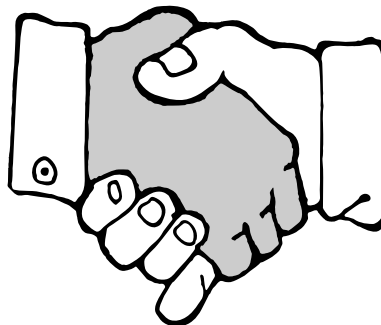
*Michael Nixon*

Mark George, Cincinnati

*David Brown*

Larry Whitted, Lancaster

*William Wills*



## WATER QUALITY TECHNOLOGY CONFERENCE AND EXPOSITION

November 6-10, 2005  
 Quebec, Canada

Stay on the cutting edge of water quality technologies, new regulations, and strategies for compliance. For more than 25 years, this conference has been the premier educational forum in the field of drinking water quality.

For more information  
 visit the Web at  
[www.awwa.org](http://www.awwa.org)  
 or call (800) 928-7337



American Water Works  
 Association  
 Dedicated to Safe Drinking Water

## DISTRIBUTION AND PLANT OPERATIONS

Sept. 18-21, 2005  
 Tampa, Florida

Keep pace with the operational demands of your system through hands-on workshops; practical information and an exchange of successful distribution solutions through this dynamic conference geared toward operators and operator managers.

For more information  
 visit the Web at  
[www.awwa.org](http://www.awwa.org)  
 or call (800) 928-7337



American Water Works  
 Association  
 Dedicated to Safe Drinking Water



# AMERICAN WATER WORKS ASSOCIATION INDIVIDUAL MEMBERSHIP APPLICATION

FAX (303) 347-0804 Phone 1-800-926-7337/303-794-7711  
6666 W. Quincy Avenue/Denver, CO 80235  
[www.awwa.org](http://www.awwa.org)

**OHIO**

For AWWA Use Only.

Have you ever been a member of AWWA?  Yes  No  
When? \_\_\_\_\_  
Member No. \_\_\_\_\_

Please furnish your preferred mailing address below (indicate whether business or home):  Business  Home

Mr.  Mrs.  Ms.  Dr.

First Name \_\_\_\_\_ Middle Initial \_\_\_\_\_ Last Name \_\_\_\_\_ Suffix \_\_\_\_\_

Exact Street Address \_\_\_\_\_ (P.O. Box or Mail Stop) \_\_\_\_\_

City \_\_\_\_\_ State or Province \_\_\_\_\_ Zip or Postal Code \_\_\_\_\_

Title \_\_\_\_\_

Company Name \_\_\_\_\_ E-mail Address \_\_\_\_\_

Home Phone \_\_\_\_\_ Business Phone \_\_\_\_\_ Business Fax \_\_\_\_\_

Applicant's Signature \_\_\_\_\_ Date \_\_\_\_\_

Signature of AWWA Member Endorsing Application (Optional) \_\_\_\_\_ Endorsing Member Number \_\_\_\_\_

Is your company a current member of AWWA? \_\_\_\_\_ If not, please provide your company's main address if different from above:

Company Name \_\_\_\_\_ Main Business Address \_\_\_\_\_

City \_\_\_\_\_ State/Province \_\_\_\_\_ Zip or Postal Code \_\_\_\_\_

<b>ANNUAL DUES:</b>	\$130.00 Active Grade Code U2	\$62.00 Operational/Administrative Grade Code O6 <small>(For operator or administrative level personnel or employees of small utilities. Will not receive <i>Journal AWWA</i>.)</small>	\$36.00 Student Grade Code 14	\$150.00 International Grade Code 03
<b>ANNUAL DUES</b>	\$ _____			
Section Assessment*	_____			
Multi-Section Option†	_____			
<b>TOTAL DUE</b>	\$ _____	Card No. _____	Exp. Date _____	

\*Section Assessment - AWWA has 43 local sections. Your section is determined by your address. However, some sections require additional annual fees to better serve their local members. **Section assessments are mandatory for applicants with addresses as shown:**

Please find your Section Assessment fee in the table at right and enter the total on the line reading "Section Assessment."

ADDRESS	ACTIVE (02)	OPERATIONS (06)
Alabama	\$20	\$20
Alberta, Manitoba, N.W. Territories, Saskatchewan	\$10	\$10
California	\$15	-
Connecticut, New Jersey	\$10	-
Florida, Minnesota, South Carolina, Texas	\$10	\$10
Georgia	\$25	\$25
Idaho (western), Oregon, Washington	\$10	-
Illinois	\$8	\$4
Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	\$47	\$20
Missouri	\$6	\$3
New York	\$15	\$8
Pennsylvania	\$15	\$5

**ALL APPLICANTS SHOULD COMPLETE THIS SECTION:**

Circle the descriptions below that best describe you. The information is used in audits of AWWA readership. Circle only ONE in each group.

**BUSINESS AND INDUSTRY**

- A. Public Water Supply Utility—Municipally Owned
- B. Public Water Supply Utility—Investor Owned
- C. Governmental—Federal, State, Local
- D. Consultant
- E. Contractor
- F. Private Industrial Systems or Water Wholesaler
- G. Manufacturer of Equipment & Supplies including Representatives
- H. Distributors of Equipment & Supplies including Representatives
- I. Educational Institutions, Faculty and Students, Libraries, and Other Related Organizations
- J. Fully Retired
- K. Professorial
- L. Research Labs
- M. Unreported

**JOB TITLE**

- A. Executive-Gen'l Mgr., Commissioner, Board Member, City Mgr., Mayor, President, Vice-President, Owner, Partner, Director, etc.
- B. Management-Division Head, Section Head, Mgr., Chief Engineer, Comptroller, etc.
- C. Engineering/non-managerial-Civil Engr., Mech. Engr. Envir. Engr., Planning Mgr., Field Engr., Systems Designer, etc.
- D. Scientific/non-managerial-Chemist, Biologist, Biophysicist, Researcher, Analyst, etc.
- E. Purchasing-Purchasing Agent, Procurement Specialist, Buyer, etc.
- F. Operations-Foreman, Operator, Maintenance, Crewman, Service Rep., etc.
- G. Marketing & Sales/non-managerial-Mkt. Analyst, Mkt. Rep., Salesman, Sales Rep., etc.
- H. Other (describe) \_\_\_\_\_

Completion of this information is optional.

AWWA maintains profile data for use in developing additional programs and services to meet the diverse needs of our members.

Birth Date \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

Race/Ethnic Identification: (check one)

- 1 American Indian/Alaskan Native
- 2 Asian/Pacific-Islander
- 3 African American
- 4 Hispanic
- 5 White (Non-Hispanic)
- 6 Other

Gender: (check one)

- F Female  M Male

**CHECK FIELD(S) SERVED:**

- 5  Water Supply Only      7  Wastewater Only
- 9  Both                              3  Other

† **MULTI-SECTION MEMBERSHIP OPTION** In addition to your own section membership, you may also join other AWWA section(s). This allows you to receive information on events and activities from other local sections. If this is of interest to you, call 1-800-926-7337 for multi-section information and fees.

The following information is for USPS 2nd class mailing requirements ONLY: In some AWWA sections, a portion of the section allotment equal to 50 percent or more of the domestic subscription rate charged for the section periodical will be allocated toward a subscription of that periodical. Dues allocated for each publication members receive: *Journal* \$28 *MainStream* \$6 *Opflow* \$5

# AWWA MANAGEMENT INSTITUTE CONTINUES TO GROW TWO MORE SESSIONS SCHEDULED FOR 2005 IN SALT LAKE CITY

The third "overflow" session of the five-day Basic AWWA Water Utility Management Institute will be presented in Salt Lake City, Utah, on *April 25 - 29, 2005*, at the Comfort Suites Hotel near the airport for all members and water department personnel nationwide. The three Institutes held since autumn 2004 have brought together water company personnel from every region of the county (and Canada as well) in an atmosphere of learning and sharing important leadership principles. Due to the overwhelming success of the Management Institute, an additional session is being planned for early June, 2005. This affordable, top-notch training teaches practical, "real world" supervisory and management skills needed to be effective in today's workplace. The schedule is as follows: **Day 1 - Foundations Of Leadership; Day 2 - The Leader's Role In Performance Management; Day 3 - Managing Conflict; Day 4 - Employee Selection; Day 5 - The Leadership of Change.** *The Institute registration fee is \$499.00.* Optional certification from Utah State University will be available for \$50.00 extra to members needing to meet training requirements for professional affiliations. To obtain the April schedule and registration information, and to inquire about the June Institute, call Chuck Christensen at (801) 298-8647, or email him at [chuckets@msn.com](mailto:chuckets@msn.com).

## DRINKING WATER SECURITY THE WATER INFORMATION SHARING AND ANALYSIS CENTER (ISAC) AND THE WATER SECURITY CHANNEL

Since December 2002, the Water Information Sharing and Analysis Center (WaterISAC) has served as the drinking water and wastewater industries' secure Internet portal for sensitive security information. To date, over 1,100 users subscribed to this vital security service representing 450 drinking water, wastewater and state water primacy agencies.

Designed by utility managers, this service will help to ensure that the vulnerability assessments, security strategies and emergency response plans of the water utilities remain up-to-date. This revolutionary service gathers and disseminates information from utilities' security incident reports, the Department of Homeland Security, federal law enforcement, the intelligence community, and environment and public health agencies. Analysts work daily collecting intelligence, and subject-matter-experts are on call to tailor information to water systems' needs.

The WaterISAC is a water industry effort, which was recommended by Presidential Decision Directive 63 and Executive Order 13231. A Board of Managers, consisting of utility managers governs the WaterISAC. The American Water Works Association, the Association of Metropolitan Sewerage Agencies, the Association of Metropolitan Water Agencies, the Awwa Research Foundation, the National Association of Water Companies, the National Rural Water Association, the Water Environment Federation, and the Water Environment Research Foundation choose the Board members. Please visit the WaterISAC public website at [www.waterisac.org](http://www.waterisac.org) for additional details.

The new Water Security Channel (WaterSC) is a free, rapid, Email notification of water security alerts and other information issued by federal government agencies. The WaterSC currently distributes updates to over 5,000 affiliate organizations. Visit the Water Security Channel at [www.watersc.org](http://www.watersc.org)

For more information, please contact Bill Clark at 202-331-0479.

# A Series of Unfortunate Events

By Robin Liss • Young Professionals

As young professionals step out of college and enter the work force, it doesn't take long for them to realize college only prepared them for a small portion of what they needed to know to be successful in the real world. Even the simple transitions may take some adjusting. For example, in college, to measure distances, we used a ruler. In the work force we use engineering and architectural scales. Or figuring out how to sit through an all day meeting, when we had a hard enough time sitting through an hour long lecture in college.

No matter how long we have been in the work force, we have all had moments that we would much rather forget. These moments I am referring to are those times, early on in our careers, when we made mistakes. Some of these mistakes are a lot more detrimental than others, but we all have all had those moments.

As an engineer working for a consulting firm, I have asked several colleagues of mine to recount some of these unforgettable times in their lives and some of the lessons they have learned. Here is a synopsis of what they had to say:

*Who would have thought that a detail as minor as a North Arrow could result in a construction change order costing actual dollars? It did on one project. The North Arrow was pointed toward the South on one drawing. As such, the Contractor routed the electrical duct bank to the wrong side of the building - thus resulting in a change order to correct the conduit runs to the duct bank. Now, I'm more conscious of proper North Arrows on plan drawings. Lesson: Small, seemingly minor details or events, sometimes hard to recognize at times, can have major impacts. It is instances like these that cause us to be more cognizant of the potential impacts of the minor decisions we make.*

*During construction, a waterline was being pressure tested in a trench. The pipe was bulkheaded using a*

*restrained joint bulkhead. I was feeling uneasy that the contractor didn't adequately restrain the bulkhead (belts and suspenders) the way I would have and that they had people in the trench during the testing. Since it was means and methods infringement, if I were to get involved, I just said "do you guys really think this is OK?" They said this was the protocol that was submitted and reviewed in the shop drawing testing procedure. I let them proceed. Well, the pipe blew up, shot across the trench like an arrow, nearly killing two guys; I pulled them out of the flooding trench with a firehose. After this experience, I began to trust my instincts and if I notice a problem, I will stop work and bring it to the site/contractors supervisors attention. Worst thing that could happen if I was wrong, would be having to work with an angry contractor, but it atleast a couple of lives could be saved if I was right. Lesson: Do not underestimate your abilities or skills, and if you have an issue or concern, find the appropriate person to discuss it with.*

*While designing upgrades to an existing water treatment plant, I was still in college-problem mode, where the world is perfect, "assumptions" actually work, and there is only one "correct" answer to every problem. I learned the hard way that not all assumptions are the right ones. I contacted a manufacturer to help me choose which type of equipment would be the most appropriate for the improvements I was designing at this plant. I recommended a piece of equipment in the specifications, only to find out later that it was not correct piece of equipment for this type of installation. I made many trips to the job site, but I was still in the perfect world of assumptions and one correct solution. In the "real world", you need to go through every process, inch by inch and be flexible to react to new conditions and information. You have to imagine every step the chemical goes through, every turn, every drop, every valve. It's a lot different, but once you make a mistake, you never forget. No one cares that your assumption should have been correct!!*

*It's hard to take your college-problem trained mind and make it understand the real world when you're first starting out. Lesson: Make sure you thoroughly understand the details of every project you work on.*

*After a severe rainfall, I was measuring how high a stream had risen during this event. I was only wearing waders up to my knees. As I began to enter the stream, and head towards the road crossing, I neglected to check the depth of the murky water with a stick and ended up wet to my waist. Unfortunately I had the companies digital camera in my pants pocket. Needless to say, it was ruined. Lesson: Always think through the steps of an action.*

Maybe you long for the days when the answer to every calculation was in the back of a textbook or when you didn't have to figure out what side of a scare to use, but we all continue to grow as professionals from the mistakes we made in the early stages of our careers.

There are several lessons that can be learned from these experiences. Not just for younger professionals, but for those more experienced professionals as well. For young professionals, I know it is not easy, but we need to learn to ask questions. Rely on the experience of others. In addition, don't be afraid to speak up and be heard. Even those more experienced professionals can make mistakes. Someone once told me, "an error is not a mistake unless you fail to correct it."

For those more experienced professionals, have patience with those less practiced than yourselves. Remember the days when you first started out and how you felt when you made a mistake. How did you work through it? How could you/did you benefit from having someone help you work through it? In addition, it never hurts to check and double-check all of your work, not matter what stage of your career you are at.

# AWWA Publishes Operator Book

AWWA has published the book entitled "Stories from the Road", which tells ten stories of on-the-job experiences of water treatment operators from across the country. The book celebrates their accomplishments and is meant to inspire and inform other operators. Water operators



are an innovative and resourceful group of individuals, and often have to survive or innovate under duress or from positions of little authority, and often without the resources they

need. In his book, Pizzi chronicles the accomplishments of these people in a way that details the courage of each.

The book includes 18 appendices that provide some of the technical approaches that were used in the sto-

ries, which makes it a handy reference in addition to fun reading. Pizzi also uses a literary device that employs sidebars that shadow the stories, adding to the local flavor and technical appeal of each story and in them readers will find some useful and informative language that runs from the practical to arcane. Ohio folks will find some surprises about familiar people, but operators in all locales will find themselves on familiar ground as Pizzi has found a way to bring the reader into the story as if they were there when it happened. From the preface to the last story, you'll find yourself nodding your head in agreement and may even find some story unfolding in an all too familiar way.

Edition: 2004, , 111 pp.,  
**Catalog Number 20547.**  
 Member Price : \$45.00  
**List Price: \$ 65.00**

Nick Pizzi is the Director of the Operations Division of EE&T, an environmental engineering firm.

Previously, he was the Assistant Commissioner of Operations and Water Quality Manager for the Cleveland, OH Division of Water. Nick also served as Director of Water Supply for Lake County. He holds a Class IV Water Supply License in Ohio, and a B.A. degree in Chemistry from St. Vincent College in Latrobe, PA. He is Chair of the Partnership for Safe Water PEAC, is a Trustee for the Distribution and Plant Operations Division of AWWA, and is a member of the AWWA Standards Council. He has served on various AWWARF PACs, and as a Journal AWWA reviewer. He also serves on the OPFLOW editorial advisory board. Nick published the AWWA text "Water Treatment Operator Handbook" in 2002. AWWA has awarded Mr. Pizzi with the OPFLOW Publication Award in 1997, and with the Ohio Section Education Award, and the George Warren Fuller Award.

## FREE SAFETY PRESENTATIONS

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**To schedule a presentation at your facility simply call your area Representative.**

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