Merry Christmas and Happy New Year
from
Arkansas Rural Water Association’s Board of Directors and Staff
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by Elizabeth Shelton
Another year is coming to an end, out with 2018 and welcome 2019! By the time everyone reads this article we will be wrapping up one year and planning for another year for your utility.

I would like to take a minute and let everyone know that now is the time to reach out to elected officials on the state level (Your State Representatives & State Senators). Let them know if legislation relating to water and wastewater is introduced during the 2019 Arkansas Legislative Session, to please contact you with that legislation and let you advise them on your understanding of the legislation prior to supporting or opposing that legislation. Let them know how this will affect your local utility. As you know, there are two sides to every piece of legislation. They were elected to represent you, their constituent, not lobbyist or other legislators who are supporting it for possible other reasons.

There will be legislation introduced regarding the operation of water and wastewater systems. You can be assured of that in the upcoming Arkansas Legislative Session! Be educated, and make your elected officials aware and committed to working with you during the session on all related water and wastewater legislation. All legislation introduced is not all bad for the water and wastewater industry, but being educated on the issues is your responsibility. Don’t rely on others who may or may not understand the issues.

The need for everyone to stay involved with the different industry groups such as Arkansas Rural Water Association, Arkansas Water and Wastewater Managers Association, and the Arkansas Municipal League is important to monitor how each organization is standing on the specific legislation. You can also go to the internet and log in at http://www.arkleg.state.ar.us/assembly/ to monitor legislation, as well as to check on how each member votes on the legislation while the bill is voted on in the House or Senate floor.

During the last legislative session in 2017, the legislation below was introduced and was supported by the PVC industry and wasn’t a necessary piece of legislation that ALL Arkansas water industry folks opposed, and it was defeated.

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**SB332 TO PROVIDE OPEN AND FAIR COMPETITION FOR STATE-FUNDED WATER, WASTEWATER, AND STORM WATER DRAINAGE PROJECTS BY INCLUDING ACCEPTABLE PIPING MATERIALS IN A PROJECT BID.**

This bill was sponsored by the PVC industry trying to get the State of Arkansas to pass a law that would require water, wastewater, and storm water drainage entities to take the lowest cost material regardless of your systems wishes on type of pipe.

The PVC pipe industry also had legislation sponsored in at least four other states this past year. NO state passed this legislation, but a lot of money was spent to try and pass this legislation.

The PVC pipe industry is now trying to get federal legislation passed regarding this legislation. ARWA believes this is a decision that the local entity should be able to make and not have state or federal legislation dictating a specific type of pipe must be used just because it is cheaper.

However, I suspect the PVC folks will find another sponsor or sponsors and probably try it again this legislative session with big money behind the PVC pipe industry. Tell your legislators that local water and wastewater utilities managers, board members, councils, mayors, and their engineers need to make decision on what type of pipe they need to purchase, NOT the pipe industry!

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**WATCH FOR IT!**

Please mark your calendar for ALL the ARWA 2019 Training Sessions by watching for the 2019 ARWA Training Calendar or by going to ARWA’s website at www.arkansasruralwater.org and download the calendar now.

If you have any questions or need assistance feel free to contact me at 501-676-2255.

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Wishing Everyone a Merry Christmas and Happy New Year!
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Algae Problems in Wastewater
By Shelby Townsley, Wastewater Technician/Trainer

Our wastewater program has received a lot of calls concerning algae problems on lagoons this year. We have had more “blue-green” algae calls than I can recall since my employment with ARWA. There are several different types of the species, but the bottom line is they are toxic to the environment. When I receive a call, my first recommendation is to try to contain it from passing through due to the serious impacts it can have, and it is a definite sign of toxicity no matter how it originated in your pond. Next recommendation is to move it whether it be by aeration, blowing water with a trash pump, or driving your boat around the area to break it up and get it moving and blending with your good water. Allowing it to start and ignoring the section can lead to it spreading throughout the pond.

A lot of causes are due to the weather conditions which have been unusually wet, then extremely hot along with high infiltration or large nutrient loads hitting our ponds and lagoons. Keep in mind, taking in waste from outside sources without testing the loads from trucks can also lead to overloads, which may be increasing the problem from one cell to the next. There are all kinds of conditions that will make the production of algae increase on the lagoon, and lack of aeration has increased problems as well. The following information from a news article from EPA may be helpful to our operators on fighting the battle of the toxic algae as well as letting you know the serious effects on the environment.

What are the causes of blue-green algae blooms?

Blue-green algae can reproduce quickly in favorable conditions where there is still or slow-flowing water, abundant sunlight and sufficient levels of nutrients, especially nitrogen and phosphorus. In still conditions, surface water may form a separate warm top layer (‘stratification’) in which blue-green algae is able to access sunlight and nutrients. If these combined factors are present for several days, algae multiply and form large ‘blooms’. The process of excess nutrients causing rapid growth of aquatic plant and bacterial life in a water body is known as ‘eutrophication’.

Nutrients are either naturally present in sediments or are washed into water systems. In particular, phosphorus may be stored in significant amounts in sediments and released by normal bacterial activity. External sources of nitrogen and phosphorus are agricultural fertilizers, household products, sewage effluent, and stormwater runoff, all of which can enter receiving waters either directly or during rainfall events. The availability of varying levels of nitrogen and phosphorus can affect which species of blue-green algae dominate and form blooms.

Blooms can form in response to increased temperatures and phosphorus levels even if nitrogen in water remains low, as some blue-green algae species can obtain nitrogen from the atmosphere.

What are the effects of a blue-green algae blooms?

The main effects of blue-green algae blooms are deterioration of water quality and production of toxins by some species. Exposure to algal toxins has been linked to fatalities of livestock, wildlife, and pets.

Decaying algae can reduce dissolved oxygen levels in the water column which can severely degrade aquatic ecosystems and lead to the death of aquatic organisms and hence, a decline in biodiversity.

Outbreaks of blue-green algae may have economic consequences from restrictions to the consumptive use of water and recreational activities due to health and aesthetic concerns. Some species of blue-green algae can produce neurotoxins, hepatotoxins, allergens or irritants to the skin and eyes, as well as compounds that affect the taste of water and produce unpleasant odor’s. In severe cases, the toxins can cause damage to the liver and nervous system and there have been human deaths associated with non-routine exposure to algal toxins through dialysis.

When a bloom is detected, alternative sources of water should be sought for human consumption and domestic purposes until specialized treatment processes can be introduced. Boiling water does not destroy algal toxins and can, in fact, release more toxins as the blue-green algae are killed. Irrigators are usually advised to avoid using contaminated water on edible crops or, if this is not possible, to avoid direct spraying.

If you need assistance with any wastewater problems please call us at 501-676-2255 for one of our wastewater techs to help you with your problem.
IRIS is a SaaS (software-as-a-service) created and owned by TechRadium, Inc. TechRadium is a leading provider of high-speed communications services to water districts, educational institutions, corporations, non-profits and government entities worldwide.

IRIS – Immediate Response Information Systems, gives organizations the ability to broadcast information via voice and text to thousands of people simultaneously with its easy-to-use mass notification service. IRIS, TechRadium is the owner of eleven United States patents and has multiple patents pending.

Phone: 1.866.894.5474
Web: https://nrwa.org/products-services/iris/

**NRWA INITIATIVES for Arkansas Rural Water Member Utilities**

The National Rural Water Association has a new series of affinity programs available for Arkansas Rural Water Association’s Member Utilities to support small water and wastewater utilities across the country. Please go to the NRWA website at www.nrwa.org or the WaterPro community website www.waterprocommunity.org to learn more about these programs.

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**Data Breach Insurance**

Bailey Special Risks, Inc. proudly offers Beazley Breach Response Insurance for utilities. This unique insurance provides a comprehensive service that protects utilities that have suffered a data breach with notification, loss control, credit monitoring services, and more.

Phone: 1.800.768.7475
Web: https://nrwa.org/affinity/data-breach-insurance/

**ServLine**

Residential Service Line and Leak Adjustment Program ServLine is a new and unique insurance program that covers water loss with no deductible, as well as repairs or replacement of a customer’s water and sewer line in a timely fashion. ServLine is a full service program backed by Hanover Insurance Company – not a warranty program.

Phone: 1.800.589.9876
Web: https://nrwa.org/affinity/servline/

**Lifestyle Health Plans – A World of Wellness**

Medova Healthcare and Mike Keith Insurance is pleased to introduce Lifestyle Health Plans, a unique health benefits program designed to address the underlying causes of the rise in healthcare costs for both employer and employee alike – employee health behaviors.

Phone: 1.800.530.5229
Web: https://nrwa.org/products-services/loifestyle-health-plans-2/

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**The Rural Water Loan Fund (RWLF)** is a funding program specifically designed to meet the unique needs of small water and wastewater utilities. The RWLF provides low-cost loans for short-term repair costs, small capital projects, or pre-development costs associated with larger projects. The RWLF was established through a grant from the USDA/RUS, and repaid funds used to replenish the fund and make new loans.

Phone: 1.800.332.8715
Web: https://nrwa.org/initiatives/revolving-loan-fund/

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**Other support initiatives**

**Ford Fleet Vehicle Pricing**

http://nrwa.org/initiatives/fleetprogram/

**Water University**

http://www.wateruniversity.org/about.aspx

**Mobile Apps**

http://nrwa.org/initiatives/apps/

**WaterPro Community Center**

http://careers.waterprocommunity.org/
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Thinking about selling some real estate?

David E. Johnson. J.D., General Counsel
Central Arkansas Water

The sale of real estate by municipalities isn’t much different than the sale of real estate by anybody else. A contract for sale, title work, deed, and the closing have always been part of the routine for property of more than nominal value. But just last year, the legislature added a new requirement to the mix: competitive bidding for the sale of real property. If you’re thinking about selling real estate, that new law is definitely something with which you should be familiar.

Up until 2017, only the state’s constitution had limited the extent to which local government could dispose of property. Basically, it required that local government receive fair consideration in exchange for the transfer of assets of any kind including personal property, real property, and services. But the constitution didn’t require open bidding.

The new law – which is codified at Arkansas Code § 14-54-302 - requires that a municipality dispose of no property “without competitive bidding” if the sale price exceeds $20,000. While the statute permits the governing body of the municipality to change that amount by resolution, allow me to caution that the sky is probably not the limit. Courts very likely would frown on a threshold that more or less nullified the statute (e.g. $100 million). Without further guidance from the statute, my recommendation would be to tread carefully. A $30,000 threshold should be no problem. A $40,000 threshold might be permissible as well. But go much beyond that and you may be asking for trouble. And the best approach of all is to stick with the guarantee: $20,000.

So how should local government competitively bid the sale of real property? With no case law yet to help flesh out details, my advice would be to follow the same path required by statute for the acquisition of goods and services: “by legal advertisement in any local newspaper.” See Arkansas Code § 14-58-303. The advertisement could simply invite the submission of bids with appropriate instructions. Or the advertisement could notify potential bidders of the time and place for an auction of the property. Allow me to add that, while plenty of statutes in Arkansas law haven’t yet caught up with the Internet including plenty of procurement statutes, a municipality’s posting of additional notice of the sale on its website and its social media pages would make for excellent extra effort.

I wouldn’t be surprised if a particular situation somewhere in the state gave rise to the new statute. Someone somewhere missed out on the purchase of real property and felt that he or she should have been given a chance, and a legislator heard about it and took up the cause. That’s an understandable feeling. And now, this new law moves us toward preventing that situation in the future . . . even if it means taking on a little extra effort.
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**Fire Hydrant Maintenance**

*By Terry Fortenberry, ARWA Circuit Rider/Trainer*

Just like any other part of a water system, Fire Hydrants require some maintenance to assure proper operation. Also, when installing Fire Hydrants, they should be installed so proper operation and maintenance will be assured.

When installing a Fire Hydrant, the location should be one that will assure that the Hydrant will not be damaged by something hitting it or should be protected in some manner that will prevent the Hydrant from being hit and damaged. Break away Hydrants have a mark that indicates the bury depth so if the Hydrant is hit it will break at the break away point to prevent total damage to the Hydrant.

When installing a Fire Hydrant, if it is a dry barrel type which is common in cold weather states such as Arkansas, because this type is designed to drain the water from the barrel of the Hydrant after it is turned off. This is accomplished by water draining through weep holes located in the foot of the Hydrant. To assure this will happen, the area around the foot of the Hydrant should be filled with washed gravel to prevent the weep holes from becoming plugged with dirt, which would result in the hydrant not being able to drain thus having the chance of freezing and bursting in cold weather.

Also, the Hydrant should be blocked to prevent it from blowing off. When doing this care should be taken to prevent plugging the weep holes also.

Installing a valve in front of the Hydrant is a good idea in that it will help in repairing the Hydrant should it be necessary to replace a damaged seat, or if the Hydrant was to get broke off due to something hitting it, the valve could be used to shut the water off to just the Hydrant until it could be repaired.

Some maintenance that is necessary on Fire Hydrants is to periodically check the lubrication of the operating nut to ensure easy operation of the Hydrant. This lubrication is usually achieved by either an oil filled reservoir in the Hydrant bonnet. The oil level can be checked and added if needed, by a plug located in the bonnet or in the top of the operating nut. On other brands of Hydrants, this lubrication is achieved by adding grease through a grease fitting located on top of the operating nut. Sometimes the operation of the Hydrant operating nut can become impossible if this lubrication is not added and maintained, and it may be necessary to disassemble the operating nut and clean it.

The caps on the outlets should be removed and the treads should be cleaned with a wire brush and lubricated with a small amount of food grade grease then replaced, so the caps can be removed with little effort when necessary.

When shutting a Hydrant off, it should never be necessary to apply a lot of force in-order to shut the Hydrant off. The Hydrant should never be forced shut, because this could damage the seat if there was something like a rock in the seat. If a Hydrant will not shut off with little force, this could be an indication that there is something in the seat. Forcing the Hydrant could damage the seat, thus resulting in having to replace the seat. If the Hydrant will not shut off with little force, the Hydrant should be reopened to full flow to try to remove anything that may be lodged in the seat. If this doesn’t work, it may be an indication that the seat is in need of replacing. If it is noticed that water is leaking from around the barrel of the Hydrant that is shut off, this could be an indication of a bad seat. A way to determine if this leaking is due to a bad seat or due to something else, would be to open the Hydrant, full flow, with the caps still on the outlets of the Hydrant. This leakage will stop if it is due to a bad seat. Caps and outlets should be in good condition in order for this to be done.

If ARWA can be of any assistance in helping you with fire hydrant Maintenance or any other matter, please contact us at 501-676-2255.
Preventive maintenance provides a water system with three basic benefits: (1) better service to all customers, (2) increased equipment service life, and (3) efficient use of resources. A preventive maintenance plan can be established by the use of planned work orders, planned work schedules, and an evaluation process for all water system equipment. The use of planned work orders is an integral part of any preventive maintenance plan. Planned work orders should include the complete procedures to be performed, the total manpower (number of personnel, skill type, and total time) needed, and a list of materials required for the each preventive maintenance job. Compiling all planned work orders in an organized work schedule provides an efficient way of using the resources available to the water system, completing the work in a timely manner, and producing a framework for quality maintenance records.

Equipment evaluation is one area overlooked when discussing a preventive maintenance plan. In order to evaluate the effectiveness of any preventive maintenance plan, a benchmark of the existing conditions of all equipment is required. When preventive maintenance work is completed, the water system should have the ability to evaluate equipment performance on both a short-term and long-term basis. Also, the preventive maintenance work itself can be evaluated to better improve the individual components of the plan. Preventative maintenance can be considered time-efficient and cost-effective ways of maintaining a water system. Scheduled preventative maintenance can lower total maintenance costs by allowing the system to purchase quality materials when time is available to obtain the best price. Scheduled preventative maintenance can be time efficient by the productive use of manpower and work schedules to complete the work while retaining some control over both the maintenance and operation of the equipment.

General maintenance is usually the largest component of any maintenance program. A general maintenance plan can be established by developing planned work orders, prioritizing work within daily, weekly, monthly schedules, developing a material purchasing system, and evaluating the overall performance of all general maintenance work. As with the preventive maintenance plan, the use of planned work orders is vital to an effective general maintenance plan. Planning work in advance can assure that proper procedures are followed by each staff member, correct materials and supplies are available to complete the work, and a record of the completed work is available for filing in project and equipment files. Reviewing planned work orders will provide the water system with a means of fine tuning their general maintenance plan. Another key is a prioritized work schedule. Prioritizing work on a daily, weekly, and monthly basis creates a productive working environment for personnel. This results in more maintenance being completed at a much lower overall cost. Efficient maintenance requires that adequate materials and supplies be available for use at a moment’s notice. It is important that water systems realize the need for developing a material purchasing system. This system would include a complete material and supply inventory, standardized purchasing procedures, and a tracking method of all materials used by the water system. It is important to have a centralized area designated for the storage of all materials and supplies used by the water system. An evaluation process should be developed to determine the overall performance of all maintenance work along with its effectiveness over the service life of the equipment. Changes in the types of procedures and materials used can be detected and corrected during the evaluation process. Also, the efficiency of a water system’s use of resources and manpower as they pertain to the general maintenance plan can be determined.

An emergency maintenance plan is an invaluable component of most maintenance programs. This specialized plan will save both time and money when utilized properly. The foundation in developing an emergency plan is knowing the capabilities and limitations of the water system’s staff and resources. The next step is to formulate contingencies for all...
types of emergencies that your water system has encountered in the past or could encounter in the future. It is important to be as specific as possible in identifying the many emergencies that could occur. Finally, a comprehensive list of consulting engineers, contractors, technical sales representatives, and material supply companies should be developed. This list should contain information as to the contact people, phone numbers (business and emergency), and the specific time and reasons each would be contacted. This contact list and a material/supply inventory list should be updated as often as possible and readily available for use at any time. Experience and planning are the keys to assuring the emergency maintenance plan operates properly. When the dust has settled and normal operation has resumed, a comprehensive evaluation of all actions taken as a part of the emergency plan should occur in a timely manner. At this point, evaluating the actions taken will hopefully result in a better emergency plan and, thus, an improved response to the next emergency.

The final component of a comprehensive maintenance program is a program evaluation. The only way to improve a water system’s maintenance program is to periodically evaluate it to ensure the main objectives of eliminating the interruption of service caused by equipment failure and extending the service life of all equipment for as long as practically possible and economically feasible are being met. By applying the knowledge and experience gained from successful and unsuccessful maintenance work along with proper planning and training, the evaluation process will improve the overall maintenance program by strengthening the individual preventive, general, and emergency plans. As more evaluations are conducted, the water system will find itself gaining more experience, performing improved maintenance work, increasing the service life of all equipment, benefiting from more productive work, saving more money, and providing the best possible water service to the customers.
Arkansas Rural Water Association (ARWA) has been providing emergency assistance to water and wastewater utilities in Arkansas since 1977 when ARWA was formed. Back in the early years, ARWA had few employees and little or no equipment to lend in an event such as a tornado or ice storm hitting your utility.

Arkansas Rural Water Association has for years now been directly involved in emergency response training and deployment through the National Rural Water Association Emergency Response Committee. Arkansas has assisted neighboring states like Mississippi and Louisiana with Hurricane Katrina and Rita helping their State’s Rural Water Associations get their water and wastewater systems back operational after the effects of those hurricanes.

On mid-day Wednesday, October 10, 2018, Hurricane Mike made landfall in the Panhandle of Florida as a Category 4 Hurricane. Hurricane Mike had wind speeds reported exceeding 155 – 165 miles per hour tearing through the state doing massive damage to communities in its path. It also hit the states of Georgia, Alabama, South Carolina, and into North Carolina with strong winds and heavy rains.

Arkansas Rural Water Association saw the reports of the damage on the news and reached out to our counterparts in Florida and called Gary Williams, Executive Director of Florida Rural Water Association to offer ARWA’s assistance. At that time, Gary stated FRWA had mobilized FRWA staff and was still trying to get a damage report of systems with damage throughout the affected area. Gary stated he thought the damage could be equal to Hurricane Katrina, which we all know did massive damage.

On Sunday, October 14, 2018, ARWA was contacted by Gary Williams with FRWA and asked if ARWA could come and assist FRWA and FLWARN with manpower and mobile generators to assist with the overwhelming damage to Florida utilities. ARWA staff Terry Fortenberry/ANRC/Circuit Rider/Trainer, Jim Barkie USDA/Circuit Rider, Jimmy Ogden/ADH/ARWA Circuit Rider, and I headed out to Florida on that Sunday with equipment, pulling four big mobile generators. ARWA staff met up with Mississippi Rural Water Association and Louisiana Rural Water Association staff and traveled to the staging area in Florida.

Monday, October 15, 2018, ARWA met with FRWA & FLWARN staff assigned to the west part of the state’s damaged area, and ARWA was assigned to assist the City of Lynn Haven, Florida. ARWA staff did an outstanding job working with the City of Lynn Haven’s water and wastewater dedicated staff, who were working long hours every day after
having their own homes damaged or destroyed. First, ARWA set a 150 KW generator at well #3 and got it pumping 800 gpm (gallons per minute) pumping to the water treatment plant. ARWA set the three other generators (120 KW, 2-60 KW’s) at larger wastewater lift stations.

After the first week, I called in two more of ARWA’s staff to travel to Lynn Haven, Florida to assist us with the overwhelming work that needed to be done. Those staff members were Chris Harris, ARWA Deputy Director, and Roy Richards, USDA/Circuit Rider. The start of the second week, things were getting better as we all started to know the town and city roads better, even without a lot of street signs being up. As water was turned on to different areas of city, that area of the water system had to be checked for leaks on mains, fire hydrants, meters or leaks on the homeowners side of the meter. All this while working around piles of debris, lots of traffic and other utility companies working to get their electric or gas utility working properly again.

Helping the City of Lynn Haven, Florida and its citizens was a moving experience, as every day we worked or took meal breaks, citizens would come and thank ARWA for coming to assist, for bringing generators to power up the water and wastewater systems, and for assisting their city in the recovery effort.

I would like to thank all of the City of Lynn Haven, Florida’s Water and Wastewater Department staff for their dedication to their community and allowing the ARWA staff to assist and work with them all through the after effects Hurricane Mike left your city.

#LynnHavenTogetherandStrong!

As with any disaster, utilities and people come together to assist all water and wastewater systems with emergency response efforts to any size system with their needs. I am proud of the Arkansas Rural Water Association staff and the other State Rural Water Associations that are part of the National Rural Water Association. I am also very proud of the National Rural Water Association Emergency Response Committee for what the committee has continued to do to make our utilities better prepared for disasters by providing Emergency Response Training each year to other State Rural Water Associations to allow for all state association staff to be better prepared. The NRWA ER committee needs to keep these efforts on the forefront with all agencies, state and federal, as these efforts will be needed again and again as hurricanes, floods, tornadoes, ice storms, earthquakes, as well as, forest fires will continue to happen.

The following photos are of some of the work done in Lynn Haven, Florida by ARWA staff!
HURRICANE MIKE

Lynn Haven, Florida

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Terry Merritt
Director of Marketing/Business Development
573-880-1706 | tmerritt@alliancewater.com

AllianceWater.com
Great Day Fellow Arkansas Drinking Water Operational Specialists,

A new year is on the way. Do you know what that means? Yep, your 24 hours of continuing education to maintain your license is due by June 30th, 2019. Fortunately, ARWA has scheduled six separate training opportunities for operators to renew both water and or wastewater licenses. These three-day classes will be held throughout Arkansas and will allow an operational specialist to renew water, wastewater, or both licenses at one convenient location. These classes, along with required water and wastewater training, will be listed in the soon-to-be released 2019 calendar.

2019 is also bringing changes to the ADH water exams. It was announced in 2018 that changes to the exams were imminent, and those changes will begin during the first test session in March, 2019. Essentially, the exam will now have new subject material (test questions) and will incorporate some metric units in mathematical calculations. Now, don’t worry. Remember, if you understand the concepts and actually study, changing the wording of the subject matter should not make a big impact on the outcome of the exam.

As I state in my classes, it is the responsibility of management and the student to obtain any and all required study material (books) and to start reviewing them long before any formal classroom training begins. This provides the student the opportunity to familiarize the material and then get more clarity during classroom discussions.

We would like to thank every exhibitor and attendee that recently made it to Hot Springs for the Annual Technical Conference, and ARWA would like to congratulate every scholarship winner. This year was bigger and better than years past, and it is all because of YOU.

The staff at ARWA is here to help you and your system. Put us on “speed dial”, and call ARWA first should your system need assistance. From training to leak detection, rate studies, emergency plans, technical assistance, or emergency equipment and response, we have the resources to help.

Until I write again, please continue to educate yourself and your public, work safely, and as always, keep that water flowing!
WATER OPERATOR LICENSE EXAMINATIONS JANUARY-DECEMBER 2019

Most current Exam Schedule is available at http://www.healthy.arkansas.gov/eng/autoupdates/oper/operexam.htm
You must register for the exam 45 days in advance at: https://health.arkansas.gov/wa_engTraining/ExamType.aspx.

Listed below are the dates and locations of examination sessions as scheduled, as October 31, 2018. All Treatment and Distribution exam grades will be available at the sessions. Acceptable photo identification (Drivers License or equivalent) will be required to sit for an Exam. Cell phones, pagers and other electronic communication devices are not allowed. Non-Programmable calculators are allowed in exam sessions.

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<td>Fayetteville Operations Center, 2435 S Industrial Dr</td>
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</tr>
<tr>
<td>3/1/2019</td>
<td>1/15/2019</td>
<td>Lonoke</td>
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</tr>
<tr>
<td>3/7/2019</td>
<td>1/22/2019</td>
<td>Mtn. Home</td>
<td>Baxter Co OEM Training Facility, 170 Dillard Dr, Midway</td>
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<tr>
<td>3/8/2019</td>
<td>1/22/2019</td>
<td>Camden</td>
<td>AR Environmental Training Academy, 100 Carr Road</td>
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<tr>
<td>3/8/2019</td>
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<tr>
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<td>Jonesboro</td>
<td>Jonesboro CWL Office Training Rm, 400 E Monroe</td>
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</tr>
<tr>
<td>5/1/2019</td>
<td>3/18/2019</td>
<td>Hot Springs</td>
<td>AWW&amp;WEA Annual Conf, HS Convention Center</td>
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<tr>
<td>6/7/2019</td>
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The above exam session information is subject to change. You should confirm this information just prior to the scheduled examination period. Also, the latest exam schedule information can be viewed on the Internet at: <http://www.healthy.arkansas.gov/eng/autoupdates/oper/operexam.htm>. 
Merry Christmas
from ARWA Board of Directors

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Merry Christmas from ARWA Board of Directors

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GILBERT, Ark. (AP) — About two dozen volunteers have recently completed an algal survey on a stretch of Arkansas waterway just weeks after federal officials issued warnings about it.

A group of scientists, students, and activists met in Gilbert for a half-day training workshop before spending the next day documenting the algae found on the Buffalo National River, the Baxter Bulletin reported. The river is known as a popular spot for rafting, fishing and canoeing.

The survey comes after the Arkansas Department of Environmental Quality recommended that 14 miles of river be declared impaired due to excessive pathogens. The National Park Service issued a warning the following day advising visitors to avoid the river’s algal blooms, which can be toxic.

Nine volunteer teams documented data including the percentage of algal cover, photographed algal blooms and recorded GPS locations. The collected data will be used to provide long-term analysis of the river’s algae.

“So many people care about the health and safety of the river,” said Teresa Turk of the Ozark River Stewards, one of the organizers of the survey. “We feel that there is not enough being done to protect it, so it’s time for citizens to step up.”

The river’s algae has been increasing in recent years and stumping scientists, said Jessie Green, executive director of the White River Waterkeeper nonprofit.

“We’re not sure why it’s growing,” Green said. “It could be weather patterns, it could by hydrology. Nutrients are a key player, no doubt ... but it’s not something that we know right now.”

A second round of surveying is planned. The survey will be used to help create a baseline to help answer future questions about the river’s algae, Green said.

“With enough long-term data, you can answer questions like, ‘Is it getting worse?’ Right now, there’s just anecdotal stories, and not a lot of solid, scientific evidence,” she said. “There’s still a lot of work and a lot of data to be collected.”

Fire hydrants or, as some systems refer to them, flushing hydrants are an important part of the water system. They are also a part of the system that is seen by the public constantly. How a hydrant is maintained in appearance can give an opinion of how the system is run and maintained to the public.

Hydrant maintenance is equally as important for the water systems operations and water loss. Generally speaking, when we go to a system to help with leak detection, almost always at least one leaking hydrant is found. A lot of the time the leak is not visible and must be found by listening to the hydrant. Not only can this add up on water loss quickly, but it can also cause expensive damage to the hydrant, damage resulting in the entire main valve replacement, shaft replacement, and sometimes replacing the entire hydrant.

Usually, debris in the seat is the cause for a leaking hydrant. Debris can usually be flushed out, but sometimes it cannot. One trick is to try shutting off the watch valve with the hydrant open and then close the hydrant. Hopefully, the debris will backwash out of the main valve. One important thing to remember about debris in the seat is however much force you use to shut off that hydrant, that much force will always have to be used until the seat is replaced. So, if the debris cannot be cleared, it’s always better to shut off the watch valve, if equipped, and put the hydrant out of service until it can be disassembled and cleaned/repaired.

Some systems do hydrant inspections themselves. Sometimes, the fire department does the inspections, and sometimes, no one does the inspections. Hydrants should be inspected at least annually. Inspections do not have to be extensive: Operate hydrant. Check for leaks. Is hydrant draining? Are the caps loose enough to allow air for drainage? Check grease or oil, and grease threads on caps with food safe grease. Check for any damage to hydrant and paint condition. Obviously, the inspection needs are going to vary with location and age.

Another aspect of hydrant maintenance is training operators and fire departments on the safe and proper use. Fire departments generally use the hydrants a lot more than the operators. A good relationship and training with the local fire departments will not only prevent damage, but will also give the operator another set of trained eyes.
Hello Mr. Philipp,

I recently attended a Class II Waste Treatment class in Lonoke, AR. The class was very well presented. The instructors (Shelby Townsley and Susan Poe) were very professional and explained everything. They were willing to stay after the day was over and help one on one, if you needed extra help. When it came to the math part, they helped you by showing you how to break down the problem to get it solved faster and easier. Not only were they very helpful, they made the class fun and interesting. They also knew the area to tell you where to go eat or anything else needed. The next class that I attend, I hope Shelby and Susan are the instructors. If all classes were this interesting and fun to be involved in, I would be a full-time student (ha ha). As far as the waste treatment organization goes, it would be very interesting to stay involved in it and maybe even become an instructor someday.

Sincerely,

Jeffery Wolf, Construction Supervisor
Arkansas Department of Corrections

---

Dear Mr. Sternberg,

I would like to share my appreciation of the diligent work that Jim puts in. I recently passed my D-4 test and I contribute my success not only to my studying and the good lord but also to Jim’s teaching methods.

Sincerely,

Terry Shaddon
City Corp

---

To Whom it May Concern,

I recently went to a Class II Waste Treatment class in Lonoke, AR. The class was very well presented. The instructors (Shelby Townsley and Susan Poe) were very professional and explained everything. They were willing to stay after the day was over and help one on one, if you needed extra help. When it came to the math part, they helped you by showing you how to break down the problem to get it solved faster and easier. Not only were they very helpful, they made the class fun and interesting. They also knew the area to tell you where to go eat or anything else needed. The next class that I attend, I hope Shelby and Susan are the instructors. If all classes were this interesting and fun to be involved in, I would be a full-time student (ha ha). As far as the waste treatment organization goes, it would be very interesting to stay involved in it and maybe even become an instructor someday.

Sincerely,

Jeffery Wolf, Construction Supervisor
Arkansas Department of Corrections

---

Dear Dennis: September 8, 2018

Western Greene County Water District’s board of directors would like to take this opportunity to extend a word of appreciation for your hard work and effort invested in doing the rate study for our Water District in May of this year. After making the telephone call to ARWA, you were prompt in getting the report completed and delivered to our office. The information you provided in your report was very helpful to the board in making our decision concerning a rate increase. Your knowledge and expertise through Arkansas Rural Water is very valuable to our District as well as other systems across the state. In closing, thank you for all of Arkansas Rural Water’s many services and support for our rural water systems throughout the state of Arkansas.

Sincerely,

Larry McFadden
Redgie Jetton
Dewayne Smith
Terry Rogers
Western Greene Co Water District

---

Dear Mr. Sternberg,

I would like to express my gratitude for the USEPA funded water and distribution classes taught by Jim Philipp. They are extremely helpful to so many water treatment operators and field crew workers. Mr. Philipp is a good teacher and without his help, I would’ve had a difficult time understanding a great deal of the material that was on the test. I greatly appreciate the time he has invested making study guides, teaching new materials, and reviewing to help us learn for the tests.

Michael Barton

---

Dennis,

I promised Jim Philipp that I would copy and share this email with you. I took Jim's Distribution and Treatment classes, took my level 4 license for both, and passed on the first try. Just wanted to share his and my accomplishments and brag on your employee a bit.

Thanks

Nick Villegas, Water Operator
Sardis Water Association

---

Mr. Dennis, September 28, 2018

I would like to share my appreciation of the diligent work that Jim puts in. I recently passed my D-4 test and I contribute my success not only to my studying and the good lord but also to Jim's teaching methods.

Sincerely,

Terry Shaddon
City Corp

---

Dear Mr. Sternberg,

I have been attending an Intermediate Water Distribution class this week at your Lonoke facility. I have been to many ARWA classes over the last 17 years. Before I moved to Arkansas, I attended at least another 17 years of classes in Oklahoma. What I’m trying to say is this is not my first training class. Jim Philipp is an amazing teacher! He is passionate about his students and passionate about his subjects, whether it be Distribution or Treatment. He surpasses any instructors I have ever had. After all these years in the industry, it is a pleasure to attend one of his classes. I always learn something. Thank you so much for the opportunity to expand my knowledge and skills.

Sue Ann Calhoun
City of Des Arc

---

Attn: Dennis Sternberg, ARWA

My name is Jake Bentley. I am the Utilities Director for the City of Mountainburg. I would like to thank you and the ARWA staff on behalf of the City of Mountainburg. As you are aware the City of Mountainburg was hit by a tornado on April 13, 2018. I was on vacation in Mt. Home and was trying to rush back to the city. USDA Circuit Rider, Jim Barkie, was here in town before I could make it back. Jim Barkie is very familiar with our system because he has stopped in and helped on many occasions. He was here every step of the way checking on citizens, helping me run generators to keep water and sewer flowing, and even helped with the clean-up. The City of Mountainburg was very fortunate to have him and the full support of ARWA. ARWA stayed in touch with him the whole time, checking on us to ensure we had everything we needed. Thank you. We are a small community and Jim Barkie and the other ARWA staff members stop by often to offer their assistance. It is very nice knowing I can call on him and ARWA 24 hours a day. We are a proud member of ARWA. We do all our water and sewer testing through ARWA. Being a small water and sewer operation and in a very rural part of Arkansas, we rely on ARWA and the people who work there, like Jim Barkie. We at the City of Mountainburg want to express our gratitude to Jim Barkie and ARWA.

Jake Bentley, Utilities Director
Neal Moon, Mayor
City of Mountainburg
Happy New Year
ARWA Staff

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- Safety Consulting

Building a New Water Treatment Plant or Adding on to your Sewer Treatment Plant?

See us about Builders Risk or an Installation Floater Policy.

David Feild, Risk Services of Arkansas / INSURICA
501.666.6653 | David.Feild@INSURICA.com
Public water systems commonly add phosphates to the drinking water as a corrosion inhibitor to prevent the leaching of lead and copper from pipes and fixtures. Inorganic phosphates are added to the water to create orthophosphate, which forms a protective coating of insoluble mineral scale on the inside of water mains, service lines, and household plumbing. The coating serves as a liner that keeps corrosion elements in water from dissolving some of the metal in the drinking water. As a result, lead and copper levels in the water will remain low. The key to ensuring that orthophosphate reduces lead and copper levels is for PWS(s) to maintain proper orthophosphate levels. The typical phosphate levels found in a liter of drinking water are about one hundred times lower than the phosphate levels found in the average American diet. For example, a person would have to drink 10 to 15 liters of water to equal the amount of phosphates in just one can of soda.

Polyphosphates not only inhibit scale formation, but they can also help remove existing hard deposited carbonate or sulfate scale. Pipelines carrying potable water treated with polyphosphate for extended periods of time first show a gradual softening of the scale followed by disintegration and removal. The soft scale particles are deflocculated by the polyphosphate and carried away resulting in a clean piping system. Secondary benefits develop, such as reduced chlorine demand due to corrosion inhibition, binding of iron and manganese, lower turbidity in the distribution system, removal of system scale deposits, control of biofilm regrowth, fewer main breaks, better valve operation, reduced hydrant flushing frequency, less wasted water during flushing, less maintenance and service expenditures, fewer complaint calls, and overall improved consumer satisfaction. If you have experienced any of the problems mentioned above, the addition of phosphates could be the answer.
Launch Your Safety Program

Any safety idea, no matter how insignificant it may seem to you, may prevent a serious accident.

Safety programs are not only the responsibility of your supervisor or safety manager – everyone must take part to keep the workplace free from hazards. Lots of work goes on behind the scenes to make your job as safe as possible, but there are also some things you can do to take accident prevention into your own hands.

Safety is important because nothing less than the future of your family is at stake. They are counting on you to provide food and shelter, and an on-the-job accident could very easily disable you and leave you without security. Whatever your job status is and whatever your duties include, use these tips to help make your safety program a success.

**Work As A Team**

Each person in the workplace, from employees to supervisors and management, must work together to achieve our safety goals. With everyone pitching in ideas and suggestions, we can solve problems and get through tough situations.

If you see a co-worker being careless or unsafe, it is your job to speak up. Remember that you have the right to work in a place free from hazards.

**Make Safety Suggestions**

If you are a seasoned employee, you can use your years of valuable experience to spot potential safety hazards. Or if you are a new employee, you may be able to spot something right away that a long-time pro may have overlooked.

You and your co-workers can get your own safety program off the ground by giving your supervisors or safety leaders ideas on how things can be made safer. Any idea, no matter how small it may seem to you, could prevent a serious accident.

**Ask Questions**

If you are unsure about any aspect of a safety program, ask. It is better to ask a question if you are hesitant than wait until after a serious accident occurs.

It’s easy to make a safety program successful if everyone does their part. Follow these simple guidelines, and you will be one of the keys to keeping our safety program on solid ground.

For more information contact:

David Feild
1501 Mart Drive
Little Rock, AR, 72202
P 501.666.6653
E David.Feild@INSURICA.com
### ARWA Training and Events 2019

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Topic</th>
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<td>8:00 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td>Water Exam Refresher</td>
<td>Jim Philipp</td>
</tr>
<tr>
<td>9/24-26/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td>Basic Distribution</td>
<td>Jim Philipp</td>
</tr>
<tr>
<td>10/22-24/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>Community Center</td>
<td>Intermediate Treatment</td>
<td>Jim Philipp</td>
</tr>
<tr>
<td>11/5-7/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td>Intermediate Distribution</td>
<td>Jim Philipp</td>
</tr>
<tr>
<td>11/19-21/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td>Advanced Treatment</td>
<td>Jim Philipp</td>
</tr>
<tr>
<td>11/26/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td>Water Exam Refresher</td>
<td>Jim Philipp</td>
</tr>
<tr>
<td>12/3-5/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td>Advanced Distribution</td>
<td>Jim Philipp</td>
</tr>
</tbody>
</table>

### ARWA Water Training Schedule 2019

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Topic</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/15-17/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td>Class I WW</td>
<td>Shelby Townsley</td>
</tr>
<tr>
<td>1/16-17/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>Lake DeGray State Park</td>
<td>WW License Renewal</td>
<td>Jim Philipp</td>
</tr>
<tr>
<td>2/6-7/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>Community Center</td>
<td>WW License Renewal</td>
<td>Susan Poe</td>
</tr>
<tr>
<td>3/18-21/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>Operations Center</td>
<td>Class II WW</td>
<td>Shelby Townsley</td>
</tr>
<tr>
<td>3/27-28/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>Mt. Magazine St. Park</td>
<td>WW License Renewal</td>
<td>Shelby Townsley</td>
</tr>
<tr>
<td>4/3-4/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td>WW Microbiology</td>
<td>Toni Gymph-Martin</td>
</tr>
<tr>
<td>4/9-11/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>John Lusk Building</td>
<td>Class I WW</td>
<td>Susan Poe</td>
</tr>
<tr>
<td>4/17-18/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>River Park Events</td>
<td>WW License Renewal</td>
<td>Shelby Townsley</td>
</tr>
<tr>
<td>5/8-9/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>Community Center</td>
<td>WW License Renewal</td>
<td>Susan Poe</td>
</tr>
<tr>
<td>5/20-23/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>Northwest Tech. Institute</td>
<td>Class II WW</td>
<td>Shelby Townsley</td>
</tr>
<tr>
<td>6/12-13/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td>Class III WW</td>
<td>Shelby Townsley/Susan Poe</td>
</tr>
<tr>
<td>7/8-12/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td>WW License Renewal</td>
<td>Shelby Townsley</td>
</tr>
<tr>
<td>8/21-22/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>Charles R Newton Center</td>
<td>Class I WW</td>
<td>Susan Poe</td>
</tr>
<tr>
<td>9/16-18/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>H.S. Convention Center</td>
<td>Class II WW</td>
<td>Susan Poe</td>
</tr>
<tr>
<td>10/21-24/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td>Class III WW</td>
<td>Susan Poe</td>
</tr>
<tr>
<td>12/9-13/2019</td>
<td>8:00 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td></td>
<td>Shelby Townsley</td>
</tr>
</tbody>
</table>

### Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/29/2019</td>
<td>7:45 am – until</td>
<td>Hurricane Creek Golf Course</td>
<td>Hurricane Drive-Bryant Golf Tournament</td>
</tr>
<tr>
<td>6/12/2019</td>
<td>7:30 am – 5:00 pm</td>
<td>ARWA Training Center</td>
<td>ARWA Operator EXPO</td>
</tr>
<tr>
<td>9/15-18/2019</td>
<td>4:00 pm – 5:00 pm</td>
<td>ARWA Water Training Center</td>
<td>42nd Annual Technical Conference</td>
</tr>
</tbody>
</table>
Would you like an opportunity to speak at the ARWA 2019 Annual Technical Conference?

Topic Title and Description
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Session Date: September 16 or September 17
Preferred Session Time: ___________________________
Speaker:_________________________________________
Company: _______________________________________ 
Phone: _____________Email: _______________________

Conference Dates: September 15-18, 2019
Speaker Session Dates: September 16-17, 2019
Hot Springs Convention Center
134 Convention Boulevard • Hot Springs, AR 71901

All presentations are generic and cannot directly promote a particular company and/or product. Company logo on slides and presentation materials is permitted. Submission of this form does not guaranteed assignment. If your topic is chosen, you will be contacted to confirm dates and times for the session.

THANK YOU FOR VOLUNTEERING!
Email: Biography to arkrwa@sbcglobal.net

Arkansas Rural Water Association Upcoming 2019 Events:

**Wastewater Microbiology Class**
April 3-4, 2019
$99 for 2 days of LAB
ARWA Headquarters
240 Dee Dee Lane
Lonoke, AR 72086

**Scholarship Golf Tournament**
May 29, 2019
Hurricane Creek Golf Course
4300 Hurricane Drive
Bryant, AR 72022

**ARWA Equipment & Supply EXPO**
June 12, 2019
ARWA Headquarters
240 Dee Dee Lane
Lonoke, AR 72086

**42nd Annual Technical Conference**
September 15-18, 2019
Hot Springs Convention Center
134 Convention Boulevard
Hot Springs, AR 71901

★ ★
Best Chocolate Fudge
2 cups sugar
1/2 stick butter
1 small can pet milk

Put in pan and bring to a boil and continue boiling for 5 minutes. Stirring well. Remove from heat and add:

1 teaspoon vanilla
6 oz real milk chocolate chips
6 Hershey’s candy bars with almonds
1 jar marshmallow creme
2 cups pecans

Pour in buttered 9x13 pan and let set.

Bread Pudding with Whiskey Sauce
1 loaf French bread
1 quart milk
3 eggs, beaten
2 cups sugar
2 teaspoons vanilla
1 cup raisins
2 tablespoons shortening

Tear bread into chunks and soak in milk. Mash with your hands to work milk into the bread. Add eggs, sugar, vanilla, and raisins. Stir well. Coat the bottom of a 9x14 baking pan with shortening. Add bread mixture and bake 45-60 minutes until firm in 350 preheated oven. You should be able to stick a toothpick in and it come out clean when it’s done. Cool before cutting. Before serving pour sauce over pudding and broil for 5 minutes.

Whiskey Sauce
1 cup sugar
1 stick butter, melted
1 egg, beaten
2 ounces Whiskey

Cream sugar and egg, until well mixed in a sauce pan. Add melted butter and stir until the sugar dissolves over medium heat. Cool and add whiskey.

Orange Slice Cake
1 cup butter
2 cups sugar
4 eggs
1 teaspoon baking SODA
1/2 cup buttermilk
3 1/2 cups all purpose flour
1 pound dates chopped
1 pound candied orange slices, chopped
1 can chunk pineapple, drained
1 can flaked coconut
1 cup chopped pecans

Cream butter and sugar. Add eggs one at a time and beat well after each. Dissolve soda in buttermilk and add to cream mixture. Place flour in large bowl and add dates, orange slices, and nuts. Stir to coat each piece. Add coconut and cream mixture to flour mixture. This makes a very stiff dough that should be mixed with your hands. Put into greased and floured Bundt pan. Bake at 250 degrees for 2 1/2 to 3 hours.

Icing
Combine fresh orange juice and 2 cups powdered sugar. Pour over cake and let sit to cool. Additional icing may be made if you prefer.

Smoked Sausage Skillet
1 pound fully cooked kielbasa or polish sausage, sliced
3 cups shredded cabbage
1 celery rib, finely chopped
1 tablespoon vegetable oil
2 tablespoon Dijon mustard
1/2 teaspoon garlic salt
1/4 teaspoon sage
2 cups cooked noodles

In a large skillet, sauté the sausage, cabbage and celery in oil for 5 minutes. Add the mustard, garlic salt and sage. Cook and stir over medium heat for 4-6 minutes or until vegetables are tender. Stir in noodles and heat through. Yield 4 servings.

Grilled Jerk Chicken
4 teaspoons curry powder
4 teaspoons ground cumin
4 teaspoons paprika
3 teaspoons ground ginger
3 teaspoons allspice
1 teaspoon salt
1 teaspoon coarsely ground pepper
4 bone in chicken breast halves with skin
4 bone in chicken thighs with skin

In a small bowl, combine the first eight ingredients; rub over chicken pieces. Cover and refrigerate for one hour. Grill chicken, covered, over indirect medium heat for 30-40 minutes or until juices run clear.
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