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Waterways is the official publication of the Illinois Rural Water Association, P.O. Box 6049, Taylorville, Illinois 62568, and is published quarterly for distribution to members as well as other industry associations and friends. Articles and photographs are encouraged. Advertising and submissions should be mailed to the above address or e-mail us at ilrwadb@ilrwa.org.

TABLE OF CONTENTS

Tragic Deaths <i>by Frank Dunmire</i>	4
Infrastructure Improvement and Funding <i>by Greg Bates</i>	5
Are You Ready for Your EPA Inspection? Capacity Development is Not Going Away <i>by Patricia Gammill</i>	8
The Village of Ohio <i>by Scott Wallis</i>	9
Third Annual Northern Conference	11
NRWA Annual Leadership Conference & Exhibition Center	12
Pictures From Around The State	14
NRWA Water Rally — Washington, D.C.	15
JULIE, Inc. Launches 811 “Call Before You Dig” Number to Help Save Lives and Protect Underground Infrastructure	17
A New Generation <i>by Bill Dowell</i>	19
4th Annual IRWA Golf Outing	19
What’s Your Excuse? Where are You Going and How are You Holding Yourself Back? <i>by Dr. Annette Colby</i>	20
History of Porcelain Enamel Coated Liquid Storage Tanks <i>by Dave Friederick</i>	25

IRWA’s Mission Statement

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

ON THE COVER...

Pictured is a water pump mailbox. This picture was taken by Heather McLeod, Membership Services Assistant just outside Sharpsburg, Illinois.

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Metropolitan Industries	6	Water Leak Locators	5
		Water Remediation Technology	2
		Water Well Solutions	17

It seems that at least once each year somewhere in Illinois, someone will die in a preventable “accident”. This time the tragic news comes from the Chicago suburb of Stickney where authorities are reporting that two workers have died in an underground vault. Though the investigation continues, it would appear that this tragedy started out with the first person entering the underground vault and succumbing to either toxic fumes or the lack of oxygen. The second death was that of a would-be rescuer. The end result is that two families will receive the horrible news that their father, husband, brother, or son will no longer walk through the front door after a hard day’s work. Instead, they will be planning a funeral.

It is not my intent to make light of this tragedy but rather to take this opportunity to once again stress the fact that safety begins with you. No matter how many safety measures are put in place, if you or someone close to you chooses to ignore one or more of them, then the ingredients are in place for another tragic outcome. No one should take lightly the subject of safety but, instead, should be aware of your surroundings at all times and be prepared to correct or report any unsafe situations.

Too many times I have sat in on safety meetings or seminars where the participants’ attention might not be fully on the instructor. Many are the times that I have heard the comment – “that will never happen to me”. Well, we would all like to think that that is the case, but consider this. Do you think that anyone who has met with an untimely death planned to have an accident on that particular day and time? I think not.

On more than one occasion, IRWA’s Training Technician, Wayne Nelson, is asked “how do you come up with these scenarios”. His simple one-line answer is the same as that of Oklahoma’s favorite son, Will Rogers, “all I know is what I read in the papers”. Real life incidents offer up more material than one cares to admit.

In the case of this particular tragedy, it would appear that confined space entry procedures were not followed.

The first step in a confined space entry procedure is for the employer to evaluate the workplace to determine if any spaces are permit-required confined spaces.

“Confined space”, as defined by Occupational Safety & Health Administration (OSHA), means a space that: (1) Is large enough and so configured that an employee can bodily enter and perform assigned work; (2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage



bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and (3) Is not designed for continuous employee occupancy.

If it is determined that the workplace does contain permit spaces, the employer shall inform exposed employees, by posting danger signs or by any other equally effective means, of the existence and location of and the danger posed by the permit spaces.

Once danger signs are posted, the employer may then determine if its employees will or will not enter permit spaces. If employees are not to enter, the employer shall take effective measures to prevent its employees from entering the permit spaces. Furthermore, if the employer decides that its employees will enter permit spaces, then a written permit space entry plan shall be developed and implemented. This written program shall be available for inspection by employees and their authorized representatives.

Like any other federal guideline there are many exceptions and conditions written into it. As we are finalizing the agenda for this fall’s Northern Conference, rest assured that there will be a refresher on confined space entry and its procedures. Until then, let’s all be safe out there. 💧



Infrastructure Improvement and Funding *by Greg Bates, IRWA Board President*

Throughout the last 14 years, our company, Jersey County Rural Water Company, has been faced with an ever increasing customer base and have had to upgrade water main sizes in several areas of the distribution system to handle this system growth. This unprecedented growth also led to water storage and pumpage problems as well. Originally thought to have a life cycle in excess of forty years, we are now faced with the problem of replacing under-sized mains, towers and pump stations before their original debts can be retired.

Seeing the writing on the wall, tap-on fees were raised to \$1500.00 in the early 1990's to help pay for two new storage tanks and a new booster station. Currently, we have identified an additional two million dollars worth of needed infrastructure improvements just to keep up with water demand and future growth. Given our proximity to the Metro St. Louis area, identifying the growth rates and growth areas of a three county rural water distribution system are difficult to say the least. Our Board of Directors must now make some very difficult decisions on how to best fund these needed improvements.

Of the many funding options available to a system (and the most undesired by the individual customer) is that of reviewing your water rates on an annual basis and planning for the future needs of the distribution system. More often than not, this will result in frequent, yet small-

er, rate increases. The Illinois Rural Water Association can assist you with this key step by conducting a water rate study. This step alone will go a long way in keeping your system financially sound and better able to pay for future improvements.

The most desirable of funding mechanisms, the grant (or free money), is fast becoming harder and harder to obtain these days. In its place you will find low interest loans available. Unlike many states, we are fortunate to have many different borrowing options in Illinois. Funding institutions in Illinois include United States Department of Agriculture's Rural Utility Services (RD), Illinois Finance Authority, Illinois Environmental Protection Agency's Revolving Loan Program, and Department of Commerce and Economic Opportunity. The fierce competition for the very limited amount of grant dollars has forced us all to look closely at our water rates and make needed increases to the rates if necessary. As we all know, Boards or Councils do not like to raise rates, but with contin-



ued increases in health care, fuel, electricity and many other factors, raising rates becomes a reality. Operators do all they can to control the costs that are under their direct control but there comes a time when the Boards and Councils must step up to the plate and provide the funds needed to keep a system viable. Keep up the good work! 💧

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Are You Ready for Your EPA Inspection?

Capacity Development is Not Going Away *by Patricia Gammill, Circuit Rider*

In my daily travels, I have met with systems that have just had their EPA inspection or getting ready to have one. In either case they have all encountered the capacity development survey. This survey consists of five sections: Cross Connection Control, Emergency Response, Technical, Financial and Managerial.

THE CROSS CONNECTION CONTROL PROGRAM SECTION

All community water supplies are required to have a program to protect their water system from backflow, which can occur whenever the water system is physically connected to a potential source of contamination. The water sup-

ply must have a way of locating cross connections, legal authority to require its customer to correct or isolate cross connections that may be present and a program to ensure that backflow prevention devices are properly installed and maintained. By now everyone should have a cross connection control program in place and are keeping it updated every two years. This program is the delivery of a cross connection survey to every residential and commercial customer. The customer should then send it back to you so the person you designate can review, sign, date and keep on file. I know it is a lot of mailing, reviewing and such but it really is designed to protect

you and your customers. It is also an EPA regulation and when they come to do your inspection they will want to know that you have this program in place. If you still do not have such a program, the IRWA person in your area can provide the information you need.

THE EMERGENCY PREPAREDNESS SECTION

This section of the capacity



development survey should be completed by a member of your organization having knowledge of the water system's ability to respond to unexpected problems. By now you should already have a written emergency response plan. Not only is it an EPA regulation, it is designed to be an efficient way for you to pull your people together in the event of an emergency. This plan is the names, numbers and contacts all in one binder, at your fingertips for everything you may need to help get you through an emergency large or small.

If you do not have an ERP, IRWA personnel can assist with getting your plan in place.

THE TECHNICAL CAPACITY SECTION

This section of the survey should be completed by a member of your organization having responsibility for ensuring that the public water supply complies with current and future regulations. This is usually the Director of Public Works or Certified Water Operator.

The questions consist of water production, chemical use, flow rates and test results. Also record keeping, hydrant maintenance and valve exercising, supply and distribution questions, along with

continued on page 11

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The Village of Ohio

by Scott Wallis, District 1 Board Member

At the intersections of Illinois 92 and 26, you will find a quaint small town named Ohio. With a population of 543, Jim Lamkin, General Superintendent has his hands full.

Jim holds both a Class C and 4 licenses and 24 years of experience. Jim has worked for the Village of Ohio for 8 years. The village still takes great pride from the 1986 high school basketball team. As they went to the state IHSA basketball tournament at U of I Champaign, and come home with second place.

Village of Ohio has a three stage aerated lagoon system, with a submerged

rock filter. The design flow is 0.076 MGD, which 2006 seen a average flow of 0.076 MGD. In 2005, the first stage lagoon was dredged of some 340,000 gallons of sludge. This according to Jim made a vast improvement of their effluent. Average effluent quality was 12 mg/l of BOD, and 17 mg/l of TSS. The process flow enters the first stage lagoon (.92 acres, 1.7 MG) by means of a lift station at the plants head works and overflows to the second lagoon (0.38 acres, .60 MG). Flow continues on to the third lagoon (.30 acres, .53 MG) for a total of 38.6 days of detention time. Next, the flow enters the 640 ton sub-



merged rock filter before discharging into a small stream.

Next on the village's agenda is starting a yearly maintenance program on both lift stations and the collection system. 💧



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water loss, meter replacement and leak detection programs. Basically, questions that should be answered with a “yes”. If you should have any concerns about any of the questions, give us a call and we can assist.

THE FINANCIAL CAPACITY SECTION

This section of the survey should be completed by a member of your organization having knowledge of the water system’s finances and financial management.

These questions are about funds for operating, maintenance, improvements, repairs, etc. Also water rates and a 5 year capital improvement plan. If you are unsure about some of the questions or need assistance with a water rate study or a 5 year plan, again IRWA personnel offers this service.

THE MANAGERIAL CAPACITY SECTION

This section should be completed by a member of your organization having knowledge of the water system’s ownership, organizational structure, staffing and job responsibilities.

These questions consist of O & M plans, operating permits, operator in charge, customer relations, public notices, ordering supplies, etc. Again, questions that we can assist you with if necessary.

So if you are getting prepared for an inspection and need any assistance whatsoever in filling out the capacity development survey, please give us a call. If you have just recently had an inspection and need advice or assistance with issues you need to correct or help in a response letter to EPA, we can assist.

Remember, all the issues that the capacity development survey covers are very important. It is a guideline to how great or how poorly a water system operates and maintains itself. IRWA is there to help all its members with any prob-

lems or concerns they have, so take advantage of your membership. We are just a phone call away. Hope to see ya soon!

Patricia Gammill 




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11:00 — 12:00	IEPA Update	Pump Design & Maintenance **
12:00 — 1:00	Lunch	
1:00— 2:00	ILWARN/Mutual Aid	Ammonia Removal—Lagoon
2:00 —2:30	BREAK	
2:30 —4:00	Reverse Osmosis	VFD/Electrical Savings **
4:00—4:30	Water Treatment Plant Pipe Repainting	Laboratory Services
5:00 —8:00	Hospitality Night	
WEDNESDAY OCTOBER 24th		REGISTRATION OPEN 8:00 a.m.—11:30 a.m.
9:00 —10:30	Piping and Parts	Confined Spaces/Trenching & Shoring **
10:30 —11:00	BREAK	
11:00 —12:00	Cross Connections	Algae Removal using Ultrasonic
12:00 —1:00	Lunch	
1:00—2:30	Tank Inspection/Cleaning	Maximizing Performance of WW Lagoons
2:30—2:45	BREAK	
2:45—4:00	Chemical Safety	TBA
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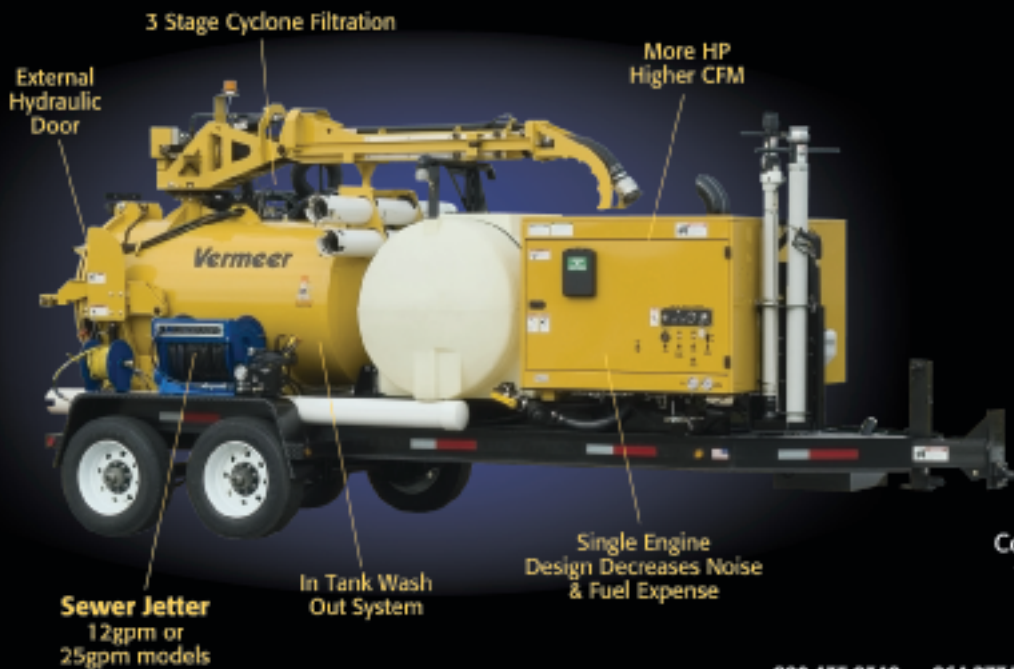
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PICTURES FROM AROUND THE STATE



On May 29, 2007, Cass Rural Water District #1 (CRWD) President Jeff Cosner, Congressman Ray LaHood (18th District) and USDA Rural Development State Director Doug Wilson joined CRWD board members, area mayors, and a large crowd for a groundbreaking ceremony to mark the construction phase of this long-awaited project.



NRWA WATER RALLY - WASHINGTON, D.C. APRIL 29 - MAY 1, 2007





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JULIE, Inc. Launches 811 “Call Before You Dig” Number to Help Save Lives and Protect Underground Infrastructure

Statewide Campaign Offers Safety Tips

JULIE, Inc., also known as the Illinois One-Call System, recently announced the launch of a new national 811 “Call Before You Dig” number to help prevent homeowners and professional excavators from damaging underground utility lines while digging and causing injury or service outages.

"Knowing where utility lines are buried before each digging project helps protect those who dig from injury, expense and penalties," said Mark Frost, executive director of JULIE, Inc. "One easy phone call to 811 will get the approximate location of underground utility lines marked for free."

In addition to JULIE's existing telephone number (800-892-0123), 811 is a new FCC-designated national N-11 number that will assist excavators with reaching the one-call center. This quick and efficient one-call service will notify the appropriate member utilities, who then send locators or locate technicians to the requested site to mark underground lines for free.

"Safe digging is no accident. Regardless of the project size or depth, always call 811 before you dig," Frost continued. "Call center representatives at JULIE are available to receive and process calls 24 hours a day, seven days a week."

SAFETY TIPS

Today, more member utility companies that supply power, gas, water and telecommunications are delivering these services underground. Following are a

few safety tips when planning outdoor projects:

- ❖ Call JULIE (simply call 811 or 800-892-0123) before you dig;
- ❖ Wait the required amount of time (two working days);
- ❖ Respect the marks; and
- ❖ Dig with care.


TYPES OF OUTDOOR PROJECTS

For homeowners or contractors considering any improvements or repairs, following a few precautions can help avoid a painful and costly accident.

Common examples of homeowner projects that require a call to JULIE before digging include putting up a fence; installing a swing set, a mail box post or water feature such as a pool, pond or fountain; building a deck or room addition; preparing a new garden area; or planting trees, bushes or shrubs.

JULIE, Inc. is a not-for-profit corporation that serves as a notification service for underground facili-

ty owners, taking information about planned excavations and distributing this information to its membership. It is then the responsibility of each facility owner to mark the location of their underground facilities at the excavation site. JULIE neither owns nor marks any underground facilities.

Established in 1974, JULIE represents more than 1,700 utility members. For a copy of JULIE's Homeowner's Guide with additional safety tips, including the meaning of the different color flags and marks used by each utility locator type, visit www.illinois1call.com. 



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A New Generation

by Bill Dowell, Wastewater Technician

About a year ago now, I offered an article here about retirement issues for the current generation of water/wastewater operators. Since then, several operators/managers have taken retirement, and all seem to be enjoying it. We wish them all the best, and continued enjoyment of their new future.

The new beginnings for those retirees are also the beginnings of a new generation in the water and wastewater fields. Recruiting and training of replacement operators can be an intimidating process. Many small systems tend to focus on day-to-day operations and costs, allowing “mentoring time” to slip away. Then sticker-shock can be overwhelming when new employees, (with qualifications), must be considered. As mentioned in that earlier offering, water or wastewater positions that require site-specific licenses can complicate the recruitment process even more. And, as the available workforce in a certain field narrows, the competitive bids are going to increase. Benefit packages with good health insurance and retirement plans will have to supplement salary incentives. (These types of benefits are not currently offered with salaries in several areas of Illinois.)

The very real prospect of an “operator shortage” is apparent. Water treatment and plant operations are more complex and time-consuming, requiring tougher certification and training. This complexity seems to be intimidating and off-putting to a younger generation. Wastewater operations, in particular, appear to be even less attractive to aspiring operators. The old “Who would want to do that?” outlook. Both these

fields of operation are going to require some new looks at recruiting efforts and methods. Along with the old stand-by plant tours, maybe adding information to the system’s website will help get the word out. Internships, and the offer of summer employment during college years can also be good introductions to these fields. There are excellent water and wastewater courses offered at numerous colleges and universities. Internet courses and mail-correspondence courses are also available.

Small systems have an excellent employment incentive if they choose to work it well. Many of the operators in our generation worked for years at low



salaries, no raises, etc., out of a sense of pride and accomplishment for work that was barely recognized within the community. Sometimes, the knowledge that you can do things that the majority of people do not even understand or know about, can carry its own rewards. Money isn’t always everything. 💧



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What's Your Excuse? Where are You Going and How are You Holding Yourself Back?

by Dr. Annette Colby, RD

You start out with big plans to change your life. Your energy is high and you can see yourself ready to move forward on your desires, goals, and dreams. For the first few days or weeks, things are going smoothly, and then one day your energy is a little less focused. Maybe you reached an obstacle, or the work of reaching your goal was more than you anticipated. Soon, before you know it, you slip back into your old habits and the way things were before.

If you set out to achieve positive life change, you will meet challenges and inner resistance. It is an expected part of the journey. You may get so frustrated that you doubt your self, your dreams, and your abilities. However, when you meet inner resistance, do not give up. It is just part of the process, and you are in good company. Every successful person first had to learn how to lead him or herself through the stickiness of wanting to quit when the journey gets difficult. I imagine all people who eventually achieved a goal must have had, at one time or another, a motivational quote written on a yellow Post-it note stuck right where they could see it everyday. It would be one of those encouraging sayings such as Ella William's tidbit, "Bite off more you can chew, then chew it."

Creating a better life is a work in progress. The big question is: How will you handle inner objections and setbacks? Will you quit on your most meaningful dreams? Will you talk yourself out of taking action? What explanations do you give to let yourself off the hook?

You owe it to yourself to do whatever it takes to make positive changes in your life. Below is a list of inner roadblocks to success. Once you recognize that these roadblocks are really just excuses, you can stop hiding behind them and once again find your empowerment and confidence. Read below to discover the four most common types of excuses – and what you can do to move beyond them.

Rationalization: When we rationalize, we place the blame of our defeat or failure upon outside persons or circumstances. This is a defense mechanism used to take the sting out of a difficult situation. We devise self-satisfying but flawed reasoning for our behaviors and actions (or lack of action). It seems logical in the moment, but it simply disconnects us from the truth. We justify why things are too difficult, why we are failing, or why we cannot move forward. Rationalization is how we attempt to explain why it is okay that we cannot create success or accomplish a goal. By blaming something or someone, we give ourselves permission to avoid accountability and responsibility for our own lives.

Tip: No improvement is possible unless we take responsibility for all

of our actions, inactions, choices, and behaviors. A choice to take action, even when things seem most difficult, sends a powerful message to yourself about what you are creating and what you believe about your own self-worth. Write down what you want to achieve, what is important to you. Then create an excuse money jar. Every time you hear yourself making an excuse for why you cannot or will not take action today, put a pre-defined amount of money into your jar. When you decide to move forward on your goal again, use the money to reward yourself for showing up and making your life important!

Perfectionism: Perfectionism can be a double-edged sword. It has the capacity to provide either great joy and personal growth . . . or misery. Perfectionism can be a gift that offers with it a driving energy, determination, and the ability to achieve success. Used as a positive characteristic, it has the capacity to motivate you to achieve your dreams. However, if perfectionism is combined with a self-punishing attitude, it can drive you into feelings of inferiority, despair, and inaction. Driving yourself to do everything perfectly creates unrealistic self-imposed rules, stress, and quitting when things do not go perfectly. Realize that it is okay to make mistakes and allow yourself to be flexible. Count on the fact that your journey to create change will be filled with highs and lows. There will be challenges and failures. A key to perfectionism is not to eliminate this characteristic, but to harness its positive attributes.

Tip: Perfectionism is, in its purest form, an inner calling to find and fulfill

continued on page 23



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one's destiny; to realize one's potential. For this to occur, perfectionism must be joined with the courage to follow your own inner passion. Perfectionism contains the energy to continually explore and search and grow and evolve. Come to understand that you grow because that is who you are. You are not trying to become perfect or better than others, rather exploring new avenues of self-expression. You achieve not to gain approval from others, but because you were born to journey.

Procrastination: Sometimes procrastination is glaringly obvious. However, procrastination also comes in many guises. There are infinite subtle ways to keep yourself from taking positive action. Sometimes people make it look like they

are "working" hard to figure out how to reach their goals. They stay very busy "trying" to "solve" the problem. If you notice this behavior in your own life, you may fool others and even yourself, but really, you are just stalling. You are either taking action to make your dreams come true or not taking action. If you are not taking action, that is okay, but notice how your choices make you feel. Be honest with yourself. Do your choices bring you more joy? Or, do they decrease the amount of joy in your life?

Tip: Remind yourself that you do not have to take action. You alone decided that your goal was important to you, and you are choosing to utilize free will to make it happen. Go back to basics and reaffirm why you first committed to cre-

ating change. Read your goals and notice if they are still important to you. This will lessen the feelings of resentment and rebellion. If having your goal is still important, commit to taking daily action.

Even if it is small action. Do not allow yourself to put things off until tomorrow or Monday. What can you do today that says in no uncertain terms that your decisions and dreams are important to you? No one owes you a great life – except for you. Embrace your opportunity and responsibility to affect your life. Not only do you deserve to have what you want, you have the power to make your dreams happen.

Creative Avoidance: Cleaning, laundry, shopping, mowing the lawn. You are just too busy, with too many chores, and too many obligations. The dog, the kids, the house, and your elderly parents. These excuses seem so real, because in a way they are real. They exist. However, the truth is that you make time for the things that you feel are important. If everything and everyone comes before you, what you are really saying is that your life and your happiness does not matter to you, and it just is not your responsibility. Face up to excessive busyness. Of course, your dreams are important! Put yourself at the top of your priority list and take action everyday. Do not allow yourself get distracted and overly involved with other less important things.

Tip: Your life is all up to you! No matter how bad you have got it, you

continued on page 24



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alone determine your thoughts, attitudes, and behaviors. No more leaving important decisions up to others. No more blaming others for what goes wrong. Hold yourself accountable for your actions. At the middle of each day take an honest assessment about whether your current choices feel good or not.

Participate in a straightforward reflection about whether you have put forth effort into your goal. Did you do something to move yourself forward and allow success? If not, that is okay; it is only mid-day and not too late. Take action now. Go for it. Your success and your happiness are in the choices you make right now.

*Dr. Annette Colby, RD, a.k.a. The "I Love My Life!" Expert, helps people turn difficult emotions into joy, release stress, end emotional eating, and move beyond depression into an extraordinary life! Spark an amazing relationship with self, body, and your life! Access hundreds of content filled articles and a F*R*E*E subscription to "I Love My Life!" newsletter at www.LovingMiracles.com.*

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History of Porcelain Enamel Coated Liquid Storage Tanks

by Dave Friederick, PE

We bathe in it. We build buildings with it. We even write on it in our schools. Porcelain enamel has been used through the ages by artists, inventors and scientists who wanted a material that is both beautiful and enduring.

As far back as 2000 BC, the Egyptians inlaid glass in metal frames. Then Greek craftsmen advanced the art

form by applying sufficient heat to fuse the metal and glass. With the expansion of the Roman Empire, the technology spread throughout Europe.

Their art — fashioned centuries ago — is testimony to the timeless beauty and permanence of Porcelain Enamel.

Everyone in the modern world uses porcelain enamel products everyday. Bathtubs, sinks, lavatories, stoves, ovens, washing machines, grills, dryers, water heaters; each has a beautiful, glassy finish we trust. We walk through buildings sheathed in porcelain enamel and read signs of the same material. The operating rooms of many hospitals are porcelain enamel. Our children write on porcelain enamel boards at school. Look around and you'll see that it's used in an amazing number of places.

In the Home: Porcelain enamel is the reason your stovetop cleans so easily. Porcelain enamel keeps the basket of the clothes washer from rusting away due to the constant exposure to water and bleach. And porcelain enamel is why you can clean the oven with caustic chemicals without damaging the surface. These benefits are a result of the protective, lustrous, and non porous nature of the chemically fused mixture (enamel) which protects the supportive metal to prevent chemical corrosion and rust formation, to aid in durability, and to add a shiny smooth beauty to the product.

In Industry: The protective metal-coating property of enamel offers a multitude of industrial and municipal applications. Porcelain enamel creates a durable barrier on a structure's substrate making it safe for storing corrosive, rust forming, caustic and chemically altering liquids, gases and solids. These enamel coated tanks play a fundamental role in the storage of the essential and sometimes dangerous components of products for manufacturing, food production, petrochemical products, agricultural uses, vaporous gases, municipal waste water, dry bulk solids, etc.

Outdoors: Porcelain enamel is used to protect storage structures and their supporting framework from the unending erosion and damage caused by weather. Stored material is protected because the enamel coated tank permanently seals off the water, heat and other damaging effects that would eventually destroy a metallic container. Because of this, tanks of all shapes and sizes are used to safely



continued on page 26

store materials outside, without any additional protection.

How does it protect? Porcelain enamel is a form of glass bonded to metal on a molecular level at high temperature. It begins as a blend of minerals smelted in much the same manner as common glass. During this process (known as "fritting"), the red-hot, molten mixture is poured from a smelter and quenched between water-cooled rollers. This quick-cooled ribbon of glass is then shattered forming a particulate known as "frit". Frit is applied to metal using either a wet or dry method and fired at very high temperatures — generally ranging from 1100 to 1600 degrees Fahrenheit. While in the furnace, the frit melts, bonding with the metal to create more than a coating. It forms an inseparable compound that merges the chemical makeup of the frit and metal, resulting in a new, chemically unique, finish. Porcelain enamel is quite simply the highest quality, most durable and sanitary finish available for metallic surfaces.

A.O. Smith Corporation chose to utilize the benefits of porcelain enamel on a series of breakthrough developments: a coating for the first large, single-piece brewery tank in 1933; the porcelain enamel-lined water heater in 1936, and agricultural dry storage in 1949. The agricultural steel tank applications include storage of rice, flour, wheat, other grains and dry bulk solids.

Later, in the 70's the A.O. Smith Corporation again used the concept of protective storage of liquids for both industrial and municipal applications. These included potable water tanks, waste water tanks, leachate tanks, anaerobic digesters, clarifiers, and tanks for the renewable fuel industry.

A.O. Smith Harvestore Products Inc. is now Engineered Storage Products, Company (ESPC). Today this manufacturer is located in DeKalb, Illinois and is still producing dry storage tanks, but sales are now dominated by liquid storage tanks. They are the only manufacturer of porcelain enamel (also called glass-fused-to-steel) tanks operating in the United States. ESPC distributes their porcelain enamel Aquastore® tanks through a dealership network spread out through North America.

Aquastore tanks feature low life-cycle costs and versatility for potable water and wastewater treatment tanks. Applications in wastewater range from EQ tanks, aeration tanks, anaerobic digestion tanks, clarifier tanks, trickle filters, and sludge storage/mixing tanks. Water applications include clear wells, ground storage tanks, standpipes, and composite elevated tanks.

The history of porcelain enamel coatings is a long trial and error story written by many inventors. A very fitting history for a product that over a long extended period of time has proven itself as one of

the lowest lifecycle cost products available for municipalities and industry for their liquid storage needs.

When you are shopping for quality and value, look for porcelain enamel in the products you purchase.

Dave Friederick, PE is a professional engineer and has been involved with porcelain enamel coated tanks for over 28 years. He currently is part owner of Cady Aquastore in Sycamore, Illinois, an authorized dealer of ESPC Aquastore® glass fused to steel tanks. ♠



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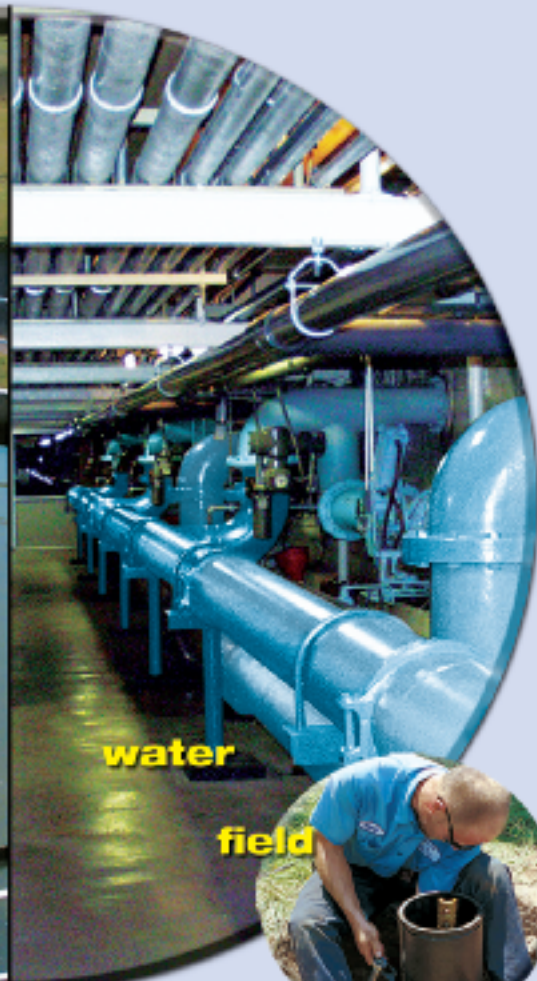
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