

# Drinking Water Courses for Renewal Training Credit

@ypotech(1033)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Advanced Oxidation and UV Disinfection(5680)	<u>10/31/2012</u>	<u>Conference/Seminar</u>	<b>120</b>	Introduces water treatment and distribution operators to the operation, uses, and types of advanced oxidation and UV processes including ozonation and UV treatment.
Coagulation and Flocculation(5676)	<u>10/31/2012</u>	<u>Conference/Seminar</u>	<b>180</b>	Focuses on the critical role that particle combining and mixing play in the surface water treatment process and how necessary they are in producing safe drinking water that meets Public Health and US EPA requirements.
Corrosion Control(5679)	<u>10/31/2012</u>	<u>Conference/Seminar</u>	<b>180</b>	Focuses on the importance of maintaining properly balanced water as well as various types of corrosion control methods for the protection of distribution systems.
Disinfection(5678)	<u>10/31/2012</u>	<u>Conference/Seminar</u>	<b>150</b>	Focuses on the critical role that pathogen inactivation plays in the surface water treatment process.
Membrane Processes(5681)	<u>10/31/2012</u>	<u>Conference/Seminar</u>	<b>120</b>	Introduction to operation, uses, and types of membrane processes including reverse osmosis, nanofiltration and electrodialysis reversal.
Sedimentation and Filtration(5677)	<u>10/31/2012</u>	<u>Conference/Seminar</u>	<b>180</b>	Focuses on the critical role that particle removal plays in the surface water treatment process.
Source Water Issues and Pretreatment(5675)	<u>10/31/2012</u>	<u>Conference/Seminar</u>	<b>150</b>	Outlines the various source water types and the important role they play.
Surface Water Treatment Plant Operations(5674)	<u>10/31/2012</u>	<u>Conference/Seminar</u>	<b>180</b>	At Your Pace Online. Discusses various surface water treatment processes and the role they play in producing safe drinking water that meets Publichealth and US EPA requirements.

360water Inc.(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Accident Investigation(7549)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Treatment plant safety reflects literally thousands of hazards. Preparation for all hazards, regardless of their chance of occurring in one's particular circumstances, is an almost impossible task. However, implementation of an accident investigation program can effectively focus a facility on safety issues. Accident investigation should include thorough investigation, reasoned analysis, and follow-up actions.

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Activated Sludge(7571)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	ACTIVATED SLUDGE discusses the activated sludge process as used for domestic wastewater treatment. An overview of the microbiology, system requirements, reactor configurations and operational parameters are discussed.
Basic Safety Fundamentals for the Water & Distribu(7548)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This Operator Education course describes the basic fundamentals, techniques, instruments, and skills needed to work safely around a water distribution system
Biochemical Oxygen Demand and Carbonaceous Biochem(7573)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This operator education course explains in a step by step method how to perform the Biochemical Oxygen Demand (BOD) and Carbonaceous Biochemical Oxygen Demand (Carb. BOD) analytical tests, including quality assurance and control measures.
Blood Borne Pathogens(7572)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Working in the wastewater industry may expose a worker to blood borne pathogens. The Code of Federal Regulations, 29 CFR 1910.1030, applies to all occupational exposure to blood or other potentially infectious materials. There is a difference between occupational exposure and exposures incidents. Workplace safety can be enhanced through engineering and work practice controls. Lastly, training about blood bone pathogens can help reduce the risk of harm faced by treatment plant operators and staff.
Confined Space Entry(7550)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	In the water & wastewater industry, much of our work takes place in confined spaces. Industry personnel perform TV inspections, flow monitoring, and the many other tasks of our profession. Confined space entry (CSE) is hazardous. Confined spaces can kill. Training about CSE can help reduce the risk of harm faced by treatment plant operators and staff
Cross Connection Control(7551)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This operator education course describes the basic fundamental techniques, instruments, and skills needed for a water distribution operator to control and prevent contamination of potable water systems due to cross connections. This course provides the water distribution operator with the basic understanding of how to control and prevent cross connections into potable water supplies. Operators will gain knowledge of the various dangers associated with potable water corruption and how to avoid possible contamination

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Drinking Water Disinfection(7552)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This operator education course discusses drinking water disinfection. Disinfectants, residuals and byproducts are discussed as are pathogens and indicator organisms
Drinking Water Ion Exchange Softening(7553)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This operator education course defines hardness as it relates to drinking water and discusses some of the associated problems. The ion exchange softening process for drinking water treatment is then explained. Included is a discussion on the general concept, advantages and disadvantages, regeneration process and design terms. Upon completion of this operator education course, the operator should understand water hardness and the general concepts of the ion exchange process for softening.
Drinking Water Precipitation Softening(7554)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This operator education course defines hardness as it relates to drinking water and discusses some of the associated problems. The precipitation softening process for drinking water treatment is discussed with an emphasis on the chemistry of softening.
Fundamentals of Coagulation and Flocculation(7555)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This operator education course discusses the fundamentals of the coagulation and flocculation processes as used for domestic drinking water treatment. An overview of turbidity, colloidal particles, coagulants, flocculation and jar testing is included
Hazard Communication Training Course(7556)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This course is provided to give Water/Wastewater employees information on the Hazard Communication Program requirements in OSHA regulation 29CFR1910.1200. As with other OSHA regulations the hazard communication program is a requirement for workplaces with greater than ten employees. OSHA regulations may not apply directly to your water/wastewater facility but most states have adopted these regulations or developed very similar regulations that are at least as stringent as the OSHA regulations. An example of this would be the "State of Ohio, Public Employees Risk Reduction Program (PERRP)" which adopted the OSHA regulations for protection of the health and safety of state, county and municipal employees

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How to Perform Fecal Coliform Analytical Test for(7574)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This operator education course explains in a step by step method how to perform the Fecal Coliformanalytical tests, including quality assurance and control measures. This method?s results are comparedto the Fecal Streptococcus and Total Coliform analytical test results for pollution source information.This method can be used to report Fecal Coliform results as required in wastewater treatment plantNational Pollutant Discharge Elimination System (NPDES) Permits. All needed equipment, chemicals,and glassware is listed. To ensure appropriate reporting on the NPDES Permit operating reports, theGeometric Mean calculation is provided with examples.
How to Perform Total Coliform Analytical Test for (7557)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This operator education course explains in a step by step method how to perform the Fecal Coliformanalytical tests, including quality assurance and control measures. This method?s results are comparedto the Fecal Streptococcus and Total Coliform analytical test results for pollution source information.This method can be used to report Fecal Coliform results as required in wastewater treatment plantNational Pollutant Discharge Elimination System (NPDES) Permits. All needed equipment, chemicals,and glassware is listed. To ensure appropriate reporting on the NPDES Permit operating reports, theGeometric Mean calculation is provided with examples.
Introduction to Distribution System Piping and Val(7558)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This Distribution System Piping and Valving introductory course describes basic types of piping usedand valve operation.In this course, the operator will accumulate valuable knowledge and understanding of the various typesof piping and valves used in a water distribution system, their purpose, usefulness and functions
Introduction to Membrane Operations for Small Util(7559)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This course teaches operators about membrane technology and why it offers an attractive alternative toother forms of conventional treatment. Today?s membrane technology offers great improvements interms of fouling resistance, productivity, and reduces capital and operational costs while including anability to meet increasingly stringent regulations
Introductory to the Development of a Quality Assur(7560)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This operator education course will enable the operator/analyst to understand and develop a QA/QC plan for a Water and Wastewater Treatment Plant laboratory.

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Leadership and How to Affect Change in Public Orga(7561)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Understand and apply the Forward-Looking Utility Process. This course will apply the Forward LookingUtility Process to a hypothetical upgrade of a utility. Every 3-5 years, most facilities undergo some sortof upgrade that re-engineers how they operate. Leadership is imperative to successfully manage plantupgrades.In this operator education course, the hypothetical upgrade is the installation of new technology in orderto increase efficiency and reduce operating and maintenance costs. The proposed new technology willinclude SCADA, electronic operations and maintenance tools, and online training
Lock Out Tag Out - The Control of Hazardous Energy(7562)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This operator education course is designed to help an operator understand how lockout/tagout affectstheir job duties and may assist in the development of a basic lockout/tagout program. This course is inno way intended to be a substitute for the proper development of a lockout/tagout program, includingsite-specific training that is required by OSHA. The writer bears no liability for the content of thiscourse; however, at the time of writing the information is thought to be in compliance with OSHASTandards for lockout/tagout program. This course's intended purpose is to provide continuing educationto water and wastewater operations personnel; however, this course may satisfy the basic annual trainingrequirements as required (depending on jurisdiction) by OSHA standard 1910.147
Math Class 2(7575)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This operator education course provides Operating Data, Design Data, and Working Data for anActivated Sludge Plant. Operators will examine the data and work problems relative to the plantoperations.Specific subjects include: calculating Sludge Age, oxygen uptake in wastewater, PH, , photosynthesis,Uptake of CO2 removes Carbonic Acid (HCO3), percent dilution, dissolved oxygen values, percent seedcalculations, fecal coliform, raw wastewater and copper, softening processes, Organic nitrogen,preservation of 0.1N Na2SO3 (sodium thiosulfate), chlorine gas and hypochlorites, wire-to-waterefficiency, meter reading, contact stabilization, conventional activated sludge, and others.
Math Class I(7563)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This operator education course provides math calculations for treatment plant operators. Data sheets arenot needed for this course.This course provides step-by-step explanations of what happened and why for the math problems.Steve Safferman, Ph.D., P.E., and Gordon Baugh, B.S., M.A., consulted on this course

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Media Filtration for Drinking Water(7564)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b>60</b>	This operator education course discusses the gravity filtration process as used for domestic drinkingwater treatment. An overview of filtration media and backwashing are included and filter design isdescribed.
Membrane Unit Operations(7565)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b>60</b>	This operator education course will explain the basic types of membrane operations available for watertreatment and will focus specifically on Reverse Osmosis and Nanofiltration membrane elements
Microscopic Examination of Activated Sludge(7576)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b>60</b>	Upon completion of this operator education course, the operator should be able to purchase and use themicroscope to view microorganisms present in activated sludge, understand their differences,metabolism and correct distribution to achieve optimum wastewater treatment. In addition, the operatorwill understand the importance of the microorganism groups as they relate to determining the food tomicroorganism (f/m) ratio and settling characteristic. Once the operator becomes proficient with theseoperational tests, the wastewater treatment plant effluent will be of higher quality.
Oxygen Measurements(7577)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b>60</b>	This operator education course discusses oxygen demand measurements: biochemical oxygen demand,chemical oxygen demand, total organic carbon and theoretical oxygen demand. Analytical methods arepresented and the measurements are compared.Upon completion of this operator education course, the operator should understand oxygen demand aswell as the applicable laboratory methods and calculations.
Pretreatment Regulations(7578)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b>60</b>	This operator education course discusses pretreatment regulations as outlined in the Clean Water Act.The role of the POTW in setting and enforcing pretreatment regulations is addressed as are the differentdischarge standards. Various industry designations and industry responsibilities under the pretreatmentregulations are also discussed.Upon completion of this operator education course, the operator should understand the purpose of thepretreatment regulations and the responsibilities of POTWs and industries
Problems Caused by Roots in Sewers(7579)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b>60</b>	This operator education course will educate the student about the problems caused by roots in sewers.The operator will understand the nature and scope of root-based nfastructure issues, types of roots, howroots grow, why roots present a serious threat to pipes, and how chemical root control can solve theseproblems.

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Solids Analysis(7580)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This operator education course defines solids as they relate to water and wastewater. Turbidity, fixed,dissolved, volatile and total solids are defined. Analytical methods are presented, as are potential sourcesof error. Sample data is presented and calculations performed. The data is then interpreted. Ways inwhich the data is used to characterize water and wastewater and for unit design and control are alsodiscussed.Upon completion of this operator education course, the operator should understand the sources of solidsin wastewater, the effect of solids on receiving waters, the laboratory method for solids analysis,including applicable calculations, and how the data is used to treat wastewater
System Design and Flow Configurations for Membrane(7566)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	There are numerous flow configurations for Reverse Osmosis (RO) treatment systems that allow theoperator to maximize system capability and meet end-use requirements. This course will provide theoperator with an understanding of reverse osmosis membrane system design and some of the variousflow configurations used in RO design to optimize system performance
Terms and Equations for Membrane Operations(7567)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This operator education course will introduce the operator to the most common terms and equationsused when discussing membrane treatment. This course is divided into two sections – TheoreticalTerminology and Practical Terminology. The Theoretical Terminology section discusses the equationsand theories used in membrane system design. The Practical Terminology Section discusses terminologyused in the construction and operation of membrane treatment systems
Trickling Filters(7581)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This operator education course describes the nature and scope of the trickling filter system as it relates towastewater treatment processes. The trickling filter process is discussed, the features and functionalityof the trickling filter are examined, slime growth management is explained, and equipment start-up andoperation are explained.

## Drinking Water Courses for Renewal Training Credit

U.S. Water and Wastewater Utility Industry(7568)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	The water utility industry in the United States is a mixture of singular and jointly operated water and wastewater entities (some of which might include solid waste), publicly owned, privately owned, publicly owned & privately operated service delivery organizations of vastly varying sizes and organizational philosophies. How do United States water resource management firms, public utilities and government operate? What influence does the federal government have on the industry? What of state and local governmental influences? How do financial considerations present themselves in the industry? What happens when a public entity delegates its water and wastewater treatment responsibility to a private entity? These are questions this operator education course will address. This course is a companion course to "United States Water and Wastewater Utility Industry – Federal, State, and Local Control".
U.S. Water and Wastewater Utility Industry Federal(7569)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	How do federal, state, and local authorities regulate water and wastewater utilities? How are these authorities organized and what is their purpose? How do laws, regulations, inspections, and reporting affect facilities? How does franchising and financial considerations present themselves in the industry? These are questions this operator education course will address. This course is a companion course to United States Water and Wastewater Utility Industry
Ultraviolet Disinfection(7570)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This operator education course examines ultraviolet light technology and how UV systems treat drinking water. The impact of ultraviolet disinfection on micro-organisms is described. Treatment zones, system safety, and costs are examined. Equipment features, functions, and operations are explained.
Wastewater 1 Operator Study Guide(7582)	<b><u>8/16/2013</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	This operator education course presents 22 fundamental subjects for persons who want to take the examination to become a licensed wastewater treatment plant operator. Conversion factors, chemical symbols, and chemical compounds are included in reference tables. This course was provided by a group of operators in southeastern Ohio, particularly Darin Wise and Mike Fox from the City of Newark, and Larry Moon from Moon Technical Service. Because of their efforts, a portion of the revenue generated by this course will benefit operator program

# Drinking Water Courses for Renewal Training Credit

Wastewater Treatment Theory 1(7583)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This operator education course examines general wastewater theory. Broad bases of subjects are covered including treatment processes and equipment, plant operations, and chemical and mechanical engineering theory. This course is organized according to treatment equipment and processes. The format of the course presents a topic, then a question about the topic, a short answer, and then an explanation about the issue at hand.
Wastewater Treatment Theory 2(7584)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This operator education course provides wastewater treatment theory including treatment processes, plant operations, and mechanical technology. Specific subjects include: Imhoff tanks, contact stabilization, velocity in a grit system, evaporation and filtration, chlorine demand, digested domestic sludge, flow meter, sampling, screen channel velocity, trickling filters, aeration process, facultative conditions, sludge gas, sludge volume index, and others.
Water Quality Management(7586)	<u>8/16/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This operator training course explains technology-based and water quality-based controls for the reduction of pollutant discharges to receiving waters so that water quality standards can be met. Several commonly used terms associated with water quality management are explained. Each of the five phases of the water quality approach to meeting water quality standards are discussed as is the watershed approach to Total Maximum Daily Load development. The schedule and estimated costs for listing, developing, and implementing Total Maximum Daily Loads are presented and load allocation is briefly discussed. Upon completion of this course, the operator should understand the technology-based and water quality based controls for reducing water pollution. The operator should also understand the Total Maximum Daily Load development process and how the need to reduce the pollutant load to a body of water can impact the discharge from a wastewater treatment plant.

## 3M Company(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Ferguson Product Expo/Training(9261)	<u>5/20/2015</u>	<u>Classroom and Hands-on</u>	<u>180</u>	Locator training on how to locate underground utility lines to safely excavate. This training will teach students to accurately find lines. Accurate locates leads to less line strikes and increases worker safety.

### Total Approved

# Drinking Water Courses for Renewal Training Credit

## Advanced Valve Technologies, Inc.(1040)

### Course Name and ID Number

### Effective Date

### Course Format

### Total Approved

### Minutes Description:

Insertion Valve Installation: 4" through 24"(6829)

12/5/2012

Classroom and Hands-on

120

Watermains and or service connections; emergency-related; wastewater related. A gate valve will be installed (inserted) into a live water main.

## Alexander Chemical Corporation(43)

### Course Name and ID Number

### Effective Date

### Course Format

### Total Approved

### Minutes Description:

Chlorine, Sulfur Dioxide & Sodium Hypochlorite Saf(1190)

2/13/2004

Classroom/College

240

Safe handling of chlorine, sulfur dioxide and sodium hypochlorite for water and wastewater operatoers. JB  
Was approved 2/13/2004

Safe Handling of Chlorine, Sulfur Dioxide, Sodium (7032)

1/28/2013

On-line Class

240

Chemical and physical properties; PPE and response; leaks, exposure and first aid; emergency equipment - Kit A and Kit B hands-on demonstration.

## American Backflow Prevention Association(235)

### Course Name and ID Number

### Effective Date

### Course Format

### Total Approved

### Minutes Description:

Cross Connection Education Day(781)

7/1/2012

On-line Class

360

Various speakers on backflow prevention devices. JLE/PC

## American Cast Iron Pipe Co.(1034)

### Course Name and ID Number

### Effective Date

### Course Format

### Total Approved

### Minutes Description:

Pipe Design, Manufacture and Installation(5692)

11/2/2012

Operator's Group Meeting

120

Pipe design per AWWA C900, C905, C200; pipe manufacture; open cut and trenchless installations; hydraulic analysis of pipe materials.

## American Flow Control(90)

### Course Name and ID Number

### Effective Date

### Course Format

### Total Approved

### Minutes Description:

Hydrant & Valve Repairs & Maint in the Field(2911)

1/11/2012

Classroom and Hands-on

120

Hands on repairing hydrants and valves at water systems which are not working or are leaking. All brands and products.

Hydrant & Valve Maintenance Renewal Training(249)

2/1/2012

On-line Class

120

Hydrant valve repairs and maint.

Waterous Training School at the Plant(737)

2/1/2012

Classroom/College

360

First appoved 8/13/02. Classroom and workshop training at the plant where the products are made, tested, to AWWA UCFM Standards. Two-day trip. Hands on: workshop maint, testing, repairs and overall working of hydrants and valves.

# Drinking Water Courses for Renewal Training Credit

Hydrant & Valve Repairs & Maint in the Field 4 hrs(6834)	<u>11/13/2012</u>	<u>Classroom and Hands-on</u>	<u>240</u>	Hands-on hydrant repair
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## American Heart Association(664)

Course Name and ID Number

Heartsaver First Aid/CPR(2585)

Effective Date

5/10/2012

Course Format

Classroom and Hands-on

**Total Approved**

Minutes    Description:

480    Formerly "Heartsaver AED" (2007)

## American Trainco(479)

Course Name and ID Number

Arc Flash & Electrical Safety with NFPA 70E(4682)

Effective Date

2/1/2012

Course Format

Classroom and Hands-on

**Total Approved**

Minutes    Description:

960    Electrical safety course. Electrical hazards, safety-related work practices and maint requirements.

Basic Electricity for the Non-Electrician(4351)

2/1/2012

Classroom and Hands-on

960    First approved 4/19/11. Designed for maintenance technicians and other non-electrical personnel working in industrial plants and commercial buildings. LS

Centrifugal Pumps and Pump Systems(4338)

2/1/2012

Classroom and Hands-on

960    Pumps

Electrical Troubleshooting & Preventive Maint(3501)

2/1/2012

Other

960    Electrical troubleshooting techniques, protection from serious injury, working with real industrial components found in their facility. Will wire basic electrical circuits using wire diagrams, and troubleshoot faults inserted by instructor. Use of phase-rotation meter, Megohmmeter and different types of multimeters and voltage testers. See 3-phase in action and measure its values. Learn what electrical PPE to wear, other safety issues.

## American Water College(853)

Course Name and ID Number

Advanced Water Math(8630)

Effective Date

7/23/2014

Course Format

Operator's Group Meeting

**Total Approved**

Minutes    Description:

480    This course compiles 8 individual lessons into one course. It is highly recommended that students complete all of math book 1 (the basic water math course) prior to taking any math book two courses. The advanced water math course builds upon the principles taught in the basic course to move students into solving more difficult math problems.

Basic Water Math(8605)

7/23/2014

Operator's Group Meeting

660    This course compiles 11 individual lessons into one course. It is designed to give students a basic understanding of the math concepts needed to solve water treatment, distribution system and wastewater treatment math problems.

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Calculating Area(8606)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course gives students the knowledge they need to calculate the area of various surfaces as they relate to water industry math problems. It is applicable to water treatment plant operators, distribution system operators, and wastewater treatment plant operators.
Calculating Volume(8607)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course gives students the knowledge they need to calculate the volumes of various shapes as they relate to water industry math problems. It is applicable to water treatment plant operators, distribution system operators, and wastewater treatment plant operators.
Chemical Dose Problems(8608)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Correctly dosing chemicals is essential for public health and for treatment plant efficiency. This course teaches operators the concepts needed to correctly calculate chemical dose problems.
Coagulation and Flocculation Problems(8609)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Properly maintaining the balance of chemicals in the coagulation and flocculation portions of the treatment process is vital for the operation of a treatment plant. Failing to have the proper balance will cause the whole process to fail.
Coagulation and Flocculation Review(8610)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>120</b>	Coagulation and Flocculation treatment processes are essential to conventional surface water treatment. In this course, students will learn coagulation chemistry basics, flash mixer concepts, principles of enhanced coagulation, along with other coagulation and flocculation topics.
Corrosion Control Review(8612)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course reviews the subject of corrosion control as it relates to water treatment.
Corrosion Control Review(8611)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course reviews the subject of corrosion control as it relates to water treatment.
Cross-Connection Control Review(8644)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course covers cross-connection control. It is necessary that distribution operators have a working understanding of cross-connection control principles.
Disinfection Problems(8613)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	The math problems related to the disinfection process at a treatment plant can be complicated at times. This course shows students how to perform the needed calculations without the headache. Calculations discussed include chlorine dose, chlorine demand, chlorine use in pounds per day, and others.
Disinfection Review(8614)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>180</b>	The disinfection process of water treatment is the process that kills bacteria and other disease causing organisms. This course reviews disinfection principles.

## Drinking Water Courses for Renewal Training Credit

Distribution Disinfection Review(8638)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Disinfection is the process that kills bacteria and other disease causing organisms. This course reviews disinfection principles as they relate to the distribution system.
Filtration Problems(8615)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This course explains how to solve math problems that relate to the filtration process. It covers how to calculate many different types of water treatment plant filter math problems, including level drop rate, flow rate through a filter, backwash water used, and many others.
Filtration Review(8616)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	After the coagulation, flocculation and sedimentation processes, filtration is used to filter out suspended particles not settled out during the sedimentation process. This course covers the basics of water filtration.
Flow Conversion Problems(8634)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	It is important that distribution system operators know how to convert between different measures of flow rates.
Flow Problems(8617)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Converting between flow rates is an everyday calculation for water treatment plant operators. Knowing how to convert between flow rates is an essential skill for every treatment plant operator.
Force-Pressure-Head(8618)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	It is vital that water industry professionals understand the relationship between force, pressure and water head. In this course, the student will learn how to solve problems involving tank pressure due to water head, as well as force placed on in-ground tanks due to high ground water levels.
Hydrants and Valves Review(8643)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Hydrants and valves are an important part of the distribution system. This course covers a broad range of topics, from different types of hydrants to valve construction.
Laboratory Problems(8619)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This course covers the various types of math problems that may be necessary in a water quality laboratory. These common problems are daily calculations in the lab, and operators, as well as lab personnel should be knowledgeable in the principles required to accurately complete the calculations.
Piping Review(8642)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This course covers piping basics. Students will learn pipe selection considerations, construction material for pipe, and about pipe joints and their applications.
Problem Solving(8620)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Having a method for solving all types of water math problems is helpful to water treatment, distribution system and wastewater system operators. This course teaches a five step approach that can be used to solve water math problems. The method is easy to follow and teaches practical problem solving.

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Pumps(8621)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course teaches students how to calculate pumping horse power problems. The difference between water horse power, brake horse power, and motor horse power are all discussed. Additionally, this course covers how to calculate the operational cost of a pump.
Pumps and Motors Review(8641)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	In this course students will learn about pumps and motors and how they are used in the distribution system. This course covers different types of pumps, and different types of motors that are commonly used in the distribution system.
Regulations Review(8622)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	In this regulations review course, different regulations that relate to water treatment are discussed. The regulations include the safe drinking water act, the lead and copper rule and disinfection by products rules.
Reservoirs Problems(8624)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course teaches students how to calculate reservoir volume in acre-ft as well as in MG (Million Gallons). The dosing of a reservoir with copper sulfate for algae control is also discussed.
Reservoirs Review(8623)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Reservoirs are required to store water prior to it being treated at a water treatment plant. This lesson covers various reservoir topics such as thermal stratification of a reservoir, algae issues and controlling algae with copper sulfate.
Safety Review(8639)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course covers safety when working as a distribution system operator. It is essential that operators know and can apply trenching safety requirements, confined space requirements, and how to set up a traffic diversion.
Sedimentation Problems(8625)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	There are various types of math problems which directly relate to the sedimentation portion of a water treatment plant. The problems discussed in this lesson include detention time, overflow rate, flow velocity and weir loading.
Sedimentation Review(8626)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	The sedimentation process is required in water treatment to allow suspended solids to settle out of the water. This course covers the basics of sedimentation.
Source Water Review(8627)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Source water is the beginning of every treatment process. The different topics covered in this source water review course include evaluation of course water, contaminants in source water, the hydrologic cycle, and other topics.
System Design and Layout(8636)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course covers the design and layout of a distribution system. Students will learn the different types of system designs, and which designs are best for which types of systems.

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The Metric System(8633)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Operators should take this course if they do not have a firm understanding of the metric system, and the different units used in water treatment.
Unit Conversions(8628)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>120</u>	This course gives students a basic understanding of how to use unit analysis to solve water treatment math problems. The steps to performing unit conversions are taught from the ground up, including a simple approach to solving any unit conversion type problem.
Velocity and Flow Rate(8629)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Calculating the flow rate of flowing water is an everyday calculation in the water industry. This course will teach students how to calculate both the flow rate, and the velocity of flowing water.
Volume Problems(8635)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This course will teach students how to solve volume problems. The principles learned in this course will allow operators to perform calculations related to trench volume and tank volume problems.
Water Meters Review(8640)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This course covers water meters as they are used in the distribution system.
Water Quality Review(8646)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	One of a distribution operator's main duties is maintaining water quality in the distribution system. This course covers water quality basics.
Water Storage Review(8645)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	There are various reasons why water would need to be stored in a distribution system. This course covers water storage principles.
Water Treatment Review(8631)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>720</u>	This course compiles 8 individual lessons into one course. These 8 lessons are intended to be a review for operators in treatment plant operation. It is helpful for both brushing up on treatment topics as continuing education, and as a review course prior to taking a water treatment certification exam. This course reviews all of the topics covered in the course "Water Treatment Plant Operation" that is offered by the Office of Water Programs at CSU Sacramento. The course breaks down the topics covered into easy to understand concepts and principles.
Water Wells Review(8637)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	In some small water systems, the only source of water is wells. This course will teach students about water wells.
Weight/Volume Relationships(8632)	<u>7/23/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This course covers the relationship between the weight of water, and the volume of water. This lesson will teach the student how to use the relationship between gallons and cubic feet of water to solve math problems in the water industry.

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## American Water Company (RWE)(148)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Forklift Safety(2551)	<u>3/28/2007</u>	<u>Classroom/College</u>	<u>60</u>	JB

## American Water Works Association(27)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Maintaining Water Quality in the Distribution Syst(1698)	<u>9/17/2004</u>	<u>On-line Class</u>	<u>240</u>	AWWA Research Foundation workshop in Chicago. JB
Operator Chemistry Made Easy #437(4311)	<u>3/28/2011</u>	<u>Operator's Group Meeting</u>	<u>45</u>	LS
Advanced Disinfection of Pipelines & Storage(4077)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Advanced Disinfection of Pipelines & Storage
Advanced Metering Infrastructure for Water(4078)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Advanced Metering Infrastructure for Water
Applied Mathematics(4778)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Applied Mathematics
Basic Mathematics(4081)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>420</u>	Basic Mathematics
Chemicals: Best Practice for Quality Assurance(4080)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Chemicals: Best Practice for Quality Assurance
Chlorine Gas: An Inherently Safer Technology(4082)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Chlorine Gas: An Inherently Safer Technology
Chlorine Gas: Balancing Public Health(4083)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Chlorine Gas: Balancing Public Health
Coagulation, Flocculation & Sedimentation Basics(79)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Three modules includes course name plus New Regulations and Enhanced Coagulation; exam at end of training; exam with two attempts, if failed no continuing education granted.
Disinfection Basics(81)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Disinfection; new regulations; exam with two attempts, if failed no continuing education granted.
Disinfection of Pipelines & Storage Facilities(2913)	<u>2/16/2012</u>	<u>On-line Class</u>	<u>120</u>	JB
Distribution Service to Customers(4085)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Distribution Service to Customers
Distribution System Materials & Equipment(4086)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Distribution System Materials & Equipment
EDP & Personal Care Products Actions/Communication(4087)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	EDP & Personal Care Products Actions/Communication
Filtration Basics(80)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Filtration; membrane processes; and the Interim Enhance Surface Water Treatment Rule and Filter Inspections; exam with two attempts, if failed no continuing education granted.

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Fundamentals of Chemistry for Water Professionals(4779)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>480</u>	Fundamentals of Chemistry for Water Professionals
GeoScience in Water Aquifers(4100)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	GeoScience in Water Aquifers
Harmful Algal Blooms: Cyanobacteria(4101)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Harmful Algal Blooms: Cyanobacteria
High Bill Complaints?(4102)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	High Bill Complaints?
High Tech Op Course 1 Process Monitoring/Control(4103)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>720</u>	High Tech Op Course 1 Process Monitoring/Control
High Tech Op Course 3 Data Management(4105)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>720</u>	High Tech Op Course 3 Data Management
High Technology Tools for Operators(4106)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	High Technology Tools for Operators
Hydraulics(4107)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>480</u>	Hydraulics
J100 RAMCAP Risk & Resilience Management(4108)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>1200</u>	J100 RAMCAP Risk & Resilience Management
Key Elements-Maintain Distribution System Quality(4109)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Key Elements-Maintain Distribution System Quality
Membrane Technology Conference Showcase(4110)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Membrane Technology Conference Showcase
Membranes: Emerging Issues & Technologies(4111)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Membranes: Emerging Issues & Technologies
P.E. Pipe in the Field(4117)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	P.E. Pipe in the Field
Perchlorate & Emerging Contaminants(4118)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Perchlorate & Emerging Contaminants
Plant to Tap: The Importance of Disinfection(4119)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Plant to Tap: The Importance of Disinfection
Pump Maintenance(4120)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Pump Maintenance
PVC Pipe in the Field(4121)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	PVC Pipe in the Field
Quagga/Zebra Mussel Control(4122)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Quagga/Zebra Mussel Control
Residuals Management & Disposal(4123)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Residuals Management & Disposal
Setting Rate in a Tough Economy(4124)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Setting Rate in a Tough Economy
The Fundamentals of DW Regulations - 1(4125)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	The Fundamentals of DW Regulations - 1
The Fundamentals of DW Regulations - 2(4126)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	The Fundamentals of DW Regulations - 2
Total Coliform Rule(4127)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Total Coliform Rule
Trenchless Technology Application(4128)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Trenchless Technology Application
Water Main Installation(4129)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Water Main Installation

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Water Shortages: Finding a Solution(4130)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Water Shortages: Finding a Solution
Water Storage Tanks O&M(4131)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Water Storage Tanks O&M
Water System Mechanical Equipment(1381)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Water System Mechanical Equipment
Water Treatment Operator Level 1 The Basics(4132)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>3600</u>	Water Treatment Operator Level 1 The Basics
Water Treatment Operator Level 2(4133)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>3600</u>	Water Treatment Operator Level 2
Water Treatment Operator Level 3(4134)	<u>2/16/2012</u>	<u>Operator's Group Meeting</u>	<u>3600</u>	Water Treatment Operator Level 3
High Tech Op Course 2 Applications & Tools(4104)	<u>12/16/2012</u>	<u>Operator's Group Meeting</u>	<u>720</u>	High Tech Op Course 2 Applications & Tools
Safety First: Confined Spaces(7095)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>9</u>	Confined spaces can become dangerous or even life-threatening in several ways. This video teaches employees the importance of following an entry permit system, how to identify a confined space and its possible dangers, proper ventilation techniques, and personal protective equipment.
Safety First: Confined Spaces--Alternative Procedur(7111)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>20</u>	This DVD teaches viewers the procedures they must use when planning and executing non-permit or alternative procedure confined-space entries.
Safety First: Elevated Work Surfaces/Fall Protecti(7106)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	Employees who work on elevated surfaces should be trained in safety procedures and fall-arrest equipment.  This video covers environmental conditions, electrical and mechanical hazards, guardrail specifications, use of roped-off areas during construction, and safety systems found on tanks and towers.  It explains the proper use of full-body harnesses, ladders, scaffolding, working on rooftops, large storage tanks, and water towers.
Safety First: Eye Protection(7103)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	About 1,000 people injure their eyes each day on the job. Safety experts say at least 90% of them could avoid injury with the proper eye protection equipment and training.  This video instructs in eye safety procedures and equipment. Employees learn about eye hazards such as chemicals, gases, heat and light, flying fragments from machinery, and infrared radiation.  The video covers the use and maintenance of goggles, safety glasses, face shields, and filtering lenses. It explains safety certification, equipment safety checks, emergency first aid and eye-washing stations.

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Safety First: Forklift Safety(7098)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>12</u>	OSHA requires that forklift operators receive appropriate training in operation and maintenance of forklifts. This training video provides an excellent overview of safe forklift operation, including weight balance, driving, lifting, safety checks, and more.
Safety First: Hazard Communications(7107)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>13</u>	<p>This video provides the basic information you need to develop a customized Hazard Communications Program that meets OSHA's Hazard Communication Standard.</p> <p>Viewers learn the five parts of a Hazard Communication Program: Chemical Inventory, Container Labeling, Material Safety Data Sheets, Employee Training, and Written Procedures.</p>
Safety First: Hazardous Spill Containment and Clea(7110)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>20</u>	<p>Water treatment plants use chemicals for softening, coagulation, disinfection, scale and corrosion control, and taste-and-odor control. These chemicals have proven to be valuable tools, but they come with a risk. The effects of exposure range from mild to fatal. Containment and cleanup are critical in the event of a spill or leak.</p> <p>This program discusses many aspects of containment and cleanup, including hazardous chemical determination; Material Safety Data Sheets; personal protective equipment; safe transport, handling, and storage of hazardous chemicals; training of employees; emergency response; and followup to spill incidents.</p>
Safety First: Heavy Equipment Yard Practices(7108)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	<p>Almost every water and wastewater utility has a pipe yard containing pipe, fire hydrants, valves, and other heavy materials and equipment used every day.</p> <p>Safety must be stressed when employees are working around these potentially dangerous items, as well as around the forklifts and other equipment used to move them. Personal protection, lifting systems, chaining and slinging, storage, loading and unloading are covered in this program.</p>
Safety First: Hot Work(7105)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	<p>Cutting torches, arc welders, soldering irons, and grinders produce high electrical currents, flames, sparks, slag, hot fragments, smoke, ultraviolet rays, and toxic fumes.</p> <p>This training video explains the basics of working safely, including personal protective equipment, work area safety, toxic gases, and compressed gas safety.</p>

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Safety First: Indoor Crane Operation(7104)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>14</u>	<p>Do your employees know the four, ironclad rules of indoor crane safety: inspections, training, communication, and technique? If you're not sure, show them Safety First: Indoor Crane Operation.</p> <p>Employees will</p> <p>learn how to inspect indoor cranes for proper operation          understand the design and operation of indoor cranes          see proper rigging and lifting techniques in action          understand how to balance a load and make sure it is safe to lift          learn standard hand signals for communication between the crane operator and the rigger          watch special techniques for safely lifting chlorine containers and other types of loads</p>
Safety First: Laboratory Safety for Water Professi(7097)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>18</u>	<p>Perfect for both new employee orientation and continuing safety training, the video covers the handling and storage of chemicals, personal protective equipment, lab safety features, lab equipment, and safe lab procedures.</p>
Safety First: Lockout Tagout for Water Distributio(7109)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	<p>Lockout/tagout is one of the most important safety procedures that water operators need to know. Needless injuries and deaths happen year after year, either because lockout/tagout was improperly performed, or because it was not communicated to all parties who should have known.</p> <p>This video provides a basic overview of lockout/tagout procedures, including why equipment must be locked and tagged when taken out of service, who performs the procedure, what materials and equipment are needed, notification, and record keeping.</p>
Safety First: Lockout Tagout of Electrical Equipme(7119)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>13</u>	<p>Viewers will learn:</p> <ul style="list-style-type: none"> <li>What employers must do to comply with OSHA's lockout/tagout rules</li> <li>Lockout/tagout program guidelines for water utilities. Type of lockout and tagout devices. Communication procedures to notify affected employees. Use of shutdown approval forms. Shutting off power at the source. Shift-worker protocol</li> <li>Removal of lockout/tagout devices</li> <li>Powering up after lockout/tagout work is finished. Documentation</li> <li>Ongoing employee training</li> </ul>

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Safety First: Night Work(7113)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	<p>Night shift workers can be exposed to additional dangers as they work outdoors. Help them stay safe with this important video training.</p> <p>The DVD covers such topics as work site lighting, traffic control, high-visibility clothing, and safety precautions around open filter beds and remote water tanks. Aurora Platinum Award Winner.</p>
Safety First: Personal Protective Equipment(7115)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	<p>We can avoid most accidents on the job if we concentrate on the basics. Nothing is more basic than the equipment we wear to protect us on the job—personal protective equipment, or PPE.</p> <p>This DVD provides an overview of OSHA-required PPE for water system workers. Excellent for new water system employees, the program presents the essential knowledge employees need to know about the specialized clothing and equipment they must use to protect eyes, face, head, hearing, respiratory tract, body, and extremities from potentially hazardous conditions.</p>
Safety First: Pipe and Street Saws(7123)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	<p>Operators using specialized power saws to cut pipe and asphalt or concrete pavement must be trained in the safe use of these saws. This DVD demonstrates proper use of pipe and street saws. The video also covers saw types, specialized blades, personal protective equipment, equipment inspection, and the importance of following saw-manufacturers' instructions.</p>
Safety First: Pipe Handling Safety for Field Crews(7099)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	<p>Injuries can occur when workers are moving heavy water distribution system components - pipe, fire hydrants, pumps, valves, etc. Not only are the individual parts potentially dangerous, so is the heavy equipment used to move these materials.</p> <p>Teaching workers how to avoid injury by using proper safety procedures is paramount especially for loading, unloading, and installing pipe with heavy equipment, including front loaders and cranes.</p>

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Safety First: Process Safety Management DVD(7100)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	<p>Process Safety Management training is required by OSHA to mitigate the chance of highly hazardous chemicals (toxic, reactive, or flammable) accidentally being released at a workplace.</p> <p>This DVD provides a systematic approach to evaluating the chemical hazards associated with water treatment processes. Any facility that uses, stores, manufactures or handles hazardous chemicals should have a comprehensive program integrating technologies, procedures, and management practices to prevent or minimize contamination or catastrophic occurrence.</p>
Safety First: Protecting Against Bloodborne Pathog(7112)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>13</u>	<p>This video provides a quick and effective way to train water utility employees on preventing occupational exposure to bloodborne diseases.</p>
Safety First: Respirator Safety(7101)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>16</u>	<p>Water utility employees may come in contact with airborne hazards like fumes, dusts, vapors, and gases, or they must enter oxygen-poor environments such as confined spaces. Do your employees fully understand when an air respirator may be necessary and which type of respirator will provide protection?</p> <p>This video tells your employees what they need to know about air respirators: different types of respirators used by water utilities, when to use each one for protection against various hazards, and how to use them properly.</p>
Safety First: Safe Handling of Compressed Gas in t(7117)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	<p>With nearly 200 different kinds of materials shipped, stored and used in compressed gas cylinders today, the need to understand safe handling practices has never been more essential.</p> <p>This training DVD provides current OSHA and DOT regulations and gives employees an instant refresher course on safe compressed gas handling procedures, including:</p> <ul style="list-style-type: none"> <li>the five basic parts of gas cylinders and their purposes</li> <li>safe handling basics and the potential consequences of mishandling</li> <li>personal protective equipment</li> <li>transporting cylinders</li> <li>visual inspections</li> <li>labels and markings</li> <li>storage and handling</li> </ul>

## Drinking Water Courses for Renewal Training Credit

Safety First: Safe Handling of Water Treatment Che(7120)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>18</u>	<p>Handling water treatment chemicals can be an extremely hazardous job. It is important to know how to properly handle these chemicals.</p> <p>This video looks at some of the most common water treatment chemicals and discusses how they are stored, proper personal protective equipment, and emergency procedures.</p>
Safety First: Safety and Security Practices for Co(7096)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>20</u>	<p>Water utility managers need to make sure that outside contractors understand and will follow utility safety and security policies and procedures. This video discusses safety communications between utility management and outside contractors.</p>
Safety First: Seasonal Safety(7102)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>14</u>	<p>Utility field employees may work in weather ranging from unbearably hot to freezing cold. This video teaches employees how to protect themselves from heat stress illness, heat exhaustion, dehydration, hypothermia, and frostbite.</p>
Safety First: Slips, Trips, and Falls(7122)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>14</u>	<p>Slips, trips, and falls are the most common types of workplace accidents. Most of these types of accidents are avoidable by using common sense and being aware of surroundings. This DVD shows workers how to keep areas as free as possible of hazards, choose proper shoes and safety gear, and properly use equipment like fall arrest systems, ladders, and scaffolding.</p>
Safety First: Trenching and Excavation(7118)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>10</u>	<p>A great orientation or refresher course for anyone who works in and around site excavations, this training DVD covers planning, soil types and soil stability, trench wall support systems, and rules for working in and around an excavation.</p>
Safety First: Water Utility Security(7124)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	<p>Proper security ensures the safety of utility employees and the public water supply. This video analyzes security issues at the treatment plant, at remote locations, and on construction or excavation job sites. Learn successful strategies for preventing vandalism and theft, dealing with bomb threats, and disaster planning.</p>
Safety First: Work Area Traffic Control(7116)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>15</u>	<p>Vehicle traffic can be managed to reduce both danger to workers and inconvenience to drivers.</p> <p>This video shows field crews how to control traffic flows around the work site. It covers placement of speed limit signs, barricades, cones, stop signs, and other traffic-control equipment.</p> <p>The Five Zone Method is explained, as is public notification and access for emergency vehicles and pedestrians.</p>

## Drinking Water Courses for Renewal Training Credit

Safety First: Working With Hazardous Materials(7114)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>10</u>	For water utility employees, working with hazardous materials is part of the job. Learn essential information on how to identify and inventory all hazardous chemicals in the workplace, understand and use Material Safety Data Sheets, and develop a written hazard communication program.
Safety First: Workplace Hearing Loss(7121)	<u>2/20/2013</u>	<u>Computer Based Training</u>	<u>14</u>	<p>Noise-induced hearing loss on the job is preventable, but once acquired, hearing loss is permanent and irreversible.</p> <p>This DVD provides an overview of the causes of work-related hearing loss and prevention. Viewers learn the specific types of damage to hearing caused by both a sudden intense noise and by chronic exposure to noise over time. The DVD also covers noise measurement, noise control, hearing tests, and hearing protection devices.</p>
Instrumentation(7903)	<u>11/8/2013</u>	<u>Operator's Group Meeting</u>	<u>360</u>	<p>This course is designed to cover the basics of process monitoring via SCADA for raw water measurements, control of water treatment and the distribution system using sensing devices.</p> <p>Students learn how to describe the requirements of SCADA System components and analyze illustrated device descriptions to identify sensors, analyzers and control devices.</p>
Revised Total Coliform Rule(7904)	<u>11/8/2013</u>	<u>Operator's Group Meeting</u>	<u>240</u>	<p>The course is made up of four modules which provide an overview of the Revised Total Coliform Rule and an introduction to the assessment process that underlies the revised rule framework. The modules describe issues to consider in assessing sample sites, distribution system operation and maintenance, as well as other considerations.</p> <p>The student will be familiarized with Revised Total Coliform Rule framework, be able to explain Tier 1 and 2 Assessments and facilitate preparation for compliance with Revised TCR.</p>

# Drinking Water Courses for Renewal Training Credit

Underground Utility Systems Level 2(7906)	<u>11/8/2013</u>	<u>Operator's Group Meeting</u>	<b>3600</b>	<p>This is a class that is facilitated by an instructor, and it's paced over the course of 5 weeks. Students are expected to complete 12 hours of online learning activities each week. Activities include presentations, videos, interactions, quizzes, discussion boards, weekly tests, homework assignments, and a live meeting. These activities can be accomplished by the student at their most convenient time during the week. Students will also be able to interact with the instructor and other water professionals from across the United States and internationally on a regular basis, and may earn 6 CEUs* for the completion of this program.</p> <p>Level 2 is for the person with a couple years experience. More details on maintenance like repair of inflow, infiltration, meters, disinfection, pressure tests and valve maintenance will be included. Intermediate math and chemistry skills will be included. Some basic concepts with planning work and more advanced safety is required. More on pumps and electricity are included.</p>
Underground Utility Systems Level 3(7907)	<u>11/8/2013</u>	<u>Operator's Group Meeting</u>	<b>3600</b>	<p>This is a class that is facilitated by an instructor, and it's paced over the course of 5 weeks. Students are expected to complete 12 hours of online learning activities each week. Activities include presentations, videos, interactions, quizzes, discussion boards, weekly tests, homework assignments, and a live meeting. These activities can be accomplished by the student at their most convenient time during the week. Students will also be able to interact with the instructor and other water professionals from across the United States and internationally on a regular basis, and may earn 6 CEUs* for the completion of this program.</p> <p>Course 3 is for supervisors and those with more training. Included are topics on corrosion, corrosion prevention, pumps and electricity, odor control, FOG control, SCADA and work orders are included. The student will understand maintenance needs, pump and electrical maintenance needs and gain knowledge of planning work activities.</p>
Nitrification in the Distribution System(8551)	<u>1/1/2014</u>	<u>Video</u>	<b>23</b>	Nitrification in the Distribution System
WSO: Disinfection By-products DVD(8436)	<u>1/1/2014</u>	<u>Video</u>	<b>20</b>	New! Covers the types of disinfectants used in water treatment.
WSO: Distribution Systems DVD(8439)	<u>1/1/2014</u>	<u>Video</u>	<b>25</b>	Basic knowledge about city water distribution systems.
WSO: Flushing and Cleaning DVD(8441)	<u>1/1/2014</u>	<u>Video</u>	<b>16</b>	Basic flushing and cleaning equipment and procedures.
WSO: Membrane Technology DVD(8432)	<u>1/1/2014</u>	<u>Video</u>	<b>19</b>	Operating principles of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.

## Drinking Water Courses for Renewal Training Credit

WSO: Ozone and UV DVD(8431)	<u>1/1/2014</u>	<u>Video</u>	<u>15</u>	Use of ozone in water drinking treatment.
WSO: SCADA and Instrumentation DVD(8438)	<u>1/1/2014</u>	<u>Video</u>	<u>20</u>	Basic principles of automation, control instrumentation, and SCADA in water treatment and distribution.
WSO: Centrifugal Pumps DVD(8440)	<u>1/1/2014</u>	<u>Video</u>	<u>24</u>	Describes advantages and disadvantages of centrifugal pumps operating principles and maint, and record keeping and trouble shooting.
WSO: Disinfection Startegies DVD(8429)	<u>1/1/2014</u>	<u>Video</u>	<u>27</u>	Basic disinfection strategies, advantages and disasadvantages of each, DBPs, waterborne diseases.
WSO: Filtration DVD(8428)	<u>1/1/2014</u>	<u>Video</u>	<u>18</u>	Covers the basic equipment, operation and maint of conventional water filtration plants.
WSO: Jar Testing DVD(8430)	<u>1/1/2014</u>	<u>Video</u>	<u>35</u>	Jar testing equipment, procedures, factors that can throw off results, temperature, daily chem doses and pH levels.
WSO: Source Water Protection DVD(8434)	<u>1/1/2014</u>	<u>Video</u>	<u>23</u>	Discusses general source water protection with a focus on point and non-point pollution
WSO: Turbidity Measurement and Particle Counting D(8433)	<u>1/1/2014</u>	<u>Video</u>	<u>17</u>	How turbidimeters and particle counters work and demonstrates their use, operation and calibration.
WSO: Water Loss Control DVD(8442)	<u>1/1/2014</u>	<u>Video</u>	<u>16</u>	Information for active leak-detection and repair program.
WSO: Water Sources DVD(8437)	<u>1/1/2014</u>	<u>Video</u>	<u>25</u>	Thorough overview of water sources for city drinking water systems.

# Drinking Water Courses for Renewal Training Credit

Maintaining and Achieving RTCR Compliance for Small(9404)

4/1/2015

Computer Based Training

180

This eLearning course focuses on 4 major areas needed by small systems to maintain and achieve compliance with the Revised Total Coliform Rule; including when and how to conduct the RTCR assessment, evaluation of sampling procedures, source water treatment assessments and evaluation of distribution system operations and maintenance practices on coliform occurrence.

The course is divided into four modules. The first module introduces the RTCR by describing the latest changes and impact to operators and their water systems. It demonstrates when and how to perform level 1 and level 2 assessments and provides examples and opportunities to apply the new learning.

The second module covers sample site assessment which includes determining if deficiencies exist in distribution system practices that may lead to inaccuracies in sample collection, possible microbial contamination, and data management procedures.

The third module illustrates the major elements of an assessment of sources of supply and treatment in the context of the RTCR.

The fourth and final module illustrates the major elements of an assessment of distribution system operations and maintenance practices in the context of the RTCR.

This eLearning course is made possible through a USEPA grant for small systems training in conjunction with AWWA's training partner, the Rural Community Assistance Partnership.

The EL219 eLearning course is FREE to operators who work with small water systems serving populations under 10,000. AWWA membership is not required; however, registration is required. To register for free, select Add to Cart, then go to Check Out. Registrants will be directed to the Login/Register page. Select the REGISTER button to create a free account. Upon successful completion of the course, registrants will receive a certificate of completion to file with their states for continuing education credits.

# Drinking Water Courses for Renewal Training Credit

Developing and Financing a Capital Plan for a Water(9488)	<u>5/5/2015</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Establishing a Capital Improvement Program (CIP) is an important facet of the management of a water utility's assets. This webinar will provide participants with an overview of the components of a CIP. It will also highlight how a CIP, along with other best management practices such as asset management and benchmarking, can improve a utility's access to financing from the multiple federal and state programs that exist. The webinar will also provide participants with descriptions of these financing programs that provide funding for water infrastructure projects.
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## Approved Environment, Inc.(658)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Chemistry 1(3959)	<u>7/6/2010</u>	<u>Operator's Group Meeting</u>	<u>60</u>	what is water? how is a water molecule built up? how much does a water molecule weigh? in what states (phases) can water be found? what happens if water changes phases? why does ice float on water? which substances are water soluble? what is hard water? which physical and chemical properties does water have?
Chemistry 2(3960)	<u>7/6/2010</u>	<u>Operator's Group Meeting</u>	<u>60</u>	history of the periodic table, arrangement of elements in the periodic table, atomic number and atomic mass, isotopes, electron configurations of atoms, reaction types, redox, oxidizing and reducing agents, examples of redox reactions, displacement reactions
Membrane Technology(3961)	<u>7/6/2010</u>	<u>Operator's Group Meeting</u>	<u>60</u>	membrane systems, process management of membrane filtration systems, dead-end filtration and cross-flow filtration, choosing a certain of membrane system, types of membranes, pressure membrane systems, microfiltration and ultrafiltration, diffusion membrane systems, nanofiltration and reverse osmosis
Disinfection by Chlorine(4369)	<u>5/11/2011</u>	<u>Operator's Group Meeting</u>	<u>60</u>	introduction: what is water disinfection? disinfection with chlorine, reaction of chlorine gas and sodium hypochlorite with water, chlorine by-products, process optimization and handling chlorine residuals, laboratory analysis to determine chlorine residual and the effectiveness of disinfection, safety
Maintenance I/Boiler Feed Water(7089)	<u>2/19/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Improving water quality in boilers and maint. of boiler systems
Drinking Water Production(7433)	<u>7/10/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	drinking water quality standards, drinking water production from surface water, pre-filtration, addition of chemicals, natural filtration, disinfection, fine filtration, preservation and storage
Filtration(7443)	<u>7/10/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	purpose of filtration, systems used, gravity filters, rapid sand filters, inert media pressure filters, cross-flow membrane filtration, microfiltration, ultrafiltration, nanofiltration

## Drinking Water Courses for Renewal Training Credit

Laboratory Procedures for Plant Control(7453)	<u>7/10/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	laboratory test procedures and analysis, settleable solids test, settleability test, total suspended solids test, total sludge solids, mixed liquor volatile suspended solids, sludge age and mean cell residence time
Laboratory Terms, Equipment, and Sampling(7448)	<u>7/10/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	definitions, laboratory equipment, standard solutions, laboratory reagents, grade A water, sampling, types of sampling, preservation of samples, locations of sampling, spectrophotometer
Maintenance II/Pumps(7452)	<u>7/10/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	types of pumps, making your pump last, checklist, pump problems, pump storage tips
Parasites and Pathogens(7436)	<u>7/10/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	significant disease agents found in water, transmission of infectious diseases, food borne/water borne bacterial diseases, food poisoning, soil borne bacterial diseases, viral diseases, antiviral vaccines and drugs, protozoan diseases, helminthic diseases
Safety(7449)	<u>7/10/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	workplace hazard assessment, adequate training for all workers, types of hazards, material safety data sheets, plant safety and good housekeeping
The Microlife(7437)	<u>7/10/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	classification of microorganisms, autotrophs and heterotrophs, aerobes, anaerobes, anoxic, fermenters, microscopic examination, slides preparation and presentation
UV Disinfection(7434)	<u>7/10/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	effect of ultraviolet, how UV disinfection works, UV-C production, ultraviolet dose/destruction relationship, UV system module, UV air application
Ammonia, pH and Chlorine(7462)	<u>7/11/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	nitrogen and water, reaction mechanisms, environmental impact and health effects, water purification technologies, measuring ammonia nitrogen, ammonia selective electrode method, methods to measure pH, hydrogen ion properties, acids and bases, effects of changes in pH on freshwater ecosystems, applications of chlorine
Biochemical Oxygen Demand Concept and Treatment(7457)	<u>7/11/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	definitions, sources of biochemical oxygen demand, BOD impact on receiving water, stages of biochemical oxygen demand, aerobes role in removing BOD, removing BOD by using chemicals
BOD, CO and COD(7463)	<u>7/11/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	biochemical oxygen demand, purpose, description, calculations, dissolved oxygen, purpose, description, procedure, chemical oxygen demand, purpose, description
Odor Control(7459)	<u>7/11/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	need for odor control, biological generation of odor/hydrogen sulfide generation, odor identification and measurement, odor complaints, solutions to odor problems, odor removal towers, ozonation, good housekeeping, odor control facilities

## Drinking Water Courses for Renewal Training Credit

Ozone Disinfection(7456)	<u>7/11/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	ozone for water and air treatment, occupational exposure limits, ozone properties, ozone generation, ozone injection techniques, how does ozone work? what is the half-life of ozone? is ozone harmful and what is the effect? measuring ozone, safety
Settleability and Loss of Solids(7458)	<u>7/11/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	solids/liquid separation, factors affecting solids settleability, systems remove solids, settling tank design and efficiency, loss of solids troubleshooting systems, precipitation, coagulation, and flocculation
Multiple choice Questions(7468)	<u>7/13/2013</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Treatment operation questions Troubleshooting questions Process control questions Activated sludge microorganisms questions Management questions Laboratory questions Maintenance questions Pumps questions

### At Your Pace Online(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Basic Electrical Concepts for Water	<u>4/14/2014</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Basic Electrical Concepts for Water Operators is a course that covers the fundamental electrical principles that water operators need in their day-to-day operations.
Distribution System Water Quality Issues(8293)	<u>4/14/2014</u>	<u>Operator's Group Meeting</u>	<u>150</u>	Distribution System Water Quality Issues is a course designed to introduce the many issues that are present in order to achieve and maintain a safe and high quality water supply in a varied and widespread distribution system.
Groundwater Wells(8294)	<u>4/14/2014</u>	<u>Operator's Group Meeting</u>	<u>150</u>	Groundwater Wells is a course designed to introduce and cover the basic components of and operation of groundwater wells and the fundamentals of maintaining safe drinking water from this types of water source.
Meters, Valves and Hydrants(8295)	<u>4/14/2014</u>	<u>Conference/Seminar</u>	<u>180</u>	Meters, Valves and Hydrants is a course that focuses on the vital roles that meters, valves and hydrants play in the delivery of safe drinking water to the public.
Pipelines(8296)	<u>4/14/2014</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Pipelines is a course that focuses on the all the components of the pipelines that deliver water, including: pipes, meters, valves, hydrants, pumps and motors, horsepower and SCADA systems. It also covers the EPA groundwater rules and distribution system water quality issues.

#### Total Approved

# Drinking Water Courses for Renewal Training Credit

Pumps and Motors(8297)	<u>4/14/2014</u>	<u>Operator's Group Meeting</u>	<u>150</u>	Pumps and Motors is a course that details the types, components of and the proper maintenance steps for water pumps and the motors that drive them.
Storage Tank Facilities(8298)	<u>4/14/2014</u>	<u>Conference/Seminar</u>	<u>120</u>	Storage Tank Facilities is a course that focuses on the types of storage facilities, functions of and maintenance of the tanks that store water for efficient delivery to the public.
Water Distribution System Operation Overview(8299)	<u>4/14/2014</u>	<u>Operator's Group Meeting</u>	<u>270</u>	Water Distribution System Operation Overview is a course designed to give an overview to water treatment and distribution operators of water distribution components. Including: Pipeline operations, Meters, Valves, Hydrants, Pumps and Motors, Groundwater wells, EPA Groundwater rules and Water Quality issues in a distribution system.

## Awwa-webcast(438)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Lead and Copper Rule(2767)	<u>12/12/2007</u>	<u>Operator's Group Meeting</u>	<u>90</u>	JB/PC
Chlorine & Ammonia Scrubbers(5075)	<u>5/3/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	How to use a scrubber properly; tools needed.
Intro to Water Conservation(5074)	<u>5/3/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	How to effectively conserve water; using a rain barrel correctly.
Julie Law Changes(5073)	<u>5/3/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	

### Total Approved

## AY McDonald Mfg. Co.(94)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Anatomy of a Service Lateral(1907)	<u>2/1/2012</u>	<u>Classroom and Hands-on</u>	<u>120</u>	First approved 3/7/05. From pipe to meter.
No-Lead Water Service Brass & Legislation(4688)	<u>2/1/2012</u>	<u>Classroom and Hands-on</u>	<u>60</u>	Regulatory update, water mains/service connections.
Water Works Brass Product Training(258)	<u>2/1/2012</u>	<u>Classroom and Hands-on</u>	<u>240</u>	First approved 3/15/01. Proper use of brass fittings and valves for water service lines, backflow valves and lead content in brass. May include a factory tour.

### Total Approved

## B&W Control System Integration(753)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
The State of Technology in Water Operations(8520)	<u>6/1/2014</u>	<u>Conference/Seminar</u>	<u>60</u>	Focuses on state of technology for the water field. Sub-topics include modern PLCs, communications, fiber, table-based technology, and other related "tech topics" specific to water operators.

### Total Approved

# Drinking Water Courses for Renewal Training Credit

## Badger Meter, Inc.(16)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Meter Accuracy & New Static Meter Technology(5691)	<u>11/2/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Meter accuracy and new meter technologies used in measuring water for revenue purposes and AWWA research results for meters at low flows.
ORION Trimble Training(7771)	<u>10/21/2013</u>	<u>Classroom and Hands-on</u>	<u>480</u>	Water mains and service connections, leak detection and data profiling of water meters.
ReadCenter Software Training(7770)	<u>10/21/2013</u>	<u>Classroom and Hands-on</u>	<u>480</u>	Use and application of Badger Meeter ReadCenter Meter Data Management Software
How Technology Is Changing the Water Industry(9151)	<u>1/21/2015</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Water mains/service connections; changes in potable water industry regarding software, analytics, and infrastructure free meter reading systems.

**Total Approved**

## Baxter & Woodman(876)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Sample Collector Training(6900)	<u>12/20/2012</u>	<u>Classroom and Hands-on</u>	<u>90</u>	Regulatory requirements, different types of samples and how to collect them and prepare them for the lab, what constitutes a good sampling location. Trainees must demonstrate proper sample collection technique. Covers Chapter 3 of Sample Collector's Handbook and clients SOP for sample collectioni available.
Understanding Wells and Pumps(6901)	<u>12/20/2012</u>	<u>Classroom and Hands-on</u>	<u>150</u>	Well design and equipment. Static & operating levels, calculating drawdown and specific capacity. Understanding pump curves. Discharge head, well lift, and total head. Well maintenance. Hands-on identification of pump and well equipment, perform static and operating levels and calculate drawdown and specific capacity.

**Total Approved**

## Baxter Learning(376)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Confined Space Entry(1296)	<u>11/3/2003</u>	<u>Other</u>	<u>60</u>	
PPE Equipment(1299)	<u>11/3/2003</u>	<u>Other</u>	<u>60</u>	
Waste management, Disposal management and envirome(1300)	<u>11/3/2003</u>	<u>Other</u>	<u>60</u>	
Hazard Communications(1879)	<u>2/8/2005</u>	<u>Other</u>	<u>60</u>	JB
Fire Safety(2291)	<u>7/5/2006</u>	<u>Operator's Group Meeting</u>	<u>60</u>	JB/PC

**Total Approved**

# Drinking Water Courses for Renewal Training Credit

## Black Hawk College(115)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Drinking Water Renewal Training(5121)	<u>5/9/2012</u>	<u>Conference/Seminar</u>	<b>450</b>	
Experimental Testing Systems ENGT 215(5189)	<u>6/13/2012</u>	<u>Classroom and Hands-on</u>	<b>2700</b>	Principles and procedures of experimental testing for function and reliability. Fixture design considerations, sensor specs, data acquisition, hardware integration, measurement system calibration and stat data analysis topics. 2 lecture hours; 2 lab hours. 3 credit hour college course
Logic Systems II ENGT218(5190)	<u>6/13/2012</u>	<u>Classroom and Hands-on</u>	<b>2700</b>	An advanced logic systems course involving digital systems for measurement, computation and control. Topics include hardware systems for the purposes of personal computing, data acquisition, programmable control and micro controlling. 2 lecture hrs/2 lab hrs per week. 3 credit hr college course.
Beginning Water Operators Course(5334)	<u>9/1/2012</u>	<u>Conference/Seminar</u>	<b>2160</b>	Night class. Math, regs, pumps and pumping, water quality disinfection, fluoridation, distribution, sample collection. Final exam. Must pass to get credit.
Drinking Water Operator's RTCs (Class C-Part 1)(6769)	<u>4/1/2013</u>	<u>Classroom and Hands-on</u>	<b>450</b>	One day session held at the Moline City Water Plant. Chlorination, Wells, Class C Math, Rules/Regs/Testing

## Bloomington Water Treatment Plant(230)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Colilert Method Review(4234)	<u>2/1/2012</u>	<u>Classroom and Hands-on</u>	<b>60</b>	Colilert Method SOP discussed and demonstrated; participants analyze samples. Coliform, TCR Rule; QC for media and vessels; sample receipt and login, excess chlorine residual in "blue flash"; sample analysis using Colilert media; demo Coliform neg, Total Coliform pos/E.Coli neg, and Total Coliform/E. coli Pos; review incubation time and temp for each media (Colilert, Colilert18); interpretation of results, QC checks; lab reports, IEPA sampling protocols and procedures for unsatisfactory samples.
Measuring Turbidity(4221)	<u>10/26/2012</u>	<u>Classroom and Hands-on</u>	<b>30</b>	Definition of turbidity, measuring turbidity (historical accepted methods), units of turbidity, regulations, common ranges of turbidity in water, turbidimeter operation (overview, calibration, procedure, checks, note and precautions), recording turbidities, hands-on practice.
BacT Sample Collection(2500)	<u>4/1/2014</u>	<u>Classroom and Demonstration</u>	<b>30</b>	JB

## Drinking Water Courses for Renewal Training Credit

Chlorine Testing(8255)	<u>4/1/2014</u>	<u>Classroom and Hands-on</u>	<u>30</u>	Measuring chloirne residuals (low range and high range), use and demonstration of laboratory and portable analyzers, calibration and verification of analyzers, brief history of drinking water disinfection
Chlorine Testing(8253)	<u>4/1/2014</u>	<u>Classroom and Hands-on</u>	<u>30</u>	Measuring chloirne residuals (low range and high range), use and demonstration of laboratory and portable analyzers, calibration and verification of analyzers, brief history of drinking water disinfection
Chlorine Testing(8256)	<u>4/1/2014</u>	<u>Classroom and Hands-on</u>	<u>30</u>	Measuring chloirne residuals (low range and high range), use and demonstration of laboratory and portable analyzers, calibration and verification of analyzers, brief history of drinking water disinfection
Chlorine Testing(8254)	<u>4/1/2014</u>	<u>Classroom and Hands-on</u>	<u>30</u>	Measuring chloirne residuals (low range and high range), use and demonstration of laboratory and portable analyzers, calibration and verification of analyzers, brief history of drinking water disinfection
Lead and Copper Overview(2998)	<u>5/1/2014</u>	<u>Classroom/College</u>	<u>30</u>	JB
Gas Monitoring Sensor Training(8600)	<u>7/16/2014</u>	<u>Classroom and Hands-on</u>	<u>30</u>	Intro to gas monitoring equipment, what gases are detected, overview of alarms, demo of meter set-up use and calibration, care and maint. Meters will be used by personnel to monitor atmospheres in confined spaces.

### Blue Line Learning Group(1013)

#### Course Name and ID Number

#### Effective Date

#### Course Format

#### Total Approved

#### Minutes

#### Description:

Bloodborne Pathogens(5118)

5/9/2012

Operator's Group Meeting

60

Hazardous Materials for First Responders(5119)

5/9/2012

Operator's Group Meeting

60

### Brenntag Mid-South Inc.(191)

#### Course Name and ID Number

#### Effective Date

#### Course Format

#### Total Approved

#### Minutes

#### Description:

Chlorine Safety & Handling(8075)

1/14/2014

Classroom and Hands-on

120

Provides infor and guidelines for the safe handling and use of chlorine in water and wastewater applications as it relates to life safety, community, environment, and standard operating procededures.

### Brenntag Missouri Valley(0)

#### Course Name and ID Number

#### Effective Date

#### Course Format

#### Total Approved

#### Minutes

#### Description:

Chlorine Safety (General Awareness)(9268)

3/2/2015

Classroom and Hands-on

120

Chlorine Safety and Handling

Chlorine Safety (General Awareness/Demo)(9267)

3/2/2015

Classroom and Hands-on

180

Chlorine Safety and Handling

# Drinking Water Courses for Renewal Training Credit

## California State University, Sacramento(71)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Small Water System Operation and Maintenance*(200)	<u>1/29/2001</u>	<u>Workshop</u>	<u>5400</u>	Written for water systems serving populations of less than 10,000; emphasis on wells, pumps, and disinfection; eight chapters; test after each chapter; final exam. Web-based correspondence too. JB
Utility Management(203)	<u>1/29/2001</u>	<u>Workshop</u>	<u>1200</u>	Management practices for both water and wastewater utilities; thirteen chapters, test after each chapter; final exam. RTC changed per email 10-26-06 JB
Water Distribution System Operation & Maintenance*(201)	<u>1/29/2001</u>	<u>Workshop</u>	<u>5400</u>	Storage, water quality , disinfection, and safety; eight chapters; test after each chapter; final exam.
Water Treatment Plant Operation, Volume I(198)	<u>1/29/2001</u>	<u>Workshop</u>	<u>5400</u>	Emphasizes surface water treatment plants, eleven chapters; test after each chapter; final exam. Online correspondence. 9 CEU= 90 contact hrs
Water Treatment Plant Operation, Volume II(199)	<u>1/29/2001</u>	<u>Workshop</u>	<u>5400</u>	Continuation of Volume I, with emphasis on conventional surface water treatment plants; includes administration and management of a water treatment plant; twelve chapters; test after each chapter; final exam. On line correspondence. JB
Small Water System Information Video Series*(370)	<u>9/27/2001</u>	<u>Video</u>	<u>1800</u>	Set includes ten different videos dealing with surface water, ground water, monitoring, storage and distribution, financial administration and emergency response.
Manage for Success(2054)	<u>8/16/2005</u>	<u>Workshop</u>	<u>2700</u>	JB
Small Water Systems: Disinfection(2051)	<u>8/16/2005</u>	<u>Operator's Group Meeting</u>	<u>1080</u>	Upon completion of this course, operators should understand the components of a water supply system from source to customer, understand the purpose for disinfection and the applicable regulations, the factors influencing disinfection effectiveness, the physical and chemical means of disinfection and the critical factors affecting each. Operators should also be able to disinfect wells, pumps, mains, and tanks, to operate various types of chlorination equipment, to determine and set chlorination rates, to measure chlorine residual, to handle chlorine and chlorine equipment safely, and to solve disinfection math problems.

## Drinking Water Courses for Renewal Training Credit

Small Water Systems: Laboratory(2053)	<u>8/16/2005</u>	<u>Operator's Group Meeting</u>	<u>1080</u>	Upon completion of this course, operators should be able to develop and implement a safety program for workers at water treatment and distribution facilities, understand and properly use safety equipment, institute safe practices around wells, treatment works, chemical processes, pumps, streets and trenches, confined spaces, and water storage facilities, practice lockout/tagout procedures, and conduct safety inspections. Upon completion of the second component of this course, operators should be able to develop water rates for a utility, determine revenue requirements, apply cost allocation methods, calculate distribution of costs to customers, design rates, administer rates and charges, and plan for financial stability.
Small Water Systems: Small Water Treatment Plants(2050)	<u>8/16/2005</u>	<u>Operator's Group Meeting</u>	<u>1080</u>	Upon completion of this course, operators should understand treatment requirements and methods for surface waters and groundwaters, be able to operate coagulation, flocculation, sedimentation, filtration, and disinfection treatment processes for a surface water treatment plant, be able to institute a corrosion control program to protect treatment and distribution infrastructure, understand the operation of solids-contact clarification and slow sand filter systems, be able to operate iron and manganese removal and water softening processes for treatment of groundwater, and be able to set up effective maintenance and safety programs for a treatment works.
Small Water Systems: Water Rates/Safety(2052)	<u>8/16/2005</u>	<u>Operator's Group Meeting</u>	<u>1080</u>	JB
Small Water Systems: Wells(2049)	<u>8/16/2005</u>	<u>Operator's Group Meeting</u>	<u>1080</u>	Set up of wellhead protection program, ID parts of a well and pump system, maintain and rehab a well, operate and maintain a well pump and hydropneumatic pressure tank, inspect a well and pumping system, disinfect wells and pumps, keep accurate records, remove sand from water mains, troubleshoot, select a well site, describe types of wells and drilling methods, test and evaluate a well and pump, and abandon and plug a well no longer productive or needed.
Water System O&M Video Training Series(2061)	<u>9/13/2005</u>	<u>Video</u>	<u>1800</u>	Basic operation and maintenance of water supply and distribution systems. JB

## Drinking Water Courses for Renewal Training Credit

Water Treatment Plant Operation Specialist(2062)	<u>9/13/2005</u>	<u>Operator's Group Meeting</u>	<u>#####</u> This is a series of 3 web-based correspondence courses (Water Treatment Plant Operation, Vol I; Water Treatment Plant Operation, Vol II; and, Small Water System Operation and Maintenance), with an online final exam. Equals 27 CEU or 270 contact hours or 6 academic units (academic units are used by colleges - certificate units are transferable to other colleges).
Water Distribution System: Facilities(2704)	<u>8/7/2007</u>	<u>Operator's Group Meeting</u>	<u>1080</u> Upon completion of this course, operators should be able to identify various types of storage facilities, pipes, joints, meters, and backflow prevention devices. Operators will learn how to determine suitable locations for facilities, inspect storage facilities, take a storage facility out of service and return it to service, safely operate, maintain, and select protective coatings for a storage facility, apply interior and exterior protective coatings, collect samples from a storage facility, protect equipment from corrosion, disinfect a storage facility, and maintain records. Operators will understand the purpose of a water distribution system, distribution system storage, and pumping facilities, the importance of hydraulics, how to properly and safely install pipe, and how to determine the need for and safely install backflow protection devices. Also included: surge control in pipelines carrying liquids.
Water Distribution System: O&M Activities(2706)	<u>8/7/2007</u>	<u>Operator's Group Meeting</u>	<u>1080</u> Upon completion of this course, operators should be able to develop and conduct a water distribution system surveillance program, a water quality monitoring program, and a cross-connection control program; locate and repair buried pipes and leaks; make pipe connections; flush and clean pipes; thaw frozen pipes and hydrants; test and read meters; disinfect mains and storage facilities; conduct effective recordkeeping; respond to emergencies; deal with the public; perform landscape maintenance around facilities; and safely operate and maintain a water distribution system.
Water Distribution System: Quality & Disinfection(2705)	<u>8/7/2007</u>	<u>Operator's Group Meeting</u>	<u>1080</u> Upon completion of this course, operators should be able to identify various types of contaminants and contamination sources and identify and correct causes of water quality degradation in water mains and storage facilities. Operators should also be able to disinfect new and existing wells, pumps, mains, and storage facilities; calculate chlorine dosage; operate and maintain hypochlorinators and chlorinators; troubleshoot chlorination systems; and conduct a chlorine safety program.

# Drinking Water Courses for Renewal Training Credit

Water Distribution System: Safety(2703)	<u>8/7/2007</u>	<u>Operator's Group Meeting</u>	<u>1080</u>	Upon completion of this course, operators should have a clear understanding of operator responsibilities, certification requirements, and career management strategies. Operators completing this course should also be able to develop and conduct a safety program and tailgate safety sessions; be able to safely operate and maintain pumps, wells, vehicles, and equipment. Operators will also learn about defensive and safe vehicle driving, routing traffic, working safely in streets, protecting the public, and conducting safety inspections of waterworks facilities.
Water Distribution System: System Administration(2707)	<u>8/7/2007</u>	<u>Operator's Group Meeting</u>	<u>1080</u>	Upon completion of this course, operators should be able to perform the following administrative functions: emergency planning; constructing an organizational chart; writing a job description and interview questions; conducting employee evaluations; ensuring equal and fair treatment to all employees; practicing effective communication within the organization; financial planning; setting up a safety program; and maintaining effective distribution system record management.
Water Distribution System Operation & Maintenance(6847)	<u>8/1/2012</u>	<u>Workshop</u>	<u>5400</u>	Operation and maintenance of water distribution system

## Calumet City Plumbing Co., Inc.(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Backflow Prevention As It Relates To The Water Ope(8291)	<u>4/17/2014</u>	<u>Presentation</u>	<u>61</u>	Definition history of backflow prevention, decription of different types of backflow preventors, high risk facilities, & backflow prevention on the new construction site.

### Total Approved

## Carbondale, City of(295)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Carbondale Public Works Safety Meeting(5487)	<u>7/13/2012</u>	<u>On-line Class</u>	<u>180</u>	Various topics

### Total Approved

## Cascade Waterworks Mfg Co.(158)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
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### Total Approved

# Drinking Water Courses for Renewal Training Credit

Cascade Plant Tour(986)	<u>2/8/2012</u>	<u>Classroom and Hands-on</u>	<u>240</u>	First approved 2/5/03. Plant tour will include proper demonstration of installations and hands-on installations of various DW and WW components and fittings. Discussions of safe use and techniques for avoiding injury during installations of service saddles, tapping sleeves, and repair clamps. Various application types for Casing Spacers is deccribed in detail. Material choices such as stainless steel options, rubber compounds, and fastener strengths.
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## Central States Water Environment Association (CSWEA)(601)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
CSWEA 88AM Monday 8:30am-12pm Leadership Academy(9405)	<u>5/18/2015</u>	<u>Conference/Seminar</u>	<u>180</u>	Information on CSWEA and wastewater industry, networking, speakers on leadership development
CSWEA 88AM Session E - 2:30pm Ethics(9411)	<u>5/19/2015</u>	<u>Conference/Seminar</u>	<u>30</u>	Covers ethics is the workplace in the wastewater industry
CSWEA 88AM Afternoon May 19, 2015 Exhibit Session(9469)	<u>5/19/2015</u>	<u>DVD</u>	<u>60</u>	Multiple Exhibitors giving in booth information on water and wastewater industry designs, products, etc..
CSWEA 88AM May 19, 2015 Morning Exhibit Session(9468)	<u>5/19/2015</u>	<u>DVD</u>	<u>60</u>	Multiple Exhibitors giving in booth information on water and wastewater industry designs, products, etc..
CSWEA 88AM Opening Session(9472)	<u>5/19/2015</u>	<u>Presentation</u>	<u>60</u>	Keynote Address on the interdependencies between water, land, food, environment, energy, health, economics and governance.
CSWEA 88AM Session A - 10:15am Leadership/Soft Ski(9407)	<u>5/19/2015</u>	<u>Conference/Seminar</u>	<u>30</u>	Covering Leadership and management skills to developing managers
CSWEA 88AM Session A - 10:45 Leadership/Soft skill(9408)	<u>5/19/2015</u>	<u>Conference/Seminar</u>	<u>30</u>	Covering leadership and skills topics for developing managers
CSWEA 88AM Session B - Energy, Controls, and Aerat(9414)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Holisitic Aeration Optimization Saves Big Money from 1 MGD to 600 MGD
CSWEA 88AM Session B - Energy, Controls, and Aerat(9416)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Energy Efficiency Projects for Aertion Systems: A case study of the Fox River Water Reclamation District
CSWEA 88AM Session B - Energy, Controls, and Aerat(9415)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Big Ideas, Big Results: Startup and Commissioning of the Eau Claire, Wisconsin, Water Resource Recovery Facility
CSWEA 88AM Session C - P, Nutrients(9423)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Managing Nutrients in the Fox River - How Low Will We Have to Go
CSWEA 88AM Session C - P, Nutrients(9425)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Illinois Nutrient Reduciton Loss Strategy - It's Out. Now Where Are We Headed?
CSWEA 88AM Session C - P, Nutrients(9424)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Benefits of Integrated Evaluation of Phosphorous Compliance Alternatives - Three Examples

### Total Approved

## Drinking Water Courses for Renewal Training Credit

CSWEA 88AM Session D - Ops, Digestion(9431)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	The Potential for Ferric Chloride to Exacerbate Digester Foaming at the Nine Springs WWTP
CSWEA 88AM Session D - Ops, Digestion(9432)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Full Scale Digester Mixing Performance: Pump and Nozzle, Linear Motion or None
CSWEA 88AM Session D - Ops, Digestion(9430)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Waste Not, Want Not: Maximizing High Strength Waste Addition
CSWEA 88AM Session E - 2pm Ethics(9410)	<u>5/19/2015</u>	<u>Conference/Seminar</u>	<u>30</u>	Covers ethics is the workplace in the wastewater industry
CSWEA 88AM Session E - 1:30 Ethics(9409)	<u>5/19/2015</u>	<u>Conference/Seminar</u>	<u>30</u>	Covers ethics is the workplace in the wastewater industry
CSWEA 88AM Session E - 3:30pm Ethics(9412)	<u>5/19/2015</u>	<u>Conference/Seminar</u>	<u>30</u>	Covers ethics is the workplace in the wastewater industry
CSWEA 88AM Session E - 4pm Ethics(9413)	<u>5/19/2015</u>	<u>Conference/Seminar</u>	<u>30</u>	Covers ethics is the workplace in the wastewater industry
CSWEA 88AM Session F - P, Digestion(9420)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Sludge Treatment Optimization and Phosphorus Removal by MAP Crystalization for Biological P-removal Plants
CSWEA 88AM Session F - P, Digestion(9418)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Phosphorus Recovery at the Stickney WRP
CSWEA 88AM Session F - P, Digestion(9419)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Recycled Phosphorus; Contaminant of Emerging Concern
CSWEA 88AM Session F - P, Digestion(9421)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Phosphate fertilizer recovery from anaerobic acid digesters in sewage treatment plants: from batch process to continuous pilot
CSWEA 88AM Session F - P, Digestion(9417)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Initial Startup Experience with Struvite Harvesting at the Madison Metropolitan Sewerage District
CSWEA 88AM Session G - Nutrients(9429)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Why Your Wastewater's "Personality" Matters
CSWEA 88AM Session G - Nutrients(9427)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Intensified treatment wetlands: Emerging green technologies for nitrogen removal
CSWEA 88AM Session G - Nutrients(9428)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Nutrient Recovery of Wastewater Nitrogen by Electrodialysis
CSWEA 88AM Session G - Nutrients(9426)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Evaluating the Options for Phosphorus Compliance Part II: The City of Fond du Lac Water Pollution Control Plant's Experience
CSWEA 88AM Session H - Ops, Management(9433)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Preparing for Climate Change - An Approach for Utilities
CSWEA 88AM Session H - Ops, Management(9437)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Lake Wingra Watershed Phosphorus Load Reduction Pilot Project
CSWEA 88AM Session H - Ops, Management(9436)	<u>5/19/2015</u>	<u>Classroom and Demonstration</u>	<u>30</u>	Permit Compliance Using a Site-Specific Approach
CSWEA 88AM Session H - Ops, Management(9434)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Asset Management Best Practices in Use - National Trends to Focus Your Resources
CSWEA 88AM Session H - Ops, Management(9435)	<u>5/19/2015</u>	<u>Presentation</u>	<u>30</u>	Sustainable Wastewater Treatment Plant Improvements using Envision
CSWEA 88AM Session K - Digestion, Energy(9454)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Codigestion Evaluation and Implementation - Case Studies

## Drinking Water Courses for Renewal Training Credit

CSWEA 88AM - Session N - Phosphorus(9449)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Nutrient Recovery as a phosphorus compliance tool - The New Water Experience
CSWEA 88AM Morning May 20, 2015 Exhibit Session(9470)	<u>5/20/2015</u>	<u>DVD</u>	<u>60</u>	Multiple Exhibitors giving in booth information on water and wastewater industry designs, products, etc..
CSWEA 88AM Session I - Energy(9438)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	The Milwaukee Metropolitan Sewerage District's Plan to achieve 100 Percent Renewable Energy
CSWEA 88AM Session I - Energy(9439)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	An Innovative Energy Saving Approach to Treat Primary Influent Using Cloth Media Filtration
CSWEA 88AM Session J - Collection, Technology(9445)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Quantifying Inflow and Infiltration via Dyed Water Flooding
CSWEA 88AM Session J - Collection, Technology(9446)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Case Study: Northside Interceptor Route Study
CSWEA 88AM Session J - Collection, Technology(9444)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Modernizing your Sewer Flow Monitoring Technology
CSWEA 88AM Session J - Collection, Technology(9447)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Maximizing your Budget Impact - Optimized Phasing of Projects to Accelerate the Environmental Benefits of Reduced CSO Volumes
CSWEA 88AM Session K - Digestion, Energy(9453)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Fats, Oils and Grease: Nuisance to Opportunity for Sioux Falls
CSWEA 88AM Session K - Digestion, Energy(9452)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Method for evaluating co-substrates in Anaerobic digestion
CSWEA 88AM Session K - Digestion, Energy(9455)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Converting Biogas into Energy and Vehicle Fuel
CSWEA 88AM Session L - Ops/Phosphorus(9462)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Wisconsin Case Studies Using Cerium Chloride to Reduce Phosphorus to Ultra-Low Limits
CSWEA 88AM Session L - Ops/Phosphorus(9461)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Phosphorus Removal: Bench Scale and Full Scale Pilots that Result in Improved Phosphorus Removal
CSWEA 88AM Session L - Ops/Phosphorus(9460)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Wastewater Microbiology Problems & Solutions
CSWEA 88AM Session M - Digestion(9440)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Improved Biosolids Stabilization Utilizing Temperature Phased Anaerobic Digestion
CSWEA 88AM Session M - Digestion(9442)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Benefits of Collaborative Research: WEP and Biosolids Pyrolysis
CSWEA 88AM Session M - Digestion(9441)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Case Study: pH Control with CO2 for Struvite Control in Anaerobic Digestion
CSWEA 88AM Session M Digestion(9443)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Silo Digester Design for NEW Water
CSWEA 88AM Session N - Phosphorus(9451)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	A Greenhouse Study Comparing Brushite and Struvite, both Wastewater Recoverable Fertilizers, to standard Phosphorus fertilizers, MAP, DAP and TSP

## Drinking Water Courses for Renewal Training Credit

CSWEA 88AM Session N - Phosphorus(9450)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	The Phosphorus Journey: One Plant's Story
CSWEA 88AM Session N - Phosphorus(9448)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Activated Sludge Densities in Enhanced Biological Phosphorous Removal System
CSWEA 88AM Session O - Wet Weather(9459)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Low Cost Improvements to Maximize Wet Weather Capacity - A Superior Approach
CSWEA 88AM Session O - Wet Weather(9456)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	A Consent Decree, a partnership, and a flood... on a path for success by 2016
CSWEA 88AM Session O - Wet Weather(9458)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Evaluation of Wet Weather Auxiliary Treatment Alternatives to Increase Plant Capacity
CSWEA 88AM Session O - Wet Weather(9457)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Phosphorus Compliance Case Studies in Illinois
CSWEA 88AM Session P - Ops Energy and Management(9466)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Increased Capacity, Sustainability, Efficiency, Reliability and Automated Control from Value Engineering of a Standard Pump Replacement Job
CSWEA 88AM Session P - Ops Energy and Management(9467)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Achieving Energy Savings and More with VFD's
CSWEA 88AM Session P - Ops Energy and Management(9465)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Jones Island Power Load Profiling
CSWEA 88AM Session P - Ops Energy and Management(9464)	<u>5/20/2015</u>	<u>Presentation</u>	<u>30</u>	Water/Wastewater Workflow Technology for Improved Plant Operations

### CEU Plan(187)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Analytical Chemistry Techniques(4190)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	This three hour short course is a survey of the myriad of techniques common to water treatment. Correct and accurate determination of the contaminants in water is the first and last step for all water treatment facilities. Before we can even design a treatment, we must know what and how much contaminant is in the water. When we are finished with the treatment, we must, again, test for the contaminant so that we will know if our treatment worked and to be assured that we are putting out good quality water (and to assure the public and the government of the same). When a treatment device is not working properly, it is imperative that we determine what is wrong with it so that we can restore the treatment process as quickly as possible. We will, in this course, also discuss some of the more common analytical chemistry techniques used towards this end.

#### Total Approved

## Drinking Water Courses for Renewal Training Credit

Arsenic(1917)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	<p>This one hour short course details one of the rules promulgated by the USEPA as part of the Drinking Water Quality Standards. We will discuss only the requirements put forth by the USEPA not the individual states. The states, as a condition of primacy are required to make regulations "equal to or stricter than" those promulgated by the USEPA. This short course addresses the regulations concerning Arsenic in drinking water. We will discuss the requirements, the necessary testing and monitoring, and methods of complying with the rule. It is not necessary that you be a chemist or an engineer but an understanding of basic principles of water treatment and some basic chemistry will make the "treatment" section of the course seem easier. I will endeavor to explain everything as we progress. This course is not a rigorous study and it will not be necessary to memorize or derive equations. This course is conceived to impart a good background, an understanding on which to build.</p>
Atoms & Molecules(4803)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	<p>This short course is the first part of larger course entitled Basic Chemistry. In this short course, we will investigate atoms and molecules, the basic building blocks of all physical matter in this world (and out of it too) that occupy space. We will discuss some of the basic concepts of chemistry but the course is not designed for chemists nor is it designed to turn anyone into one. This course is not designed to be a rigorous study and it will not be necessary to memorize or derive equations. It is suggested that you have a calculator handy to do basic multiplication and division. If you do not have one, there is one on your computer (all windows operating systems have one under Accessories heading in the Programs section in the Start menu). In the real world, if you need an equation or in-depth study of a principle, there are many excellent reference books, the internet, and a host of specialists that can be consulted. This course is conceived to impart a good background, an understanding on which to build.</p>
Basic Chemistry-Complete Series(3606)	<u>2/21/2012</u>	<u>Other</u>	<b>600</b>	<p>In this ten hour course, we will discuss many of the basic concepts of chemistry but the course is not designed for chemists nor is it designed to turn anyone into one. The course has been broken into eight short courses that can be taken together or in one or two hour increments.</p>
Basic Microbiology(1437)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Basic Microbiology

# Drinking Water Courses for Renewal Training Credit

Basic Microbiology - Part 2(2346)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	<p>This course is a continuation of the Basic Microbiology course, Part 1. It will include all the basic techniques that were discussed in Part 1. It will mainly concentrate on the methods currently accepted by EPA to detect Total and Fecal Coliforms in Drinking Water. Some of these methods are also acceptable for testing Environmental Waters (non potable). Besides the step-by-step methodology I will include a discussion of each of the procedures, their pros and cons for many laboratories. Most of the procedures for Total and Fecal Coliforms include the primary testing method, and confirmatory test when required. Already I have used terms that need some explanation. Drinking and Finished drinking water are treated basically the same according to EPA. You must test the full 100ml sample volume and you only need to report coliform Presence/Absence, but results can be enumerated and both total and fecal coliforms must be confirmed. Surface and Raw Source drinking water are basically the same for the purpose of this discussion. You might test the full 100 ml sample volume, but it may not be necessary depending on what methodology you are using. Environmental, Ambient and Stream water are another group EPA treats as the same. They don't require the full 100ml sample to be tested and confirmation is not always required for every analysis, but you need to enumerate your results. Consult the EPA website if you need further information on the types of waters your lab analyzes. When I use the term must it means that this criteria is required by the National Primary Drinking Water Regulations. The term 'should' is used for practices while not specifically required by regulations, are considered good laboratory practice for quality assurance. By the end of this training course, you will have the ability to:</p> <ul style="list-style-type: none"> <li>•evaluate and implement a laboratory procedures</li> <li>•create a procedure for the Chain of custody for laboratory results.</li> <li>•describe the different methods for testing for total and fecal coliforms</li> <li>•compose and maintain a Laboratory Quality Manual</li> <li>•explain the QC plan should be kept to maximum of five pages but kept responsive to changes</li> <li>•define the testing methods utilized at your plant</li> </ul>
Bio-Augmentation(805)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Bio-Augmentation
Chemical Bonding(4805)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Chemical Bonding
Chemical Nomenclature(4806)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Chemical Nomenclature
Chemical Protective Clothing & Respiratory Protect(809)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Chemical Protective Clothing & Respiratory Protect

## Drinking Water Courses for Renewal Training Credit

Chlorinators(800)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Chlorinators
Chlorine Dioxide(802)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Chlorine Dioxide
Chlorine Procedures(801)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Chlorine Procedures
Components of Chlorine(799)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Components of Chlorine
Corrosion Control(2347)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	<p>In April 1992, nine explosions rocked the City of Guadalajara, Mexico. The explosions opened a two kilometer trench, killed 215 people, injured hundreds, and damaged sixteen hundred buildings. Damages were calculated at 75 million US dollars. The event was the result of corrosion.A corroded water line leaked and caused the corrosion of a buried gasoline line. As a result, the gasoline line corroded and leaked its contents into a porous sewer line. The gasoline flumes mixed with air from the surface and street traffic ignited the explosive combination. Corrosion is often viewed as rust, to be painted over, and forgotten. As you will see in this course, corrosion is a serious matter that should be near the top of your "To Do list". Corrosion is often hidden or masked; not visible without investigation. Corrosion can be dangerous to the system and to your health. Corrosion is always costly.As we go on, we will learn:•What corrosion means to a water system•What corrosion means to a wastewater system•What the risks are•How corrosion can be prevented•How corrosion damage can be repaired•How to be safeBy the end of this training course, you will have the ability to:</p> <ul style="list-style-type: none"> <li>•explain the theory of corrosion</li> <li>•identify corrosion parameters with detection and prevention concepts</li> <li>•demonstrate the use of phosphates for corrosion control</li> <li>•implement a plan to control lead corrosion</li> <li>•evaluate corrosion damage at a wastewater system.</li> <li>•describe the risks</li> </ul>
CPM: Building a PM Program(4809)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	CPM: Building a PM Program
CPM: Creating SOP's(4813)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	CPM: Creating SOP's
CPM: Functions, Failures - Modes & Effects(4808)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	CPM: Functions, Failures - Modes & Effects
CPM: Tracking Failures(4810)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	CPM: Tracking Failures
Dechlorination for Gas Application and	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Dechlorination for Gas Application and Usage
Disinfection By-Products: Summary of Rule(920)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Summary of the Rule.
Distribution Mathematics(1435)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Distribution Mathematics

## Drinking Water Courses for Renewal Training Credit

Emergency Response(3388)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Emergency Response
Emerging Waterborne Pathogens(812)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Emerging Waterborne Pathogens
Enhanced Coagulation(923)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Theory behind enhanced coagulation and how it may be pilot tested, implemented and maintained and monitored.
Geology(806)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Geology
Hazardous Materials Effects on Human Health(797)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>240</u>	Hazardous Materials Effects on Human Health
History of Ultraviolet Disinfection(1441)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	<p>The development of Ultraviolet Disinfection equipment has been primarily dependent on people having new ideas on how to bring the latest developments in the field of lamps, ballasts, and sensors together after it was shown that UV light would inactivate microorganisms. This course will explain the history of Ultraviolet Disinfection through the time elements of patented discoveries. Since the discovery in the 19th century that ultraviolet light will inactivate microorganisms it has been exploited for commercial purposes. This review will look at UV systems and show through patents and their accompanying scientific papers how UV systems in the early 1900s have evolved into today's modern equipment. The initial UV system will be contrasted with the equipment that exists today to cope with the same problems.</p> <p style="text-align: center;">In addition, this course will trace the development of the UV disinfection of water and wastewater by using primarily United States patents and scientific papers by the inventors. By the end of this training course, you will have the ability to:</p> <ul style="list-style-type: none"> <li>•explain the history of UV disinfection</li> <li>•compare the methods of UV disinfection</li> <li>•list the cleaning methods of a UV system</li> <li>•explain UV light as a disinfectant and that it has no residual</li> <li>•compare UV treatment in wastewater treatment has become cost effective</li> <li>•evaluate the cleaning techniques such as: air sourcing, chemical, and acid methods</li> </ul>

# Drinking Water Courses for Renewal Training Credit

Introduction to Backflow Prevention(1924)

2/21/2012

Operator's Group Meeting

60

An Introduction to Backflow Prevention is a primer for the water supplier who needs to have an understanding of the basic principles, hydraulic influences, and backflow prevention assemblies that are used to protect the public water system. The course begins with a review of the rationale, growth and need to implement a backflow prevention program. Section 1 will explain the value of water throughout history and the need for the water supplier to protect the quality and integrity of the public water system from the contamination threat posed by the water customer. Section 2 explains the hydraulic conditions that can facilitate or even cause a backflow event and contaminate the public water system, along with the hydraulic principles that cause backflow to happen in the public water system. The Operator will learn the impact that these principles can have on the public system and the negative ramifications that can result. Section 3 presents the proper application of backflow prevention assemblies, the operation, advantages and limitations of various backflow prevention assemblies that would be used as containment principle protection for the public water system. And lastly, we will demonstrate the protections that a utility can implement through the appropriate selection and application of the available backflow prevention assemblies to protect the public water system. By the end of this training course, you will have the ability to:

- identify various check and actuated control valves
- describe the importance of a backflow prevention program
- compare a backflow prevention program
- create a backflow prevention testing program
- apply test lines and gauges for backflow prevention test
- formulate a compliance and monitoring program

# Drinking Water Courses for Renewal Training Credit

Introduction to Basic Microbiology & Parasites(2345)

2/21/2012

Operator's Group Meeting

360

Introduction to Basic Microbiology and Parasites is a combination of the Basic Microbiology, Parts 1 and 2, along with the study of Parasites, Part 1 and 2. This complete course is a six hours course including the following course summaries: Basic Microbiology, Part 1: This class will introduce you with all the basics of microbiology. It will help with your understanding of techniques, materials, media and reagents that are commonly used in all Microbiology laboratories. A brief history of microbiology and the development of media and procedures for testing drinking water will begin your understanding of microbiology. Definitions of basic terms, a discussion of glassware and equipment and a beginning understanding of staining bacteria will set the stage for beginning lab work to follow. I hope this class will introduce you with all the basics of microbiology. It will help with your understanding of techniques, materials, media and reagents that are commonly used in Microbiology laboratory. Basic Microbiology, Part 2:

This class is a continuation of the basic Microbiology course. It will include all the basic techniques that were discussed in Part One. It will mainly concentrate on the methods currently accepted by EPA to detect Total and Fecal Coliforms in Drinking Water. Some of these methods are also acceptable for testing Environmental Waters (non potable). Besides the step-by-step methodology I will include a discussion of each of the procedures, their pros and cons for many laboratories. Most of the procedures for Total and Fecal Coliforms include the primary testing method, and confirmatory test when required. Parasites, Part 1: This class is to introduce laboratory personnel to human intestinal parasites. This class will include the study of the helminths, nematodes, trematodes and cestodes. There will be tips to the identification of their ova, their life cycle and their effects on man. This class will introduce you into how to process specimens, use a microscope, and calibration of a micrometer. This class will cover all the basics for the identification of the 3 group's helminths. Parasites, Part 2: This class is intended for the environmental technician but has been adapted from a clinical course. You may find some of the information more detailed than you thought you needed. But lots of background information is always a good thing. This course will introduce you to the most common parasitic group, the Protozoan. This group includes the amoeba, flagellates, ciliates and coccidia. This course will focus on the cyst or environmental form of these organisms.

## Drinking Water Courses for Renewal Training Credit

The trophozoite form is the motile stage that lives in the body. And they must be stained with a specific stain to assure identification. Because of that staining procedure, trophozoite identification is another course all by itself. The presented information is applicable for environmental samples and human specimens alike. I do recom

Introduction to Chlorine(798)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Introduction to Chlorine
Introduction to the Hydrologic Cycle & Aquifers(2349)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This one hour short course is the first in a series of courses based on the popular "Water's Journey" series of films. Earth has been described as a water planet, and, without a doubt, water is our most important resource. All living things depend on the natural cycle of water. It is the essence that gives us life. One of the greatest mysteries of our planet is the magical cycle of water - Rain pours down from the skies nourishing parched vegetation, evaporation drives water skyward, springs convey great volumes of water to earth's magnificent rivers, and mankind is intertwined in this complex and endless renewal of water. Perhaps the most amazing wonder about this great cycle is water's secret journey underground, where it can travel for hundreds of years before revealing itself on the surface again. Vast reserves of clean water are held within the rock in the earth's aquifers. To protect these precious resources, we must come to understand the body of our planet. Film producer and environmentalist Wes Skiles led a team in exploring and charting part of the Floridian aquifer from the inside. The expedition was produced for the National Public Broadcasting System by Karst Productions. We have obtained the rights to create this one hour course for continuing education credit based on this film. We are excited about the outcome and hope that you enjoy the course.
Introduction to UV Technologies(817)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Introduction to UV Technologies

# Drinking Water Courses for Renewal Training Credit

Introduction to Watersheds and Riversheds(2350)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	<p>This one hour course is the second in the series of courses based on the popular "Water's Journey" series of films. This installment follows filmmaker and environmentalist Wes Skiles and his team as they explore the St. Johns River from its mouth at the Atlantic Ocean to its headwaters deep in the marshes in the interior of Florida.</p> <p>This river, the largest in Florida, has undergone a series of major transformations over the years from its discovery by Europeans in the mid 1500s to the ill-fated attempt to recover the flood plain by draining the river to its current rebirth. We will explore this incredible river from its mouth at Jacksonville through its three distinct riversheds to its headwaters and will discover how conservation and restoration methodologies are bringing the mighty St. Johns back from the brink of destruction. By the end of this training course, you will have the ability to:</p> <ul style="list-style-type: none"> <li>•describe the hydrologic cycle</li> <li>•creation and implementation of a stormwater management plan</li> <li>•evaluate a surface water supply program and system</li> <li>•indicate the geologic history of aquifer</li> </ul> <p>•discuss the age of aquifer water</p>
Lab Practices - Terminology & Apparatus(3387)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	<p>It is not unusual for an individual to take a trainee job in a municipal laboratory setting with a minimal scientific background. Operators are sometimes thrust into the role of laboratory analyst without having had much, if any, formal laboratory training. Even if one has completed high school chemistry and/or biology, the terminology specific to the water and wastewater field may be new. The purpose of this course is to introduce individuals desiring to work, or already working, in a water or wastewater lab to basic laboratory terminology, apparatus, and equipment.</p>
Lab Practices: Basic Drinking Water Quality Test(4820)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>120</b>	<p>This course is designed to introduce the following basic water quality procedures to operators and new laboratory analysts: pH, acidity, alkalinity, chlorine residual, color, conductivity, hardness, threshold odor number, turbidity, and the jar test. For each parameter, general information is discussed; proper sample collection, preservation techniques and holding times are presented; step-by-step analytical procedures based on approved regulatory methods (where applicable) are given; the equipment and apparatus necessary for each procedure are listed; and troubleshooting issues are presented.</p>

## Drinking Water Courses for Renewal Training Credit

Laboratory Safety - Labware & Waste Disposal(3385)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Laboratory Safety - Labware & Waste Disposal
Laboratory Safety: Electrical, Fire and Radiation(4819)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	<p>It's easy to take electricity for granted, and to ignore its potential dangers. The combination of electrical and electronic equipment, chemicals, and liquids can be hazardous if not deadly. Note that this course is designed for environmental laboratory technicians and water/wastewater operators, and does not go into the level of detail nor explore regulatory requirements for electricians and electrical workers. Electrical construction and repair must be done by someone properly trained and certified. If there is an electrical problem in the laboratory, contact a supervisor or the maintenance department and request immediate troubleshooting and repair of the problem. Fire is a serious, but common, hazard in the laboratory. Fires can be caused by faulty electrical equipment, misuse of chemicals, improper chemical storage or disposal, and open flames from burners and heaters. Once a fire or explosion occurs in a laboratory it can get out of control quickly, as other chemicals are exposed to heat, flames, or shrapnel from explosions. Some of the more sophisticated water laboratories may use radiation producing equipment such as analytical x-ray equipment, and may use or test for radioactive materials. In this course, we will discuss these types of equipment and the laboratory safety requirements for them. By the end of this training course, you will have the ability to:</p> <ul style="list-style-type: none"> <li>•explain how to safely work in a lab around electrical equipment, fire safety, and radiation hazards</li> <li>•discuss the duration of exposure or cumulative exposure is critical for health</li> <li>•identify the different classes of fire extinguishers and their locations.</li> <li>•demonstrate that chemicals should be store according to compatibility</li> <li>•indicate electrical and fire hazards within the lab</li> </ul>
Laboratory Safety: Guidelines-Chemical & Bio(4814)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Laboratory Safety: Guidelines-Chemical & Biosafety
Laboratory Safety: Overview, Rules & Regulations(4801)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Laboratory Safety: Overview, Rules & Regulations
Laboratory Safety:The Nucleus of a Lab Safety Prog(4802)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Laboratory Safety:The Nucleus of a Lab Safety Program

# Drinking Water Courses for Renewal Training Credit

Lead and Copper Rule(1916)

2/21/2012

Operator's Group Meeting

60

This one hour short course details one of the rules promulgated by the USEPA as part of the Drinking Water Quality Standards. We will discuss only the requirements put forth by the USEPA not the individual states. The states, as a condition of primacy are required to make regulations "equal to or stricter than" those promulgated by the USEPA and most have copied wholesale their rules from the Code of Federal Regulations regarding drinking water regulations. This short course addresses the Lead and Copper Rule (LCR) as put forth in Subpart I, "Control of Lead and Copper" (40 CFR 141.80 and other documents). We will discuss the requirements, the necessary testing and monitoring, and methods of complying with the rule. It is not necessary that you be a chemist or an engineer but an understanding of basic principles of water treatment and some basic chemistry will make the "treatment" section of the course seem easier. I will endeavor to explain everything as we progress. This course is not a rigorous study and it will not be necessary to memorize or derive equations. This course is conceived to impart a good background, an understanding on which to build. Each paragraph reviews a concept necessary to an understanding of water chemistry. Throughout the text, terms that are particularly important are typed in bold. Hovering your cursor over a term in bold will usually bring up a definition for that term. In each section, grayed boxes give hints, rules of thumb, and other notes that help clarify the concepts presented. An example of some of the engineering is presented after the discussion with complete solutions explaining the problem solving process. It is recommended that the problem set be reviewed until the solution is understood. Because each ensuing concept builds on the last, the section should be reviewed until the examples can be answered correctly with confidence. By the end of this training course, you will have the ability to:

- describe the regulations surrounding the Lead and Copper Rule and the Compliance of the Rule
- identify lead and copper in plumbing materials used in drinking water supplies

- describe health hazards associated with lead or copper poisoning

- create a good sampling technique for lead and copper
- develop a lead and copper monitoring program including periods, parameters, sampling locations, and sampling frequency

- evaluate and implementation of a lead and copper removal

## Drinking Water Courses for Renewal Training Credit

				program
Leadership(4191)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Leadership
Manager's Guide to Cost Control(4194)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>120</b>	Manager's Guide to Cost Control provides you with some practical strategies to operate your public utility, water or wastewater plant more economically. It is a two-hour course wherein Mr. Bode illustrates his actual experiences with successfully reducing his wastewater department operating budget while maintaining an excellent quality of service to his residents. He then relates these to useful procedures that you can apply to your own situation.
Nuclear Decay(4804)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Nuclear Decay
On-site Sodium Hypochlorite Generator Conversion(796)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>240</b>	On-site Sodium Hypochlorite Generator Conversion
Oxidation in Water/Wastewater Treatment(804)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Oxidation in Water/Wastewater Treatment
Parasites - Part I - Helminths(1438)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	<p>This class is to introduce laboratory personnel to human intestinal parasites. This class will include the study of the helminths, nematodes, trematodes and cestodes. There will be tips to the identification of their ova, their life cycle and their effects on man. This class will introduce you into how to process specimens, use a microscope, and calibration of a micrometer. This class will cover all the basics for the identification of the 3 group helminths. By the end of this training course, you will have the ability to:</p> <ul style="list-style-type: none"> <li>•discuss the differences between whip worms and pinworms and the causes of increased detections of parasites in humans</li> <li>•explain the differences from stage to stage of tapeworms</li> <li>•identify eggs in the Parasitic life cycles</li> <li>•explain how common the helminths are</li> </ul> <p>•indicate that hookworms are found in the soil</p> <p>•review of nematodes as the most common parasitic worms</p>

# Drinking Water Courses for Renewal Training Credit

Parasites, Part 2(1922)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	<p>This class is intended for the environmental technician but has been adapted from a clinical course. You may find some of the information more detailed than you thought you needed. But lots of background information is always a good thing. This course will introduce you to the most common parasitic group, the Protozoan. This group includes the amoeba, flagellates, ciliates and coccidia. This course will focus on the cyst or environmental form of these organisms. The trophozoite form is the motile stage that lives in the body. And they must be stained with a specific stain to assure identification. Because of that staining procedure, trophozoite identification is another course all by itself. The presented information is applicable for environmental samples and human specimens alike. I do recommend that you have a reference text in your laboratory. There are several good ones available. My personal favorite is Atlas of Human Parasitology, by Lawrence Ash and Thomas Orihel. This one has lots of color photos and extensive section of artifacts. Another good one is Procedure Manual for the Diagnosis of Intestinal Parasites, by Donald L. Price. I like this one because the procedures are explained well and there are some excellent charts for the protozoan. Part 2 is a continuation of Part 1 in that it covers the next set of parasitic organisms. The first sections of part 2 are a review. Read over again, making sure that not only do you remember the information but also that you are using it. As in part 1 I have included lifecycles. They will not be shown for every organism since many are identical. They are intended to give you an overview of how these organisms move through the environment and into the human body. By the end of this training course, you will have the ability to:</p> <ul style="list-style-type: none"> <li>•know more about protozoan, flagellates and ciliates</li> <li>•learn if and how parasites infect humans and the life cycles</li> <li>•explain the different categories of parasites</li> <li>•indicate some of the bugs in our plant</li> <li>•measure parasitic eggs</li> <li>•learn how to properly identify a Microsporid Oocyst</li> </ul>
Pipes, Valves, and Fittings(816)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Pipes, Valves, and Fittings
Procedures for UV Pilot Testing(1439)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Procedures for UV Pilot Testing
Public Admin I - Intro to Public Administration(4193)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Public Admin I - Intro to Public Administration
Respiratory Protection(810)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Respiratory Protection

## Drinking Water Courses for Renewal Training Credit

Reverse Osmosis(4465)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Reverse Osmosis
Solubility(4807)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Solubility
States of Matter(4466)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	States of Matter
Stormwater: New Orleans History of Stormwater(4195)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Stormwater: New Orleans History of Stormwater
Technical Equipment(807)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Technical Equipment
Terrorism Vulnerability Assessment in CWS(921)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Public Law 107-188; vulnerability assessments for all CWS.

# Drinking Water Courses for Renewal Training Credit

Toxic and Hazardous Material Handling  
Procedures(1436)

2/21/2012

Operator's Group Meeting

240

This course, while designed to address issues related to workers health and safety, is a multi-objective course. One of the most important objectives of this course is to make students aware of safety aspects he or she needs to know when handling hazardous and toxic chemicals manufactured, used, stored or transported on the highways. The potential of getting exposed to hazardous and toxic chemicals at workplace is great. A large body of publications and scientific literature seem to agree that all chemicals are hazardous. Some publications, on the other hand, seem to indicate that some chemicals are very serious while others are not. Regardless, students taking this course are advised to understand and respect all chemicals and take protective measures when dealing with toxic and hazardous chemicals at their workplace. Relationships between exposure to toxic chemicals and human health have been demonstrated to exist for decades if not centuries. Our health and the health of the environment in which we live seem to go hand in hand. That is to say, impacts of environmental contamination on human health can be devastating to children and the elderly. More so on children. Dr. Schettler states, "Developing tissues and homeostatic mechanisms are often uniquely vulnerable to toxic insults and children exposures frequently exceed those of adults." For example, the impact of toxic lead on adults is less pronounced than on children. Lead can cause growth retardation and can cause brain damage in children exposed to the toxic metal during their early developmental phases. Conversely, the toxic effects of mercury on human health can be demonstrated in adult beings because mercury tends to bio-accumulate in the tissues, builds up over the years until such time it reaches a dangerous level or certain threshold in the human system. The improper handling and management of toxic and hazardous material, the nucleus of this course, has been demonstrated to cause serious environmental and human health injuries. For example, toxic chemical releases into the air causes respiratory and skin illnesses, and may cause cancer in cases of frequent exposures. It could also result in physical damages as a result of fires and explosions. Finally, as the saying goes, an ounce of prevention is

# Drinking Water Courses for Renewal Training Credit

TPMAP: Checklists Mean More than a Checkmark(4817)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	<p>This course will focus maintenance as it pertains to failures and accident prevention. After completing this course, the student will be able to understand how to:</p> <ul style="list-style-type: none"> <li>•Total productive maintenance (TPM)</li> <li>•Cost savings</li> <li>•History</li> <li>•Background</li> <li>•Overall Equipment Effectiveness (OEE)</li> <li>•Cost impact</li> <li>•Ownership</li> <li>•Lubrication</li> <li>•Equipment defects</li> <li>•Operator equipment management pillar</li> <li>•Four maintenance groups</li> <li>•Achievements</li> <li>•Vicious cycle of maintenance</li> </ul> <p>I bet an operator can do this! Upon completion of this course, the student should have better understanding of the following:</p> <ul style="list-style-type: none"> <li>•implementing inspections to foresee problems before they happen.</li> <li>•explain OEE stands for Overall Equipment Effectiveness</li> <li>•evaluate total productive maintenance</li> <li>•compose a Checklists program</li> <li>•create maintenance staff to use equipment check lists</li> </ul> <p>your repair cost and down time should be reduced</p> <ul style="list-style-type: none"> <li>•understanding the performance of our equipment and the maintenance.</li> </ul>
TPMAP: Equipment Failures and Hazards(4816)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	<p>This course will focus maintenance as it pertains to failures and accident prevention. After completing this course, the student will be able to understand how to:</p> <ul style="list-style-type: none"> <li>•Bearings and seal failures</li> <li>◦Understanding the term fatigue</li> <li>◦Premature bearing failure</li> <li>◦Seals</li> <li>◦Premature opening of lapped faces</li> <li>◦Seal leaks</li> <li>◦To alternate or not to alternate pumps</li> <li>•Problems and solutions to avoid failures</li> <li>•Cavitation causes and solutions</li> <li>•Excessive heat problems and solutions</li> <li>•Noises what they mean</li> <li>•Vibration</li> </ul> <p>By the end of this training course, you will have the ability to:</p> <ul style="list-style-type: none"> <li>•explain over greased bearings will fail sooner</li> <li>•discuss cavation and the five major factors to evaluate</li> <li>•analyze why Do not alternate pumps for an equal time, to prevent same time failure</li> <li>•review the loss of head is greater in a globe valve over a gate valve</li> <li>•describe some problems commonly found that shorten bearing and seal life</li> <li>•choose a preventive maintenance program to include alignment and balancing of rotating equipment</li> </ul>

# Drinking Water Courses for Renewal Training Credit

TPMAP: Ownership of Equipment(4815)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This course will focus on general supervision and the areas associated with supervision. After completing this course, the student will be able to understand the how to: <ul style="list-style-type: none"> <li>• Predicting centrifugal pump failures</li> <li>• Detecting temperature differential</li> <li>• Causes of high temperature</li> <li>• Oil sampling</li> <li>• Monitoring and analyzing data</li> <li>• Good maintenance practices</li> <li>• Operations part in prevention</li> <li>• Ensuring longer rotating equipment life</li> <li>• Friction between maintenance and operations</li> </ul> By the end of this training course, you will have the ability to: <ul style="list-style-type: none"> <li>• discuss proper maintenance techniques to minimize problems</li> <li>• explain why vibration will cause premature seal and bearing wear</li> <li>• appraise water leaking into bearing and causing failures</li> <li>• formulate a plan no to run pumps dry causing vibration and cause damage</li> <li>• create a procedure for amperage draw in your preventive maintenance program</li> </ul>
TPMAP: Solutions Can Be Healthy(4818)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This course will focus maintenance as it pertains to failures and accident prevention. After completing this course, the student will be able to understand how to: <ul style="list-style-type: none"> <li>• Condition monitoring</li> <li>• Contamination control</li> <li>• Vibration monitoring</li> <li>• Ferrographic analysis</li> <li>• Spectrographic elemental analysis</li> <li>• Precision maintenance</li> <li>• Operational reliability</li> <li>• Listen</li> </ul> By the end of this training course, you will have the ability to: <ul style="list-style-type: none"> <li>• create a plant statement: "positive operation equals better outcome"</li> <li>• explain predictive maintenance has additional savings over preventative maintenance</li> <li>• implement a training relationship to operation program</li> <li>• evaluate a proactive contamination control maintenance program</li> <li>• discuss how better filtering reduces the cost and increases the life of the equipment</li> <li>• propose participants will feel a vested interest in the program</li> </ul>
Tracing the Path of Water(3384)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	JB
Trenchless Technologies: An Introduction(4812)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Trenchless Technologies: An Introduction
Trenchless Technologies:Pipeline & Structure Rehab(4811)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Trenchless Technologies:Pipeline & Structure Rehab

# Drinking Water Courses for Renewal Training Credit

UV Disinfection - Sizing UV System Using Bioassay(1440)

2/21/2012

Operator's Group Meeting

60

A UV system can be designed using the UVDIS program that was developed by HydroQual in Mahwah, New Jersey. This program was developed as a result of extensive field-testing and is presented in the US EPA Design Manual (United States Environmental Protection Agency, 1986). All the major UV companies use this program. The program takes into account the physical characteristics of the UV system, the effluent quality and the disinfection requirements.

This program was developed with lamps that were perpendicular to the flow of wastewater but has been subsequently tested by HydroQual for lamps that are parallel to the flow and it is still valid. One of the major parameters in this program is the UV output of the lamp. The UVDIS program was developed with data from UV systems that used a low-pressure mercury lamp (G64T5L) that produced 30 Watts of UV light in air. The assumption that is made is that all UV systems regardless of the type of lamp that they use have the same hydraulics and delivery of UV dose as the systems that were tested to develop the UVDIS program. This course will show that these assumptions are not necessarily true and the information for the UVDIS program should be developed through the testing of actual UV equipment. Before a UV system is installed in a wastewater treatment plant for disinfecting wastewater, it is important to gather enough information to determine whether it is a suitable application and that the UV system is designed to meet the disinfection requirements under the worst case conditions. This paper will give an overview of the major parameters that must be taken into consideration. The major parameters listed in Table 1 below must be taken into consideration when a UV disinfection system is being designed for wastewater. The customer or the consultant must provide this information to the UV system manufacturer since each UV system is designed on an individual basis. By the end of this training course, you will have the ability to:

- discuss bioassays and their purpose
- indicate design parameters for the UV system
- explain how Water hardness and suspended solids affects UV performance

- appraise UV transmittance as it cannot be judged by the naked eye
- evaluate the parameters affecting the UV disinfection of wastewater
- identify UV lamps may not produce the same output in air when compared to water

# Drinking Water Courses for Renewal Training Credit

Water Purification(1884)

2/21/2012

Operator's Group Meeting

120

This two hour short course is the eighth and final part of larger course entitled Basic Chemistry. Water is fundamental to life on this planet. It has been estimated that humans can live for nearly thirty days without food but a person will die within ten days without water. Water covers about 70% of the earth but unfortunately, more than 97% of that water is salt water and cannot be tolerated by humans (or many plants). Of the remainder, most is frozen and therefore not accessible; less than 0.01% of the water on the earth is available and potable. The World Health Organization and Federal and State regulators have set many guidelines for the purity of the water that humans can tolerate. There are many different techniques that may be used to purify water including filtration, clarification, distillation, ion exchange, and membrane separations. In this course, we will discuss the basics of each. Advanced concepts and engineering principles are discussed in the ten-hour Water Purification Techniques by the same author. We will also discuss some of the basic concepts of chemistry but the course is not designed for chemists nor is it designed to turn anyone into one. This course is not designed to be a rigorous study and it will not be necessary to memorize or derive equations. It is suggested that you have a calculator handy to do basic multiplication and division. If you do not have one, there is one on your computer (all windows operating systems have one under Accessories heading in the Programs section in the Start menu). In the real world, if you need an equation or in-depth study of a principle, there are many excellent reference books, the internet, and a host of specialists that can be consulted. This course is conceived to impart a good background, an understanding on which to build. Each paragraph reviews a concept necessary to an understanding of water chemistry. Throughout the text, terms that are particularly important are typed in bold. In each section, grayed boxes give hints, rules of thumb, and other notes that help clarify the concepts presented. Examples of most concepts are presented after their discussion with complete solutions explaining the answer and the problem solving process. It is recommended that the problem set be reviewed until the solution is understood. Because each ensuing concept builds on the last, the section should be reviewed until the examples can be answered correctly with confidence. A short test at the end of each of the three sections verifies an understanding of that material. The tests are not intended to be too difficult and there is no intention to be deceptive. Thank you for taking this course.

# Drinking Water Courses for Renewal Training Credit

the end of this training course, you will have the ability to:

- describe different ways to distill water
- compare mixed bed exchange units as possibly the best units for purer water
- identify various techniques to produce clear water
- illustrate different options for filtration
- e

Water Reuse - The Florida DEP Program(4189)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Water Reuse - The Florida DEP Program
Water Shortage, Reuse & Resource Management(1925)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	<p>Three decades of headline news about water supply by four different governors. How can a state that is a lush, sub-tropical paradise with the second highest annual rainfall in the United States have a water crisis? And how does a large community with no viable water resources within its corporate boundaries, and located in an area where "water wars" between urban and agriculture interests, cities, counties, and regulatory agencies are not uncommon, meet the water needs of its citizens and industries?St. Petersburg, Florida, developed the first, and currently the largest, urban water reclamation system in the U.S. It is the cornerstone of a comprehensive water conservation program. The author shares his 20 years experience directing the water, wastewater, and reclaimed water programs for the City of St. Petersburg, Florida.By the end of this training course, you will have the ability to:</p> <ul style="list-style-type: none"> <li>•discuss formulation of water reuse and its' importance in water conservation used today</li> <li>•identify the water supply problems of the Tampa Bay Florida area and objectives to minimizing water usage</li> <li>•develop and implementation of a reclaimed water program</li> <li>•evaluation and troubleshooting of a reclaim water system and program</li> <li>•establishment of rules and procedures for a reclaimed water supply program</li> <li>•implementation of an educational outreach program and rate structure for a reclaimed water supply program</li> </ul>
Water Treatment Techniques - Distillation(1432)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	text base - online

# Drinking Water Courses for Renewal Training Credit

Water Treatment Techniques - Filtration(1430)

2/21/2012

Operator's Group Meeting

120

Course Summary:WTT:FiltrationThis two hour short course is the first part of larger course entitled Water Treatment Techniques. Nearly every municipal water treatment facility in this country employs the unit operation of filtration somewhere in its treatment scheme. "Filtration" encompasses a variety of procedures from rough screening to exclude fish and floating debris to the tightest sub-micron final filtration for sterilization. Filtration may suggest a granular media through which water is trickled or a woven media through which water is suctioned. In any case, the term filtration implies that something is excluded from the stream based on its physical size. We will investigate how filters work, how and where filtration should be applied, and what may go wrong with the process. Though this course is not designed exclusively for engineers, an understanding of basic principles of fluid flow is a suggested prerequisite. This course is not a rigorous study and it will not be necessary to memorize or derive equations. We may also discuss some of the basic concepts of chemistry but the course is not designed for chemists nor is it designed to turn anyone into one. It is suggested that you have a calculator handy to do basic multiplication and division. If you do not have one, there is one on your computer (all windows operating systems have one under Accessories heading in the Programs section in the Start menu). In the real world, if you need an equation or in-depth study of a principle, there are many excellent reference books, the internet, and a host of specialists that can be consulted. This course is conceived to impart a good background, an understanding on which to build. Each paragraph reviews a concept necessary to an understanding of water chemistry. Throughout the text, terms that are particularly important are typed in bold. Hovering your cursor over a term in bold will usually bring up a definition for that term. In each section, grayed boxes give hints, rules of thumb, and other notes that help clarify the concepts presented. An example of some of the engineering is presented after the discussion with complete solutions explaining the problem solving process. It is recommended that the problem set be reviewed until the solution is understood. Because each ensuing concept builds on the last, the section should be reviewed until the examples can be answered correctly with confidence. A short test at the end of each of the six sections (three sections per hour) verifies an understanding of that material. The engineering questions that might come up on the tests are deliberately basic and there is no intention to be deceptive. We're

# Drinking Water Courses for Renewal Training Credit

interested in understanding the concepts of filtration, not how well you can use a calculator. By the end of this training course, you will have the ability to:

- explain how the lab pure water filters work
- describe the different types of filters (realized and refreshed my memory on greensand fil

Water Treatment Techniques - Ion Exchange(1433)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	<p>This two hour short course is the fourth part of larger course entitled Water Treatment Techniques. Water is an excellent solvent capable of dissolving a portion of anything it contacts. Because of its solvency, natural water is always contaminated. Most of the contaminants are ionic in nature. "Ion exchange" is a water treatment technique that uses the ionic nature of dissolved contaminants to remove them. In this course, we will discuss some of the basic concepts of chemistry but the course is not designed for chemists nor is it designed to turn anyone into one. An understanding of basic principles of fluid flow is a suggested prerequisite. The course is not a rigorous study and it will not be necessary to memorize or derive equations. It is suggested that you have a calculator handy to do basic multiplication and division. This course is conceived to impart a good background, an understanding on which to build. By the end of this training course, you will have the ability to:</p> <ul style="list-style-type: none"><li>•describe the different resins used and the regeneration process</li><li>•Identify flow measurement device</li></ul> <p>•explain the ion exchange process</p> <ul style="list-style-type: none"><li>•identify flow lost due to leak or bypass</li><li>•discuss the effective troubleshooting techniques for ion exchange</li><li>•evaluate the process control when incoming flow has decreased</li></ul>
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# Drinking Water Courses for Renewal Training Credit

Water Treatment Techniques - Membrane Separation(1434)

2/21/2012

Operator's Group Meeting

120

This two hour short course is the final part of larger course entitled Water Treatment Techniques. Several of the newer water treatment techniques are from the family of membrane separations.

Membranes may be used to transport contaminants away from the purified water (as in dialysis, electro dialysis or electro dialysis reversal) or the water may be transported across the membrane leaving the impurities behind (as in micro- and ultrafiltration, nanofiltration or reverse osmosis). This course discusses each of these techniques though much of the course is dedicated to the theory and practice of the reverse osmosis technique. We will also discuss RO system engineering, operation, troubleshooting and performance restoration. The course is not a rigorous study and it will not be necessary to memorize or derive equations. This course is conceived to impart a good background, an understanding on which to build. By the end of this training course, you will have the ability to:

- identify the processes which water dissolves into and passes through the membrane, not holes
- explain how RO works, the use of nanofiltration, how to clean RO filters
- evaluate and troubleshoot diffusion within membrane separation
- discuss micro-ultra-nanofiltration utilized in membrane separation

- explain - Gives me a better idea on how to manage our membrane filters.

## Drinking Water Courses for Renewal Training Credit

Water Treatment Techniques Settling & Clarificatio(1431)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	<p>This two hour short course is the second part of larger course entitled Water Treatment Techniques. Settling is, simply put, using the force of gravity to act on contaminants so that they settle leaving clearer water which can be decanted off. Clarification is just settling with a little help. In this course, we will discuss primary settling only. We will not discuss activated sludge treatment. CEU Plan offers several other courses that cover activated sludge treatment in detail. We will discuss several physical and chemical methods used to enhance settling but it is not necessary that you be a chemist or an engineer. An understanding of basic principles of water treatment and some basic chemistry will make the course seem easier but is not required. Though this course is not designed exclusively for engineers, an understanding of basic principles of fluid flow is a suggested prerequisite. We may also discuss some of the basic concepts of chemistry but the course is not designed for chemists nor is it designed to turn anyone into one. This course is not a rigorous study and it will not be necessary to memorize or derive equations. This course is conceived to impart a good background, an understanding on which to build.Course # 98: Course Title = Settling and Clarification (continued)Learning ObjectivesAfter completing this course, the student should be able to:</p> <ul style="list-style-type: none"> <li>•describe the physical process of sedimentation</li> <li>•explain how settling may be enhanced by physical and chemical means</li> <li>•describe the lime softening process</li> <li>•discuss the variations in the simple processes to achieve "enhanced coagulation" and "enhanced softening"</li> <li>•explain the use of dissolved air floatation</li> </ul>
Water's Journey - Part 3(3383)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Study of the Everglades
What is Cryptosporidium?(813)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	What is Cryptosporidium?
Wind Turbines & Alternative Energy Resources(4196)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Wind Turbines & Alternative Energy Resources
Your Responsibilities with the Regulatory Agency(2344)	<u>2/21/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Your Responsibilities with the Regulatory Agency
Common Pitfalls in Chemical Feed(5498)	<u>8/17/2012</u>	<u>Operator's Group Meeting</u>	<u>240</u>	<p>This four hour course is broken into twelve sections of course material. It is a streaming courses including audio discussion of common mistakes and assumptions within chemical feed systems. This is course is a great refresher or study for certification exams.</p>

## Drinking Water Courses for Renewal Training Credit

ERS: Generators(5493)	<u>8/17/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Part of the series Emergency Response and Safety. This course discusses the loss of power and its effect on treatment works. Looks at several disaster situations and how the loss of power turned the disaster into a catastrophe or the use of EM generators turned the disaster into a mere difficulty.
Field Testing a Double Check Valve Assembly-3 Val(5494)	<u>8/17/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Instruction of how backflow prevention devices function and how they are tested to evaluate effectiveness - this course examines the double check valve device assembly.
Field Testing a Pressure Vacuum Breaker BPD(5496)	<u>8/17/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Field testing of a pressure vacuum breaker backflow prevention device using a three-valve test kit.
Field Testing a Reduced Pressure Principle BPD(5495)	<u>8/17/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Illustrates field testing of a reduced pressure principle backflow prevention device using a three valve test kit. This course is the second segment of a 3-part series (first segment not required for enrollment in this segment).
Field Testing Spill-Resistant Pressure Vacuum BPD(5497)	<u>8/17/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Illustrates field testing of a spill-resistant pressure vacuum breaker backflow prevention device using a three valve test kit.
Introduction to Concrete Pressure Pipe(5492)	<u>8/17/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Illustrates the AWWA Standards for concrete pressure pipe, design and installation considerations, and fabrication techniques utilized. Discusses various custom fittings, troubleshooting. FLASH required.
Lime/Soda Ash Softening for Water Plant Operators(5491)	<u>8/17/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Softening for water treatment operators.
Math for Water Plant and Distribution(5489)	<u>8/17/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Mathematics of a Treatment Process: formulas and examples.
Principles of Chlorination & Dechlorination(5490)	<u>8/17/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Course looks at the most common mistakes DW/WW systems make using Hypochlorite and liquid-based De-chlorinating agents, on-site generation, strength of hypochlorite, alternate de-chlorinating methods, instrumentation for measuring , calculations, calibration, handling, safety.
Reasonable Security Measures to Protect Your Plant(5499)	<u>8/17/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Ten measures to assure a better-protected small DW/WW treatment plant against natural impacts, misuse or vandalism. Measures are intended to be implemented with little cost and time for small operations with limited ability to pursue expensive security activities or spend significant amounts of time.
Laboratory Safety - Complete Course(925)	<u>12/10/2013</u>	<u>Operator's Group Meeting</u>	<u>300</u>	5 sections with this course. Overview, lab safety program, lab guidelines part 1, lab guidelines part 2, and part 3. Each section worth 1 hour AND HAS OWN COURSE NUMBER.

# Drinking Water Courses for Renewal Training Credit

## CH2M Hill(425)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Project Tools: PEG & OCR(4519)	<u>7/28/2011</u>	<u>Conference/Seminar</u>	<u>60</u>	FOR CH2MHILL EMPLOYEES ONLY: This course will clarify why the information gathered through PEG and OCR is important to the O&MBG and part of the regular GLT report. In this class, the mechanics of how to download and complete a PEG are covered. The facilitator also discusses how tier levels are determined, what documentation is sent to OCR, and how next level managers should manage and set up tier conference calls.
Module 5: Black Hat White Hat, A History of Compl(5488)	<u>8/1/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	Outlines CH2M Hill compliance program and objectives, environmental regulations, and potential enforcement.
Spill Prevention, Control, and Countermeasures Pla(7055)	<u>1/30/2013</u>	<u>Conference/Seminar</u>	<u>60</u>	Addresses the applicability and requirements for a Spill Prvention, Control and Countermeasures Plan (SPCC); training and inspection requirements, facility maps, reporting requirements to the National Response Center and EPA.
Method Update Rule & Online Standard Methods(7310)	<u>5/1/2013</u>	<u>Teleconference</u>	<u>60</u>	FOR CH2MHILL EMPLOYEES ONLY. This course addresses the new regulations Methods Update Rule (MUR) and the Online version of Standard Methods. It dissects the MUR and highlights the parts that have the most applicability to our projects and treatment facilities. The training concludes with a question and answer period.
Module 8: Search & Seizure, Your Legal Rights(7309)	<u>5/1/2013</u>	<u>Conference/Seminar</u>	<u>120</u>	FOR CH2M HILL EMPLOYEES ONLY. This training session will inform associates of their rights under the law. Specifically, the course covers legal rights on the job and how associates should protect themselves and the company if faced with a legal search at any job site. Though the likelihood of a legal search is VERY small, if one DOES occur, this course will highlight important points to remember and follow. It will also discuss how to handle requests for legal documents if served with a subpoena or other request.
Stationary Reciprocating Internal Combustion Engin(7311)	<u>5/1/2013</u>	<u>Teleconference</u>	<u>60</u>	FOR CH2MHILL EMPLOYEES ONLY. This course will cover the federal requirements for Stationary Reciprocating Internal Combustion Engines (RICE). The RICE Rule was recently updated and the class discussed those changes as well as the compliance dates. The course also covers an overview of the Rule and how to determine applicability.

## Drinking Water Courses for Renewal Training Credit

Module 3: Little Ways to Get in Big Trouble(7382)	<u>6/1/2013</u>	<u>Conference/Seminar</u>	<u>180</u>	As a result of attending this training, associates will have a deeper understanding of how legal issues surrounding our work can be interpreted by regulators and customers. They will also be aware of seemingly meaningless situations that can lead to misinterpretations and decreased trust. Associates are taught how to avoid these situations, be attentive to details and operate in a way that removes misunderstandings.
Disasters! Hurricanes and Business Continuity Plan(7610)	<u>8/22/2013</u>	<u>Conference/Seminar</u>	<u>60</u>	FOR CH2MHILL EMPLOYEES ONLY. This course addresses potential disasters and hazards that could adversely effect our water/wastewater treatment facilities and operations. We will look at water sector guidance for Business Continuity Planning (BCP) issued by the WRF, in collaboration with the EPA and AWWA, and the template that accompanies it. Associates will be taught how to complete one section of the BCP in detail: Mission essential functions (MEF). As a result of attending this training, associates will know how to develop a Business Continuity Plan, how that plan coordinates with other emergency plans they have already developed, and where to get assistance with BCP development or other emergency planning. Associates will be given an opportunity to clarify information and ask questions at the end of training. Associates will also be given contact information if they require assistance with their BCP.
Facility Security: Guns, Gates and Guards(7611)	<u>8/22/2013</u>	<u>Conference/Seminar</u>	<u>60</u>	As a result of attending this training, associates will know what suspicious behavior to watch for in and around our water/wastewater facilities and to whom to report it. They will be familiar with the water sector standards for utility responsibilities and elements of a physically security facility. Associates will be given an opportunity to clarify information and ask questions at the end of training. Associates will also be given contact information if they have questions or need assistance with security.

## Drinking Water Courses for Renewal Training Credit

DMR Preparation(8126)	<u>1/1/2014</u>	<u>Presentation</u>	<b>60</b>	CH2M HILL employees only - An essential element of Perfect Compliance is a relationship with regulators that is based upon mutual respect and confidence in the expertise of our project management staff. That confidence can be irreparably damaged by the submission of Discharge Monitoring Reports (DMRs) that contain erroneous information. The purpose of this course is to review all of the procedures associated the preparation of DMRs and to outline a strategy for a comprehensive review of DMRs before submission to the regulator. By submitting timely and accurate DMRs, we strengthen the confidence level of regulators in our ability to effectively manage wastewater operations.
Matrix Spike and Matrix Spike Duplicates(8128)	<u>1/1/2014</u>	<u>Presentation</u>	<b>60</b>	CH2M HILL employees only - As of December 2013, MUR requirements must now be fully implemented at each facility. One of the more complex QC elements, "Matrix Spike"(MS) and "Matrix Spike Duplicate"(MSD), will be addressed in this course. In this class, we will walk through the definition of a MS and MSD, the entire procedure of how to prepare, implement and analyze these samples, and how to incorporate them into your data collection. Attendees will include staff at CH2M HILL projects that operate on-site laboratories and are required to comply with the MUR requirements. Attendees will understand their responsibilities and what steps they need to take in order to be in Perfect Compliance with the corresponding MUR requirements. Associates will also know who to contact if they have questions.
MUR Compliant QC Stats(8143)	<u>1/1/2014</u>	<u>Presentation</u>	<b>60</b>	FOR CH@MHILL EMPLOYEES ONLY: The MUR requirements, which were required to be fully implemented by December 2013, not only effects your Lab SOPs and your lab procedures but also effects the QC Stats Report. The report continues to measure precision and accuracy for each analyzed parameter, but there are also some new features/requirements like new tabs for matrix spike and matrix spike duplication. This training is designed to walk you through the use of the QC Stats and to address any questions you may have. Attendees will understand their responsibilities and what steps they need to take in order to be in Perfect Compliance with the corresponding MUR requirements. Associates will also know who to contact if they have questions. We expect that attendees will either confirm that they are in compliance or immediately begin to perform tasks in order to come into compliance. Compliance will be confirmed at future site visits.

# Drinking Water Courses for Renewal Training Credit

Workplace Violence and Active Shooter Response(8144)	<u>1/1/2014</u>	<u>Presentation</u>	<u>60</u>	FOR CH2MHILL EMPLOYEES ONLY: As a result of attending this training, associates will know what suspicious behavior to watch for in and around our water/wastewater facilities and to whom to report it. They will know what to do, per Department of Homeland Security guidance, if they are involved in an active shooter situation. Associates will be given an opportunity to clarify information and ask questions at the end of training. Associates will also be given contact information if they have questions or need assistance with security.
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Introduction to Incident Command System(8511)	<u>6/11/2014</u>	<u>Lecture</u>	<u>90</u>	FOR CH2M HILL EMPLOYEES ONLY. The Incident Command System (ICS) is a standardized, on-scene, all-hazards incident management approach to emergencies/incidents that complies with Presidential directive and the National Incident Management System (NIMS). ICS allows all entities involved in the emergency/incident to be able to work with and communication with other governmental and private entities in a seamless and effective manner in order to reduce loss of life, property and harm to the environment. This course provides an introduction to the Incident Command System. As a result of this training, associates will understand the ICS, as part of the National Incident Management System (NIMS) approach. They will be able to work with and communication with other governmental and private entities in a seamless and effective manner. This will reduce loss of life, property and harm to the environment. After the course, participants will be provided with a link to take an online exam of the material. If they pass, they will receive a certificate of completion from FEMA.
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## Chemical Pump Sales and Service(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Chemical System Training(8478)	<u>5/21/2014</u>	<u>Classroom and Hands-on</u>	<u>60</u>	Covers types of chemical systems - gas and liquid. Typical problems associated with both, along with solutions, maintenance and repair

**Total Approved**

## City Water, Light & Power(75)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Annual Training(2917)	<u>5/9/2012</u>	<u>Classroom/College</u>	<u>300</u>	Safety training

**Total Approved**

## Cla-Val(357)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
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**Total Approved**

# Drinking Water Courses for Renewal Training Credit

Electronic Control Valves(7031)	<u>1/24/2013</u>	<u>On-line Class</u>	<u>60</u>	Control valves and how they can be operated electronically. Use of SCADA with these types of valves.
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Operation, Maintenance and Troubleshooting of Auto(7050)	<u>1/24/2013</u>	<u>Classroom and Hands-on</u>	<u>240</u>	Control valves for potable water systems
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## Clow Valve Company(173)

### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Clow Valve Company Plant Tour(742)	<u>3/15/2012</u>	<u>Classroom and Hands-on</u>	<u>360</u>	Tour of the manufacturing plant and hands-on training for hydrants and valves. JLE
Hydrant and Valve Operation and Maintenance(548)	<u>3/15/2012</u>	<u>Demonstration</u>	<u>120</u>	Hydrant and valve maintenance.
Field Repair on Hydrants and Valves(4849)	<u>3/22/2012</u>	<u>Classroom and Hands-on</u>	<u>240</u>	Field training on hydrants and valves, repairs.

## Clow Water(963)

### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
When It Matters Use Ductile Iron Pipe(8209)	<u>3/14/2014</u>	<u>Conference/Seminar</u>	<u>60</u>	Water mains and service connections
Pipe 101(8249)	<u>3/28/2014</u>	<u>DVD</u>	<u>60</u>	Basic pipe introduction, a video showing production of the pipe. Different pipe joints, fittings, etc.

## College of Lake County(114)

### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Distribution and System Maintenance(717)	<u>7/23/2002</u>	<u>Conference/Seminar</u>	<u>300</u>	How to properly maintain a watermain. Flushing techniques and repairs. Metering and safety. JLE
Pumps and Hydraulics(713)	<u>7/23/2002</u>	<u>Conference/Seminar</u>	<u>450</u>	Covers the design and theory involved in pumping fluids, proper application of pumps, also basic electrical and controls of pumps. JLE
Sources of Water(711)	<u>7/23/2002</u>	<u>Conference/Seminar</u>	<u>150</u>	Covers the sources of water, how it gets there, and methods of acquiring it for PWS use. JLE
Water Quality(712)	<u>7/23/2002</u>	<u>Conference/Seminar</u>	<u>150</u>	Covers how and when raw water quality changes, differing methods of reacting to and addressing those changes, regulations, parameters, and tests for monitoring water quality. JLE
Chemical Feeding(5269)	<u>5/30/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	Chemical feeding and/or calculations
Regulations & Certification Exam Review(5270)	<u>5/30/2012</u>	<u>Conference/Seminar</u>	<u>150</u>	Regulatory update

## Drinking Water Courses for Renewal Training Credit

### Dixon Engineering(411)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Tank Maintenance(1510)	<u>4/1/2004</u>	<u>Conference/Seminar</u>	<b>60</b>	Purpose of tank inspection, etc. JB/PC
Tank Style Comparisons(1814)	<u>12/8/2004</u>	<u>On-line Class</u>	<b>60</b>	Costs, O&M, etc.

### DPC Enterprises(303)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Chlorine Safety and Handling(1051)	<u>2/1/2012</u>	<u>Operator's Group Meeting</u>	<b>120</b>	First approved 3/19/02. 3/30/11 Chlorine institute videos, chlorine safety & handling, A-Kit Repair, first responder video for chlorine, review, Q & A and quiz. AR

### Ductile Iron Pipe Research Association (DIPRA)(160)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
DI Pipe in AC Right of Ways(462)	<u>1/9/2002</u>	<u>Other</u>	<b>60</b>	Safety concerns and design considerations for installing DI Pipe in AC Right of Way.
Corrosion Control for DI Pipe(460)	<u>10/11/2012</u>	<u>Other</u>	<b>60</b>	Basics of electrochemical corrosion and use of polyethylene encasements
Design of DI Pipe(459)	<u>10/11/2012</u>	<u>Other</u>	<b>60</b>	Wall thickness, design of DI pipe
DI Pipe on Supports(466)	<u>10/11/2012</u>	<u>Other</u>	<b>60</b>	Design and installation considerations for pipe on supports - bridge crossing, pipe on driven piles, unstable soils, etc.
DI vs. Concrete Pipes(469)	<u>10/11/2012</u>	<u>Other</u>	<b>60</b>	Prestressed Concrete Cylinder Pipe, strength, hydraulics, permeation, installation.
DI vs. HDPE Pipes(468)	<u>10/11/2012</u>	<u>Other</u>	<b>60</b>	High density polyethylene pipe, permeation, hydraulics, strength, tapping.
DI vs. PVC Pipes(467)	<u>10/11/2012</u>	<u>Other</u>	<b>60</b>	Theory & design, strength of materials, hydraulics, permeation, tapping, comparisons.
DI vs. Steel Pipes(470)	<u>10/11/2012</u>	<u>Other</u>	<b>60</b>	Comparison of design, manufacture, corrosion control, installation, etc.
DIPRA Corrosion School(463)	<u>10/11/2012</u>	<u>Other</u>	<b>420</b>	Basics of corrosion control, resistivity, the 10 point system, history & development of polyethylene encasement.
Horizontal Directional Drilling(5537)	<u>10/11/2012</u>	<u>Other</u>	<b>60</b>	Use of restrained joint, polyethylene-encased DI pipe for a common trenchless method of pipe installation. Review of basic design, tools and fluids for the work and job experiences for this installation tool.

## Drinking Water Courses for Renewal Training Credit

Installation of D I Pipe(464)	<u>10/11/2012</u>	<u>Other</u>	<u>60</u>	Review proper installation of D I Pipe.a
Manufacture & Features of DI Pipe(458)	<u>10/11/2012</u>	<u>Other</u>	<u>60</u>	Details AWWA standards for Ductile Iron Pipes
Stray Current Corrosion(461)	<u>10/11/2012</u>	<u>Other</u>	<u>60</u>	Identifying sources of stray current and rare occurrence of severe condition.
Subaqueous Pipelines(471)	<u>10/11/2012</u>	<u>Other</u>	<u>60</u>	Review of design, permit and installation methods for water crossing with D I Pipe.
Thrust Restraint(465)	<u>10/11/2012</u>	<u>Other</u>	<u>60</u>	Design & installation of trust restraint systems including bblocks, restrained joint systems, tie rods, etc.

### Echologics Engineering, Inc.(684)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Fundamentals of Leak Detection(2678)	<u>7/10/2007</u>	<u>On-line Class</u>	<u>420</u>	JB
Water Leak Detection(2676)	<u>7/10/2007</u>	<u>On-line Class</u>	<u>900</u>	JB

#### Total Approved

Minutes   Description:

### Education and Training Services(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Public Utilities & Waterworks Management Institute(7792)	<u>11/13/2013</u>	<u>DVD</u>	<u>1200</u>	Utility leadership skills: Foundations of Leadership; The Leader's Role in Performance Management; Collaboration and Teams; Managing Conflict; The Leadership of Change. No partial credit given by trainer. 3 day event. Next event Elgin IL Sept 8 - 10, 2014.

#### Total Approved

Minutes   Description:

### Emery & Associates, Inc.(15)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Electrical Hazard Abatement(1826)	<u>12/30/2004</u>	<u>Other</u>	<u>240</u>	JB/PC
Confined Space(2820)	<u>2/4/2008</u>	<u>On-line Class</u>	<u>240</u>	JB

#### Total Approved

Minutes   Description:

### Environmental Resource Training Center(10)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Basic Water Supply(4)	<u>1/7/2000</u>	<u>Conference/Seminar</u>	<u>2700</u>	This course is an introduction to water supply covering Class D and C operations. Topics include wells, chlorination, fluoridation, chemical treatment, distribution systems, pumps, sampling, operating reports, water quality and realted math.

#### Total Approved

Minutes   Description:

## Drinking Water Courses for Renewal Training Credit

Class B & A Water Supply(6)	<u>1/7/2000</u>	<u>Conference/Seminar</u>	<u>2700</u>	This course is intended to assist water supply operators preparing for the Class A certification exam. Surface water treatment and lime softening are covered with related math and chemistry. Topics include surface water quality, clarification, filtration, taste and odor control, process waste disposal, jar testing, sampling and operation reports.
Cross Connection Control(16)	<u>1/7/2000</u>	<u>Conference/Seminar</u>	<u>1440</u>	Workshop includes theory and application of backflow devices, RPZ's, atmospheric vacuum breaker, control assembly, testing practices, thermal expansion, installation and maintenance safety. Credit is not given for the written exam. 23.5 Hours RTC. Barb and Jewel
Class A Water I(1231)	<u>8/20/2003</u>	<u>Conference/Seminar</u>	<u>480</u>	Drinking Water Training Reimbursement Program. All classes are approved for 7.5 hours RTC. JB
Class A Water II(1325)	<u>11/26/2003</u>	<u>Conference/Seminar</u>	<u>480</u>	DWTRP - Class A Module II
Class B Water I(1326)	<u>11/26/2003</u>	<u>Conference/Seminar</u>	<u>480</u>	DWTRP - Class B Module 1
Class B Water II(1327)	<u>11/26/2003</u>	<u>Conference/Seminar</u>	<u>480</u>	DWTRP - Class B Module II
Class C Water I(1328)	<u>11/26/2003</u>	<u>Conference/Seminar</u>	<u>450</u>	Formerly called DWTRP - Class C Module I
Class C Water II(1329)	<u>11/26/2003</u>	<u>Conference/Seminar</u>	<u>480</u>	DWTRP - Class Module II
Class D Water I(1331)	<u>11/26/2003</u>	<u>Conference/Seminar</u>	<u>480</u>	DWTRP - Class D Module I
Class D Water II(1382)	<u>12/2/2003</u>	<u>Conference/Seminar</u>	<u>450</u>	Formerly DWTRP - Class D Module II
Water Distribution System Operation and Maintenance(1478)	<u>3/1/2004</u>	<u>Workshop</u>	<u>5400</u>	Chapter Contents: The Water System Operator, Storage Facilities, Dist. System Facilities, Water Quality Considerations, Operation and Maintenance, Disinfection, Safety.
Water Short School(1807)	<u>12/1/2004</u>	<u>Conference/Seminar</u>	<u>1800</u>	Intro to groundwater, surface water, distribution rules, regs, reporting, testing; math review; TCR, X-Connect, corrosion control, storage, pumps, wells, hydrants, meters, valves, lab chemistry, surface water treatment, filtration, ion exchange, lime softening, groundwater treatment, chlorination and fluoridation. Yearly course, 4 days of instruction, IEPA certification exam 5th day.
A & B Water Short Course(2064)	<u>9/19/2005</u>	<u>Conference/Seminar</u>	<u>1350</u>	Class A & B Water Short School
Pumps & Pumping(2752)	<u>10/23/2007</u>	<u>Classroom/College</u>	<u>900</u>	Pumps & Electrical Maintenance

## Drinking Water Courses for Renewal Training Credit

Small Water System Operation and Maintenance(8313)	<u>7/1/2011</u>	<u>Workshop</u>	<b>5400</b>	Chapter Contents: 1. The Small Water System Operator 2. Water Sources and Treatment 3. Wells 4. Small Water Treatment Plants 5. Disinfection 6. Safety 7. Laboratory Procedures 8. Setting Water Rates for Small Water Utilities
Water treatment Plant Operation, Volume I(8314)	<u>7/1/2011</u>	<u>Workshop</u>	<b>5400</b>	Chapter Contents: 1. The Water Treatment Plant Operator 2. Water Sources and Treatment 3. Reservoir management and Intake Structures 4. Coagulation and Flocculation 5. Sedimentation 6. Filtration 7. Disinfection 8. Corrosion Control 9. Taste and Odor Control 10. Plant Operation 11. Laboratory Procedures
Small Water System Operation and Maintenance(1724)	<u>4/18/2012</u>	<u>Workshop</u>	<b>3600</b>	Chapter Contents: Small Water System Operator, Water Sources & Treatment, Wells, Small Water Treatment Plants, Disinfection, Safety, Laboratory Procedures, Setting Water Rates for Small Water Utilities.
A & B Water Math & Chemistry(5560)	<u>5/1/2012</u>	<u>Classroom and Hands-on</u>	<b>900</b>	Basics of chemistry concepts and the math utilized in the operation of GW and SW treatment process including ion exchange and lime softening, oxidation, clarification and filtration.
Backflow Preventer Testing Update(17)	<u>5/9/2012</u>	<u>Conference/Seminar</u>	<b>480</b>	This course is ONLY for persons who have completed the four-day Cross Connection Control course. This course provides an opportunity to practice testing double check valve and RPZ backflow preventers and be introduced to current testing procedures, such as the direction of flow procedure.
C & D Water Short Course (3 Days)(5331)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<b>1350</b>	C & D Water Short Course (3 Days)
Class A & B Water Operations Math(5335)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<b>450</b>	Basic math relative to Class A and B topics including filtration, ion exchange, jar testing, chemical feeding, lime softening and clarification math.

# Drinking Water Courses for Renewal Training Credit

**Evanston, City of(0)**

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Chlorine Cylinder Change(8220)	<u>4/1/2014</u>	<u>Classroom and Hands-on</u>	<b>60</b>	Under close supervision by the instructor, this hands-on training requires the operators to change an active bank of four 1-ton cylinders. Operators are instructed and observed on the proper operation of the cylinder hoist, the proper sequence of cylinder valve operation, and leak detection during a cylinder change. Performance is evaluated and discussed following the cylinder change.
Chlorine Leak Drills(8219)	<u>4/1/2014</u>	<u>Classroom and Hands-on</u>	<b>60</b>	The instructor simulates a chlorine leak. Two operators are assigned to respond as if it were an actual leak occurring during off-hours. Operators are required to assess severity and location of the leak, simulate Fire Department notification if necessary, don appropriate PPE, and isolate the chlorine leak. The SCBA and A & B emergency repair kits will actually be used. The rest of the training group observes and critiques the operators at the end of the simulation.
Chlorine Video(8215)	<u>4/1/2014</u>	<u>Classroom/College</u>	<b>60</b>	Operators view a 23-minute video on chlorine safety and emergency response procedures (Chlorine Safety, AWWA). The video covers physical characteristics of liquid and gaseous chlorine, safety parameters such as IDLH/TWA/STEL, and safe handling of chlorine gas. A quiz is administered following the video. The instructor reviews the quiz and then conducts a question/answer session with the operators to further review the topics covered in the video.
Contingency Plan(8218)	<u>4/1/2014</u>	<u>Classroom/College</u>	<b>60</b>	Contingency planning in the event of a chlorine leak is discussed in detail. The instructor runs through several scenarios to outline the appropriate actions to be taken depending on the leak location and severity. This includes proper use of PPE, methods of locating and isolating the chlorine leak within the plant, and notification requirements for plant staff and the surrounding area.
Use of Emergency Repair A-Kit(8216)	<u>4/1/2014</u>	<u>Classroom and Hands-on</u>	<b>60</b>	The operators are instructed on the theory and proper use of the A-kit (emergency repair kit for 150-pound chlorine cylinders). Proper use of the kit is demonstrated on a dummy chlorine cylinder with simulated leaks on the sidewall, fusible plug, and valve area. The operators are then given a mock leak and required to install the appropriate repair kit part correctly. Performance is evaluated and discussed following the mock repair.

## Drinking Water Courses for Renewal Training Credit

Use of Emergency Repair B-Kit(8217)	<u>4/1/2014</u>	<u>Classroom and Hands-on</u>	<u>60</u>	The operators are instructed on the theory and proper use of the B-kit (emergency repair kit for 1-ton chlorine cylinders). Proper use of the kit is demonstrated on a dummy chlorine cylinder with simulated leaks on the sidewall, fusible plug, and valve area. The operators are then given a mock leak and required to install the appropriate repair kit part correctly. Performance is evaluated and discussed following the mock repair.
Use of Self-Contained Breathing Apparatus (SCBA)(8214)	<u>4/1/2014</u>	<u>Classroom and Hands-on</u>	<u>60</u>	The operators are instructed on the theory of operation, capabilities, limitations, and proper use of the self-contained breathing apparatus (SCBA) during a chlorine leak. Operators are then required to correctly don the SCBA and operate it. Proper tank replacement is also discussed and practiced.

### F.B. McAfoos & Co(1017)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Right-of-Way Mower and Mowing Safety(5180)	<u>3/15/2012</u>	<u>Conference/Seminar</u>	<u>150</u>	

### Federal Emergency Management Agency(215)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
IS-00200.b ICS for Single Resources and Initial Ac(8195)	<u>7/22/2013</u>	<u>Conference/Seminar</u>	<u>180</u>	ICS for single resources and initial action incident for knowledge of command structure and use of resources.
IS-00800.b National Response Framework, An Introdu(8197)	<u>7/29/2013</u>	<u>Conference/Seminar</u>	<u>180</u>	An introduction to the national response framework for regional and national emergency response.
IS-00700.a National Incident Management System (NI)(8196)	<u>8/14/2013</u>	<u>Conference/Seminar</u>	<u>180</u>	Intro to National Incident Management System for proper interaction with other emergency response entities.
IS-100.B: Introduction to Incident Command System,(7689)	<u>9/11/2013</u>	<u>Operator's Group Meeting</u>	<u>180</u>	ICS 100, Introduction to the Incident Command System, introduces the Incident Command System (ICS) and provides the foundation for higher level ICS training. This course describes the history, features and principles, and organizational structure of the Incident Command System. It also explains the relationship between ICS and the National Incident Management System (NIMS). First online 10/12/2010.
IS-547.A: Introduction to Continuity of Operations(8402)	<u>10/13/2013</u>	<u>Operator's Group Meeting</u>	<u>120</u>	This course is to be completed after taking the IS-546.a - Continuity of Operations Awareness Course. The IS 547.a course describes the Continuity Management Cycle and how it should be used to develop sound continuity of operations plans.

# Drinking Water Courses for Renewal Training Credit

## Fifteen County Water Supply Operators Association(41)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Hydrant Maintenance and Operation(4616)	<u>12/20/2011</u>	<u>Classroom and Hands-on</u>	<u>120</u>	Water hydrant operation and maintenance.
Electric Energy Savings Using VFDs(8881)	<u>6/18/2015</u>	<u>Conference/Seminar</u>	<u>60</u>	Electric Energy Savings Using VFDs
High Density Lime Systems; Feeding High Density Li(8883)	<u>8/20/2015</u>	<u>Conference/Seminar</u>	<u>60</u>	High Density Lime Systems; Feeding High Density Lime
Singer Valve Installation and Service(8880)	<u>8/20/2015</u>	<u>Conference/Seminar</u>	<u>60</u>	Singer Valve Installation and Service
Managing Your Water Utility with Cellular AMA/AMI(8886)	<u>10/15/2015</u>	<u>Conference/Seminar</u>	<u>60</u>	Managing your water utility with cellular AMA/AMI
Pumps and Scada(8885)	<u>10/15/2015</u>	<u>Conference/Seminar</u>	<u>60</u>	Pumps and Scada
Regulatory Update(8887)	<u>12/17/2015</u>	<u>Conference/Seminar</u>	<u>60</u>	Regulatory Update

## Firnbach, Donn(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Applied Mathematics for Water Treatment(8385)	<u>5/1/2014</u>	<u>Conference/Seminar</u>	<u>180</u>	Training will be provided to calculate surface area, volume in MG, and flows and velocities. Also conversion formulas to calculate head pressure and temp.
Disinfecting Storage Facilities, Water Main and Ch(8386)	<u>5/1/2014</u>	<u>Conference/Seminar</u>	<u>180</u>	Operators will learn the three AWWA approved methods for disinfecting storage tanks and calculations for chlorinating water mains and chemical dosing.
Fundamentals of Iron Removal Treatment(8387)	<u>5/1/2014</u>	<u>Classroom and Hands-on</u>	<u>180</u>	Participants will be trained to record data on the monthly log, take all residuals, backwash the filter and restore to normal operation.

## First-In Rescue Training, LLC(965)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Fall Protection(5153)	<u>5/16/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	OSHA Standards. Hands-on with use of wearing harnesses and lanyards. Annual training for private industry and public works.
Fire Extinguisher HEPW(9496)	<u>7/4/2015</u>	<u>Classroom and Hands-on</u>	<u>120</u>	Fire Extinguisher Training

## FirstNet Learning(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>

## Drinking Water Courses for Renewal Training Credit

Arc Flash Awareness(8547)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>30</b>	This course covers the safety issues related to arc flashes and blasts. Topics include safety in avoiding injuries and fatalities, approach boundaries, using proper PPE, and lockout/tagout procedures. The course provides an overview of OSHA Standards 29-CFR, Part 1910 and National Fire Protection Association (NFPA) Standard 70E.
Asbestos Awareness(8527)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course covers health hazards and protective measures related to asbestos. Topics include locations where asbestos is commonly found, requirements for signs and labels, circumstances where employees may risk asbestos exposure, exposure prevention safety measures, asbestos-related illnesses, and OSHA's required medical program. This course covers OSHA standard 29 CFR 1910.1001.
Back Safety(8538)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>30</b>	This course is about general safety awareness information regarding job specific hazards, safe work practices, and ergonomics. Topics include basic risk identification skills, conducting ergonomics assessments and health screenings, and engineering control available for implementation. This course primarily covers OSHA 29 CRF 1903.1.
Bloodborne Pathogens(8542)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course is designed to minimize the health risks to workers exposed to blood and other potentially infectious materials. Topics include the definition of bloodborne pathogens, symptoms of the diseases they cause and modes of transmission; Exposure Control Plans; universal precautions, engineering controls, work practices, and personal protection equipment; decontamination and disposal; hepatitis B vaccines and emergency procedures related to exposure incidents. This course primarily covers OSHA 29 CFR 1910.1030.
Compressed Gas Safety(8539)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course covers how employers and employees can work safely with compressed gases by controlling the physical and health hazards associated with them. Topics include physical properties of widely used compressed gases; inspection of cylinders, regulators, and fittings; handling and storage of compressed gases; safety relief devices for compressed gas containers; basic hazard recognition and control procedures; and responding to emergencies. The course provides an overview of OSHA's 29 CFR 1910.101.

## Drinking Water Courses for Renewal Training Credit

Confined Space Entry(8545)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course provides information about working safely in confined spaces and hazardous atmospheres and necessary equipment and permits. Topics include definitions and identification of hazards related to confined spaces and hazardous atmospheres; duties of a confined space attendant; equipment, pre-entry requirements, and point-of-entry permits. This course provides an overview of OSHA 29 CFR 1910.146.
Defensive Driving(8548)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course provides general vehicle safety information designed to heighten awareness and minimize the risk of involvement in a vehicular accident. Topics include defensive driving and you, making good choices, driving safely as a state of mind, hazards outside your control, and vehicle protection systems.
Electrical Safety(8526)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course provides electrical safety practices and distinguishing exposed live parts from other parts of electrical equipment. Topics include general safety-related work practices, clearance distances, voltages, ground fault protection on construction sites, recognition of hazardous classified locations, and additional safety practices that are not addressed by federal law.
Emergency and Disaster Preparedness(8536)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>30</b>	This course provides instruction on emergency response, safety, reporting, and evacuation of company facilities in the event of a natural disaster, fire, bomb threat, or other emergency.
Fall Protection(8528)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>30</b>	This course is about the basic fall protection principles for employees who might be exposed to fall hazards. Topic include fall hazards in work areas; fall protection systems; methods for minimizing fall hazards; the role of the employee in fall protection plans and safety monitoring systems; equipment limitations in low-sloped roof work; and correct procedures for equipment, materials handling and storage, and erection of overheard protection. This course provides an overview of OSHA 29 CFR 1910 Subparts D and F and 1926 Subparts E, L, M, P, and X.
Fire Prevention(8529)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>30</b>	This course is about the basic fire safety principles, the recognition and prevention of potential fire hazards and proper emergency procedures such as proper fire extinguisher operation and maintenance. Topics include those required by the OSHA Workplace Fire Protection Program, including the responsibility of employers to provide proper exits; fire fighting equipment; and employee training to prevent fire, death, and injury in the workplace. This course primarily covers OSHA 29 CFR 1910.38 and 29 CFR 1926 Subparts E and F.

## Drinking Water Courses for Renewal Training Credit

First Aid and CPR Academic Training(8533)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course covers basic First Aid and CPR practices in the workplace though does not provide certification for either. Topics include appropriate responses to emergency situations such as bleeding, shock, burns, eye injuries, heart attack, fractures, and exposure to chemicals. The goal of the course is to give employees the confidence to face emergency and first aid situations, knowing where their responsibilities begin and end. OSHA: 29 CFR 1910.152 [Reserved] Subpart K; 29 CFR 1910.151 Subpart K
Forklift Safety(8530)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course provides students with the necessary academic training required to become a qualified forklift operator. Topics include forklift physics, proper forklift operation and safety practices, general preventive maintenance practices, and safe refueling and recharging procedures. Many practical exercises are provided and good habits are illustrated. This course mainly covers OSHA 29 CFR 1910.178.
Hand and Power Tool Safety(8537)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course covers the potential hazards associated with the use of hand and power tools as well as the safety precautions required to prevent those hazards from occurring, including guards and safety switches. Power tool hazards and prevention measures are addressed by the power source used: electrical, pneumatic, liquid-fueled, hydraulic, and powder-actuated. This course provides an overview of OSHA 29 CFR 1926 Subpart I and 29 CFR 1910 Subpart P.
Hazard Communication - New GHS Standards(8531)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course covers OSHA's Hazard Communication Standard (HAZCOM), 29 CRF 1910.1200, which requires that hazardous materials used at the work site are identified, labeled, handled, used, and disposed of properly. Topics include chemical states, employer and employee responsibilities, company goals, and federal agencies that regulate workplace chemicals. The goal of the course is to prevent or minimize employee exposure to hazardous materials and to minimize their accidental release in the work environment. This course covers the 2012 changes to SDS, labeling, and GHS.
Hearing Conservation(8532)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>30</b>	This course is about the purpose and components of OSHA's Hearing Conservation Program in the prevention of noise-induced hearing loss. Topics include audiometric testing and the advantages, disadvantages, proper fitting, use, and care of various types of hearing protectors. This course primarily covers OSHA 1910.95.

## Drinking Water Courses for Renewal Training Credit

Ladder and Scaffolding Safety(8541)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>30</b>	This course is about how to recognize, control or minimize the hazards associated with ladders, stairways, and scaffolding used at worksites. Topics include ladder and scaffold hazards; construction, use, placement, care, and handling of ladders; important safety features; correct procedures for erecting and moving ladders and scaffolding; fall protection devices; and electrical hazard safety guidelines. This course provides an overview of OSHA 29 CRF 1926.1060 Subpart X and 1926.454 Subpart L.
Lockout Tagout Training(8540)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course is about the control of hazardous energy and work under the protection of a lockout/tagout permit. Topics include the purpose of lockout/tagout programs, limitations of tags, and hazards of operating machines or equipment that have been locked or tagged out. This course primarily covers OSHA 29 CRF 1910.147.
Personal Protective Equipment(8546)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course is about the types of personal protective equipment (PPE); when personal protective equipment is necessary; and the selection, use, and maintenance of personal protective equipment in the workplace. Topics include how to don, doff, adjust, and wear PPE; limitations of PPE; and the proper care, useful life, and disposal of PPE. The following OSHA regulations are covered in this course: 29 CFR 1910.95 Occupational Noise Exposure Standard and 29 CFR 132-136 plus 138, covering general requirements, eye and face protection, respiratory protection, head protection, occupational foot protection, and hand protection.
Respiratory Protection(8534)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This course covers respiratory hazards, protection mechanisms, safe work practices, and use of respiratory protection against hazardous airborne contaminants in the work environment. Topics include employer and employee responsibilities; the nature, extent, and effects of respiratory hazards; the operation, limitations, and capabilities of respirators; and respirator selection, use, inspection, maintenance, cleaning, storage, and malfunctions. This course covers primarily OSHA's 29 CFR 1910 Subpart I.
Slips, Trips and Falls(8549)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<b>30</b>	This is about recognition and prevention of slip, trip, and fall hazards. Topics include OSHA requirements for housekeeping; aisles and passageways; covers and guardrails; floor loading protection; and fixed industrial stairs, ladders, scaffolding, and manually-propelled mobile ladder stand and scaffold (towers). This course provides an overview of OSHA 29 CRF 1910 Subparts D and F and 1926 Subparts E, L, M, P, and X.

## Drinking Water Courses for Renewal Training Credit

Trenching and Excavation Safety(8535)	<u>7/1/2014</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This course covers health and safety concerns unique to trenching and excavating. Topics include confined space requirements, safety principles, site assessment, causes of fatalities, factors to consider before trenching and excavating, and types of excavation methods. This course provides an overview of OSHA's 29 CFR 1926.650 Subpart P.
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### Fischer, Harris & Associates(257)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Pipe Joint Assembly & Restraint(896)	<u>5/9/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	Mechanical joint installation, coupling restraints, etc. JLE
Pipe Connections, Valve Insertions/Capital Improve(6828)	<u>12/5/2012</u>	<u>Conference/Seminar</u>	<u>60</u>	Assembly and restraint of mechanical joint fittings, couplings, solid sleeves and techniques for installing new valves in existing piping. Monthly at municipal water offices or at Operator Workshops.
Pipe Joint Assembly & Restraint(9526)	<u>10/29/2013</u>	<u>Conference/Seminar</u>	<u>60</u>	Mechanical joint installation, coupling restraints, etc.
Pipe Joint Assembly By the Book(8839)	<u>11/18/2014</u>	<u>Conference/Seminar</u>	<u>60</u>	This presentation will provide a detailed discussion of the applicable AWWA and Manufacturer standards for the proper installation of Ductile and PVC pipe joints, assembly of mechanical joint fittings and joint restraint devices.

#### Total Approved

### Ford Meter Box Co.(378)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Ballcorps and Corporation Stops Section A(5129)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>60</u>	Meter testing, drilling machine tapping fitting assembly for pull apart test. Concerns water mains and or service connections and regulatory updates.
Coppersettters, Linesettters and Resettters(5134)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>60</u>	
Couplings for Pipe and Tubing(5138)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>60</u>	
Curb Stops and Meter Valves(5136)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>60</u>	
Drilling Machines(5131)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>45</u>	Tapping water main (drilling machine) tapping machine.
Ford School & Tour Pell City, AL(5145)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>150</u>	Attendees get hands-on lab experience at the factory concerning installation. Incorporates drinking water-related training.
Ford School & Tour Wabash, IN(5144)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>210</u>	Formerly the title was "Factory Tour". Attendees get hands-on lab experience at the factory concerning installation. Incorporates drinking water-related training.
Inside Meter Settings(5132)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>30</u>	

#### Total Approved

## Drinking Water Courses for Renewal Training Credit

Meter Box Covers(5133)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>30</u>	
No Lead Water Works Brass(5143)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>30</u>	No lead brass
Pipe Restraints and Adapter Flanges(5141)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>60</u>	
Plastic Pit Setters(5135)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>50</u>	
Service Saddles and Tapping Sleeves(5130)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>60</u>	
Training and Factory Tour(2351)	<u>5/10/2012</u>	<u>Classroom/College</u>	<u>900</u>	
Water Meter Couplings and Accessories(5137)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>30</u>	
Water Meter Testing Equipment(5139)	<u>5/10/2012</u>	<u>Classroom and Hands-on</u>	<u>90</u>	Hands-on meter testing.
Water Services from Main to Meter(8198)	<u>3/3/2014</u>	<u>Conference/Seminar</u>	<u>150</u>	Ford Meter pipeline and meter equipment and services.
Pipe Repair Equipment(5140)	<u>5/10/2015</u>	<u>Classroom and Hands-on</u>	<u>30</u>	Power Point presentation featuring 25 slides describing the different types of repair products for pipeline repair, service line repair, and installation practices.
TroubleShooting:How to Recognize Improper Install(5142)	<u>5/10/2015</u>	<u>Classroom and Hands-on</u>	<u>60</u>	This Power Point Presentation consists of 50 slides total. The slides are pictures of products returned to the manufacturer with the claim of being defective. This presentation goes through the process of how the Ford Factory Product Assurance Lab looks at and determines whether the product defect was caused by a manufacturing issues or an installation error. As we continue through this thought process, we will also discuss proper installation procedures.

### Gallagher Bassett Service Inc.(151)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
OSHA Compliance Training(5507)	<u>8/30/2012</u>	<u>Classroom and Hands-on</u>	<u>240</u>	OSHA/ II Dept. of Labor required compliance training: confined space entry, haz-com, PPE, lockout/tagout
DOT Flagger Training(7075)	<u>2/18/2013</u>	<u>Conference/Seminar</u>	<u>240</u>	Safety

#### Total Approved

### Glendale Heights, Village of(450)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Confined Space Entry and Rescue(1685)	<u>8/27/2004</u>	<u>Other</u>	<u>90</u>	

#### Total Approved

### Grundfos(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
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#### Total Approved

# Drinking Water Courses for Renewal Training Credit

Advantages of Stepper Motor Design in Metering Pum(9169)      1/10/2015      Conference/Seminar      60      Demo plus going through screens and buttons to simulate real life situations

## H. S. & E. Compliance Resources Inc.(21)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Confined Space Entry for WaterTreatment Operators(122)	<u>9/26/2012</u>	<u>Conference/Seminar</u>	<u>240</u>	MSDS Case Study; permit required confined space entry; atomospheric monitoring; ventilation, confined space hotwork; combination of films and slides.
Emergency Response(1164)	<u>9/26/2012</u>	<u>Conference/Seminar</u>	<u>240</u>	Annual refresher for emergency response. JLE
Hazard Communication(1165)	<u>9/26/2012</u>	<u>Conference/Seminar</u>	<u>240</u>	OSHA hazard communication training. JLE
Lockout/Tagout(1166)	<u>9/26/2012</u>	<u>Conference/Seminar</u>	<u>240</u>	OSHA lockout/tagout training. JLE
Municipal Confined Space and Competent Persons(2279)	<u>9/26/2012</u>	<u>Conference/Seminar</u>	<u>480</u>	JB
Municipal Emergency Response Operations(3088)	<u>9/26/2012</u>	<u>Classroom/College</u>	<u>240</u>	JB
Municipal Hazardous Communication Applicability(3084)	<u>9/26/2012</u>	<u>Classroom/College</u>	<u>480</u>	JB
OSHA Training(2225)	<u>9/26/2012</u>	<u>Conference/Seminar</u>	<u>600</u>	JB
PPE & Respirator Training(1167)	<u>9/26/2012</u>	<u>Conference/Seminar</u>	<u>240</u>	PPE and respirator training. JLE
Proper Use of Cl2 ER Kit A&B(1163)	<u>9/26/2012</u>	<u>Conference/Seminar</u>	<u>240</u>	Proper use of chlorine emergency kit A & B. JLE
Safe Handling of Chlorine(2785)	<u>9/26/2012</u>	<u>Classroom/College</u>	<u>240</u>	JB
The Safe Handling of Water Treatment Chemicals(70)	<u>9/26/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	The safe handling of water treatment chemicals includes slides and movies on chlorine and sulfur dioxide; emergency kits for handling both are discussed and demonstrated
Trenching and Shoring(2691)	<u>9/26/2012</u>	<u>On-line Class</u>	<u>240</u>	JB

### Total Approved

## HD Supply Waterworks(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
HD Supply Operator's Training(9281)	<u>2/26/2015</u>	<u>DVD</u>	<u>60</u>	GIS, field tool selection and use.

### Total Approved

## Heartland Pump Rental & Sales, Inc.(464)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Diesel Pump Technology(4075)	<u>11/3/2010</u>	<u>Presentation</u>	<u>60</u>	JB/PC

### Total Approved

## Drinking Water Courses for Renewal Training Credit

SCADA System Design & Operation(4076)	<u>11/3/2010</u>	<u>Presentation</u>	<u>120</u>	JB/PC
Mechanical Seal Design and Operation(4561)	<u>10/25/2011</u>	<u>Presentation</u>	<u>60</u>	Design and operation of mechanical seals.
Optimizing Pump Systems(4559)	<u>10/25/2011</u>	<u>Presentation</u>	<u>60</u>	Basic centrifugal pump operation, basic hydraulics, and optimizing pumping systems.
Vertical Turbine Pump Material Selection(4560)	<u>10/25/2011</u>	<u>Presentation</u>	<u>60</u>	Proper design and operation of vertical turbines.

### Highland Park, City of(102)

#### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
CUMMINS Diesel Stand-by Generators(8561)	<u>1/23/2014</u>	<u>Classroom and Hands-on</u>	<u>300</u>	Theory, installation, operation and maintenance of Cummins (brand) stand-by diesel generators
EATON Motor Control Centers(8555)	<u>2/25/2014</u>	<u>Classroom and Hands-on</u>	<u>270</u>	Eaton (brand) Motor Control Centers: Features, theory, installation, operation and maintenance. Includes classroom and hands-on training (Video-recorded for review and training of future Operators)
EATON Power Transformers – Substation Transformers(8556)	<u>2/25/2014</u>	<u>Classroom and Hands-on</u>	<u>120</u>	Theory, installation, operation & maintenance of Eaton (brand) power transformers
EATON Low Voltage Switchboard Assembly(8558)	<u>6/4/2014</u>	<u>Classroom and Hands-on</u>	<u>120</u>	Theory, installation, operation & maintenance of Eaton (brand) low voltage switchboards
EATON Automatic Transfer Switches(8557)	<u>6/4/2014</u>	<u>Classroom and Hands-on</u>	<u>120</u>	Theory, installation, operation and maintenance of several types of Eaton (brand) automatic power transfer switches.
EATON Low Voltage Switchgear Assembly(8559)	<u>6/4/2014</u>	<u>Classroom and Hands-on</u>	<u>120</u>	Theory, installation, operation & maintenance of low voltage switchgear
EATON Low Voltage Variable Frequency Drives(8560)	<u>6/4/2014</u>	<u>Classroom and Hands-on</u>	<u>120</u>	Theory, installation, operation and maintenance of Low Voltage Variable Frequency Drives

### Honeywell Analytics(0)

#### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Honeywell Analytics: Gas Detection 101(9485)	<u>5/21/2015</u>	<u>DVD</u>	<u>60</u>	Safety; gas detection

### Horner & Shifrin, Inc.(1024)

#### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Put Your Data to Work: Benefits of GIS Integration(5477)	<u>7/31/2012</u>	<u>On-line Class</u>	<u>120</u>	Benefits both water districts and municipalities and operators - inventory of infrastructure will be more organized and allows better response to EM events and plans for future operations/improvements.

# Drinking Water Courses for Renewal Training Credit

## Hydra -Stop(81)

### Course Name and ID Number

### Effective Date

### Course Format

### Total Approved

### Minutes Description:

Water System Maintenance Techniques(2784)	<u>1/22/2008</u>	<u>Classroom/College</u>	<u>180</u>	1 hour for each module - 3 hours total. Valve insertion, tapping, etc. May go longer. JB/PC
Line Stopping Applications & Techniques(5337)	<u>7/1/2012</u>	<u>On-line Class</u>	<u>60</u>	
Line Tapping/Pressure Connection Aps & Techniques(5338)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>60</u>	
Valve Insertion Applications & Techniques(5336)	<u>7/1/2012</u>	<u>On-line Class</u>	<u>60</u>	

## Hydro, Inc.(845)

### Course Name and ID Number

### Effective Date

### Course Format

### Total Approved

### Minutes Description:

HydroAire Centrifugal Pump(3725)	<u>1/22/2010</u>	<u>On-line Class</u>	<u>360</u>	jb
Submersible Pumps in Municipal Applications(3817)	<u>8/2/2012</u>	<u>On-line Class</u>	<u>360</u>	JB/PC

## IL. Department of Public Health(24)

### Course Name and ID Number

### Effective Date

### Course Format

### Total Approved

### Minutes Description:

Cross Connection Control Overview(6752)	<u>9/1/2012</u>	<u>Conference/Seminar</u>	<u>240</u>	IDPH Course #750-153-C1
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## Illinois American Water Company Peoria(1002)

### Course Name and ID Number

### Effective Date

### Course Format

### Total Approved

### Minutes Description:

Electrical Hazards - Arc Flash(5516)	<u>9/5/2012</u>	<u>Classroom and Hands-on</u>	<u>270</u>	Covers the requirements of OSHA's adoption of the National Fire Protection Association 70E as its procedures for working on or near energized electrical equipment.
Excavation, Shoring & Manufacturer's Tab Data(5515)	<u>9/5/2012</u>	<u>Classroom and Hands-on</u>	<u>360</u>	Covers requirements of title 29 CFR Subpart P and specifically the company Excavation and Trenching Program. Topics: site eval, soil classifications, protective systems, general safety requirements and emergency procedures. Installation of cave-in protection equipment in accordance with Manufacturer's Tabulated Data is also covered.

## Drinking Water Courses for Renewal Training Credit

Hazard Communication Program(5512)	<u>9/5/2012</u>	<u>Classroom and Hands-on</u>	<u>150</u>	OSHA Standard 1910.178; American Water's Forklift SOP; Video and student handbooks J.J. Keller. Labeling, signs, and warnings required to be on containers of hazardous chemicals stored and used within the workplace, SDS sheets and how to read them, location of the chemical inventory, and technical hazard info on the primary hazardous chemicals used in the water and wastewater treatment industry.
Safe Chemical Handling w/Powered Industrial Trucks(5513)	<u>9/5/2012</u>	<u>Classroom and Hands-on</u>	<u>150</u>	Covers requirements of OSHA Standard 1910.178 and specifically forklift driver certification - general and specific truck operations, workplace hazards, safety precautions, hands-on practical training requirements and evaluations for certification.
Technical Confined Space Entry(5514)	<u>9/5/2012</u>	<u>Classroom and Hands-on</u>	<u>210</u>	Covers requirements of OSHA Standard 1910.178 and specifically Confined Space Entry Program. Topics: ID and classify confined spaces, common hazards in confined spaces, entry permit, specific procedures, atmospheric testing, and op and maint of multi-gas monitors, retrieval equipment, ventilation blowers, and the company policy on non-entry rescue.
Lockout/Tagout of Hazardous Energy(5524)	<u>9/21/2012</u>	<u>Classroom and Hands-on</u>	<u>120</u>	Covers requirements of Title 29 CFR 1910.147 and specifically the company's lockout/tagout program. Hands-on: develop lockout/tagout procedure for facility equipment.
Respiratory Protection and Fit Tests(5695)	<u>11/7/2012</u>	<u>Classroom and Hands-on</u>	<u>180</u>	
Cut-Off and Ring Saw Operation & Maintenance(6883)	<u>12/6/2012</u>	<u>Classroom and Hands-on</u>	<u>75</u>	Operation and safety of cut-off or ring saw
Power Grit Saw Operation & Maintenance(6882)	<u>12/6/2012</u>	<u>Classroom and Hands-on</u>	<u>65</u>	Operation and safety of power grit saw.
Guillotine Saw Operation & Maintenance(6881)	<u>12/11/2012</u>	<u>Classroom and Hands-on</u>	<u>115</u>	Operation and safety using a guillotine saw at IL Am Water.
Process Safety Management/Risk Management Plan(7148)	<u>1/1/2013</u>	<u>Conference/Seminar</u>	<u>220</u>	This course addresses all elements of OSHA's Process Safety Management and EPA's Risk Management Plan as applies to water and wastewater treatment plants that use highly hazardous chemicals including process safety, process hazard analysis, operating procedures, training, contractor safety, management of change, pre-startup safety review, mechanical integrity, non-routine work authorizations, incident investigation, emergency planning and response, compliance audits and RMP submission
National Safety Council Defensive Driving Course(7054)	<u>1/28/2013</u>	<u>Conference/Seminar</u>	<u>360</u>	Defensive driving techniques to develop crash avoidance behavior and safe driving practices.
Laboratory Operating Requirements(7057)	<u>2/4/2013</u>	<u>Conference/Seminar</u>	<u>140</u>	Testing samples to ensure compliance with drinking water standards.

# Drinking Water Courses for Renewal Training Credit

Using SafeStart to Enhance Plant Operations(7163)	<u>4/16/2013</u>	<u>Workshop</u>	<b>480</b>	Introduction and Overview Eyes on Task, Mind on Task Line of Fire, Balance/Traction/Grip Rushing, Frustration, Fatigue, Complacency Critical Error Reduction Techniques
Electrical Continuity and Meter Installations(7739)	<u>10/15/2013</u>	<u>Classroom and Hands-on</u>	<b>95</b>	Topics include inspection of currently installed meters, piping and grounding bonding jumpers, installation procedures for temporary and permanent bonding grounding jumpers, meter removal and installation, determination of service amperage ratings and completion of work orders. Participants will install temporary and permanent bonding grounding jumpers and meters.
Personal Protective Equipment(7901)	<u>11/11/2013</u>	<u>Conference/Seminar</u>	<b>150</b>	The requirements of Title 29 CFR 1910.132 through 138 and American Water's Personal Protective Equipment Program. This course explains types of personal protective equipment, limitations of use, and requirements of use to operate the treatment plants and distribution facilities to ensure continuity of quality and operation of facilities.

## Illinois Central College(225)

### Course Name and ID Number

### Effective Date

### Course Format

Ameren Gas & Electrical Safety(6751)

9/13/2012

Conference/Seminar

### Total Approved

### Minutes Description:

**120** Dangers of digging around gas pipes.

## Illinois Department of Agriculture(309)

### Course Name and ID Number

### Effective Date

### Course Format

Public Pesticide Applicator Training Right-of Way(7706)

1/1/2013

Conference/Seminar

### Total Approved

### Minutes Description:

**420** Right-of-Way pest control – chemical weed control on noncrop sites such as parking lots, along roads, in access rights-of-way, and in fence lines; water tanks and fences. 2 day course. Credit given only for training, not time spent testing.

## Illinois Department of Transportation(266)

### Course Name and ID Number

### Effective Date

### Course Format

Flagger Training(936)

1/21/2003

Other

### Total Approved

### Minutes Description:

**180** Correct procedures for flagging utility work. JLE/PC

OSHA 10 hour Training(9550)

5/19/2015

Conference/Seminar

**600** Confined Space, Fall Protection, Haz Com, Electrical, LOTO, Excavation, Intro to OSHA, Fire Protection, tools

## Illinois Electric Works(0)

### Course Name and ID Number

### Effective Date

### Course Format

### Total Approved

### Minutes Description:

# Drinking Water Courses for Renewal Training Credit

ANSI Authorized Worker Fall Protection(9471) 5/6/2015 Classroom and Demonstration 480 Fundamentals of Fall Protection

## Illinois Electric Works/Toshiba International Corp(171)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Understanding Electric Motor Repair(3179)	<u>12/1/2008</u>	<u>Classroom/College</u>	<u>480</u>	JB

**Total Approved**

## Illinois Intstitute of Technology(934)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Water Chemistry(7900)	<u>1/1/2013</u>	<u>Conference/Seminar</u>	<u>2400</u>	All water and wastewater treatment processes relating to the chemical properties involved.

**Total Approved**

## Illinois Municipal League Risk Management Assoc.(259)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Confined Space Entry and Rescue(1041)	<u>3/20/2003</u>	<u>Conference/Seminar</u>	<u>150</u>	1.5 hours of classroom and 1 hour of mock rescue. JLE
Municipal Safety Training(898)	<u>3/2/2005</u>	<u>Conference/Seminar</u>	<u>120</u>	MSDS, PPE, confined space, etc. JLE/PC
Hazard Communication & MSDS(2987)	<u>6/3/2008</u>	<u>Other</u>	<u>60</u>	TL
Personal Protective Equipment(2793)	<u>8/7/2012</u>	<u>On-line Class</u>	<u>60</u>	Approved 1/30/2008. Re-approved 8/7/2012. JB/tl/PC
Control of Hazardous Energy (Lockout/Tagout)(5694)	<u>11/2/2012</u>	<u>On-line Class</u>	<u>60</u>	
Trenching and Shoring(7059)	<u>1/1/2013</u>	<u>Conference/Seminar</u>	<u>60</u>	safety
Bloodborne Pathogens(7217)	<u>3/12/2013</u>	<u>Conference/Seminar</u>	<u>60</u>	Training on diseases, exposures, warning labels, hand washing, PPE, vaccines, exposure incident response & medical records
Bloodborne Pathogens(7328)	<u>6/6/2013</u>	<u>Presentation</u>	<u>45</u>	Bloodborne Pathogens
Control of Hazardous Energy (Lockout/Tagout)(7373)	<u>6/7/2013</u>	<u>Presentation</u>	<u>45</u>	Lockout/Tagout
Confined Space Entry(7506)	<u>7/16/2013</u>	<u>Presentation</u>	<u>60</u>	Confined Space Entry
Hearing Conservation(7687)	<u>9/4/2013</u>	<u>Presentation</u>	<u>60</u>	Hearing Conservation
Fire Extinguisher Safety Training(7731)	<u>9/24/2013</u>	<u>Presentation</u>	<u>45</u>	Fire Extinguisher

**Total Approved**

## Illinois Municipal Utilities Association(197)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
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**Total Approved**

## Drinking Water Courses for Renewal Training Credit

Fire Safety/Fire Extinguisher(904)	<u>10/15/2011</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Initial approval 12/10/02. Life safety, evacuation procedures and portable fire suppression equipment use. JLE
Arc Blast/Arc Flash Protection & High-Voltage Elec(5474)	<u>3/27/2012</u>	<u>Presentation</u>	<u>360</u>	Arc Blast/Arc Flash Protection & High-Voltage Elec
Confined Space Entry(617)	<u>7/25/2012</u>	<u>Operator's Group Meeting</u>	<u>87</u>	Initial approval 4/24/02. How to's on confined spaces. JLE
Emergency Preparedness(732)	<u>7/25/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Initial approval 7/31/02. Preparing for natural disasters(floods). Emergency response procedures. JLE
Hazard Chemical Safety(900)	<u>7/25/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Initial approval 12/10/02. Overview of MSDS and chemical labeling requirements. JLE
Hazard Communication(730)	<u>7/25/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Initial approval 7/31/02. Health hazards in the workplace. MSDS. JLE
Lockout/Tagout(728)	<u>7/25/2012</u>	<u>Operator's Group Meeting</u>	<u>75</u>	Initial approval 7/31/02. Lockout/tagout of electrical equipment. JLE
Personal Protective Equipment(729)	<u>7/25/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Initial approval 7/31/02. Proper procedures for using all types of PPE. JLE
Respiratory Protection(901)	<u>7/25/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Initial approval 12/10/02. Types of respirators, SCBA's, selection and use. JLE
Trenching & Excavation Safety(2794)	<u>7/25/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	tl
Trenching and Shoring(759)	<u>7/25/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Initial approval 9/9/02. Laws, regs, procedures and policies for trenching and shoring. JLE
Worksite Protection and Traffic Control(903)	<u>7/25/2012</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Initial approval 12/10/02. Flagging procedures and work zone configuration. JLE
Benefits of the GHS and SDS/Understanding the Data(7671)	<u>9/1/2013</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Relates to OSHA's revised standard for HazCom regarding the new Globally harmonized System (GHS) for the classification and labeling of chemicals.
Benefits of the GHS and SDS/Understanding the Data(8023)	<u>11/21/2013</u>	<u>Presentation</u>	<u>90</u>	Relates to OSHA's revised standard for HazCom regarding the new Globally harmonized System (GHS) for the classification and labeling of chemicals. Shorter version of 7671 or 8019.

### Illinois Public Risk Fund(546)

#### Course Name and ID Number

Blood Borne Pathogens(5126)

#### Effective Date

5/10/2012

#### Course Format

Conference/Seminar

#### Total Approved

#### Minutes Description:

120

How to assist coworkers bleeding or injured and protect them and yourself.

### Illinois Public Service Institute(567)

#### Course Name and ID Number

#### Effective Date

#### Course Format

#### Total Approved

#### Minutes Description:

## Drinking Water Courses for Renewal Training Credit

Communication Skills(8933)	<u>10/5/2015</u>	<u>Workshop</u>	<u>195</u>	Underscores how people learn and remember
Legal Update(8932)	<u>10/5/2015</u>	<u>Workshop</u>	<u>210</u>	Drugs, alcohol, FOIA, Social Media
Service Excellence in Public Works(8930)	<u>10/5/2015</u>	<u>Workshop</u>	<u>225</u>	Obstacles and Best Practices
Communication Excellence(8934)	<u>10/6/2015</u>	<u>Workshop</u>	<u>150</u>	Written Communication, formal letters, email, informal correspondence
Maximizing Social Media(8938)	<u>10/6/2015</u>	<u>Workshop</u>	<u>105</u>	Using social media, Do's and Don'ts, Best Practices
Achieving Service Excellence(8936)	<u>10/8/2015</u>	<u>Workshop</u>	<u>450</u>	Focus on practical solutions to barriers for achieving service excellence in a changing environment.
Conducting Performance Appraisals(8935)	<u>10/8/2015</u>	<u>Workshop</u>	<u>225</u>	Techniques and procedures for success.
Creating an Action Plan(8937)	<u>10/9/2015</u>	<u>Workshop</u>	<u>240</u>	Putting lessons learned from the week into an action plan to take back to work.

### Illinois Rural Water Association(29)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Railroad Permits(3972)	<u>7/27/2010</u>	<u>Classroom/College</u>	<u>180</u>	permits for boring under RR. JB/pc
Hydrant and Valve O&M(2107)	<u>4/5/2012</u>	<u>Conference/Seminar</u>	<u>240</u>	JB/pc
Well and Pump Operation and Maintenance(2602)	<u>11/2/2012</u>	<u>Conference/Seminar</u>	<u>180</u>	Kishwaukee College Malta IL 1/9/13; Hopedale Comm Center, Hopedale 1/10/12
Rural Development Update(6966)	<u>2/19/2013</u>	<u>DVD</u>	<u>30</u>	Funding options for PWS
Water Loss Audit Seminar(9066)	<u>1/1/2015</u>	<u>Conference/Seminar</u>	<u>360</u>	History of water loss, how to use the AWWA M36 manual and AWWA water loss software.
From Wells to Filters to System Metering(9400)	<u>5/21/2015</u>	<u>Conference/Seminar</u>	<u>180</u>	Session will cover proper well operation and maintenance, filter operation to help reduce TTHMs, and the options for metering in distribution systems.

**Total Approved**

### Illinois Valley Community College Continuing Education Center(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Water Supply Operation II (Class B)(8205)	<u>1/1/2014</u>	<u>Classroom and Hands-on</u>	<u>900</u>	Prepares participants for the Class B operator's license examination administered by the IL EPA.

**Total Approved**

### Intergovernmental Risk Management Agency(69)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
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**Total Approved**

## Drinking Water Courses for Renewal Training Credit

Avoiding Summer Hazards(5341)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	Safety
Back Safety/Ergonomics(5342)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	Safety - demonstrations of ergonomically correct stretches and lifts.
Confined Space Entry Refresher(569)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	Formerly "Confined Space Entry and Rescue" for 3 hrs. Planning, reviewing, and implementing plans. What help is available. JLE
Effective Safety Committees(5343)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>60</u>	
Electrical Safety(3050)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	JB
Fall Protection(1303)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	BST/PC
Fork Lift Safety(3403)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>240</u>	Safety when moving chemicals. JB/tl
GHS/Hazard Communication(5344)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	
Harassment in the Workplace(5345)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>60</u>	
Lock-Out/Tag-Out(568)	<u>7/1/2012</u>	<u>Presentation</u>	<u>90</u>	Company policy and procedures. JLE/PC
Respiratory Protection Overview(5346)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	
Supervisor Safety Training(1395)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	
Trench Collapse - Refresher(301)	<u>7/1/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	Formerly called Trench/Excavation Compliance
Work Zone Safety(2886)	<u>7/1/2012</u>	<u>On-line Class</u>	<u>120</u>	JB
Self Inspection Techniques(1088)	<u>7/20/2012</u>	<u>Conference/Seminar</u>	<u>60</u>	PC
Slips, Trips and Falls(2381)	<u>7/20/2012</u>	<u>Classroom/College</u>	<u>60</u>	First approved 10/19/2006 JB/PC
OSHA 10 Hour(7093)	<u>2/18/2013</u>	<u>On-line Class</u>	<u>600</u>	Regulatory updates/safety.
Key Elements for Effective Root Cause Analysis & P(8034)	<u>12/11/2013</u>	<u>On-line Class</u>	<u>120</u>	Safety; Incident Evaluation; Case History of Titanic; Case Story of Titanic; Applying Root Cause Analysis; Basic Steps in Identifying the Root Causes of a Problem; The Accident Review Board process; Discussion & Evaluation.
Ladder Safety(8035)	<u>12/11/2013</u>	<u>On-line Class</u>	<u>60</u>	Hazard-Alert Ladders; Ladder Inspection Form; Recognizing Ladder Hazards; Ladder Selection; Ladder Inspection; Ladder Set-Up; Ladder Safety; Ladder Maintenance and Storage: Questions, Quiz, Evaluation.
Confined Space Entry Compliance and Non-Entry Resc(9491)	<u>8/13/2015</u>	<u>Classroom and Hands-on</u>	<u>300</u>	Discuss Confined Space Entry Issues Describe requirements set for permits, air quality, isolation, and ventilation Identify proper entry, rescue, training, and posting procedures Demonstrate the use of equipment and confined space skills

# Drinking Water Courses for Renewal Training Credit

## ISAWWA(28)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Taste and Odor Control #111(289)	<u>5/2/2001</u>	<u>Video</u>	<b>180</b>	2000 satellite video. JLE
Water Treatment Series #102(643)	<u>5/14/2002</u>	<u>Video</u>	<b>45</b>	3 videos on chlorine, disinfection by-products, and information on turbidity/particle counting. JB
Distribution System Repair #109(661)	<u>5/24/2002</u>	<u>Video</u>	<b>180</b>	2001 satellite teleconference. Cost-effective methods for repairing and maintenance of the distribution system. JLE
Groundwater Treatment #114(657)	<u>5/24/2002</u>	<u>Video</u>	<b>105</b>	Groundwater treatment, 2 volumes. JLE
Surface Water #113(658)	<u>5/24/2002</u>	<u>Video</u>	<b>105</b>	Surface water treatment, 2 volumes. JLE
Managerial Responsibilities #117(701)	<u>7/16/2002</u>	<u>Video</u>	<b>60</b>	
Storage and Distribution #115(702)	<u>7/16/2002</u>	<u>Video</u>	<b>60</b>	
Emerging Treatment Technologies #125(757)	<u>9/4/2002</u>	<u>On-line Class</u>	<b>180</b>	Emerging treatment technologies such as ultraviolet, ozone and membranes. JLE
Operator Math #104(838)	<u>10/21/2002</u>	<u>Video</u>	<b>15</b>	Dosage, conversions and formulas. JLE
Water Treatment Series #102(839)	<u>10/21/2002</u>	<u>Video</u>	<b>45</b>	3 videos - 15 minutes each. Jar testing, coagulation, flocculation, sedimentation and filtration. JLE
Routine Coliform Sampling #106(937)	<u>1/21/2003</u>	<u>Video</u>	<b>15</b>	Proper procedures for taking coliform samples. JLE
Meters A to Z(970)	<u>1/27/2003</u>	<u>On-line Class</u>	<b>240</b>	Accurate water measurement is the means by which water utilities produce revenue to cover expenses, charge each customer equitably, prevent waste of water, and minimize the load on wastewater facilities. During this intensive one-day seminar we will explore meters from A to Z. <ul style="list-style-type: none"> <li>• What is a water meter?</li> <li>• Things water meters do</li> <li>• A water meter only does two things, register and record</li> <li>• Types of water meters</li> <li>• Fire service metering</li> <li>• Application's for water meters</li> <li>• Sizing of water meters</li> <li>• Meter testing</li> <li>• Repair or replacement</li> <li>• Conclusion and remarks</li> </ul>
Basics of Waterborne Pathogens #133(1149)	<u>5/29/2003</u>	<u>On-line Class</u>	<b>180</b>	Seminar or on DVD/Video.
Case Studies in Source Water #105(1148)	<u>5/29/2003</u>	<u>Video</u>	<b>15</b>	JB

## Drinking Water Courses for Renewal Training Credit

Emerging Issues in Water Utility Operations #130(1562)	<u>4/30/2004</u>	<u>On-line Class</u>	<u>120</u>	Learn what utility professionals believe to be the challenges and issues facing utilities, including monitoring and control system technologies and treatment technologies - see how they impact you.
Water System Security #123(1576)	<u>4/30/2004</u>	<u>Video</u>	<u>60</u>	4 videos. JB Water Treatment Plant Chemical Protection & Security; Water System Security-Video Field Guide; Utility Perimeter Security; Source Water Security & Protection Source Waters.
Excellence in Water Quality Distribution(1868)	<u>1/31/2005</u>	<u>Teleconference</u>	<u>195</u>	AWWA Satellite Teleconference. JB
Pipeline Repair #137(2463)	<u>1/16/2007</u>	<u>Video</u>	<u>210</u>	AWWA Teleconference. JB
Water System O&M #432(2923)	<u>4/18/2008</u>	<u>Video</u>	<u>255</u>	JB
Sampling Techniques(3158)	<u>11/5/2008</u>	<u>On-line Class</u>	<u>210</u>	covers sampling procedures for IOC's, flouride, Nirate and nitrite, SOC's, VOC's, disinfection be-products, and bacteriological samples.
Taste & Odor & Taste Test Competition(3202)	<u>2/24/2009</u>	<u>On-line Class</u>	<u>300</u>	Determining the causes of taste and odor in potable water as well as treatment response. KG
Water Resource Alternatives #3404(3404)	<u>4/27/2009</u>	<u>Video</u>	<u>180</u>	JB
Annual Regulatory Update(3512)	<u>6/5/2009</u>	<u>On-line Class</u>	<u>300</u>	
Excel 101: Press this Button(3530)	<u>9/22/2009</u>	<u>Operator's Group Meeting</u>	<u>60</u>	KG
Excel 201: "Conform" to Technology(3532)	<u>10/1/2009</u>	<u>Operator's Group Meeting</u>	<u>60</u>	KG
Basic Math for Operators Class C& D- Quick Refresh(3522)	<u>10/5/2009</u>	<u>On-line Class</u>	<u>420</u>	KG/PC
Excel 301: Finesse(3535)	<u>11/19/2009</u>	<u>Operator's Group Meeting</u>	<u>45</u>	KG
ARRA: After The Gold Rush(3838)	<u>4/5/2010</u>	<u>Operator's Group Meeting</u>	<u>60</u>	JB/tl
Design & Operational Challenges(3841)	<u>4/7/2010</u>	<u>Classroom/College</u>	<u>240</u>	JB
Effective Backflow Programs(3843)	<u>4/8/2010</u>	<u>On-line Class</u>	<u>240</u>	Effective Backflow Programs, IEPA Title 35 - What it says in plain English - Learn how to effectively develop, implement, and enforce an effective cross-connection control program that meets all of the Illinois EPA requirements. Cross-Connection inspections, surveys and record keeping are the three key elements of all effective backflow prevention programs, how does each element relate to the others and how do you move forward from where you are.
Reducing Chemical Usage in Reservoirs(3873)	<u>4/28/2010</u>	<u>Operator's Group Meeting</u>	<u>60</u>	JB
Applying Service Project Design to IL Systems(3999)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<u>60</u>	JB

## Drinking Water Courses for Renewal Training Credit

Chemical Properties, Safety & Security(3982)	<u>7/29/2010</u>	<u>On-line Class</u>	<b>300</b>	JB
Extraordinary and Meaningful Customer(4008)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>30</b>	JB
Flange Adaptors(4003)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
Gas Chlorination Safety(4007)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
ILWARN(3995)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>30</b>	JB
JULIE Law Changes: Excavators/Facility(4006)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
Mechanical & Flange Joint Installation(4010)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
Membrane Water Treatment System(4005)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
Pandemic Perspectives(4011)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
Pipe Tapping & Repair(4000)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
Preventative Maintenance & Well Rehab(3984)	<u>7/29/2010</u>	<u>On-line Class</u>	<b>240</b>	This seminar will discuss Preventative Maintenance Testing for your well and pumping equipment. The analysis of this PM data will lead into a discussion of well rehabilitation and when it is required. Also discussed will be the various types of well rehabilitation and the correct technique for the application. Included in the discussion will be the parameters that are required to design the most appropriate and effective well rehabilitation plan. Case Studies will also be discussed and reviewed
Sustainable Approach to Managing Potable Water(3990)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
The Evolution of Pipe & Fittings(3992)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>90</b>	JB
Water Conservation Ordinance & Watersense(3993)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
Water Conservation Programs for Utilities(4001)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
Water Rate Studies: Be Green/Save Green(3996)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
Water Storage Tank Safety Modifications(3997)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
Why Should I Care About Implementing WPP?(3998)	<u>7/29/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Well Head Protection Program. JB
Water Rate Studies(4066)	<u>11/1/2010</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
Changing Strategic AMR Direction(4217)	<u>1/13/2011</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB
Mixing/Maintaining Water Quality in Tanks(4215)	<u>1/13/2011</u>	<u>Operator's Group Meeting</u>	<b>60</b>	JB

## Drinking Water Courses for Renewal Training Credit

Solving Corrosion Problems On Water Utility(4216)	<u>1/13/2011</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Cathodic protection of cast iron, ductile iron, and welded steel transmission and distribution water mains is a mitigative measure that can reduce premature breaks due to corrosion and extend a water pipe's service life. With the increasing frequency and costs of water main breaks coupled with limited capital funding, municipal water utilities should consider using cathodic protection to reduce their main breaks. Several Midwestern water utilities have demonstrated that CP can extend the service life of buried water infrastructure at a cost that is much less than either pipe repairs or main replacement. By installing cathodic protection as a good engineering practice, water utilities can increase the service life of their water mains, maintained a more reliable water service to their customers, and augment the health and security of their buried water distribution infrastructure.
Understanding Water Rights and Conflicts(4219)	<u>1/13/2011</u>	<u>Operator's Group Meeting</u>	<u>60</u>	JB
High Tech Operator Part I(4365)	<u>5/3/2011</u>	<u>Conference/Seminar</u>	<u>720</u>	LS
High Tech Operator Part II(4366)	<u>5/3/2011</u>	<u>Conference/Seminar</u>	<u>720</u>	LS
High Tech Operator Part III(4367)	<u>5/3/2011</u>	<u>Conference/Seminar</u>	<u>720</u>	LS
OSHA: Welding #3022(4453)	<u>6/22/2011</u>	<u>Operator's Group Meeting</u>	<u>120</u>	There are many safety precautions which must be taken when performing arc and gas welding. In this presentation you will learn about those safety precautions, as well as OSHA violations with regard to welding.
OSHA: Excavations #3021(4488)	<u>6/28/2011</u>	<u>Operator's Group Meeting</u>	<u>150</u>	In this class you will learn about various excavation requirements, such as shoring and other protective systems. In addition, you will learn about soil classification.
Best Practices in Leadership(4540)	<u>9/6/2011</u>	<u>Operator's Group Meeting</u>	<u>60</u>	LS
Trenchless Water Main Rehabilitation(4541)	<u>9/6/2011</u>	<u>Operator's Group Meeting</u>	<u>75</u>	LS
Effective Backflow Programs(4611)	<u>12/20/2011</u>	<u>On-line Class</u>	<u>300</u>	Laws regarding backflow, why backflow preventers are needed and who needs them, how preventers work and different types, how to run a backflow preventer program.
Ensuring Sustainable Water Systems(4612)	<u>12/20/2011</u>	<u>Operator's Group Meeting</u>	<u>90</u>	Perspectives on full-cost pricing, cost of service rate-making, and revenue-positive conservation strategies
Mechanical Seal & Pump Reliability(4613)	<u>12/27/2011</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Overview of the causes of seal failure and corrective actions to produce improved pump reliability. ISAWWA Course #2057
Disaster Management for Water & Wastewater(4645)	<u>1/11/2012</u>	<u>On-line Class</u>	<u>960</u>	Hazards and dangers to water system, disaster prep and procedures, prevention steps.

## Drinking Water Courses for Renewal Training Credit

Water Distribution Systems & Maint NIGHT CLASS(4642)	<u>1/11/2012</u>	<u>Conference/Seminar</u>	<u>960</u>	3 mos classroom instruction. Also can be offered as a 20 hr. course.
Heartsaver® CPR AED Certification(5208)	<u>1/26/2012</u>	<u>Conference/Seminar</u>	<u>240</u>	Heartsaver CPR AED is a classroom, video-based, instructor-led course that teaches adult CPR and AED use, as well as how to relieve choking on an adult. This course teaches skills with American Heart Association's (AHA) research-proven Practice-While-Watching (PWW) technique, which allows instructors to observe the students, provide feedback and guide the students' learning of skills.
Intro to and Installation of Ductile Iron Pipe(5213)	<u>1/26/2012</u>	<u>On-line Class</u>	<u>300</u>	Topics to be covered: Ductile Iron Pipe: Manufacture, Features and Design; Corrosion Control: Ductile Iron Pipe Installation per AWWA C600; Thrust Restraint; Horizontal Directional Drilling with Ductile Iron Pipe; Q&A and Summary
Julie and the One Call Process(4837)	<u>2/7/2012</u>	<u>On-line Class</u>	<u>180</u>	Calling and responding to Julie tickets. The One-Call process, importance of proactive safety campaigns and highlights some interesting options; also includes a full presentation of the Remote Ticket Entry System as well as other online options available to Excavators and JULIE Members.
Water Well Rehab Technologies(4836)	<u>2/14/2012</u>	<u>On-line Class</u>	<u>240</u>	Water well rehab, when to rehab, laws and regs of water wells SB1213 new law banning mercury seals, alternative motor options to mercury motors

# Drinking Water Courses for Renewal Training Credit

Solar Powered Water Mixing(5122)

3/2/2012

Operator's Group Meeting

60

Solar powered water mixing is gaining greater usage in reservoirs, finished water tanks and wastewater treatment plants. In the last 20 years solar panels have increased in efficiency and utilize indirect light as well as direct light. Solar power is now utilized for a variety of water circulation applications. The emerging science of water circulation has been shown to provide numerous water quality benefits. Solar panels produce sufficient power to create an upwelling motion by a carefully designed impellor system. The result is an almost frictionless flow to move layers of water long distances as well as promoting vertical and horizontal circulation. As a result, solar technology meets mixing objectives in potable drinking water tanks, wastewater plants, and freshwater reservoirs. Energy requirements for solar water-mixing technology have been designed to run on low wattage solar energy. New advances in solar-powered water movement has been applied to a variety of unique applications in the last five years including blue-green algae reduction in lakes, municipal odor control, and high-grid aeration reduction in activated sludge. A recent qualitative assessment indicated that solar powered circulation (SPC) in selected wastewater test sites, were shown to augment the mixing and oxygenation required for digestion, while reducing aeration & electricity consumption, and lowering greenhouse gas emissions, sludge buildup, and odor events. Solar powered circulation transformed the bacterial community to those performing aerobic digestion in the upper water column and anaerobic digestion in the slurry and sludge. One of the fastest growing solar mixing applications is in potable water tanks. Solar powered water mixing eliminates summer stagnation, winter ice formation, and lowers chlorine by-product formation. Solar powered mixing is also being used in conjunction with air stripping THMs from potable water reservoirs. Solar water mixing is effective as well as affordable and currently in several sites in Illinois. This discussion will also touch on an effective low energy grid type of mixer used in potable water tanks and waste water systems.

## Drinking Water Courses for Renewal Training Credit

Do You Really Have a Free Cl <sub>2</sub> Residual?(5001)	<u>3/8/2012</u>	<u>On-line Class</u>	<b>240</b>	Seminar = 4 hrs; Webinar = 1 hr. A detailed breakpoint chlorine diagram will be used during this session to help visualize the pros and cons between using combined chloramine residuals or free chlorine disinfection methods. Chloramination treatment, disinfection byproduct formation, nitrification, and controlling chlorine taste/odor will be addressed in this session. Attendees given formulas and tools to return to the job and calculate chlorine demand, optimize chlorine dosage rate, and limit byproduct formation.
Lead & Copper Compliance at the Racine WI Plant(4913)	<u>3/20/2012</u>	<u>DVD</u>	<b>30</b>	WaterConn 2012 = 0.5 hr or Webinar = 1 hr
Lead and Copper Compliance at the Racine WI Plant(7684)	<u>3/20/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Lead and copper compliance, distribution
Practical Approaches to Fund Infrastructure Prjcts(4888)	<u>3/20/2012</u>	<u>DVD</u>	<b>30</b>	WaterCon 2012=0.5 hr; webinar = 1.0 hr. Identify annual system replacement needs and develop a proactive replacement program based on the true useful life of water and wastewater infrastructure and equipment. This presentation also focuses on ways to structure a user charge system to balance the objective of sufficient funding for timely infrastructure replacement with the necessity to maintain affordability for rate payers.
Practical(Iy) Asset Mngmnt One Communities Foray(4883)	<u>3/20/2012</u>	<u>On-line Class</u>	<b>240</b>	WaterCon 2012 =0.5 hr; seminar= 4.0 hrs. Integration of a practical asset management system with a community's existing tools and management processes.
Pipeline Inspection Technologies(5234)	<u>3/29/2012</u>	<u>On-line Class</u>	<b>240</b>	Learn about the latest water transmission and distribution system piping inspection techniques including video (CCTV) and acoustic leak detection. Discussion will highlight projects and applications around North America with actual video footage and leak sound findings. Hands on demonstrations will include the chance to insert a tethered camera into a simulated distribution system and witness (and hear) a mock inspection in a transmission main.
Cost Analysis of Cross Connection Control Mngmnt(5124)	<u>4/12/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Explains the legal requirement of a back-flow program and better insights into a backflow prevention program.
Math for Water Works Operators(5055)	<u>4/19/2012</u>	<u>On-line Class</u>	<b>240</b>	Review of basic math computations performed by water operators of all classes, including area and volume calculations, unit conversions, distribution system math, chemical feed calculations, and basic water treatment calculations.

## Drinking Water Courses for Renewal Training Credit

Planning for Critical Data Systems - SCADA(5235)	<b><u>4/26/2012</u></b>	<u>On-line Class</u>	<b><u>180</u></b>	SCADA systems are one of a number of critical data systems in use in the modern water/wastewater utility. The impact of these systems extends well beyond the day to day monitoring and control of facilities. The data gathered is a critical business asset for a Utility, and careful consideration needs to be given to how SCADA information is gathered, utilized, and interfaced with other critical Utility information assets.
Issues in Water Utility Operation(5117)	<b><u>4/30/2012</u></b>	<u>Video</u>	<b><u>120</u></b>	Aging infrastructure both distribution and aging manpower. Use of RF for monitoring and surveillance of system.
Math for Water Works Operators(5082)	<b><u>5/2/2012</u></b>	<u>Conference/Seminar</u>	<b><u>240</u></b>	Review of basic math computations performed by water operators of all classes.
Essential Operations for a Reliable Dist System(5083)	<b><u>5/4/2012</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	Metering, Leak Detection, Valve Exercising, Fire Hydrant Maint, etc.
Innovative Operator Tools #131(2250)	<b><u>5/4/2012</u></b>	<u>On-line Class</u>	<b><u>120</u></b>	ISAWWA Video. SCADA, AMR & GIS
Water Utility Financial Sustainability in an Uncer(5125)	<b><u>5/4/2012</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	How to price water rate increases and what factors to consider.
Membrane Solutions for Water & Wastewater(5085)	<b><u>5/10/2012</u></b>	<u>Presentation</u>	<b><u>300</u></b>	Enhance knowledge of membrane technology options and the contamination problems they solve.
Chemical Properties, Safety & Security(5116)	<b><u>5/16/2012</u></b>	<u>On-line Class</u>	<b><u>240</u></b>	Discusses properties, safety, equipment, PPE, security and some regulatory issues relating to liquid chlorine, sodium hypochlorite, fluoridation chemicals, and others related to water treatment.
Current Issues in Risk Management for Utilities(5086)	<b><u>5/17/2012</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	Overview of IL Workers Compensation Reform; Economic changes - increase in general liability or auto liability claims, doing the same work with less funds.
Integrating Power Monitoring Data into SCADA Syst(5087)	<b><u>5/23/2012</u></b>	<u>Operator's Group Meeting</u>	<b><u>60</u></b>	
Industrial Network Hacking Awareness & Prevention(5088)	<b><u>5/24/2012</u></b>	<u>Conference/Seminar</u>	<b><u>240</u></b>	01/17/12 in Moline 02/29/12 in St. Charles 05/24/12 in O'Fallon 08/02/12 in Champaign

## Drinking Water Courses for Renewal Training Credit

Extend the Life of Your Water Storage Tank(5089)	<u><b>5/30/2012</b></u>	<u>Operator's Group Meeting</u>	<b>60</b>	Water systems often need to recoat reservoirs or elevated storage tanks. By referring to two coating systems included in the revised AWWA D102 Standard "Coating Steel Water-Storage Tanks", painting contractors and specifiers discover they can offer tank Owners the benefits of extended service life and lowered maintenance costs for their water storage tanks. This presentation will discuss the revised AWWA D102 Standard and two new interior and exterior coating systems. Picture images of tank-painting projects will be included in this PowerPoint presentation. The Author is a member of the AWWA D102 Revision Task Force.
Optimize Your Systems(5229)	<u><b>5/31/2012</b></u>	<u>On-line Class</u>	<b>240</b>	With smaller budgets and less personnel, it's more important than ever to search for opportunities that will help to optimize your systems by improving efficiency and reducing operating costs. With this goal in mind, this presentation will touch on topics such as variable frequency drives, SCADA, surveillance, chemical dosing, equipment inspection and preventive maintenance implementation.
Getting Back to Basics: Julie & One-Call Process(5090)	<u><b>6/6/2012</b></u>	<u>Operator's Group Meeting</u>	<b>60</b>	JULIE, Inc. provides an update of the one-call process. Getting back to the basics of calling and responding to JULIE tickets. JULIE's Damage Prevention Manager will explore the steps of the one-call process, discuss the importance of proactive safety campaigns and highlight some interesting options available to facility owners and excavators in Illinois.
Keep Water Inside of Your Pipe & Dirt Out(5215)	<u><b>6/9/2012</b></u>	<u>On-line Class</u>	<b>240</b>	Ductile Iron and PVC Pressure Pipe/Fitting, Assembly and Restraint This presentation will first discuss current pipe and fitting standards as written by AWWA and ASTM including the new standard for C-900 pipe. Installation procedures detailed by these standards as well as recommendations by the manufacturers trade associations will be presented with an emphasis on what is practical to accomplish in the field and what may present a challenge. Pipe joint restraint methods including thrust blocks, threaded rod, pipe company built in restraint and third party wedge action restrainers will be discussed highlighting the strengths and limitations of each. Practical advice for installing and restraining other types of pipe connections such as cast couplings, differing pipe materials, flange adapters and expansion joints will be presented. Software utilized to determine restrained lengths will be demonstrated and distributed. This presentation is recommended for both the seasoned veteran waterworks professional as well as the newest member of the team.

## Drinking Water Courses for Renewal Training Credit

Adherence to the AWWA G-300 Standard(5233)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Part II. Illustrating Excellence in Source Water Protection and Adherence to the AWWA G-300 Standard Through Case Studies. Source Water Protection (SWP) programs share certain common elements but also involve many site-specific issues that reflect the diversity of local hydrology, land use, and physical settings. Therefore, it is challenging to determine the appropriate level of complexity and effort required to develop and implement an effective SWP program. This webinar will present a number of case studies that focus on the six essential elements of SWP programs that meet the American National Standards Institute (ANSI)/American Water Works Association (AWWA) Utility Management Standard G-300 for Source Water Protection. Webinar participants will be able to assess the site-specific aspects of the G-300 Standard and gain understanding on how their Source Water Protection programs may be improved to better meet the standard criteria.
AWWA G-300 Standard for Source Water Protection(5232)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Part I. Understanding the Essential Elements to meet the AWWA G-300 Standard for Source Water Protection
BSI Online: Backflow Tracking Automation(5200)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	BSI Online is an innovative way to administer a backflow tracking program. Highly effective and easy to use, BSI Online automating the backflow tracking process. BSI Online is currently being utilized by municipalities across the country as an excellent means of complying with State regulatory agencies. BSI Online will automate and simplify your backflow tracking program. BSI Online is designed to increase backflow testing compliance, while more efficiently allocating your most valuable resource – time.
Detailed Topics in Cured-in-Place-Pipe (CIPP)(5204)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	More and more Illinois communities are looking for new technologies to provide less expensive solutions to improve underground water systems. Cured-in-Place-Pipe (CIPP) Rehabilitation is an IEPA approved technology that is gaining traction in the region. The cost savings and reduced disruption associated with this trenchless technology is very attractive to water system owners.

## Drinking Water Courses for Renewal Training Credit

Firewalls Are Not Strong Enough(5207)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Water works control systems are increasingly communicating with business systems in order to more efficiently plan maintenance and schedule crews, purchase spare parts, and serve real-time information to large end users. These efficiencies can result in substantial savings for water utilities. Interconnection begs the question of security though, and many utilities are expressing serious concerns over conventional firewall-based security measures. Though they may look like hardware, firewalls are essentially software artifacts, with all the complexity, limitations and vulnerabilities of software.
Lab Training: Glassware & Pipetting #3024(5217)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>90</u>	In this class, typical laboratory glassware, such as beakers, Erlenmeyer flasks, and pipettes are discussed. The student will learn about specific types of pipettes and proper procedure in using them.
Lab Training: Safety Practices #3025(5218)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Lab technicians not only have to learn about safety, they have to LIVE it. This class discusses personal protective equipment, such as safety glasses and proper footwear. Also discussed is the subject of safety equipment that can be found in a lab, such as lab hoods and safety showers.
Lab Training:Filtering, Mixing & Sampling #3023(5216)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>90</u>	Filtering is a way of separating solids from a liquid. You will learn various methods and equipment used to filter. In addition, various problems that are experienced while mixing and sampling are discussed.
Measuring Chlorine Residual(5221)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This presentation will cover the important considerations in accurate measurement of free and total chlorine residuals by the DPD colorimetric method and amperometric titration for portable and laboratory measurements and on-line measurements with either the colorimetric or amperometric probes. Measurement of residuals for chloramination also will be discussed including measurement of monochloramine, free ammonia and total ammonia.

## Drinking Water Courses for Renewal Training Credit

Modern Marvels-City Water #141(5224)	<u>6/18/2012</u>	<u>Video</u>	<b>45</b>	When we turn on a faucet, we expect clean, pure water to flow out. We also expect our cities to provide ample water for industry, fire fighting and irrigation. Public water supply systems supply about 99% of the US population, but most of us know little about the vast networks of aqueducts, pipes and pumps that make this possible. This video examines how clean water gets to millions of taps in Chicago, New York City and Los Angeles; and it tells the colorful history of those cities' water systems. Along the way, it documents the history of public water systems worldwide, from the time of the pharaohs to modern times. Finally, we'll get a glimpse of cutting-edge modern technologies, including a new state-of-the-art desalination facility in Tampa, Florida.
Operation A & B Test Refresher(5225)	<u>6/18/2012</u>	<u>On-line Class</u>	<b>480</b>	Refresher course for water operators Class A & B
Operator Chemistry Made Easy #437(5268)	<u>6/18/2012</u>	<u>Video</u>	<b>45</b>	This video teaches basic chemistry for water treatment operations. It is an ideal training tool for novice water treatment operators and an excellent reference on the job. Topics covered: Atomic structure, Atomic weight and number, Elements, Periodic table, Forms of matter, Molecules, Compounds, Mixtures, Chemical formulas and equations, Molarity, Solutions and concentrations, pH, Scaling and corrosion, Temperature, Inorganic compounds, Taste, color, and odor, Iron and manganese, Water softening, Langelier saturation index, Chlorination, Forms of chlorine, Chlorine Contact Time (C/T), chemical dosage calculation.
OSHA: Cranes #3019(5230)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<b>150</b>	In this class, you will learn about OSHA standards with regard to cranes and derricks. There are many safety guidelines which must be followed in the operation of this equipment, especially with regard to fall protection and prevention of electrocution.
OSHA: Demolition #3020(5231)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<b>150</b>	In this class you will learn about OSHA standards applying to Demolition: preparation, the handling of debris, mechanical demolition, and the use of explosives.
Stainless Mud Valves, Valve Position Indicators Etc(5240)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Mud valves have been used to drain tanks and basins in water and wastewater treatment plants for many years. However, since these valves are submerged, they are subject to corrosion. Stainless mud valves are proving to be a cost effective option, providing additional years of service life.
Unidirectional Flushing #429(5244)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<b>15</b>	Explains concepts and techniques of unidirectional flushing; how to develop a flushing plan using paper maps; how computer aided mapping simplified the project; benefits versus traditional flushing techniques and benefits to the community.

## Drinking Water Courses for Renewal Training Credit

Utilizing Data and Performance to Schedule Well(5248)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>70</u>	Utilizing Data and Performance to Schedule Required Well Pump Maintenance and Well Rehabilitation. Proper analysis of hydrogeologic and pump performance data is critical to protecting the investment of a water supply well and its equipment. The webinar will focus on the importance of utilizing data to guide decision making related to pump maintenance and well rehabilitation. Properly acquiring the data is critical for making sound maintenance decisions. A detailed description and understanding of this critical data will be provided. Examples will be provided along with analysis and description.
Water - Filtration #3010(5250)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Using the Internet students will explore the rudiments of water treatment. The topics of this course include general issues operators face when dealing with the filtration processes. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links. Assessments: This course contains self-tests, lesson quizzes, and a final.
Water - Fluoridation #3011(5251)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Using the Internet students will explore the rudiments of water treatment. The topics of this course include general issues operators face when dealing with the fluoridation processes. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links. Assessments: This course contains self-tests, lesson quizzes, and a final.
Water - Iron & Manganese #3012(5252)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Using the Internet students will explore the rudiments of water treatment. The topics of this course include general issues operators face when dealing with iron and manganese levels. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links. Assessments: This course contains self-tests, lesson quizzes, and a final.
Water - Permits & Administration #3007(5253)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>2880</u>	Using the Internet students will be able to improve their people skills, operations management, become more familiar with safety issues and responsibilities and the permitting and certification process.

## Drinking Water Courses for Renewal Training Credit

Water - Pumps, Maintenance & Safety #3008(5254)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>2880</u>	Using the Internet, students will cover a very broad range of topics including, centrifugal pumps, selection and replacement of packing, seals, hydraulics, operating conditions, preventative maintenance, motors, plans and specifications, hazard types, plant equipment and procedures, lab safety and fire prevention, and hazard communications.
Water - Sedimentation #3013(5255)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Using the Internet students will explore the rudiments of water treatment. The topics of this course include general issues operators face when dealing with sedimentation basins. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links. Assessments: This course contains self-tests, lesson quizzes, and a final.
Water Analysis#3006(5256)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>3840</u>	Using the Internet, students will be introduced to basic laboratory safety and gravimetric, spectrophotometric, electrochemical, titrimetric and microbiological methods. The units include instruction on the procedures for regulatory sampling and safety, and specific analytical procedures for total residue, fluoride, pH, ammonia, acidity, alkalinity, calcium, chloride, hardness, and coliform analysis.
Water Distribution : Water Mains #3015(5258)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Using the Internet students will obtain a working knowledge of potable water distribution systems. The specific topic of this course is that of water mains for distribution systems. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links. Assessments: This course contains self-tests, lesson quizzes, and final.
Water Distribution: Valves Mains Meters O&M #3014(5257)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Table water distribution systems. The specific topics of this course are that of proper maintenance and operations of the values, mains, and meters found in water distribution systems. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links. Assessments: This course contains self-tests, lesson quizzes, and final.
Water Treatment - Disinfection #3016(5262)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Using the Internet students will explore the rudiments of water treatment. The topics of this course include general issues operators face when dealing with a verity of disinfection processes. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links. Assessments: This course contains self-tests, lesson quizzes, and a final.

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Water Treatment : Sources & Treatment #3017(5263)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<b>600</b>	Using the Internet students will explore the rudiments of water treatment. The topics of this course include an overview of water treatment and reservoir management. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links. Assessments: This course contains self-tests, lesson quizzes, and a final.
Water Treatment Quality #3018(5264)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<b>600</b>	Using the Internet students will explore the rudiments of water treatment. The topics of this course include general issues operators face when insuring the quality of the water. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links. Assessments: This course contains self-tests, lesson quizzes, and a final.
Water: Coagulation & Flocculation #3009(5265)	<u>6/18/2012</u>	<u>Operator's Group Meeting</u>	<b>600</b>	Using the Internet students will explore the rudiments of water treatment. The topics of this course include general issues operators face when dealing with coagulation and flocculation. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links. Assessments: This course contains self-tests, lesson quizzes, and a final.
Hands On Basic Water Quality Testing(3106)	<u>6/19/2012</u>	<u>Conference/Seminar</u>	<b>240</b>	JB
Proper Ap & Maint of Various Valves for Water Serv(5236)	<u>6/19/2012</u>	<u>On-line Class</u>	<b>240</b>	A valve and automatic or manual control operator should not just be selected by pipe size or type of water or wastewater. It may even be the wrong valve type in an existing installation. One needs to know many things to reduce maintenance cost and increase the service life. This presentation will detail points an operator or engineer should consider during the design or replacement of a valve or valve and operator system. All types of valves and operators will be discussed including butterfly, knife, slide, gate, plug, control, throttling, air relief and surge protection, and process control.
#102 Water Treatment Series(5422)	<u>6/21/2012</u>	<u>Other</u>	<b>45</b>	Chlorine Safety, Turbidity Measurement, Disinfection by product control.Total renewal training credit for viewing all 3 videos and completing test
#103 Water Supply Operations Series: Ozone(5423)	<u>6/21/2012</u>	<u>Other</u>	<b>45</b>	
#104 Operator Math(5424)	<u>6/21/2012</u>	<u>Other</u>	<b>15</b>	Gain a working knowledge of the chemical dosage formulas.
#105 Case Studies in Source Water(5425)	<u>6/21/2012</u>	<u>Other</u>	<b>15</b>	Explore the basics of a sanitary survey.

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#106 Routine Coliform Sampling for Water Utilities(5426)	<u>6/21/2012</u>	<u>Other</u>	<u>15</u>	Approved, step by step procedures for taking water samples for coliform testing
#107 Security Risk Assessment for Water Utilities(5427)	<u>6/21/2012</u>	<u>Other</u>	<u>180</u>	Teleconference video which provides an overview of the project that will assist utilities in assessing their systems and developing measure to reduce the risks of terrorist or other criminal attacks.
#109 Distribution System Repair, Rehab & Replaceme(5428)	<u>6/21/2012</u>	<u>Other</u>	<u>180</u>	Teleconference video that will help you make the best decisions for your utility about when to repair, rehabilitate or replace worn out pipelines and up to date technologies.
#110 Automation & Instrumentation(5429)	<u>6/21/2012</u>	<u>Other</u>	<u>180</u>	Teleconference covering Making the Most of Technology, Monitoring & Controlling Drinking Water Systems, Procuring & Building a SCADA System and case studies.
#111 Taste & Odor in Drinking Water(5430)	<u>6/21/2012</u>	<u>Other</u>	<u>180</u>	1 VHS Tape - 3.0- Teleconference covering Intro to taste & odor problems, Controlling taste & odor in source water treatment plants, distribution systems; using multilayer aeration.
#112 Roles & Responsibilities of Operators, Mgrs, (5431)	<u>6/21/2012</u>	<u>Other</u>	<u>30</u>	elp the operator, manager, or official with an understanding of basic operation and maintenance aspects of your system and help you analyze and solve operation and maintenance problems.
#113 Surface Water Treatment(5432)	<u>6/21/2012</u>	<u>Other</u>	<u>105</u>	Help the operator, manager, or official with an understanding of basic operation and maintenance aspects of your system and help you analyze and solve operation and maintenance problems.
#114 Groundwater Treatment(5433)	<u>6/21/2012</u>	<u>Other</u>	<u>105</u>	Help the operator, manager, or official with an understanding of basic operation and maintenance aspects of your system and help you analyze and solve operation and maintenance problems.
#115 Storage & Distribution(5434)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	Help the operator, manager, or official with an understanding of basic operation and maintenance aspects of your system and help you analyze and solve operation and maintenance problems.
#116 Monitoring(5435)	<u>6/21/2012</u>	<u>Other</u>	<u>45</u>	Help the operator, manager, or official with an understanding of basic operation and maintenance aspects of your system and help you analyze and solve operation and maintenance problems.
#117 Managerial Responsibilities(5436)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	Help the operator, manager, or official with an understanding of basic operation and maintenance aspects of your system and help you analyze and solve operation and maintenance problems.
#118 Financial Considerations(5437)	<u>6/21/2012</u>	<u>Other</u>	<u>45</u>	Help the operator, manager, or official with an understanding of basic operation and maintenance aspects of your system and help you analyze and solve operation and maintenance problems.

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#119 Emergency Preparedness(5438)	<u>6/21/2012</u>	<u>Other</u>	<u>15</u>	Help the operator, manager, or official with an understanding of basic operation and maintenance aspects of your system and help you analyze and solve operation and maintenance problems.
#128 Preventing Waterborne Disease: Is Your System(5439)	<u>6/21/2012</u>	<u>Other</u>	<u>225</u>	Teleconference presents a discussion on waterborne microbial risks that includes info on 3 barriers: source water protection, water treatment and distribution system.
#132 Excellence in Water Quality Distribution(5440)	<u>6/21/2012</u>	<u>Other</u>	<u>195</u>	ractical ways to protect water quality in distribution systems.
#134 Water Resource Alternatives: The Future of Su(5441)	<u>6/21/2012</u>	<u>Other</u>	<u>180</u>	Explore in depth water sustainability - discussions on emerging practices such as desalination and aquifer storage.
#137 3-8-07 Satellite Teleconference(5442)	<u>6/21/2012</u>	<u>Other</u>	<u>180</u>	Teleconference presenting detailed information on preparing for main breaks, performing pipeline repairs and other utility issues related to pipe repair.
#434 Utility Excavation(5443)	<u>6/21/2012</u>	<u>Other</u>	<u>30</u>	Excavation is one of the most dangerous work activities for water utility employees. These two programs on a single DVD show employees how to work safely on the excavation site.Program 1: Backhoe Safety provides essential safety training for employees who work on and around backhoes. It covers work-site preparation, traffic control, equipment checks, and proper use of backhoes while digging, backfilling, traveling, and carrying pipe.Program 2: Trenching and Shoring Techniques covers OSHA standards, protective equipment, shoring, sloping, shields, and ladders.

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Advances in Water Pipeline Condition #2066(5419)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	<p>Utilities are considering a ten-step strategy that begins with identifying, locating, and assessing the condition of the water infrastructure; proceeds with determining the appropriate levels of service and the criticality of the assets; and culminates with establishing a funding strategy.</p> <p>This strategy seeks to answer 5 basic questions:</p> <ol style="list-style-type: none"> <li>1. What is the current state of the assets?</li> <li>2. What is the required level of service?</li> <li>3. What assets are critical to sustain performance?</li> <li>4. What are the best O&amp;M and Capital Improvement Program strategies?</li> <li>5. What is the best funding strategy?</li> </ol> <p>The answers to these questions are found through field operations, desk-top analysis, or a combination of both. Goals of the Presentation: The goals of the presentation are:</p> <ol style="list-style-type: none"> <li>1. Present the status of water system assets across the US based on the assessment of over 750,000 assets performed to date.</li> <li>2. Review with the audience a ten-step program to asset management that empowers the utility with information and control of their assets.</li> <li>3. Showcase two major east-coast cities that have taken the beginning steps of inventorying and assessing the condition of their water infrastructure.</li> <li>4. Review the available technologies for locating, inventorying, inspecting, and assessing water system assets, including internal inspection (CCTV) of small and large, in-service water mains.</li> </ol>
Applying Service Project Design to IL #2035(5396)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	Field engineering in developing countries can be rough, creative and seat-of-the-pants. It can also offer ideas and lessons that can be applied to higher-tech processes in the United States. We'll look at examples of water systems in Central America and Africa and what they can teach us about operating water systems in Illinois.
ARRA: After the Gold Rush #2019(5381)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	The IEPA talks about the challenges presented by the ARRA programs and the future of Illinois' SRF programs in the wake of the recently concluded "stimulus" process.
AWWA Sat. Telecon: O&M: Tools and Techniques toPro(5352)	<u>6/21/2012</u>	<u>Other</u>	<b>180</b>	This video of a satellite teleconference presents information on the sources of contamination in distribution systems and suggests steps, tools and techniques to solve this problem

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AWWA Satellite Teleconference: Maintaining Water Q(5353)	<u>6/21/2012</u>	<u>Other</u>	<u>255</u>	John Dyksen, General Manager of Engineering and Technical Services for United Water New Jersey, gives an overview of maintaining water quality in distribution systems; Jan Routt, Water Quality Superintendent for West Virginia-American Water Company, discusses monitoring techniques for distribution systems; Janice Skadsen, Water Quality Manager for the City of Ann Arbor, Michigan, discusses disinfection considerations; Mark LeChevallier of American Water Works Service Company, discusses biofilm control and removal; Rich Theiss of AH Environmental Consultants, discusses unidirectional flushing; Gregg Kirmeyer, Economic and Engineering Services, Inc., discusses operation and maintenance of water storage facilities.
Back to Basics, JULIE and the One-Call #2079(5421)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	JULIE, Inc. provides an update of the one-call process. Getting back to the basics of calling and responding to JULIE tickets. JULIE's Damage Prevention Manager will explore the steps of the one-call process, discuss the importance of proactive safety campaigns and highlight some interesting options available to facility owners and excavators in Illinois.
Basic Microsoft Excel for Water/Wastewater #2042(5403)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	This webinar will teach basic spreadsheet concepts (data entry, organization, formatting, saving, etc.), how to use formulas and basic functions, and finally, how to identify and solve typical problems. The course will use the Illinois EPA spreadsheets (found at <a href="http://www.epa.state.il.us/water/forms.html">http://www.epa.state.il.us/water/forms.html</a> ) to teach the concepts. By the end of the webinar, everyone should be able to fill in the forms, correct formula problems, and save the sheet.
Basics of Waterborne Pathogens #133(5354)	<u>6/21/2012</u>	<u>Other</u>	<u>180</u>	Waterborne pathogens - what are they? where do they come from? what health problems do they cause? how are they detected? what are the best treatment technologies?
Benchmarking & Assessing Performance #2007(5371)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	This one hour webinar will highlight some of the options out there to help utilities assess their performance and find ways to identify weaknesses to allow them to find solutions. The programs for this effort will include: benchmarking, self-assessment, and then peer reviews. By assessing a utility's performance it provides a basis to promote capital improvement programs, education programs, etc.

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Best Practices in Leadership #2051(5410)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	Being a supervisor and a leader in an organization is a very complex and challenging. This session will provide an overview of a variety of important topics to include what it means to be a supervisor; civility in the workplace, understanding today's employee; employee engagement; motivating employees; the challenges of being a Leader vs. Manager; and much more.
Breakpoint Chlorination ... Do you Really Have a Fre(5457)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	Combined chloramine residuals often mask themselves as false-positive 'phantom' free chlorine residuals, while using the DPD free chlorine reagents and test method. A detailed breakpoint chlorine diagram will be used during this session to help visualize the pros and cons between using combined chloramine residuals or free chlorine disinfection methods. Chloramination treatment, disinfection byproduct formation, nitrification, and controlling chlorine taste/odor will be addressed in this session. Attendees will receive formulas and tools, to calculate chlorine demand, optimize chlorine dosage rate, and limit byproduct formation. Bring a copy of your raw/finished water quality and chlorine dosage/residual reports to discover if you have phantom false-positive chlorine residuals and how to avoid them and then make treatment changes to improve water quality and consumer confidence.
Building Partnerships Prior to A Disaster #2053(5412)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	Government statistics cite the private sector controlling over 85% of the nation's infrastructure. As public safety leaders, it is essential to develop a communal understanding of the integral roles and responsibilities the private sector community has in Illinois homeland security/emergency management efforts and establish mutually beneficial collaborations prior to the occurrence of disasters/incidents. These collective capabilities will greatly enhance the preparedness and response/recovery activities for Illinois communities and beyond.

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Changing Strategic AMR Direction #2043(5404)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	Mobile read AMR systems have been the dominate form of reading automation for the past 20+ years. Over 90% of the utilities with AMR use mobile read systems. However, additional challenges to utility management, including scarcity of supplies, climate change and water efficiency initiatives are forcing utilities to look at more sophisticated forms of reading automation. Can a utility with a mobile read system cost effectively migrate to a fixed network system? The presentation highlights several critical issues utilities should consider when deciding to change its AMR strategic direction. Issues to be addressed include stranded assets of the existing system, operational impacts of moving to fixed network technologies, and establishing a competitive environment for upgrade procurement. The presentation will review a recent effort by a NE Illinois utility to address reading automation due to a changing operational environment.
Chlorine/Sulphur Dioxide/Ammonia #2002(5366)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	Advantages and disadvantages of scrubbing technologies; Regulations and applicable standards; Properties including sizes and chemicals of chlorine, ammonia and sulphur dioxide; Dangers and benefits of the gasses
Comprehensive Performance Evaluations #2004(5368)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	The use of the CPE process as found in the partnership for safe water to optimize surface water treatment systems or control turbidity.
Emerging Constituents In Water Supply #2054(5413)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	Water supply operators face the ever increasing challenge of protecting public health and understanding their product - drinking water. Environmental working groups and independent agencies attempt to sharpen public awareness of water quality issues, as recent data regarding hexavalent chromium and radionuclides become 'viral' issues in today's electronic newsfront. While a concern, the focus of USEPA is to scientifically evaluate emerging water quality constituents, their potential public health impact, and regulatory limits and goals. In sufficient concentration, there is also a need to further identify treatment and removal technologies to remove contaminants to acceptable levels in drinking water. This webinar will focus on emerging water quality constituents for both surface and groundwater sources, current issues, and potential solutions.
Emerging Issues in Water Utility Operations #130(5355)	<u>6/21/2012</u>	<u>Other</u>	<b>120</b>	Learn what utility professionals believe to be the challenges and issues facing utilities, including monitoring and control system technologies and treatment technologies - see how they impact you.

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Emerging Treatment Technologies #125(5356)	<u>6/21/2012</u>	<u>Other</u>	<u>180</u>	Information on advanced water treatment processes including ultraviolet, ozone and membrane tech; determining and choosing the right processes for your system; advantages of newer technologies.
Ensuring Sustainable Water Systems #2055(5414)	<u>6/21/2012</u>	<u>Other</u>	<u>90</u>	This webinar will provide water utility managers, financial directors, and local elected officials with an overview of how careful planning for conservation can recover costs, ensure adequate revenues to replace and maintain critical infrastructure, and enhance water conservation efforts by promoting environmentally sound decisions by customers. The webinar will provide perspectives from three national experts on full-cost water pricing, cost of service rate making, and low-cost or revenue-positive conservation strategies that can be implemented even in tough financial times.
Excel 101: Press This Button #2006(5370)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	This class is for operators who need basic instructions on how to get started in Excel. Topics include: Creating an Excel Workbook; Adding additional Excel Worksheets; Understanding rows and columns in Excel; Learning the basic math functions in Excel; Copying, pasting, and dragging functions in Excel; Changing fonts.
Excel 201: "conFORM" to Technology #2009(5372)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	This class is for operators who have a basic understanding of Excel who want to create forms.; Learn how to reference cells in math functions; Adjust cell size; Wordwrap; Format numbers; Reference data from other Excel workbooks; Printing
Excel 301: Finesse #2012(5375)	<u>6/21/2012</u>	<u>Other</u>	<u>45</u>	This class is for operators who have an understanding of Excel and want to finalize their forms in Excel to use for reporting. Creating graphs and charts are also covered. Topics include: Creating borders; Adding in headers and footers; Learning how to create a line graph; Printing.
Extraordinary/Meaningful Customer Service #2024(5386)	<u>6/21/2012</u>	<u>Other</u>	<u>30</u>	In today's economy, there are many choices offered on where we take our business. The customer is ultimately the deciding factor on whether a business thrives or fails. It's very basic -- customers return to those businesses that treat them well. Local government is also being challenged to continually adapt to satisfy the changing needs of its constituents. This course will address the unique challenge of customer service in the public sector. Participants will emerge stronger and better equipped to meet the needs and demands of their customer. In addition, different ideas will be presented that your municipality could implement so that citizens know you're serious about excellent public service.

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Filter Inspections and Optimization #2003(5367)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	The use of easily found tools in the typical water treatment plants to inspect and optimize granular gravity filters to prevent future catastrophes and also to assist in the compliance of the interim enhanced surface water treatment rule.
Flange Adaptors #2015(5378)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	Connecting a plain end pipe to a waterworks flange is an economical alternative to flange spool pieces. This presentation will discuss the various products available for making this connection.
Gas Chlorination Safety #2023(5385)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	Many water plants and remote ground water well sites still use gas chlorine for disinfection. Gas chlorine represents a significant safety hazard to operators. Introduction to options available to plants to keep operators safe.
GIS Implementation for Water Dist. Syst. #2020(5382)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	he session will provide general information, technical guidance, and an overview of the process utilized for the application of a Geographic Information System (GIS) for a water distribution system. GIS can provide an organization with the ability to construct, develop, and utilize water system specific data in an innovative format that will assist in the overall analysis and reporting capabilities for the users. The session will provide the attendees with the concept of GIS and software available to implement GIS into your water system programs. Through this training the process and key components of implementing and utilizing GIS for water system analysis will be demonstrated. Although each organization is different, the overall process can be applied to better understand and implement a usable and reliable GIS. Particular attention will be given to utilizing the organizations existing information and incorporation in the GIS as well as outline the available options for additional data creation through GPS and field based data collection methods. Case studies will be provided that relate GIS with comprehensive planning and the type of reports that can be generated to assist the organization in evaluating capital improvement needs. The use of GIS has also enhanced the accuracy and usability of water distribution modeling software.
ILWARN: How to Register/Activate/Respond #2058(5417)	<u>6/21/2012</u>	<u>Other</u>	<b>30</b>	ILWARN overview; How to register on the ILWARN site; What happens after you sign your Mutual Aid Agreement?; How to activate ILWARN and respond to ILWARN request; How to use ILWARN website

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Improving the Water Quality in Tanks #2052(5411)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	Both chlorine and chloramine systems will be discussed. Topics will include the benefits of actively mixing the tank, methods for chlorine boosting, in-tank trihalomethane (THM) and haloacetic acid (HAA) removal strategies, and properly sizing the mixing system based on tank hydraulics and the problems to be solved in the tank.
Innovative Operator Tools #131(5357)	<u>6/21/2012</u>	<u>Other</u>	<u>120</u>	Newer technologies are critical tools to help you provide safe and adequate supplies of water. Teleconference focuses on these tools.
Introduction To Water Conservation #2011(5374)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	Water Conservation is becoming a relevant topic in the Midwest and there is a lot to learn both as a water user and a water industry professional. This introductory presentation includes 50 minutes of content related to basic water conservation principles and practices as well as regional drivers and regulations. The last 10 minutes is saved for question & answer session and discussion on relevant conservation strategies for the local area.
Ion Exchange Design, O&M #2025(5387)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	The presentation will give operators and others a better understanding of the key components of a typical municipal ion exchange system. We will discuss resins and the classifications of resins in terms of anion and cation. We will discuss resin selectivity, resin capacity, the relationship between resin capacity and frequency of regeneration, regenerations of anion and cation resins, as well as brine feed systems and by-pass and blending systems. Following operation aspects of the ion exchange system we will discuss system maintenance, resin failures and resin replacement frequency.
JULIE Law Changes on Excavators & Facility #2022(5384)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	JULIE, Inc. provides update on one-call process and key legislation changes in Illinois. Dave Van Wy, JULIE's Damage Prevention Manager, will explore the steps of the one-call process, discuss the importance of proactive safety and education campaigns and highlight recent legislation and policy changes impacting facility owners and excavators in Illinois.

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Mechanical & Flange Joint Installation #2026(5388)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	Installation of mechanical joints is a simple process, but is quite often done incorrectly. Flange pipe can normally be joined with simple red rubber gaskets, but in larger diameters or high pressure situations they can be quite difficult to seal. The use of stainless steel bolts and nuts can also complicate many installations. We will review AWWA standards for each and discuss flange layback, stainless steel fasteners, serrated flange surfaces and what can be done to improve quality of a seal. Installation of mechanical joints is a simple process, but is quite often done incorrectly. Flange pipe can normally be joined with simple red rubber gaskets, but in larger diameters or high pressure situations they can be quite difficult to seal. The use of stainless steel bolts and nuts can also complicate many installations. We will review AWWA standards for each and discuss flange layback, stainless steel fasteners, serrated flange surfaces and what can be done to improve quality of a seal. Installation of mechanical joints is a simple process, but is quite often done incorrectly. Flange pipe can normally be joined with simple red rubber gaskets, but in larger diameters or high pressure situations they can be quite difficult to seal. The use of stainless steel bolts and nuts can also complicate many installations. We will review AWWA standards for each and discuss flange layback, stainless steel fasteners, serrated flange surfaces and what can be done to improve quality of a seal.
Mechanical Seal and Pump Reliability #2057(5416)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	The single most frequent work order required for sealed pumps is to change the mechanical seal, even though they are designed to run 30,000 hours before wearing out. The second most common cause of work orders is bad bearings on your pump. Mechanical packing is still in use on many pumps, leading to some of the bearing problems. Addressing the causes and concerns creating shortened seal life will instantly increase the service life and reduce your operating budget dramatically. This webinar is focused on the causes of seal failure and what you can easily do to upgrade your "Bad Actors" to more reliable service. This is not an infomercial about any seal or packing vendor, but a general information transfer regarding best practices and simple fixes of some of your most costly system repairs.

# Drinking Water Courses for Renewal Training Credit

Membrane Water Treatment Syst. Overview #2018(5380)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	As the efficiency of membrane water treatment systems continue to improve, and as the costs of the systems continue to decline, many facilities are integrating membrane treatment as the selected water treatment system for one, or multiple constituents. There are generally four types of membrane treatment systems, namely:1) Microfiltration2) Ultrafiltration3) Nanofiltration4) Reverse Osmosis.In this webinar, each of the four membrane treatment systems will be reviewed, along with the basic theory and applicability of each system. Typical membrane treatment trains, which include pre- and post-membrane treatment, also will be presented. The webinar will include approximately 45 minutes of presentation with the remaining 15 minutes for questions and discussion.
Mixing/Maintaining Water Quality in Tanks #2038(5399)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	With the implementation of the Stage II DPB Rule as well as the increased used of chloramination for secondary disinfection, more emphasis has been placed on maintaining water quality in distribution systems. A key component of distribution systems are the storage tanks and reservoirs, yet they often are responsible for water quality degradation due to short-circuiting, poor mixing, and increased water age. Until recently, the causes of short-circuiting, stratification and poor mixing in water storage tanks were not well understood and therefore methods to solve water quality problems were often "shots in the dark" and unsuccessful. Some state's rules and regulations have taken a proactive step in recommending to separate the inlet and outlet pipe, but this simple recommendation is often not enough due to the complexity of mixing in different styles of storage tanks. The effect of temperature differences alone between the inlet (source) water and tank water can completely change the circulation and mixing patterns of storage tanks resulting in water quality degradation.This technical webinar will provide the attendees a fundamental understanding of mixing processes in all styles of water storage tanks. The deficiencies of single inlet and outlet pipes, and the impact of temperature differences between inlet water and tank water, are demonstrated. The improved mixing efficiency of multi-port manifolds is presented. Other methods are also discussed (baffles,= recirculation pumps, mechanical mixers, etc.). The discussion is supported by the use of CFD and Physical Scale models so the attendees will actually see short-circuiting and mixing in storage tanks. Several "before and after" case studies are presented using field sampling data that shows the elimination of stratification, improvement in residuals, and reduction in water age.

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Modern Marvels-City Water #141 #141(5358)	<u>6/21/2012</u>	<u>Other</u>	<u>45</u>	When we turn on a faucet, we expect clean, pure water to flow out. We also expect our cities to provide ample water for industry, fire fighting and irrigation. Public water supply systems supply about 99% of the US population, but most of us know little about the vast networks of aqueducts, pipes and pumps that make this possible. This video examines how clean water gets to millions of taps in Chicago, New York City and Los Angeles; and it tells the colorful history of those cities' water systems. Along the way, it documents the history of public water systems worldwide, from the time of the pharaohs to modern times. Finally, we'll get a glimpse of cutting-edge modern technologies, including a new state-of-the-art desalination facility in Tampa, Florida.
Now What? Communications in a Crisis #2049(5408)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	We've all been there – whether it's a watermain break, a boil water advisory, or concern over 'wonky' test results. Bad things happen to good companies. Bad things happen to the water utility sector each and every day. How do you react when you have the Mayor on line one, and the TV station on line two? You have two choices – run and hide, or embrace this opportunity to build trust, display credibility, and restore confidence in not just the water system – but yourself as a manager. There is a single emotional factor that will go further towards building trust than honesty, competence or dedication. Learn what that trait is – and how to incorporate it into your communications. How do non-verbal communications make a difference? This is a lively, spirited presentation using examples specifically tailored for the water utility sector.
Operator Chemistry Made Easy #437(5359)	<u>6/21/2012</u>	<u>Other</u>	<u>45</u>	This video teaches basic chemistry for water treatment operations. It is an ideal training tool for novice water treatment operators and an excellent reference on the job. Topics covered: Atomic structure, Atomic weight and number, Elements, Periodic table, Forms of matter, Molecules, Compounds, Mixtures, Chemical formulas and equations, Molarity, Solutions and concentrations, pH, Scaling and corrosion, Temperature, Inorganic compounds, Taste, color, and odor, Iron and manganese, Water softening, Langelier saturation index, Chlorination, Forms of chlorine, Chlorine Contact Time (C/T), chemical dosage calculation.

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Operator Math Made Easy #438(5360)	<u>6/21/2012</u>	<u>Other</u>	<b>30</b>	This video teaches water operators mathematical calculations used in water treatment and distribution. It is an ideal training tool for novice water treatment operators and an excellent reference on the job. Topics covered: Powers notation, Scientific notation, Dimensional analysis, Rounding and estimating, Solving for the unknown value, Ratio and proportion, Average, Percentage, Circumference, Surface area, Volume, Conversion tables, Graphs, Average Daily Flow, Surface Overflow Rate, Weir Overflow Rate, Filter Loading Rate, Filter Backwash Rate, Detention Time, Well Yield, Well Drawdown, Well Specific Capacity
Pandemic perspectives #2027(5389)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	At the time of the webinar, a year will have passed since the H1N1 influenza pandemic was declared. Whether we had a mild influenza pandemic or a severe one, companies will be looking back at their experiences, plans and strategies to evaluate their performance. What did we learn from the experience? How can our response be used to improve our business continuity and crisis management programs? This webinar will examine the lessons learned and how we can use them as a positive change agent moving forward as we prepare for future threats.
Pandemic Planning For Water Utilities #2010(5373)	<u>6/21/2012</u>	<u>Other</u>	<b>30</b>	You probably have a disaster plan for your water utility, but a pandemic is a different kind of disaster. Now is the time to do additional planning so you are ready if this kind of disaster should strike. Here are some scenarios to consider:• How will your utility operate if you are not there due to sickness or quarantine?• What about other key members of your staff?• What will you do if members of your family are extremely sick? What about staff member’s families?• What will you do if some staff members refuse to report to work even though they are not sick?• Are you able to operate some of your utility remotely?• What if it becomes difficult to receive chemical deliveries on time due to truck driver shortages?• What if a crucial piece of equipment needs immediate maintenance? Have you developed a list of electrical,mechanical, and other vendors that will respond to an emergency? What if that vendor has a large number of employees out due to sickness?This webinar is a guide on how to plan and respond to the influenza pandemic.

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Pipe Tapping and Repair #2037(5398)	<u>6/21/2012</u>	<u>Other</u>	<p><b>60</b> Topic: A side from "normal" every day taps and main breaks, there are many applications that you would see innormal, everyday operations of any given system. We will look at unusual repairs made in extreme circumstances, and pipe tapping in diameters and materials that you wouldn't normally work with. This will provide you with an idea of things that aren't in any catalog anywhere, but can still be made possible.</p>
Radium Treatment Residual Regulations #2046(5407)	<u>6/21/2012</u>	<u>Other</u>	<p><b>60</b> In November 2006, the United States Environmental Protection Agency released the Ultraviolet Disinfection Guidance Manual for the Final Long Term 2 Enhanced Surface Water Treatment Rule (<a href="http://www.epa.gov/ogwdw000/disinfection/lt2/Pdfs/guide_lt2_uv_guidance.pdf">http://www.epa.gov/ogwdw000/disinfection/lt2/Pdfs/guide_lt2_uv_guidance.pdf</a>). This document (UVDGM) was generated to provide technical information on how UV should be applied for disinfection of public water systems. It is important to note that it is not a regulation just guidance on how to implement UV.The Webinar will focus on the following aspects of UV disinfection:</p> <ul style="list-style-type: none"> <li>• UV fundamentals – what is UV, how is UV light generated, what UV does and how it works, how organisms respond to UV, and a comparison of available lamp types.</li> <li>• Equipment selection – what manufacturers will require to provide an adequately sized system including flowrates (peak, average, and minimum), water quality (transmittance – how much light passes through the water,soluble iron and manganese, hardness), required disinfection/dose (are you trying to receive cryptosporidium/giardia credits), and existing plant hydraulics (not many new DW plants are being constructed, therefore existing hydraulic grade lines often will help dictate the size of equipment that is required).</li> <li>• Installation requirements for chambers and cabinets.</li> <li>• Maintenance items that will need attention including lamps, sleeves, wiper rings, UV intensity monitors, and power supplies.</li> <li>• Validation requirements – what/how UV manufacturers get their systems approved.</li> <li>• Regulatory summary and why municipalities might/have to implement UV.</li> </ul>

## Drinking Water Courses for Renewal Training Credit

Rate Making in a Troubled Economy #2000(5364)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	<p>Many communities and water utilities are experiencing water revenue declines. In most cases, these same water providers have already streamlined their operations to minimize their expenditures. Additional expenditure reduction cannot take place without affecting the level of service they are providing. While the current economic conditions make it a difficult time to raise customer's water bills, regulatory requirements and customer expectations may leave water utility managers, and ultimately the policy makers, with no choice. This webinar provides the tools a water utility manager needs to efficiently lay the ground work for a rate increase, and presents strategies to help sell it to the policy makers.</p>
Reducing Chemical Usage In Reservoirs #2021(5383)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	<p>Protecting and safeguarding our nation's drinking water supply has become an important priority for the 21st century. Many communities are reliant on chemical processes to treat their drinking water supply. This webinar will focus on ways to reduce chemical usage using natural alternatives for drinking water treatment.</p>
Renewable Energy for IL Water Utilities #2017(5379)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	<p>With businesses being told they should be green and use renewable, sustainable energy— how can a water utility use renewable energy to be green? This fast paced hour will discuss producing electricity using wind and solar-photovoltaic resources to offset the electrical energy needs of a utility. The discussion will be primarily focused on utility grid interconnected systems using renewable energy. The seminar will go over the basics of wind and solar, including siting tips. Using examples for both a small and large sized utility, we will size renewable energy systems using both wind and solar resources. We will describe details of a few of the renewable energy projects presently underway or planned in Illinois for utilities. To complete the hour long program, we will highlight additional resources for more information, discuss recent state laws that allow utilities and other governmental bodies like schools and cities to join together to create renewables energy facilities and end with time for question and answers.</p>

## Drinking Water Courses for Renewal Training Credit

Renewable Energy/Energy Efficiency #2005(5369)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	This short course will address the tools, techniques, and tactics of comprehensive energy management. This course will cover energy costs, financial and technical issues, conservation measures, and the implementation of renewable energy technologies within a public utility. It will start by presenting the issues in an overview fashion to guide decision-makers on their energy costs, demands, and resources. The second session will address the demand side and will cover conservation measures and process modifications, including presentation of actual examples where minor capital investments can offer significant annual operations savings. The third session will outline the range of available renewable technologies and their technical and financial issues. Finally, the last session presents a ranging set of energy strategy approaches for utilities that will vary depending on their technical and policy interests and capability.
Small Water System Operation & Maintenance #4000(5451)	<u>6/21/2012</u>	<u>Other</u>	<b>5400</b>	Scope: This course is designed to train operators in the practical aspects of operating and maintaining small drinking water supply systems and treatment plants, with emphasis on safe practices and procedures. Topics covered include roles and duties of small system operators, water sources, and treatment processes. Detailed descriptions of the components of a drinking water well are presented, and operators will learn how to set up a wellhead protection program; operate, maintain, and rehabilitate wells; disinfect wells and pumps; and troubleshoot operating problems. Other major topics in this program include operation and maintenance procedures for small water treatment plants, disinfection, safety, laboratory procedures, setting water rates, and how to solve water treatment plant arithmetic problems.
SMALL WATER SYSTEM OPERATION & MAINTENANCE #4004 ((5455)	<u>6/21/2012</u>	<u>Other</u>	<b>1800</b>	Scope: This video series provides needed training for various operators and managers of small public water systems. Operators have the responsibility of ensuring that safe and pleasant drinking water is delivered to everyone's tap. The information provided in these videos will help operators do their jobs with greater knowledge and efficiency. Managers must see that maintenance, recordkeeping, reporting, public complaints, and budgeting are properly handled. The information provided in these videos will increase background knowledge regarding the system and provide specific training regarding administrative tasks. Owners and governing bodies must understand the needs and provide operators and managers with the resources to perform their jobs.

## Drinking Water Courses for Renewal Training Credit

Small Water Systems Video #431(5361)	<u>6/21/2012</u>	<u>Other</u>	<b>450</b> Small systems need to deliver safe drinking water to their consumers and to do it in a cost-effective manner. The objective of this video series is to provide operators and managers with the knowledge, skills, abilities, and judgment essential to safely operate and maintain their facilities as well as manage their facilities using appropriate financial strategies.
Solving Corrosion Problems On Water Utility #2039(5400)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b> As municipal water system facilities are reaching their life expectancy, the need to rehabilitate or replace water mains is increasing. There is a need for water utilities to maintain their current infrastructure as they struggle to close the gap between current spending and the future capital needs. Corrosion is a phenomenon that concerns most water utilities in North America where about two thirds of the installed water main network consists of various forms of ferrous pipes, including cast iron, ductile iron, and steel pipes. Studies have shown that electrochemical corrosion is the predominant deterioration mechanism on the exterior of cast and ductile iron pipes. Cathodic protection of cast and ductile iron mains is a mitigative measure that has been shown to reduce corrosion of ferrous water mains.
Steps for Distribution System Optimization #2001(5365)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b> This webinar includes the use of multiple barrier approach to optimizing your distribution system through proper operational techniques. #

# Drinking Water Courses for Renewal Training Credit

Stuxnet: Debugging & Impact on SCADA  
#2036(5397)

6/21/2012

Other

30

The Stuxnet worm was the first virus/worm commercially recognized to be designed to target Supervisory Control and Data Acquisition (SCADA) systems by actually reprogramming Programmable Logic Controllers (PLCs). The worm infects and spreads by taking advantage of unpatched Microsoft operating systems through networks and USB sticks (simply by viewing the contents of the USB drive). The scary thing for the water/wastewater community is that this was not an isolated single hacker working along; it was likely a team of developers that wrote code to disrupt control systems, proving that this type of a cyber-attack is possible. this webinar will discuss best practices to help keep your SCADA systems safe including how to consider appropriately securing, patching, and updating your systems. A non-technical overview of how SCADA system firewalls and prudent network security design will also be presented. Time will be available at the end of the presentation to answer security, networking, and SCADA-related questions. The Stuxnet worm was the first virus/worm commercially recognized to be designed to target Supervisory Control and Data Acquisition (SCADA) systems by actually reprogramming Programmable Logic Controllers (PLCs). The worm infects and spreads by taking advantage of unpatched Microsoft operating systems through networks and USB sticks (simply by viewing the contents of the USB drive). The scary thing for the water/wastewater community is that this was not an isolated single hacker working along; it was likely a team of developers that wrote code to disrupt control systems, proving that this type of a cyber-attack is possible. this webinar will discuss best practices to help keep your SCADA systems safe including how to consider appropriately securing, patching, and updating your systems. A non-technical overview of how SCADA system firewalls and prudent network security design will also be presented. Time will be available at the end of the presentation to answer security, networking, and SCADA-related questions.

# Drinking Water Courses for Renewal Training Credit

Sustainable Approach to Managing Water  
#2028(5390)

6/21/2012

Other

**60** The Initial Distribution System Evaluation (IDSE) requirements of the Stage 2 Disinfectants and Disinfection Byproducts Rule will assist in locating areas of high disinfection byproducts within the distribution system which will require corrective action. The impact of the Long Term 2 Enhanced Surface Water Treatment Rule will require more effective disinfection and better disinfectant residual maintenance throughout the distribution system. The increasing regulatory pressure coupled with the drive towards sustainable best practices will require water plant managers/operators to operate their facilities at the highest levels of sustainable performance. Water quality begins to degrade immediately once it enters the distribution system and begins to age within the storage facilities. Challenges to water quality maintenance from accumulation of disinfection byproducts, nitrification, bio-film development, Iron/Manganese deposits, accumulated sedimentation, corrosion, depletion of chlorine residual and thermal stratification can be managed. Tightening regulations for potable water quality are causing those responsible for its quality to look for new water quality management tools and methods to meet those requirements in the most sustainable manner possible. While the water quality management tools presented can be implemented separately, their adoption from the water plant through the distribution tanks provides a synergistic approach to water quality management. It's also important to note that these tools are effective, sustainable and independent of the type of disinfectant used or the raw water source. The sustainable water quality management tools presented in detail involve chemical cleaning, active mixing and effective water storage tank asset management. This presentation will review recent AWWA-RF data on mixing, or lack thereof, within water storage tanks. The role of passive and active mixing systems, chemical cleaning and sustainable asset management maintenance programs of the storage tank will be discussed to show how the combination can work synergistically to assist operators in the management of water quality within their storage tanks. Components of an effective water storage tank asset condition assessment will be reviewed along with how then to build an effective sustainable asset management program. Participants will learn about new innovative sustainable strategies for the management of water quality from the water plant through storage by minimizing those things that consume disinfectant, namely, organic and inorganic materials through the use of chemical cleaning, tank asset management programs and

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The Evolution of Pipe & Fittings #2030(5391)	<u>6/21/2012</u>	<u>Other</u>	<u>90</u>	active tank mixing to homogenize water chemistry within the storage tanks.
Toilet Rebate & Other Incentive Programs #2040(5401)	<u>6/21/2012</u>	<u>Other</u>	<u>90</u>	A historical look at the early beginnings of our distribution systems and the evolution of pipe materials. We will review some design changes and applications of materials throughout the years, bringing us up to current familiar products. There are many pictures and stories of early pipe, hydrants and valves, with the idea that you will have a feel for how our systems have evolved and how our profession has adapted through the years to get us where we are today.
Trenchless Water Main Rehabilitation #2050(5409)	<u>6/21/2012</u>	<u>Other</u>	<u>75</u>	Many Midwestern water utilities are looking to water conservation programs as a way to reduce peak demand and protect their water supply. Toilet rebates, and other customer incentive programs can be an effective strategy to achieve this goal without reducing customer service or satisfaction. Cost-effective programs require careful planning to ensure that rebates achieve utility goals. This webinar will provide an overview of toilet rebates programs currently being implemented by two Midwestern water utilities - the City of Madison, Wisconsin, Water Utility, and the City of Batavia, Illinois, Water Utility. The webinar will provide, from a national perspective, the do's and don'ts of planning your program. Participants will gain an understanding of how to plan, implement, and evaluate an effective customer rebate or incentive program.
				Broken, leaky, and undersized water mains are a common problem experienced in many Illinois communities. This problem is often compounded with decreasing water capital funds, placing an even greater burden on today's public works directors and water operators. The typical solution has been water main replacement using open cut methods with the new main located in the pavement because of minimal space available outside of the pavement. These projects are very costly and a major disturbance to the public. This presentation will discuss the many reasons why trenchless water main rehabilitation should be seriously considered when assessing alternate construction methods. Several IEPA approved technologies will be presented along with a number of local example projects.

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Understanding Electronic Control Valves #2065(5418)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	<p>Today's world of electronics offers a variety of challenges for control opportunities for diaphragm actuated control valves. From an operator's perspective, these valves are often challenging to understand. This webinar is to present-in everyday logic-how electronic interface valves operate and what they can do in terms of automated water system control. The presenter will take an everyday item, like a home heating/cooling system thermostat, and expand its operating principle into, "How automatic control valves interface with electronic control pressures, flows, levels and combined functions." We will also compare the differences of hydraulic pilot operation to electronic interface operations. What can these electronic valves do for you? Attend the seminar and learn how electronic control valves can make your life easier. These valves can be programmed for easy adjustment over the internet and communication from the valve to you regarding system failure, opening, closing or other information you prefer. This webinar is not about highly technical electronics but is about giving you a clear understanding of operating concepts of electronic water control valves that you may have now or in the future.</p>
Understanding Water And Terrorism #2041(5402)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	<p>This webinar will reference the book, "Understanding Water and Terrorism" and will help you understand the reasons that our water supply and availability are so critical to our way of life, and how that quality of life may be threatened in the coming years by terrorists. You will discover: • Is a terrorist attack against our nation's water system possible?• What is being done to protect this critical infrastructure?• How can you help?• Is your family safe?• How can you prepare?</p>
Understanding Water Rights and Conflicts #2044(5405)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	<p>This webinar will be presented by Herbert C. Young, author of "Understanding Water Rights and Conflicts" Second Edition. This webinar will follow the text which will help you understand the reasons that water supply and availability are so critical to our quality of life and why that quality of life may be threatened in the coming years. You will discover:• Is there enough water?• Where does your water come from?• What are the problems facing your water supply?• Can you protect yourself from drought?• Can the environment be protected?• Are there solutions to the coming "water crisis?"</p>

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Unidirectional Flushing #429(5362)	<u>6/21/2012</u>	<u>Other</u>	<u>15</u>	Explains concepts and techniques of unidirectional flushing; how to develop a flushing plan using paper maps; how computer aided mapping simplified the project; benefits versus traditional flushing techniques and benefits to the community.
Utility Metering and AMR #2056(5415)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	Improved resource management, operational efficiencies, and decision making, through advancements in water metering, data collection, and information technologies Today's utilities face an ever increasing demand to improve operational efficiencies and the stewardship of financial and natural resources. To help achieve these goals, advancements in residential and commercial water metering technology, automatic meter reading systems, and advanced data reporting software have emerged to assist utilities with these - and future - information and reporting requirements . Accurate measurement of water consumption, theconsumption, the efficient collection and clear interpretation of metering system data, and its timely dissemination to internal and external stakeholders, are critical to sound utility management practices.This webinar will provide an overview of current metering and meter reading technologies with a focus on a number of newer and emerging technologies including "Static Metering", "Fixed Network Meter Reading", "Data Analytics", and other tools that are available to assist the utility in effectively recording, collecting, analyzing, and communicating metering and water distribution system data.

# Drinking Water Courses for Renewal Training Credit

UV Disinfection in Drinking Water Facilities  
#2045(5406)

6/21/2012

Other

60 In November 2006, the United States Environmental Protection Agency released the Ultraviolet Disinfection Guidance Manual for the Final Long Term 2 Enhanced Surface Water Treatment Rule ([http://www.epa.gov/ogwdw000/disinfection/lt2/Pdfs/guide\\_lt2\\_uv\\_guidance.pdf](http://www.epa.gov/ogwdw000/disinfection/lt2/Pdfs/guide_lt2_uv_guidance.pdf)). This document (UVDGM) was generated to provide technical information on how UV should be applied for disinfection of public water systems. It is important to note that it is not a regulation just guidance on how to implement UV. The Webinar will focus on the following aspects of UV disinfection:

- UV fundamentals – what is UV, how is UV light generated, what UV does and how it works, how organisms respond to UV, and a comparison of available lamp types.
- Equipment selection – what manufacturers will require to provide an adequately sized system including flowrates (peak, average, and minimum), water quality (transmittance – how much light passes through the water, soluble iron and manganese, hardness), required disinfection/dose (are you trying to receive cryptosporidium/giardia credits), and existing plant hydraulics (not many new DW plants are being constructed, therefore existing hydraulic grade lines often will help dictate the size of equipment that is required).
- Installation requirements for chambers and cabinets.
- Maintenance items that will need attention including lamps, sleeves, wiper rings, UV intensity monitors, and power supplies.
- Validation requirements – what/how UV manufacturers get their systems approved.
- Regulatory summary and why municipalities might/have to implement UV.

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Water Conservation Ordinance/WaterSense #2031(5392)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	<p>In following its tradition of publishing model ordinances, the Chicago Metropolitan Agency for Planning (CMAP) staff embarked on a process to develop an updated Model Water Conservation Ordinance to provide assistance to communities that wish to promote water conservation initiatives. This effort fulfils one of the many recommendations outlined in the recently approved Northeastern Illinois Water Supply/Demand Plan, the a result of a three-year planning process, facilitated by CMAP, that coordinated a diverse set of stakeholders including government entities, environmental interest groups, academia, and private sector representatives in a 11-county planning area in the northeastern Illinois region. In drafting the model ordinance, staff completed an extensive review of water conservation ordinances and regulations nationwide as well as relevant literature. A panel of experts provided their input to the document during its formative stages. The model ordinance addresses indoor and landscape water use in both the residential and commercial/institutional/industrial sectors with consideration to the latest available technologies and state of the art practices in the field. It serves as a tool that contains model ordinance language, commentary, potential water savings, current examples and resources for further research. Staff also utilized the WaterSense label and performance standards to align many of the flow rates with specific WaterSense products. WaterSense, a US EPA sponsored partnership program, provides a nationally recognized water conservation and efficiency brand that can aid in public outreach and implementation of the ordinance. By adopting the requirements of the proposed ordinance, communities may achieve significant water use reductions while deferring the need for water infrastructure expansion. This webinar will include detailed information about the model ordinance and the role of WaterSense products in its development and future implementation.</p>
Water Conservation Programs for Utilities #2013(5376)	<u>6/21/2012</u>	<u>Other</u>	<u>60</u>	<p>his presentation will cover best practices in water conservation programs looking across the United States as well as regional and local Illinois water conservation programs. Following the best practices, information will be presented on tips for starting a water conservation program or strengthening an existing program. The standardized approach to water conservation program development as outlined in M52 will also be incorporated into the presentation. The last 10 minutes will be reserved for a question &amp; answer session and discussion on the material presented.</p>

## Drinking Water Courses for Renewal Training Credit

Water Distribution System #3003(5445)	<u>6/21/2012</u>	<u>Other</u>	<u>3840</u>	Using the Internet, students will obtain a working knowledge of potable water distribution systems. The topics of this course include water storage facilities, operation and maintenance of water mains, water quality issues, disinfection, and safety.
Water Distribution System Operation & Maintenance (5351)	<u>6/21/2012</u>	<u>Other</u>	<u>960</u>	<p>OBJECTIVE: This course is designed to train operators to safely and effectively operate and maintain water distribution systems.SCOPE: This course is designed to train operators in the practical aspects of operating and maintaining water distribution systems, emphasizing safe practices and procedures. Topics include the role and duties of water distribution system operators, procedures for operating and maintaining clear wells and storage tanks, components and characteristics of distribution system facilities, operating and maintaining distribution systems, maintaining water quality in the system, disinfecting new and repaired facilities as well as water delivered to consumers, and techniques for recognizing hazards and developing safe procedures and programs. Operators learn to analyze and solve problems when they occur and perform mathematical calculations commonly associated with operating a distribution system.contents1. The Water Distribution System Operator2. Storage Facilities3. Distribution System Facilities4. Water Quality Considerations in Distribution Systems5. Distribution System Operation and Maintenance6. Disinfection7. Safety8. Distribution System AdministrationTEXTBOOK: Water Distribution System Operation and Maintenance, A Field Study Training Program; 5th Edition</p>
Water Distribution System Operation & Maintenance (5452)	<u>6/21/2012</u>	<u>Other</u>	<u>5400</u>	<p>Scope: This course is designed to train operators in the practical aspects of operating and maintaining water distribution systems, emphasizing safe practices and procedures. Topics include the role and duties of water distribution system operators, procedures for operating and maintaining clear wells and storage tanks, components and characteristics of distribution system facilities, operating and maintaining distribution systems, maintaining water quality in the system, disinfecting new and repaired facilities as well as water delivered to consumers, and techniques for recognizing hazards and developing safe procedures and programs. Operators learn to analyze and solve problems when they occur and perform mathematical calculations commonly associated with operating a distribution system.</p>

# Drinking Water Courses for Renewal Training Credit

Water Distribution System Operation & Maintenance (5444)

6/21/2012

Other

1200

OBJECTIVE: This course is designed to train operators to safely and effectively operate and maintain water distribution systems. SCOPE: This course is designed to train operators in the practical aspects of operating and maintaining water distribution systems, emphasizing safe practices and procedures. Topics include the role and duties of water distribution system operators, procedures for operating and maintaining clear wells and storage tanks, components and characteristics of distribution system facilities, operating and maintaining distribution systems, maintaining water quality in the system, disinfecting new and repaired facilities as well as water delivered to consumers, and techniques for recognizing hazards and developing safe procedures and programs. Operators learn to analyze and solve problems when they occur and perform mathematical calculations commonly associated with operating a distribution system. contents1. The Water Distribution System Operator2. Storage Facilities3. Distribution System Facilities4. Water Quality Considerations in Distribution Systems5. Distribution System Operation and Maintenance6. Disinfection7. Safety8. Distribution System AdministrationTEXTBOOK: Water Distribution System Operation and Maintenance, A Field Study Training Program; 5th Edition

# Drinking Water Courses for Renewal Training Credit

Water Metering: Most for Your Money

6/21/2012

Other

60

Solar powered water mixing is gaining greater usage in reservoirs, finished water tanks and wastewater treatment plants. In the last 20 years solar panels have increased in efficiency and utilize indirect light as well as direct light. Solar power is now utilized for a variety of water circulation applications. The emerging science of water circulation has been shown to provide numerous water quality benefits. Solar panels produce sufficient power to create an upwelling motion by a carefully designed impellor system. The result is an almost frictionless flow to move layers of water long distances as well as promoting vertical and horizontal circulation. As a result, solar technology meets mixing objectives in potable drinking water tanks, wastewater plants, and freshwater reservoirs. Energy requirements for solar water-mixing technology have been designed to run on low wattage solar energy. New advances in solar-powered water movement has been applied to a variety of unique applications in the last five years including blue-green algae reduction in lakes, municipal odor control, and highgrid aeration reduction in activated sludge. A recent qualitative assessment indicated that solar powered circulation (SPC) in selected wastewater test sites, were shown to augment the mixing and oxygenation required for digestion, while reducing aeration & electricity consumption, and lowering greenhouse gas emissions, sludge buildup, and odor events. Solar powered circulation transformed the bacterial community to those performing aerobic digestion in the upper water column and anaerobic digestion in the slurry and sludge. One of the fastest growing solar mixing applications is in potable water tanks. Solar powered water mixing eliminates summer stagnation, winter ice formation, and lowers chlorine by-product formation. Solar powered mixing is also being used in conjunction with air stripping THMs from potable water reservoirs. Solar water mixing is effective as well as affordable and currently in several sites in Illinois. This discussion will also touch on an effective low energy grid type of mixer used in potable water tanks and waste water systems.

## Drinking Water Courses for Renewal Training Credit

Water Rate Studies: Be Green/Save Green #2032(5393)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	Water rates should be set to ensure that municipal water utilities can be self-sustaining and self-renewing. However, multiple issues are making these goals difficult to achieve: stagnating revenues due to the economic downturn, inflation in operating expenses, greater need for capital improvements as infrastructure ages and deteriorates, and rising competition for infrastructure funding. Amid all of these concerns is the push to be more sustainable or "green". This presentation will demonstrate how a rate study can help your utility to develop a proactive, multi-year plan to address revenue shortages and increased infrastructure funding needs. It also explores how a rate study can help make your utility sustainable with respect to energy use, infrastructure replacement, and user charges without breaking the bank.
Water Storage Tank Safety Modifications #2033(5394)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	Discuss safety modifications to water tanks for climbing safely, emergency rescues, & repainting operations.
Water System Design for Non-Engineers #2014(5377)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	Water system design criteria will be presented in layman's terms. Pumping capacity, storage capacity and water main sizing design criteria will be presented. An overview of code requirements and Ten State standards and their relationship to water system design will be presented as part of the course.
WATER SYSTEM OPERATION AND MAINTENANCE #4005 (VIDE(5456)	<u>6/21/2012</u>	<u>Other</u>	<b>1800</b>	Scope: This series of videos provides needed training for operators of public water systems. Operators have the responsibility of ensuring that safe and pleasant drinking water is delivered to everyone's tap. The information provided in these videos focuses on seven critical areas and will help operators do their jobs with greater knowledge and efficiency.
Water System Security #123(5363)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	Water Treatment Plant Chemical Protection & Security; Water System Security-Video Field Guide; Utility Perimeter Security; Source Water Security & Protection Source Waters.
Water Treatment I #3004(5446)	<u>6/21/2012</u>	<u>Other</u>	<b>3840</b>	Using the Internet, students will explore the rudiments of water treatment. The topics of this course include regulatory monitoring, iron and manganese removal, filtration, coagulation, flocculation, fluoridation, and disinfection. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.

## Drinking Water Courses for Renewal Training Credit

Water Treatment II #3005(5447)	<u>6/21/2012</u>	<u>Other</u>	<b>3840</b> Using the Internet, students will focus on issues of concern to surface water treatment facilities. The topics of this course include reservoir management, taste and odor control, corrosion management, softening, demineralization, and trihalomethanes. Instrumentation and sludge handling and disposal issues are also addressed. Along with reading assignments from the text, the course is augmented with audio, photographs, interactive exercises, and online links.
Water Treatment Plant Operations Certificate: Adva(5448)	<u>6/21/2012</u>	<u>Other</u>	<b>#####</b> Water Treatment Plant – Level 2, a continuation of Level 1, is designed to train students in the practical aspects of operating and maintaining water treatment plants, emphasizing safe practices and procedures. Information is presented on drinking water regulations (including the Safe Drinking Water Act), iron and manganese control, fluoridation, softening, trihalomethanes, demineralization, handling and disposal of process wastes, maintenance, instrumentation, and advanced laboratory procedures.
Water Treatment Plant Operations Certificate: Comp(5449)	<u>6/21/2012</u>	<u>Other</u>	<b>#####</b> Water Treatment Plant – Level 1 is designed to train students to safely and effectively operate and maintain drinking water treatment plants. This course covers information on the importance and responsibilities of a water treatment plant operator, sources of water, reservoir management, and intake structures.
Water Treatment Plant Operations Certificate: Stan(5450)	<u>6/21/2012</u>	<u>Other</u>	<b>#####</b> Water Treatment Plant – Level 1 is designed to train students to safely and effectively operate and maintain drinking water treatment plants. This course covers information on the importance and responsibilities of a water treatment plant operator, sources of water, reservoir management, and intake structures.

# Drinking Water Courses for Renewal Training Credit

Water Treatment Plant Operations: Volume 1 #4002(5453)	<u>6/21/2012</u>	<u>Other</u>	<b>5400</b>	Scope: This course is designed to train operators in the practical aspects of operating and maintaining water treatment plants, emphasizing safe practices and procedures. Information is presented on the importance and responsibilities of a water treatment plant operator, sources of water, reservoir management, and intake structures. Operators will learn how to safely operate and maintain coagulation, flocculation, sedimentation, filtration, and disinfection processes. They will also learn to control tastes and odors in drinking water, control corrosion to meet the requirements of the Lead and Copper Rule, perform basic water laboratory procedures, and solve arithmetic problems commonly associated with water treatment plant operations. An important segment of the course provides operators information on overall plant operation and covers topics such as daily operating procedures, regulation of flows, chemical use and handling, records and reports, plant maintenance, safety and security, emergency conditions and procedures, handling complaints, and energy conservation.
Water Treatment Plant Operations: Volume 2 #4003(5454)	<u>6/21/2012</u>	<u>Other</u>	<b>5400</b>	Scope: This course is designed to train operators in the practical aspects of operating and maintaining water treatment plants, emphasizing safe practices and procedures. Information is presented on drinking water regulations (including the Safe Drinking Water Act), iron and manganese control, fluoridation, softening, trihalomethanes, demineralization, handling and disposal of process wastes, maintenance, instrumentation, and advanced laboratory procedures. Administrative procedures for dealing with budgeting, setting rates, recordkeeping, personnel administration, public relations, and emergency planning are also covered in this course.
Why Should I Care - Implementing a WPP? #2034(5395)	<u>6/21/2012</u>	<u>Other</u>	<b>60</b>	Illinois groundwater resources continue to be degraded. Furthermore, the Illinois State Water Survey study found the State of Illinois may need up to 50 percent more water within 40 years. These combined factors make it imperative to implement wellhead protection programs.
Emergency Preparedness & Response(5091)	<u>6/26/2012</u>	<u>On-line Class</u>	<b>240</b>	The EPA recently released the Tabletop Exercise Tool for Water Systems: Emergency Preparedness, Response, and Climate Resiliency (TTX). Tabletop exercises allow water systems to practice, test, and improve emergency response plans (ERPs) and procedures. Exercise participants will learn how to use this tool to examine short-term emergency response capabilities, tasks and objectives.
A Drop of Knowledge: Non-Operators Guide to DW(5329)	<u>6/28/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	

## Drinking Water Courses for Renewal Training Credit

IL Mercury Legislation & How It Affects Your Equip(5327)	<u>6/28/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	
Outdoor Water Use Efficiency:Outreach & Irrigation(5328)	<u>6/28/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	
Regionally Coordinated Water Resource Planning(5330)	<u>6/28/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	
Required Well Pump Maintenance & Well Rehab(5092)	<u>6/28/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Proper analysis of hydrogeologic and pump performance data is critical to protecting the investment of a water supply well and its equipment. The webinar will focus on the importance of utilizing data to guide decision making related to pump maintenance and well rehabilitation. Properly acquiring the data is critical for making sound maintenance decisions. A detailed description and understanding of this critical data will be provided. Examples will be provided along with analysis and description.
Joint Restraint Design and Application(5214)	<u>7/24/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This presentation will explain why joint restraint is needed and the various techniques used to accomplish it. A free computer design program will be demonstrated that will determine the restrained distance needed to eliminate reliance on thrust blocking. It will discuss the various products on the market used for joint restraint and where they should be considered.
Asset Management (AM) for Small Systems & EPA(5196)	<u>7/25/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	
Tour of the Champaign County Water Treatment Fac(5242)	<u>7/26/2012</u>	<u>Other</u>	<u>120</u>	The Champaign County Water Treatment Facility, owned and operated by Illinois American Water Co, is LEED certified by the U.S. Green Building Council. The facility was needed to support Champaign County's steadily-expanding consumer base and to improve water system reliability. Integrating sustainable features into plant design was also a chief objective of the project. Constructed on 7.5 miles outside of downtown Champaign on a "greenfield" site (a piece of previously undeveloped land), the CCWTF is a model of sustainability, incorporating energy-efficient technology and demonstrating close regard for the environment.

## Drinking Water Courses for Renewal Training Credit

Qualified Energy Conservation Bonds (QECBs)(5206)	<u>7/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	In 2009, Illinois counties and cities received a \$134 million allocation of Qualified Energy Conservation Bonds (QECBs). QECBs are taxable bonds issued by local governments in which the issuer receives a direct cash payment from the U.S. Treasury for a substantial portion of the interest cost on the borrowing. For eligible projects, QECBs can provide water and wastewater utilities with very low interest rates (from 0% to 1.5% in the current market) for terms up to 22 years.
Bad Sample = Bad Results(5199)	<u>8/9/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Sample collection do's and don'ts. Sampling requirements for coliform, DBP, IOC's, SOC's, and VOC's, and bacteriological samples will be covered. The webinar will conclude with a discussion of lab procedures to ensure the integrity of your samples and IEPA data filing and compliance procedures.

# Drinking Water Courses for Renewal Training Credit

Management of Water & WW Residuals Containing Rad(5220)	<u>8/21/2012</u>	<u>On-line Class</u>	<p><b>240</b> 8:00 – 8:10 Introductions and Announcements              8:10 – 8:40 Basic Health Physics for Radium Water Treatment Residuals Part 1, Gary Forsee              Introduction to radioactivity, units, dose, exposure, and health risks – as they pertain to the water/wastewater treatment industry.              8:40 – 8:50 Break              8:50 – 9:30 Basic Health Physics for Radium Water Treatment Residuals Part 2, Gary Forsee              Concentrations of residuals in Illinois, health and safety recommendations, risk, and putting the numbers in perspective.              9:30 – 10:00 Introduction to 32 IAC 330.40(d): Management and Disposal of Water and Wastewater Treatment Residuals Containing Radium, Mike Klebe              Overview of the rule, regulatory requirements, and fundamentals of the rulemaking.              10:00 – 10:15 Break              10:15 – 11:15 Land Application of Residuals Containing Radium, Jewel Brant              Specifics on new requirements for land application of treatment residuals containing radium.Including field sampling, compare/contrast with US EPA 503, IEPA Part 391, and IEMA 330.40(d). Demonstration of calculations.              11:15 – 11:30 Laboratory Issues, Gary Forsee              Sample Volumes, Analysis Methods, MDA/MDC’s, and Turnaround times.              11:30 – 12:00 What Happens with Residuals are Too “Hot”, Michael Klebe              Low Level Radioactive Waste Management and Regulations. Compliance Strategy for radium residuals exceeding exempt limits.</p>
Aeration Strategies for THM Control(5195)	<u>8/22/2012</u>	<u>Operator's Group Meeting</u>	<p><b>60</b> The Stage 2 Disinfection Byproducts Rule has led some water utilities to consider aeration as a potential, cost effective treatment approach to remove TTHMs after formation and in the distribution system. Aeration of TTHMs is controlled by Henry’s Law constants - with chloroform the most and bromoform the least volatile. Since HAA5s are not volatile, they are not removed by aeration. While substantial information regarding aeration treatment of TTHMs is available from the literature going back to the 1980s, new interest in the topic has focused on applying aeration in distribution systems to minimize TTHM concentrations at localized distribution system “hot spots.”</p>

## Drinking Water Courses for Renewal Training Credit

Application of Activated Carbon in Municipal DW(5241)	<u>8/23/2012</u>	<u>On-line Class</u>	<b>300</b>	Activated carbon has been used in drinking water treatment plants for decades, to treat a variety of contaminants. Powdered activated carbon (PAC) was initially introduced over fifty years ago to treat taste and odor issues. Later, granular activated carbon (GAC) was introduced as a more efficient means of applying activated carbon. In more recent years, activated carbon has been used to treat both groundwater and surface water to remove a range of contaminants, from pesticides to volatile organic compounds (VOC). Most recently, this technology has been used to help drinking water utilities comply with US-EPA regulations regarding disinfection byproducts (DBP). On the horizon, activated carbon is also seen as a viable means to provide a barrier against emerging contaminants, such as endocrine disrupting compounds (EDC) and pharmaceutical and personal care products (PPCP).
Optimatics' New Software Subscription Program(5227)	<u>8/24/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Optimatics' suite of customized software tools deliver least-cost, hydraulically robust improvement plans and operating strategies to water and wastewater utilities. Optimizer WDS (Water Distribution) and WCS (Wastewater Collection) software has been applied to more than 250 optimization studies of potable water, wastewater, reclaimed water and irrigation systems, achieving significant return on investment. Traditionally provided as consulting services, this powerful and highly customizable optimization software is now being provided to consultants and utilities under a new software subscription program including training and support from Optimatics' expert team. This brings the power of optimization to all engineers involved in design and planning of water distribution and wastewater collection systems.
Tour of the City of Rockford Water Treatment Plant(5209)	<u>8/28/2012</u>	<u>Other</u>	<b>240</b>	Water treatment basics will be discussed along with historical and current technologies utilized in municipal water systems. A case study focusing on the City of Rockford's water treatment processes will be reviewed and discussed. The City of Rockford utilizes various water treatment facilities to treat its source water for iron, manganese, and radium. Proper preventative maintenance of water treatment equipment and the steps required for a full system evaluation will be reviewed in detail. The seminar will be split between classroom instruction at the City's water division facility and on site instruction at various City water treatment facilities. During the site visit, the complete water treatment process at one of the City's facilities will be reviewed from production to distribution.

## Drinking Water Courses for Renewal Training Credit

Using Green Codes to Garner Water Use Efficiency(5245)	<u>8/29/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Construction codes offer the most cost effective and sustainable means to improve the efficient use of water. There are three different sets of water use efficiency building codes available for water utilities and government agencies to implement to promote the efficient use of water in their service territories. The infrastructure to administrate and enforce the measures already exists within the local communities, making this the ideal method to gain effective demand management at minimal cost and effort. This webinar explains the advantages and differences in the IAPMO Green Plumbing and Mechanical Supplement, the ICC International Green Construction Code, and the ASHRAE 189.1 Standard.
Pumps and Pump Maintenance(5237)	<u>9/1/2012</u>	<u>On-line Class</u>	<u>240</u>	Pumps are a critical component in all water or waste water systems, so it's a good idea to know what makes them run and how to prevent their breakdown. Basic pump maintenance and repair techniques are the primary goal of this course so water professionals can keep their facilities and equipment running smoothly. Proper maintenance of pumps will also result in pump operation cost reductions and increased pump life. Water professionals who want to refresh their skills on pump and pump system troubleshooting and repair are candidates for this class.
Innovative New Technologies for the Water & WW Ind(5212)	<u>9/5/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	This presentation will give an overview of several new technologies for Water Distribution and Sewer Collection. Included will be; Under Pressure Valve Insertion, Manhole and Culvert Pipe Rehab, Preventing Hydrogen Sulfide based Concrete Corrosion, Ultra Low Maintenance Air and Vacuum Valves, Low Head Loss Check Valves and Chimney Seal Options.
Pipeline Repair for Water Utilities DVD #439(5520)	<u>9/5/2012</u>	<u>Video</u>	<u>15</u>	Supplements field training for new employees in pipeline repair.
Customer Service in Action(5203)	<u>9/12/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Water utility employees at all levels of the organization are interacting with customers on a daily basis. Each contact is an opportunity to demonstrate the value of the water utility to these customers. Whether a customer service representative is explaining a water bill or a field technician is telling customers a main break has occurred and their water will be off for several hours, the elements of a successful interaction are the same. Good communication is the key. This webinar will examine the role of communication in providing excellent customer service. The guiding principles for communicating with customers will be presented along with several applications for clerical staff, field personnel and customer service representatives.

# Drinking Water Courses for Renewal Training Credit

Maintaining Water Quality in the Dist System(5267)	<u>9/13/2012</u>	<u>On-line Class</u>	<u>240</u>	<p>Most water distribution systems have areas where there are water lines that may not have sufficient demands to keep the detention time short enough to maintain minimum disinfectant residuals. Failure to maintain a minimum disinfectant residual in water lines, in addition to being a violation of State and Federal standards, also contributes to the conditions that favor growth of biofilms within the distribution lines. Long-term exposure to low disinfectant residual conditions within a water pipeline not only favors the potential for biofilm growth, it increases the demand for disinfectant and makes it more difficult for operators to maintain desired minimum disinfectant residual levels. A recognized solution to this water quality problem within water distribution systems is periodic flushing of the pipelines. This process allows for the turn-over of water in the line, thus flushing the water that has a low disinfectant residual and the biofilm from the inside surface of the pipe. Advanced Maintenance Flushing minimizes disinfectant residual conditions in water distribution systems by providing periodic flushing on a consistent and regulated basis in order to maintain the water quality in the distribution system between flushing events. Advocates of this philosophy, including hundreds of municipal water distribution utilities throughout the U.S. and Canada, have concluded that smaller volumes of water can be used on a more frequent basis to maintain a minimum disinfectant residual that in turn results in a reduction in the growth rate of biofilms resulting in a reduced disinfectant demand within the pipeline. A reduced disinfectant demand in the pipeline in turn results in a longer detention time allowed prior to the loss of disinfectant residual within the pipeline. Implementation of Advanced Maintenance Flushing also results in the use of lower volumes of water purged per flush event; therefore utilities can benefit by utilizing less labor and reducing its reliance on resources, thus lowering operational costs associated with the maintenance of a flushing program.</p>
Membrane Technology for Municipal/DW Treatment(5223)	<u>9/14/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	

## Drinking Water Courses for Renewal Training Credit

INFINITANK - "The New Standard of Service Life"(5211)	<u>10/12/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	<p>INFINITANK™ Water Tank Preservation Program, the New Standard of Service Life, is the first water tank program of its kind designed to protect both exterior and interior water tank surfaces. INFINITANK™ utilizes coating systems that exceed the performance of AWWA “standard” systems without additional coats of paint, includes the use of Opti-Check™ (OAP) fluorescent technology, and can meet a 24 hour Return-to-Service requirement for interior tank surfaces. With Owner contracted Third-Party inspection, INFINITANK™ overcomes the main causes of tank deterioration:</p> <ul style="list-style-type: none"> <li>• Inadequate / insufficient Coating DFT</li> </ul>
Mechanical Seal Basics, Protective Coatings Etc(5222)	<u>10/15/2012</u>	<u>On-line Class</u>	<b>240</b>	<p>William “Doc” Burke, A.W. Chesterton's presentation will cover improving mechanical seal reliability and the advantages of applying protective coatings to water &amp; Wastewater Pumps. This presentation will discuss how seal life can be extended between repairs and the practical advantages of coatings on pump internals.</p>
Basics of AC Motors(5202)	<u>10/17/2012</u>	<u>On-line Class</u>	<b>240</b>	<p>Upon completion of this course, you should be able to:</p> <ul style="list-style-type: none"> <li>• Explain the concepts of force, inertia, speed, and torque</li> <li>• Explain the difference between work and power</li> <li>• Describe the construction of a squirrel cage AC motor</li> <li>• Describe the operation of a rotating magnetic field</li> <li>• Calculate synchronous speed, slip, and rotor speed</li> <li>• Identify NEMA enclosures and mounting configurations</li> <li>• Plot starting torque, accelerating torque, breakdown torque, and full-load torque on a NEMA torque curve</li> <li>• Apply de-rating factors as required by an application</li> <li>• Describe the relationship between A/Hz, torque, and horsepower</li> <li>• Match an AC motor to an application and its load</li> <li>• Identify NEMA enclosures and mount configurations</li> <li>• Understand AC Motor meggering &amp; wiring techniques</li> </ul>

## Drinking Water Courses for Renewal Training Credit

WATERiD: Water Infrastructure Dbase for Water & WW(5266)	<u>10/25/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	<p>This presentation presents a project of developing a national database for water infrastructure system which includes both drinking water and wastewater. The database is entitled as "WATERiD" and can be accessed at <a href="http://www.waterid.org">www.waterid.org</a>. Water infrastructure in U.S. is aging poorly and municipal governments are struggling to find easy access to comprehensive information about sustainability of their water infrastructure such as condition assessment, renewal engineering, subsurface utility engineering, best appropriate practices, and cost of technologies. Such information can be used as knowledge by the various utilities but are not readily shared across utilities. Because there is no easy accessible platform through which successful experiences and lessons learned can be shared, common mistakes are made repeated in different locations. WATERiD is accommodating utilities to share their experience and lesson learned, and is a single point information center for the utilities where they can find all the water infrastructure sustainability relevant information. To collect lessons learned and utility experience, more than 100 utilities throughout the U.S and 30 additional international utilities were contacted. The data from utilities are compiled, taxonomically classified, and uploaded in WATERiD for sharing between the utilities. This presentation starts with brief research needs and purpose, followed by WATERiD architecture, upload and search capability, and ends up with WATERiD future development work. Sustainability building upon foundational WATERiD resources has and will continue to take the cooperation of utilities, organizations, and professionals from across the water infrastructure industry.</p>
Tour of the Village of Carpentersville(5210)	<u>10/29/2012</u>	<u>Other</u>	<u>240</u>	
#440 Drought Workshop DVD(8020)	<u>11/5/2012</u>	<u>Video</u>	<u>360</u>	<p>This is a DVD recording of the Drought Workshop held in Elgin, IL on 11/05/12. A one day workshop that looks at the impacts of the 2012 drought on water systems in Illinois. The workshop will focus on the supply and demand balancing act experienced by water suppliers during the current drought conditions. Representatives from ISWS, USGS and IEPA will present rainfall, stream flow and groundwater level trends that compare this drought with previous ones. Water utility representatives will present case studies of how the drought has impacted their systems, both from a demand standpoint and the impacts on supply. Potential solutions to dealing with the effects of the drought conditions will be discussed in the afternoon session.</p>

## Drinking Water Courses for Renewal Training Credit

Manage for Success: Effective Utility Leadership(5219)	<u>11/5/2012</u>	<u>On-line Class</u>	<b>960</b> Objective: This course is designed to provide managers with additional training and skills in team building and problem identification and resolution. Scope: This training manual stresses problem identification and solutions, working together as a team, communication, motivation, and evaluating and improving solutions to problems. Managers completing the training program will be confident that they have the tools and the ability to apply them to be successful managers. Utilities can help ensure that they have the needed management capacity by having their management personnel complete this training program.
Using the AWWA Water Audit Spreadsheet (Seminar)(5246)	<u>11/6/2012</u>	<u>On-line Class</u>	<b>240</b> The Water Audit Spreadsheet based tool contains worksheets in a spreadsheet file used to help track water usage and calculate levels of performance for tracking water losses. Instructions for using the spreadsheet tool are included in the spreadsheet. The spreadsheet prompts the user to enter standard water supply information such as the volume of water
Building the Canal to Save Chicago(5201)	<u>11/7/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b> Chicago was the fastest growing city in the late 1800s, but its location had one big disadvantage - poor drainage. Cholera and typhoid were rampant and Chicago had one of the highest mortality rates among major cities. The Chicago River was a public nuisance, polluted and smelly, and discharging to the source of water for the city, Lake Michigan. The building of a canal to reverse the flow of the Chicago River solved these problems and allowed the city to continue to grow, the mortality rate plummeted and the river became enjoyable. The building of the canal required the creation of a new government and the development of pioneering construction technology that helped in the building of the Panama Canal. The reversal of the flow in the Chicago River remains a wonder of the world and it remains critical to a sustainable future for the Chicago metropolis.

## Drinking Water Courses for Renewal Training Credit

Water Operations for the Non Water Operator(5260)	<u>11/7/2012</u>	<u>On-line Class</u>	<b>240</b>	<p>Distribution</p> <ul style="list-style-type: none"> <li>• Storage</li> <li>• Disinfection</li> <li>• Lead &amp; Copper</li> <li>• Corrosion</li> <li>• Math</li> </ul> <p>Water Sources</p> <ul style="list-style-type: none"> <li>• Surface water</li> <li>• Wells</li> <li>• Math</li> </ul> <p>Treatment</p> <ul style="list-style-type: none"> <li>• Ion exchange</li> <li>• Conventional softening</li> <li>• Membranes</li> </ul> <p>Plant Tour</p>
UV For Municipal Drinking Water Applications(5249)	<u>11/14/2012</u>	<u>On-line Class</u>	<b>240</b>	<p>UV technologies continue to experience rapid growth in municipal drinking water disinfection applications worldwide. Many utilities are utilizing UV to address risks presented by the chlorine-resistant pathogens Cryptosporidium and Giardia to meet LT2 regulations, without forming harmful disinfection by-products (DBPR2). In addition, there is a growing awareness of UV-based oxidation processes for treating micropollutants in water, including treatment of T&amp;O compounds and associated algal toxins. As a result, a number of water treatment plants worldwide have installed or are in the process of installing UV-oxidation for the purpose of controlling T&amp;O in drinking water. This seminar will review using UV to meet LT2 and DBR2 regulations. The seminar will then shift to the science and applications of UV Oxidation.</p>
Trends in Energy Sourcing(5243)	<u>11/15/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	
Using the AWWA Water Audit Spreadsheet (Webinar)(5247)	<u>11/20/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	<p>The Water Audit Spreadsheet based tool contains worksheets in a spreadsheet file used to help track water usage and calculate levels of performance for tracking water losses. Instructions for using the spreadsheet tool are included in the spreadsheet. The spreadsheet prompts the user to enter standard water supply information such as the volume of water</p>

## Drinking Water Courses for Renewal Training Credit

Water Meters in Chicago: the MeterSave Program(5259)	<u>11/28/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	The City of Chicago is one of the last major metropolitan cities to be fully metered. Although 79% of our water revenue is from metered accounts, Chicago has approximately 320,000 homes that are not metered. Chicago has been researching best practices to implement Universal Metering including installation of a meter upon property transfer, upon customer volunteerism, or as part of a mandatory, geographically-based program. In 2008, Chicago began planning for a novel, voluntary, incentivized program called MeterSave. Homeowners participating in MeterSave receive a 7-year guarantee that their water bill will be no higher than it would have if the meter had not been installed. Customers will have the ability to control their water usage and reduce their bills while at the same time the City can improve water conservation and better track consumption and leakage. Once the meters are installed the homeowners will, by word of mouth, become ambassadors to promote the program in future years. Awareness and education are key components to gaining buy-in by a municipality's constituencies.
SDWA Regs Updates with Focus on Stage 2(5239)	<u>12/4/2012</u>	<u>On-line Class</u>	<u>180</u>	This seminar will bring an overview on the latest updates of the Safe Drinking Water Act (SDWA) regulations with a focus on the implementation of Disinfectants and Disinfection Byproduct Rule (Stage 2 DBP rule) and its operation evaluation requirements.
Energy Management for Small Systems & EPA(5205)	<u>12/5/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	
Hydrants and Pipes Seminar(6824)	<u>12/5/2012</u>	<u>On-line Class</u>	<u>240</u>	Hydrant repair and maintenance; pipe design, manufacturing process, joints, installation prodedures and hydraulic analysis
Practical Proactive Management of Our Groundwater(6825)	<u>12/5/2012</u>	<u>Presentation</u>	<u>240</u>	GW topics.
Review & Refresher of Fluoride Dosage Calculations(6835)	<u>12/6/2012</u>	<u>Presentation</u>	<u>60</u>	
Water Main Corrosion Control w/Cathodic Protection(6836)	<u>12/6/2012</u>	<u>Presentation</u>	<u>60</u>	
Water Main Rehab w/Cured-in-Place-Pipe: Aqua-Pipe(6837)	<u>12/6/2012</u>	<u>Presentation</u>	<u>60</u>	

## Drinking Water Courses for Renewal Training Credit

13 Ways Through a Firewall(6872)

12/12/2012

Operator's Group Meeting

60

Firewalls are a given—everyone assumes that every security posture includes a firewall. But are they really secure? Join us to see 13 ways to break through a firewall. Attacks include: Walking a USB stick past the firewall, phishing attacks, stealing a password, using essential connections to compromise servers, piggy-backing on VPN, split tunneling, firewall vulnerabilities, firewall configuration errors and omissions, forging an IP address, using default password, standing up a wireless access point inside the protected network, and using vendor back-doors. Note: One or two scenarios will be live, others will be screen shots, and some will be discussion only. For each scenario, compensating measures are briefly discussed and compared.

# Drinking Water Courses for Renewal Training Credit

Roadmap to Stage 2 Compliance(6873)

12/12/2012

On-line Class

**60** Problem: Recently, the EPA changed its requirements for public water systems to achieve compliance with the Stage 2 Disinfectant and Disinfection Byproducts (DBPs) Rule. The new Stage 2 rule strictly limits the amount of disinfectant used by water operators as well as the amount of DBPs allowed in the water system. Subsequently, many compliant systems may become non-compliant due to these rule changes. Most of the recommended approaches to achieve these new standards require costly infrastructure upgrades or changes in the treatment process, yet these options are not feasible for utilities with a limited budget. Discussion: Research shows that the majority of water treatment plants treat water to acceptable levels. Proper maintenance of filters, water storage tanks and pipelines is necessary to control chlorine demand and DBP levels. Due to the high cost of infrastructure upgrades necessary to achieve compliance, operators are looking for alternative methods to meeting the new requirements. One such approach is to chemically treat water distribution systems with NSF 60 certified chemicals specifically engineered to remove naturally occurring organic and inorganic deposits from all water treatment infrastructures. By safely removing the scales and films that react with disinfectants, water operators can simultaneously reduce disinfectant demand and DBPs. Thus, water treatment with NSF 60 certified chemicals is a safe, cost-effective alternative to achieving Stage 2 Compliance. In this presentation, examples of successful applications in the US, Canada and Europe will be discussed. Conclusion: The NSF 60 certified chemical approach detailed in this presentation can alleviate the need for large capital expenditures and treatment changes for both surface and ground water treatment plants. Utilities can achieve compliance with the Stage 2 DBP Rules while saving in both capital and operations/maintenance budgets.

## Drinking Water Courses for Renewal Training Credit

Security Issues and Best Practices in Water/Wastew(6874)	<u>12/12/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	<p>The security posture of most water/wastewater treatment plants is weak. The main reasons are that they were not designed to be secure against modern attack methodologies. Plant personnel are not properly educated on the "who, what, why, when and how" of facility and system security. Security by obscurity does not work for critical infrastructure. The potential for harm is too significant. Security for water/wastewater plants is minimized, un-funded, and not part of "best practices" thinking. Security is not a core competency of most engineering, system integration and construction companies, nor of the operators and IT personal involved with these plants. A security incident at a water facility has not yet caused the financial burden or societal anxiety that motivates action. We tend to wait and react to incidents as opposed to being predictive and proactive. All infrastructure, including water and wastewater facilities, should be considered a target for any group or individual that may benefit from impacting the availability of the service as well as the confidentiality and integrity of the information and systems contained therein. This presentation will explore the motivation behind and the best practices for an appropriate security posture for a water/wastewater facility. It will look at security policies, vulnerabilities and risk management concerns and opportunities. It will explore the relationship between physical security and information security. Finally it will propose some ideas for developing prudent security policies given the vulnerabilities and risk and suggestions for implementing the appropriate technologies and practices to support the policies, standards and guidelines</p>
Telemetry: A Detailed Look at Telemetry(6870)	<u>12/12/2012</u>	<u>On-line Class</u>	<u>240</u>	<p>"• Telemetry Technology • Telemetry Components • Tailoring your Telemetry System • Telemetry Security • Troubleshooting a Telemetry System"</p>
Water Operator Math: Class A & B(5261)	<u>12/12/2012</u>	<u>On-line Class</u>	<u>180</u>	<p>A review of basic math computations performed by water operators of all classes, including area and volume calculations, unit conversions, distribution system math, chemical feed calculations, and basic water treatment calculations. Participants should bring pencil, paper and a basic calculator.</p>
Wells, Pumps, Mercury Seal Law & VFD's(6871)	<u>12/12/2012</u>	<u>On-line Class</u>	<u>240</u>	<p>Topics included will be: various pumps relating to common well &amp; pump related failures/issues and coming into compliance with the new Mercury Seal law as well as VFD's on well pump applications.</p>

## Drinking Water Courses for Renewal Training Credit

Rehab Roadmap: Coating Systems for Concrete W Tank(5238)	<u>12/13/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	One of the causes of premature coating failure on exterior surfaces of concrete water storage tanks is the reaction of “old fashioned” coatings with the tank’s cementitious, alkaline substrate. These coatings, allowed by AWWA D110, are generally more sensitive to moisture and may “hydrolyze” ; not providing the long-term durability Owners may expect
ISAWWA Water Plant Systems Safety Audit/Survey Too(7090)	<u>1/7/2013</u>	<u>Other</u>	<b>60</b>	Safety, water mains, and disaster-related
Ductile Iron Pipe: Design, Manufacturing Process &(8180)	<u>6/26/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	<ul style="list-style-type: none"> <li>• Design of DIP per AWWA C150 in comparison to alternate materials</li> <li>• Manufacturing process of DIP per AWWA C151 and how it compares to alternate materials</li> <li>• Joints for open cut, trenchless and exposed applications</li> <li>• Linings and coatings</li> <li>• Installation of DIP – Open cut and trenchless applications like HDD and pipe bursting</li> <li>• Hydraulic analysis</li> </ul>
Annual Regulatory Update DVD(7745)	<u>10/9/2013</u>	<u>Video</u>	<b>420</b>	Recorded from annual regulatory session in Elgin Fall 2013.
Energy Conservation - Basic Electrical Concepts(7967)	<u>12/5/2013</u>	<u>Operator's Group Meeting</u>	<b>300</b>	The purpose of this course is to acquaint you with the basic concepts of electricity and how to use those concepts to maximize efficiency in your workplace. There are five units in this course. Each unit consists of a PowerPoint presentation, self-tests to check your understanding of the material (ungraded), and a unit exam.
Hazwoper Refresher(7963)	<u>12/5/2013</u>	<u>Operator's Group Meeting</u>	<b>480</b>	This Internet-based course provides 8 hours of interactive training online for those needing the Hazwoper Refresher certification (29 CFR 1910.120). Topics include exercises on PPE, Regulations, Hazard Recognition, etc. The course consists of an online text, interactive exercises, web links, self-grading quizzes, and final exam.
Hazwoper Refresher For Supervisors(7964)	<u>12/5/2013</u>	<u>Conference/Seminar</u>	<b>480</b>	This Internet-based course provides eight hours of interactive training online for the annual refresher to the 40-hour Hazardous Wastesite Worker course (29 CFR 1910.120). This course places greater emphasis on supervisory functions and fulfills the OSHA/EPA requirements for supervisors. The Supervisor Refresher is only intended to be taken by those who have already taken the OSHA 8 Hour HAZWOPER Supervisor (Initial) Training.

## Drinking Water Courses for Renewal Training Credit

Lockout/Tagout Awareness Course(7962)	<u>12/5/2013</u>	<u>Operator's Group Meeting</u>	<b>240</b>	This course presents OSHA’s general requirements for controlling hazardous energy during service or maintenance of machines or equipment. It is not intended to replace or to supplement OSHA standards regarding the control of hazardous energy. After taking this course, employers and other interested parties are urged to review the OSHA standards on the control of hazardous energy to gain a complete understanding of the requirements regarding the control of hazardous energy. These standards, as well as other relevant resources, are identified throughout this publication.
Warehousing & Powered Industrial Truck Safety(7965)	<u>12/5/2013</u>	<u>Operator's Group Meeting</u>	<b>360</b>	Public Warehousing and Storage Safety Training Program is an online interactive training program consists of 24 lessons that depict common, unsafe actions and conditions that exist in most warehouses. The topics selected represent the greatest hazards in public warehousing as determined by accident statistics, OSHA violations, OSHA training requirements, with input from warehouse workers, and suggestions from trainers who conduct health and safety training.
Water Distribution Systems: Distribution Faciliti(7968)	<u>12/5/2013</u>	<u>Operator's Group Meeting</u>	<b>300</b>	Using the Internet students will obtain a working knowledge of potable water distribution systems. The specific topics of this course involve the issues of water distribution systems and facilities. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.
Water Distribution Systems: Storage Systems(7969)	<u>12/5/2013</u>	<u>Operator's Group Meeting</u>	<b>600</b>	Using the Internet students will obtain a working knowledge of potable water distribution systems. The specific topic of this course is that of water storage facilities. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.
Water Distribution Systems: System Disinfection(7970)	<u>12/5/2013</u>	<u>Operator's Group Meeting</u>	<b>600</b>	Using the Internet students will obtain a working knowledge of potable water distribution systems. The specific topic of this course is that of water disinfection systems. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.

## Drinking Water Courses for Renewal Training Credit

Water Distribution Systems: System O&M(7971)	<u>12/5/2013</u>	<u>Operator's Group Meeting</u>	<b>600</b>	"Using the Internet students will obtain a working knowledge of potable water distribution systems. The specific topic of this course is that of the needs for proper operations and maintenance of water distribution systems. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links. Assessments: This course contains self-tests, lesson qui"
Water Distribution Systems: System Safety(7972)	<u>12/5/2013</u>	<u>Operator's Group Meeting</u>	<b>600</b>	Using the Internet students will obtain a working knowledge of potable water distribution systems. The specific topic of this course is that of safety issues confronting water distribution systems. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.
Water Distribution System: Water Quality(7973)	<u>12/5/2013</u>	<u>Operator's Group Meeting</u>	<b>300</b>	Using the Internet students will obtain a working knowledge of potable water distribution systems. The specific topic of this course is that of water quality for distribution systems. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.
Worker Safety For Disaster Response(7966)	<u>12/5/2013</u>	<u>Operator's Group Meeting</u>	<b>360</b>	This course is designed to provide workers with the knowledge, information, and basic skills to work safely at a disaster site, a natural event or man-caused incident. Those taking this course will learn how to recognize potential hazards and the need for reporting hazards identified on assigned job tasks, helping them to ensure the health and safety for themselves and others. No final exam is required.
Water Treatment - Disinfection #3016(8512)	<u>6/11/2014</u>	<u>Operator's Group Meeting</u>	<b>900</b>	Using the Internet students will explore the rudiments of water treatment. The topics of this course include general issues operators face when dealing with a variety of disinfection processes. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links. Assessments: This course contains self-tests, lesson quizzes, and a final.
#3055 Worker Safety for Disaster Response(8562)	<u>6/25/2014</u>	<u>Operator's Group Meeting</u>	<b>900</b>	This course is designed to provide workers with the knowledge, information, and basic skills to work safely at a disaster site, a natural event or man-caused incident. Those taking this course will learn how to recognize potential hazards and the need for reporting hazards identified on assigned job tasks, helping them to ensure the health and safety for themselves and others. No final exam is required.

## Drinking Water Courses for Renewal Training Credit

Detecting & Silencing Leaks DVD(9109)	<u>12/5/2014</u>	<u>Video</u>	<u>15</u>	Operators learn how to help consumers find and use the home's water meter to help determine if there is a leak, and then use the various shutoff valves to appliances and fixtures to isolate the leak. It illustrates how to discover if a toilet is leaking using a dye, and repair a leaking toilet.
Solid Waste Management #3047(9129)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<u>3600</u>	Using the Internet this course will provide the student with a comprehensive look at solid waste management; combining the aspects of landfill, composting and household hazardous waste operations. This class will meet or exceed most state requirements for the educational components of certification and/or licensing required for solid waste professionals.
Solid Waste Management: Composting Operations #304(9130)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<u>1500</u>	Using the Internet, students will be able to obtain the skills and knowledge to work in a variety of composting facilities. The topics include the Physical Science of Composting, Feedstock, Quality and Classification, Facility Operations, Marketing/End Use and Regulations. The course is enhanced with up-to-date photographs, interactive exercises, and online links. Upon Completion of this Course, participants will: Understand composting of organic materials; Become exposed to the various opportunities for composting agricultural and industrial wastes; and Understand the full range of composting technologies. This course will take approximately 25 hours to complete. Individual times may vary. You must successfully pass the exam at the end of the course to receive CEU credits. This class will meet or exceed most state requirements for the educational components of certification and/or licensing required for solid waste professionals.
Solid Waste Management: Landfill Operations #3049(9131)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<u>1500</u>	Using the Internet, students will be able to obtain the basic knowledge and skills to be part of a modern landfill operation. This course provides information about the role of the sanitary landfill as a component of an integrated solid waste management system; key functions and associated processes within landfill operations; basics of landfill gas and leachate management and groundwater monitoring; and essentials of equipment selection, cell construction and litter management; and fundamentals of accident prevention. This course will take approximately 25 hours to complete. Individual times may vary. You must successfully pass the exam at the end of the course to receive CEU credits. This class will meet or exceed most state requirements for the educational components of certification and/or licensing required for solid waste professionals.

## Drinking Water Courses for Renewal Training Credit

Wastewater Analysis #3029(9117)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<b>2880</b>	Using the Internet, students will be introduced to basic laboratory safety and gravimetric, spectrophotometric, electrochemical, titrimetric, and microbiological methods. The units include instruction on the laboratory procedures for microscopic, coliform, BOD5, COD, ammonia, grease and oil, chlorine and solids analysis
Wastewater Collection Systems #3030(9118)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<b>3840</b>	Using the Internet, students will gain a working knowledge of wastewater collection systems safety procedures, sewer inspection and testing, pipeline cleaning and maintenance, underground repair, lift stations, equipment maintenance, and sewer rehabilitation. Along with reading assignments from the text, the course is enhanced with up-to-date photographs, audio, interactive exercises, and links.
Wastewater Treatment - Industrial #3031(9119)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<b>3840</b>	Using the Internet, students will focus on issues of concern to industrial wastewater treatment facilities. The topics of this course include regulatory requirements; flow measurement; preliminary, physical and chemical treatment; filtration; and treatment of metal streams. Along with reading assignments from the text, the course is augmented with audio, photographs, interactive exercises, and online links.
Wastewater Treatment I #3032(9120)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<b>3840</b>	Using the Internet, students will explore the rudiments of wastewater treatment. This introductory course includes instruction in water pollution control, preliminary and primary treatment, fixed film processes, and suspended growth systems. Along with reading assignments from the text, the course is enhanced with up-to-date photographs, audio, interactive exercises, and online links.
Wastewater Treatment II #3033(9121)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<b>3840</b>	Using the Internet, students will focus on issues of concern to wastewater treatment facilities. The topics of this course include activated sludge process control, sludge digestion and solids handling, nitrogen and phosphorous removal, and odor control. Along with reading assignments from the text, the course is augmented with audio, photographs, interactive exercises, and online links.
Wastewater Treatment: Disinfection & Chlorination (9122)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<b>600</b>	Using the Internet students will explore the rudiments of wastewater treatment. The topics of this course include general issues operators face when disinfecting wastewater. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.

## Drinking Water Courses for Renewal Training Credit

Wastewater Treatment: Fixed Film Process #3035(9123)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Using the Internet students will explore the rudiments of wastewater treatment. The topics of this course include general issues regarding the trickling filter process when treating wastewater. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.
Wastewater Treatment: Pollution Control #3036(9124)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Using the Internet students will explore the rudiments of wastewater treatment. The topics of this course include general issues regarding what is meant by the term water pollution, the steps needed to treat it and the math used. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.
Wastewater Treatment: Pond Systems #3037(9125)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Using the Internet students will explore the rudiments of wastewater treatment. The topics of this course include general issues regarding use of wastewater ponds as a treatment method. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.
Wastewater Treatment: Preliminary Treatment #3038(9126)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Using the Internet students will explore the rudiments of wastewater treatment. The topics of this course include general issues regarding the steps in preliminary treatment of wastewater. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.
Wastewater Treatment: Primary Treatment #3039(9127)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Using the Internet students will explore the rudiments of wastewater treatment. The topics of this course include general issues regarding the steps in primary treatment of wastewater. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.
Water Treatment: Suspended Growth Systems #3040(9128)	<u>12/5/2014</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Using the Internet students will explore the rudiments of wastewater treatment. The topics of this course include general issues regarding suspended growth systems. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises, and online links.

## Drinking Water Courses for Renewal Training Credit

Water/Sewer Plans 101(8847)	<u>2/10/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	Basic interpretation of water/sewer civil drawings for the water/sewer crew. The seminar would highlight: · A review of typical construction drawings, the legends · What sheets makes up a typical plan set · How to read the legends to understand the drawings – what do all those squiggles mean · A review of the Standard Specifications manual for Illinois
Utility Management(8849)	<u>4/1/2015</u>	<u>Conference/Seminar</u>	<u>720</u>	The topics I would cover are 1) Management challenges for the 21st Century 2) Utility Managers responsibilities 3) Supervisory decision making 4) Planning ( Stress / time management) 5) Organizing your department 6) Staffing ( hiring/ firing performance reviews) 7) Leadership 8) Labor Unions 9) Supervising Diversity 10) Conflicts in the workplace
Pumps & Pumping Workshop: 4-day Course(9093)	<u>4/23/2015</u>	<u>Classroom and Demonstration</u>	<u>1440</u>	This course will detail pump component relationships and maintenance procedures and concepts and principles of pump theory and maintenance. In-plant demonstrations will enhance understanding. The learning experientiel is enhanced through interaction with operators and maintenance personnel attendees of the Pumps and Pumping workshop.
Radium & Ion Exchange Systems(9069)	<u>4/30/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	Radium Treatment and Deep Wells Ion Exchange Principles and Monitoring
Chemical Properties, Safety & Security(9070)	<u>5/5/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	The program will discuss properties, safety, equipment, PPE, security and some regulatory issues relating to liquid chlorine, sodium hypochlorite, fluoridation chemicals, and others related to water treatment.
ILWARN: How to Register / Activate / Respond WEBIN(9383)	<u>5/6/2015</u>	<u>Operator's Group Meeting</u>	<u>30</u>	to activate ILWARN and respond to ILWARN request; How to use ILWARN website
Keep Water in Your Pipes & Dirt Out(9072)	<u>5/7/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	Assessing Water Hammer In Your System. Discussion of the damage water hammer can create on municipal systems and how to assess hammer issues and reduce the annual number of main breaks. Pipe Tapping and Repair. Discussion of water main repair fittings and tricks of the trade and techniques for successful repairs. Ductile Iron and PVC pipe and fitting installation. What you should know to make sure you don't build problems into your system. Pipe Joint Restraint. How to design a pipeline using restrained joints that does not require thrust blocks
Pumps and Pump Maintenance(8852)	<u>5/12/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	This course will cover how to provide proper preventative maintenance and testing to increase the life of your pumps as well as methods for trouble shooting and repairing pumps.

## Drinking Water Courses for Renewal Training Credit

Financial Management(9259)	<u>5/13/2015</u>	<u>Conference/Seminar</u>	<b>360</b>	Provide participants with financial tools to ensure their water systems can continue to deliver safe reliable water for years to come while ensuring financial sustainability
High Volume Horizontal Hydraulic Fracturing in Ill(9512)	<u>5/13/2015</u>	<u>Operator's Group Meeting</u>	<b>60</b>	This session will explain the Illinois Department of Natural Resources' rules relating to water source management for high volume hydraulic horizontal fracturing operations in Illinois. The presentation will cover the applicable statues, administrative rules, and IDNR's permitting procedure.
Hands on Basic Water Quality Testing(9073)	<u>5/14/2015</u>	<u>Classroom and Hands-on</u>	<b>240</b>	If you have little or no experience in a laboratory or would like to learn how to run chlorine, phosphate, pH, turbidity, hardness, alkalinity, fluoride, iron, and conductivity then this class is for you. Join us for a short lecture and then lots of hands-on lab experience.
Small System Operator Training to Achieve/Maintain(9237)	<u>5/14/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	Regulatory Review Total Coliform Rule Revised Total Coliform Rule Groundwater Rule Surface Water Treatment Rule Stage 2 Disinfectants/ Disinfection Byproducts Rule Lead and Copper Rule Microbial Contaminants Distribution System Operation and Maintenance Disinfection Byproducts Formation and Control
Distribution System O&M- Hydrants, Valves, Water S(9074)	<u>5/19/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	-How to properly install, operate and maintain fire hydrants and valves.-Water Services from Main to Meter: Discuss, Pipe, Saddles, Corporation Stops, Service tubing, Curb Stops, Fittings and typical types of meter installations from the northern region to the southern region of our country
Phosphate Technology & Biofilm Control(9075)	<u>5/19/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	This presentation will address: A) the use of blended phosphate technology and how it is used to control corrosion within a drinking water system and sequester metals within a distribution system. In addition to this, I will present technology on addressing the control of biofilm development within distribution systems as well as controlling biofilms in filter units and dealing with biomasses in well rehabilitation process. There will also be a discussion on additional chemical and equipment applications that compliment both of the afore mentioned technologies.
Chemical Properties, Safety & Security(9071)	<u>5/20/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	The program will discuss properties, safety, equipment, PPE, security and some regulatory issues relating to liquid chlorine, sodium hypochlorite, fluoridation chemicals, and others related to water treatment.

# Drinking Water Courses for Renewal Training Credit

Drinking Water Chloramine Chemistry 101(8896)	<u>5/20/2015</u>	<u>Operator's Group Meeting</u>	<u>61</u>	Many utilities now use chloramines for secondary disinfection to minimize regulated disinfection by-product formation. Chloramine chemistry can be complex. The reactions and rates governing chloramine formation and subsequent "decay" are described by the Unified Model. Although the Unified Model does not consider additional "demand" reactions that occur in actual water systems (e.g., reactions with natural organic matter and nitrite), understanding the underlying chemistry described by the Unified Model provides a fundamental baseline for interpreting actual system operation and proposed operational changes. Using the Unified Model as a conceptual basis, this presentation provides an introduction to chloramine chemistry, explaining chloramine formation and "decay" under drinking water conditions and highlighting the reasons why pH and chlorine to nitrogen ratio are important. In addition, the presentation will tie this fundamental chemistry to practical implications for utilities when using chloramines.
This presentation will address: A) the use of blen(9076)	<u>6/2/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	-How to properly install, operate and maintain fire hydrants and valves.-Water Services from Main to Meter: Discuss, Pipe, Saddles, Corporation Stops, Service tubing, Curb Stops, Fittings and typical types of meter installations from the northern region to the southern region of our country
Backflow Codes, Installation & Repair(9077)	<u>6/10/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	The Backflow Codes, Installation and Repair course is a hands on training course for all involved in the backflow industry. From Plumbing inspectors, backflow testers and water utility personnel, this course will cover the history of cross connection control on an industry level, state level and local level and will cover the ins and outs of installation and repair of the most common backflow prevention assemblies in the industry.
Effective Backflow Programs(9079)	<u>6/16/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	Effective Backflow Programs, IEPA Title 35 - What it says in plain English - Learn how to effectively develop, implement, and enforce an effective cross-connection control program that meets all of the Illinois EPA requirements. Cross-Connection inspections, surveys and record keeping are the three key elements of all effective backflow prevention programs, how does each element relate to the others and how do you move forward from where you are.
Generators: Increasing Your Reliability through Pr(9080)	<u>6/18/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	This seminar will discuss operation and maintenance of stand-by generators for the non-technical person.

## Drinking Water Courses for Renewal Training Credit

Operator Math Made Easy #438(5226)	<u>6/18/2015</u>	<u>Video</u>	<u>30</u>	This video teaches water operators mathematical calculations used in water treatment and distribution. It is an ideal training tool for novice water treatment operators and an excellent reference on the job. Topics covered: Powers notation, Scientific notation, Dimensional analysis, Rounding and estimating, Solving for the unknown value, Ratio and proportion, Average, Percentage, Circumference, Surface area, Volume, Conversion tables, Graphs, Average Daily Flow, Surface Overflow Rate, Weir Overflow Rate, Filter Loading Rate, Filter Backwash Rate, Detention Time, Well Yield, Well Drawdown, Well Specific Capacity
Optimization of Water Treatment Plant Operations(5228)	<u>6/21/2015</u>	<u>On-line Class</u>	<u>240</u>	The goal of this seminar is to help water treatment plant operators effectively control water treatment processes and operations, improve finished water quality, and reduce operational costs. We will discuss various approaches to the optimization of water treatment processes and operations including coagulation, flocculation, sedimentation, filtration, lime softening and others. We will also address issues which are often overlooked in water treatment plant operations, including chemical feed rate optimization, choice of coagulant, rapid and flocculation mixing, and source water quality monitoring for effective operational control. Each topic will include general theory, if applicable, and case studies.
Putting a Charge in the Coagulation Process – Usin(8894)	<u>6/22/2015</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Streaming current monitors have been in common use for nearly 30 years yet they are still not well understood as to their operation and function. Utilities that have used streaming current monitoring have had variable success. Yet this tool is very valuable in optimizing coagulant dosing with many users experiencing savings of up to 20% of their chemical feed costs. As with most measurements in water treatment, successful use of streaming current depends on the operations staff integrating streaming current with other measurements (turbidity, particle counting, pH, conductivity,etc.) to achieve optimal benefit.This presentation will review the theory and principle of operation of streaming current measurement and variables that must be understood and addressed to successfully apply streaming current measurement. Specifically the presentation will address selection of sampling location, instrument installation and control of other variables such as conductivity and pH in making successful use of streaming current measurements. Examples of successful applications will be discussed.
Meter Symposium(9094)	<u>8/6/2015</u>	<u>Conference/Seminar</u>	<u>300</u>	Presentations on the latest in meter technology.

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Water Main Rehabilitation Alternatives, Decisions (9078)	<u>8/11/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	New water loss regulations are increasing the need for communities to replace/rehabilitate more water mains in order to reduce leakage. There are many water main rehabilitation technologies available to improve more water main with less funds. This seminar will describe and compare the various technologies available to Illinois communities. Case studies, lessons learned, cost comparisons, and design considerations will be presented to help attendees make informed decisions about their specific infrastructure situation.
Water Operator Exam Refresher for Class C & D(9081)	<u>8/13/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	This course will cover the critical area that you need to take and pass your operator certification exam. We will cover laboratory testing, rules & regulations, chemical treatment, MATH (distribution system, chemical feed, filtration, etc.), sampling & operational reporting among others. We will jam pack these sessions full of information.
Distribution System O&M- Hydrants, Valves, Water S(9082)	<u>8/20/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	This course will cover how to properly install, operate and maintain fire hydrants, valves and water service lines.
Chemical Properties, Safety & Security(9083)	<u>8/25/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	The program will discuss properties, safety, equipment, PPE, security and some regulatory issues relating to liquid chlorine, sodium hypochlorite, fluoridation chemicals, and others related to water treatment.
Pumps & Pump Maintenance(9084)	<u>8/25/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	This course will cover how to provide proper preventative maintenance and testing to increase the life of your pumps as well as methods for trouble shooting and repairing pumps.
Phosphate Technology & Biofilm Control(9085)	<u>9/1/2015</u>	<u>Conference/Seminar</u>	<u>240</u>	This presentation will address: A) the use of blended phosphate technology and how it is used to control corrosion within a drinking water system and sequester metals within a distribution system. In addition to this, I will present technology on addressing the control of biofilm development within distribution systems as well as controlling biofilms in filter units and dealing with biomasses in well rehabilitation process. There will also be a discussion on additional chemical and equipment applications that compliment both of the afore mentioned technologies.
Water Loss and Hands-On Meter Testing & Leak Detec(9086)	<u>9/1/2015</u>	<u>Classroom and Hands-on</u>	<u>240</u>	This class will begin with a brief discussion on water loss including leaks and meters. It will then move onto a hands-on demonstration of meter testing with field examples and explanation. There will also be a hands-on demonstration for listening for leaks and leak correlators.

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Keep Water in Your Pipes & Dirt Out(9087)	<u>9/2/2015</u>	<u>Conference/Seminar</u>	<b>240</b> Assessing Water Hammer In Your System. Discussion of the damage water hammer can create on municipal systems and how to assess hammer issues and reduce the annual number of main breaks. Pipe Tapping and Repair. Discussion of water main repair fittings and tricks of the trade and techniques for successful repairs. Ductile Iron and PVC pipe and fitting installation. What you should know to make sure you don't build problems into your system. Pipe Joint Restraint. How to design a pipeline using restrained joints that does not require thrust blocks
SCADA 101(9088)	<u>9/3/2015</u>	<u>Conference/Seminar</u>	<b>240</b> Introduction to SCADA: A general overview of SCADA systems and their use and how they can help operators and managers. Topics will include:- SCADA System Architecture (proprietary systems vs. open systems)- Benefits from a SCADA System- Field Devices (very broad overview)- Controllers (very broad overview)- Operator Interface (very broad overview)- Telemetry (very broad overview)- SCADA System Design Documentation- SCADA System Maintenance Documentation- Selecting the Right System Integrator.
Water Distribution System Operation & Maintenance(9360)	<u>9/23/2015</u>	<u>Conference/Seminar</u>	<b>960</b> OBJECTIVE: This course is designed to train operators to safely and effectively operate and maintain water distribution systems.SCOPE: This course is designed to train operators in the practical aspects of operating and maintaining water distribution systems, emphasizing safe practices and procedures. Topics include the role and duties of water distribution system operators, procedures for operating and maintaining clear wells and storage tanks, components and characteristics of distribution system facilities, operating and maintaining distribution systems, maintaining water quality in the system, disinfecting new and repaired facilities as well as water delivered to consumers, and techniques for recognizing hazards and developing safe procedures and programs. Operators learn to analyze and solve problems when they occur and perform mathematical calculations commonly associated with operating a distribution system.contents1. The Water Distribution System Operator2. Storage Facilities3. Distribution System Facilities4. Water Quality Considerations in Distribution Systems5. Distribution System Operation and Maintenance6. Disinfection7. Safety8. Distribution System AdministrationTEXTBOOK: Water Distribution System Operation and Maintenance, A Field Study Training Program; 6th Edition

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Planning, Design & Construction of the Pittsfield(9089)	<u>9/29/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	1 An overview presentation:-Project planning, alternative evaluation, source water assessment, feasibility analysis, environmental review, permitting, easement acquisition and funding acquisition.-Project bidding, alternative evaluation and budget coordination, bid award and construction planning / coordination, construction monitoring, dispute and problem resolution, testing, change orders, performance review and trending.-Environmental Factors.2 Demonstration of fusible PVC welding process3 Demonstration of geological and screening alternatives4 Tour of Water Treatment Plant5 Demonstration of data collection, trending and mobile access technologies.6 Question and Answer
Water Operator Exam Refresher for Class A & B(9090)	<u>10/1/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	This course will cover the critical area that you need to take and pass your operator certification exam. We will cover laboratory testing, rules & regulations, chemical treatment, MATH (distribution system, chemical feed, filtration, etc.), sampling & operational reporting among others. We will jam pack these sessions full of information
Hands-On Water Line Location(9095)	<u>10/6/2015</u>	<u>Classroom and Hands-on</u>	<b>240</b>	As today's underground infrastructure becomes increasingly congested and the use of no dig technology becomes more prevalent, the skills of utility locating technicians and their equipment are under increased pressure to provide accurate results and reduce the risk of damage to utility lines. A basic understanding of pipe location history, theory, type of signals used and application methods of signals to designated utility networks will be discussed. A hands-on field training session will follow where theory and signal application techniques will be put into practice with ample time for Q & A to follow field training. A representative from JULIE will speak on requirements and updates to the law.
Practical Solutions to External Corrosion Problems(9091)	<u>10/6/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	Corrosion of various forms of buried cast iron, ductile iron, and steel piping is a serious problem to most municipal water utilities. However, infrastructure asset management tools combined with cathodic protection can reduce the number of premature breaks caused by corrosion. Properly designed, installed, and maintained cathodic protection systems can add years of additional service life to both new and existing water mains. Course will include real world examples and table top demonstrations of how to measure soil corrosivity and techniques to evaluate the effectiveness of a simple cathodic protection system.

## Drinking Water Courses for Renewal Training Credit

Water Operator Exam Refresher for Class C & D(9492)	<u>10/7/2015</u>	<u>Conference/Seminar</u>	<b>720</b>	This 2-day Course will cover the critical areas that you need to take and pass your operator certification exam. We will cover laboratory testing, IEPA rules regulations, chemical treatment, water storage, water distribution, chlorination, fluoridation, wells and pumps, operational reports and finally MATH. 1) Water Storage, Water Distribution, Class *D* Math and Pumps and Hydraulics 2) Water Sampling, EPA Rules and Regulations and Chlorination 3) Fluoridation and Class *C* Math and Final Questions
Chemical Properties, Equipment, Safety & Security(9096)	<u>10/8/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	The program will discuss properties, safety, equipment, PPE, security and some regulatory issues relating to liquid chlorine, sodium hypochlorite, fluoridation chemicals, and others related to water treatment.
Field Sampling and Analysis – What you need to know(8895)	<u>10/12/2015</u>	<u>Conference/Seminar</u>	<b>60</b>	<p>Utilities are implementing expanded monitoring in the water distribution system as well as source water surveillance. Some of the monitoring is in response to increase regulation but most utilities understand that monitoring is a tremendous tool for controlling operation of the system. Frequent monitoring can identify and help correct problems before they become a nuisance or even chronic. Regular monitoring of pH, chlorine residual, turbidity, iron, copper, hardness, alkalinity, lead and many other tests are practical and easily completed with portable instrumentation. Field sampling and analyses can be very useful and accurate if a few simple steps are followed including selection of the proper method and proper measurement tools. Tips for getting good measurements will be discussed including:</p> <ul style="list-style-type: none"> <li>• Proper sampling methods and locations</li> <li>• Selecting the proper measurement methods.</li> <li>• Use of the proper measurement tools,</li> <li>• Overcoming interferences,</li> <li>• Proper calibration and use of standards,</li> <li>• Proper care of instruments and reagents.</li> <li>• Limitations of field methods also will be discussed.</li> </ul>

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Lock Out Tag Out Training(9103)	<u>10/14/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	This training session will highlight the hazards of not properly securing the work area of stored energy (electrical, pressure, chemical, gravity, mechanical, etc.). The OSHA standard (29CFR 1910.147) will be reviewed in detail with examples of a written program, written machine specific procedures, and a group activity to conduct a LOTO exercise. Discussion will be provided on the equipment available for completing successful LOTO practices. A presentation with video and many pictures will be made to the attendees.
Hands-On Basic Water Quality Testing(9097)	<u>10/15/2015</u>	<u>Classroom and Hands-on</u>	<b>240</b>	If you have little or no experience in a laboratory or would like to learn how to run chlorine, phosphate, pH, turbidity, hardness, alkalinity, fluoride, iron, and conductivity then this class is for you. Join us for a short lecture and then lots of hands-on lab experience.
Telemetry: A Detailed Look at Telemetry(9098)	<u>10/20/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	Telemetry Technology• Telemetry Components• Tailoring your Telemetry System• Telemetry Security• Troubleshooting a Telemetry System
Annual Regulatory Update(9099)	<u>10/22/2015</u>	<u>Conference/Seminar</u>	<b>300</b>	This seminar will cover current and upcoming regulations. Illinois and US EPA representatives will be available to answer questions.
Concrete Pipe: Selection, Installation, Inspectio(8919)	<u>10/27/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	The training topics would include: Intro to Concrete Pipe, Proper selection of RCP Strength Class, RCP Installation & Inspection and Recent Developments in the Concrete Pipe Technology.
Water/Sewer Plans 101(8863)	<u>10/29/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	Basic interpretation of water/sewer civil drawings for the water/sewer crew. Including: · A review of typical construction drawings, the legends · What sheets makes up a typical plan set · How to read the legends to understand the drawings – what do all those squiggles mean · A review of the Standard Specifications manual for Illinois
Project Management Workshop(9101)	<u>11/2/2015</u>	<u>Conference/Seminar</u>	<b>960</b>	This course is designed to provide managers with additional training and skills in project management.
Distribution System O & M - Hydrants, Valves & Wat(9100)	<u>11/5/2015</u>	<u>Classroom and Demonstration</u>	<b>240</b>	-How to properly install, operate and maintain fire hydrants and valves.-Water Services from Main to Meter: Discuss, Pipe, Saddles, Corporation Stops, Service tubing, Curb Stops, Fittings and typical types of meter installations from the northern region to the southern region of our country

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Wastewater Microbiology(8851)	<u>11/5/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	An interactive class to identify filamentous bacteria. Instruction will include a review of the common wastewater microbiology problems, identification of the various types of filamentous bacteria and a microscopic examination of mixed liquor samples to identify various type of filamentous bacteria. Attendees are encouraged to bring samples from their plants for identification.
Effective Backflow Programs(9102)	<u>11/17/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	Effective Backflow Programs, IEPA Title 35 - What it says in plain English - Learn how to effectively develop, implement, and enforce an effective cross-connection control program that meets all of the Illinois EPA requirements. Cross-Connection inspections, surveys and record keeping are the three key elements of all effective backflow prevention programs, how does each element relate to the others and how do you move forward from where you are.
HDPE PIPE – An Introduction(9105)	<u>12/1/2015</u>	<u>Conference/Seminar</u>	<b>240</b>	-What is HDPE pipe-How to join HDPE pipe-How to install HDPE pipe-How to tap HDPE pipe-Application for HDPE pipe-Accountability and Quality Control-Standards & Specification-Fusion Demonstrations
Water Operator Exam Refresher for Class A & B(9493)	<u>12/8/2015</u>	<u>Conference/Seminar</u>	<b>720</b>	This 2-day course will cover the critical area that you need to take and pass your operator A&B certification exam. We will cover laboratory testing, rules & regulations, chemical treatment, MATCH (distribution system, chemical feed, filtration, etc), sampling & operational reporting, among others.

### J & R Supply(657)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	<u>Minutes</u>	<u>Description:</u>
Brass Product Training(2563)	<u>4/6/2007</u>	<u>On-line Class</u>		<b>60</b>	JB
Line Tracing and Pipe Locating(2553)	<u>4/3/2014</u>	<u>On-line Class</u>		<b>60</b>	Offered annually.

### J.U.L.I.E(78)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	<u>Minutes</u>	<u>Description:</u>
JULIE Inc Excavator Safety Training(6878)	<u>12/14/2012</u>	<u>Conference/Seminar</u>		<b>75</b>	The IL One-Call System, methods of reaching JULIE, policy changes for 2013, the one-call process, the ICC, pipeline safety, Q&A
Northern/Central Illinois Pipeline Association Exc(6880)	<u>12/14/2012</u>	<u>Conference/Seminar</u>		<b>75</b>	JULIE IL One-Call System, policy changes for 2013, the process, the ICC, and pipeline safety.
Southern Illinois Pipeline Association Excavator S(6879)	<u>12/14/2012</u>	<u>Conference/Seminar</u>		<b>75</b>	JULIE IL One-Call System, policy changes for 2013, the process, the ICC, and pipeline safety.

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JULIE Remote Ticket Entry Training(7152)	<u>3/19/2013</u>	<u>Conference/Seminar</u>	<u>120</u>	Training on us of Remote Ticket Entry Training and Ticket Search
JULIE Remote Ticket Entry Training - Webinar(7172)	<u>4/3/2013</u>	<u>Operator's Group Meeting</u>	<u>120</u>	Remote Ticket Entry Training by webinar
Staking University / JULIE, Inc Locator Training(9532)	<u>4/28/2015</u>	<u>Classroom and Hands-on</u>	<u>450</u>	Staking University topics covered on buried pipe and cable locator proper use and energizing buried utilities with hands-on training. JULIE, inc review of member detail and notification reports and grid vs polygon notification methods.
Subsurface Instruments Inc / JULIE, Inc Locator Tr(9528)	<u>5/19/2015</u>	<u>Classroom and Hands-on</u>	<u>240</u>	JULIE, Inc Member Database Review, Premarking and Tolerance Zone.Subsurface Instruments, Inc overview of locating products, how the instruments work, hands-on use of locating instruments

### JCM Industries, Inc.(725)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Pipe Tapping and Repair(2859)	<u>2/22/2008</u>	<u>On-line Class</u>	<u>60</u>	Correct installation of fittings for water main tapping and repair. JB
Assessing Water Hammer in Your System(4340)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>60</u>	LS/PC
The Evolution of Our Dist System, Pipe & Fittings(5274)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>90</u>	

#### Total Approved

### John A. Logan College(363)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Basic Waterworks Operations(1512)	<u>4/6/2004</u>	<u>Other</u>	<u>2700</u>	Basic Waterworks Operations

#### Total Approved

### Joliet Junior College(68)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Basic Electrical Circuits(848)	<u>5/4/2012</u>	<u>On-line Class</u>	<u>420</u>	For maintenance person with no electrical experience, with one day hands-on, building and testing the most common electrical circuits used in residential and industrial applications, also for maint personnel who are looking for cross-training in the field of electricity.
Basic Pipefitting Skills(656)	<u>5/4/2012</u>	<u>Conference/Seminar</u>	<u>840</u>	Types of pipe, fittings, reading prints, cutting pipe. JB
Corrosion Control For Distribution Systems(2125)	<u>5/4/2012</u>	<u>Conference/Seminar</u>	<u>180</u>	Identifies the corrosion process and proven measures to reduce its negative impact on metallic piping and associated fittings.
Digital Multimeter Certification(779)	<u>5/4/2012</u>	<u>Classroom/College</u>	<u>420</u>	Understanding and troubleshooting with electrical fluke meter. JB

#### Total Approved

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Electrical Diagrams and Circuits(1265)	<u>5/4/2012</u>	<u>Classroom/College</u>	<b>420</b>	For electricians (or maintenance personnel) who work with electrical/electronic drawings and circuits. Circuit requirements, logic and applications are covered. Includes converting standard ladder (line) diagrams into PLC diagrams. Troubleshooting.
Electrical Practices Industrial Employee Safety(381)	<u>5/4/2012</u>	<u>Classroom/College</u>	<b>420</b>	Trains those who are responsible for operating and maintaining 600 volts or less electrical equipment on the requirements of the Electricity Act, Regs and Codes of Practice. Simplifies the OSHA Electrical Standard and criteria and specifically addresses safe work practices to be used during the operation and maintenance of electrical equipment.
Electrical Principles and Practices(1026)	<u>5/4/2012</u>	<u>Classroom and Hands-on</u>	<b>420</b>	For electrically inexperienced maintenance personnel who need to be trained, or cross-trained, in working with (or around) electrical circuits.
How Pumps Work(1269)	<u>5/4/2012</u>	<u>Classroom/College</u>	<b>420</b>	Overview of pump purposes, types and operation..
Meter Maintenance/Automated Reading(2126)	<u>5/4/2012</u>	<u>Conference/Seminar</u>	<b>180</b>	Basic maintenance, automated meter reading systems such as touch reading and radio frequency reading systems; causes of wear and tear, technology solutions, more.
Motors and Motor Control Circuits(931)	<u>5/4/2012</u>	<u>Classroom/College</u>	<b>840</b>	Single and multi-phase motors, connections and troubleshooting. JB
New System Inspection (WTR 897)(766)	<u>5/4/2012</u>	<u>Conference/Seminar</u>	<b>180</b>	New system procedures, construction, record keeping, testing and reporting. JLE
Operating Reports & Applied Math (WTR 898)(767)	<u>5/4/2012</u>	<u>Conference/Seminar</u>	<b>180</b>	All aspects of IEPA record keeping and reporting. Mathematics for chemical calculations and well pumping. JLE
Pneumatics Level I(1266)	<u>5/4/2012</u>	<u>Classroom/College</u>	<b>840</b>	JB
Pneumatics Level II(1267)	<u>5/4/2012</u>	<u>Classroom/College</u>	<b>420</b>	JB
SCADA Systems (WTR 903)(1444)	<u>5/4/2012</u>	<u>Conference/Seminar</u>	<b>180</b>	Technologies and components that comprise SCADA systems, history, control and reporting, etc. JB
Shaft Alignment(1268)	<u>5/4/2012</u>	<u>Classroom/College</u>	<b>840</b>	
Understanding AC/DC Motors(963)	<u>5/4/2012</u>	<u>Classroom/College</u>	<b>840</b>	JB
Variable Frequency Drive Setup and Troubleshooting(1250)	<u>5/4/2012</u>	<u>Classroom/College</u>	<b>840</b>	JB
Wastewater Treatment Operator Review Course 1 & 2(2914)	<u>5/4/2012</u>	<u>Conference/Seminar</u>	<b>1140</b>	Some applies to DW. JB
Water Storage & Distribution (WTR 906)(5114)	<u>5/4/2012</u>	<u>DVD</u>	<b>180</b>	Overview of potable water storage and distribution.

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Water Storage Tank Maintenance (WTR 902)(1443)	<u>5/4/2012</u>	<u>Conference/Seminar</u>	<u>180</u>	Basics of water storage tank inspection and assessment for repairs. JB
Water Treatment Operator Review Course Class A & B(918)	<u>5/4/2012</u>	<u>Conference/Seminar</u>	<u>2700</u>	Prepares the student to take the IEPA Class A & B.
Water Treatment Operator Review Course Class C & D(472)	<u>5/4/2012</u>	<u>Conference/Seminar</u>	<u>2700</u>	Prepares the student to take the IEPA Class C & D.
Wastewater Treatment Operator Review Class 1 & 2 W(8899)	<u>1/1/2015</u>	<u>Conference/Seminar</u>	<u>2700</u>	This advanced course is designed to prepare the student to take the IEPA Class 1 & 2 wastewater operator license examinations. It is intended to assist the student in developing and understanding of primary, secondary, and tertiary treatment systems; physical, chemical and biological treatment systems; disinfection, bio-solids treatment and handling. This course is non-college credit but is equivalent to 3 semester hours or 45 CEUs. Texts: Operation of Wastewater Treatment Plants, Vol. II 6th Ed.; ERTC - Class I & II Short School Text.
Wastewater Treatment Operator Review Class 3 & 4 W(8900)	<u>1/1/2015</u>	<u>Conference/Seminar</u>	<u>2700</u>	This introductory course is designed to prepare the student to take the IEPA Class 3 & 4 Wastewater operator license exams. It is intended to assist the student in developing an understanding of primary, secondary, and tertiary systems; physical, and biological treatment, systems; disinfection, bio-solids treatment and handling. Texts: Operation of Wastewater Treatment Plants, Vol. I, 7th Ed.; ERTC - Class III & IV Short School Text. Non college credit but equivalent to a 3 hr semester course.

### Kentucky Department for Environmental Protection(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Surface Water Certification School(6898)	<u>12/11/2012</u>	<u>Conference/Seminar</u>	<u>1080</u>	Plant operator, water chemistry, coagulation, flocculation, sedimentation, alternative treatment processes, filtration, disinfection, sampling, iron and manganese, taste and odor control, fluoridation, stabilization, cross connections.

### Kirkwood Community College(70)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Water Treatment - Disinfection(5276)	<u>5/21/2012</u>	<u>Operator's Group Meeting</u>	<u>900</u>	Rudiments of water treatment. Text: Water Treatment Plant Operation, Vol 1. Self-tests, lesson quizzes, and a final.
Basic Hydraulics(5303)	<u>5/31/2012</u>	<u>Workshop</u>	<u>600</u>	
Basic Hydraulics for Water & WW(5323)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	

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Basic Math Refresher for Water & WW(5318)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	pc
Bearing and Shaft Seal Maintenance(5300)	<u>5/31/2012</u>	<u>Workshop</u>	<u>300</u>	
Bearing and Shaft Seal Maintenance(5298)	<u>5/31/2012</u>	<u>Workshop</u>	<u>300</u>	Same as course 5300 which has been excluded.
Bearings(5305)	<u>5/31/2012</u>	<u>Workshop</u>	<u>600</u>	
Certification Review for Water(5321)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	
Chlorine Systems O & M(5293)	<u>5/31/2012</u>	<u>Workshop</u>	<u>1800</u>	Textbook: O & M of Chlorine Systems, Chapter tests and final.
Coagulation and Flocculation(5319)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	
Compressors(5296)	<u>5/31/2012</u>	<u>Workshop</u>	<u>840</u>	
Disinfection for Public Water Systems(5320)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	
Electrical Fundamentals for Water & WW(5291)	<u>5/31/2012</u>	<u>Workshop</u>	<u>1800</u>	For entry-level and exp operators who must operate and maintain electrical systems. Test: Electrical Fundamentals for Water/Wastewater
Hydraulic Systems Maintenance(5295)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>900</u>	
Hydraulic Troubleshooting(5302)	<u>5/31/2012</u>	<u>Workshop</u>	<u>600</u>	
Introduction to Water Technology(5304)	<u>5/31/2012</u>	<u>Workshop</u>	<u>600</u>	
Jar Testing for Water Analysis(5324)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>420</u>	
Leak Detection in Water Mains(5325)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	
Lime Softening(5313)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	
Manage for Success(5307)	<u>5/31/2012</u>	<u>Workshop</u>	<u>2700</u>	Text: manage for Success 1st Ed. Chapter tests and final exam
Piping Systems(5294)	<u>5/31/2012</u>	<u>Workshop</u>	<u>900</u>	Piping and tubing systems for transporting all sorts of fluids, methods of joining pipes, valves, fittings, pipe hangers, insulation,etc
Programmable Logic Controllers(5301)	<u>5/31/2012</u>	<u>Workshop</u>	<u>600</u>	
Pump Installation & Maintenance(5299)	<u>5/31/2012</u>	<u>Workshop</u>	<u>600</u>	PC
Pumps & Pumping(5292)	<u>5/31/2012</u>	<u>Workshop</u>	<u>1800</u>	For al personnel who come in contact with centrifugal pumps. Text: Pumps & Pumping, 10th Ed. Chapter Tests and Final Exam
Pumps (Hands On) Training(5312)	<u>5/31/2012</u>	<u>Classroom and Hands-on</u>	<u>300</u>	
Pumps and Pumping Overview(5322)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	
Reading Utility Blueprints and Plans(5326)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	
Safety, Calibration & Testing Procedures(5297)	<u>5/31/2012</u>	<u>Workshop</u>	<u>300</u>	

## Drinking Water Courses for Renewal Training Credit

Sampling Concerns for Public Water Systems(5317)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	
Simplified Math for Water Operators(5311)	<u>5/31/2012</u>	<u>Workshop</u>	<u>1200</u>	
Small Water Systems O & M(5306)	<u>5/31/2012</u>	<u>Workshop</u>	<u>5400</u>	Test: Small Water Systems Op & Maint 4th Ed. Chapter tests and final exam.
Taste and Odor Control(5316)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	
Water Dist Systems-Valves, Mains & Meters O&M(5288)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Rudiments of water treatment. Text: Water Distribution System Operations & Maintenance. Self-tests, lesson quizzes, and a final.
Water Distribution System O & M(5308)	<u>5/31/2012</u>	<u>Workshop</u>	<u>5400</u>	Text: Water Dist System O&M 5th Ed.
Water Distribution System Operations & Maintenance(5286)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	
Water Distribution Systems(5283)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>300</u>	Rudiments of water treatment. Text: Water Distribution System Operations & Maintenance. Self-tests, lesson quizzes, and a final.
Water Distribution Systems - Storage Systems(5287)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Rudiments of water treatment. Text: Water Distribution System Operations & Maintenance. Self-tests, lesson quizzes, and a final.
Water Distribution Systems - System Safety(5284)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Rudiments of water treatment. Text: Water Distribution System Operations & Maintenance. Self-tests, lesson quizzes, and a final.
Water Distribution Systems - Water Mains(5289)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Rudiments of water treatment. Text: Water Distribution System Operations & Maintenance. Self-tests, lesson quizzes, and a final.
Water Distribution Systems - Water Quality(5290)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>300</u>	Rudiments of water treatment. Text: Water Distribution System Operations & Maintenance. Self-tests, lesson quizzes, and a final.
Water Distribution Systems-System Disinfection(5285)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Rudiments of water treatment. Text: Water Distribution System Operations & Maintenance. Self-tests, lesson quizzes, and a final.
Water Microbiology the Basics(5315)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	
Water Treatment - Coagulation and Flocculation(5275)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Rudiments of water treatment. Text: Water Treatment Plant Operation, Vol 1. Self-tests, lesson quizzes, and a final.
Water Treatment - Filtration(5277)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Rudiments of water treatment. Text: Water Treatment Plant Operation, Vol 1. Self-tests, lesson quizzes, and a final.
Water Treatment - Fluoridation(5278)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Rudiments of water treatment. Text: Water Treatment Plant Operation, Vol 1. Self-tests, lesson quizzes, and a final.
Water Treatment - Iron & Manganese(5280)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>300</u>	Rudiments of water treatment. Text: Water Treatment Plant Operation, Vol II. Self-tests, lesson quizzes, and a final.
Water Treatment - Quality(5281)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Rudiments of water treatment. Text: Water Treatment Plant Operation, Vo II. Self-tests, lesson quizzes, and a final.

## Drinking Water Courses for Renewal Training Credit

Water Treatment - Sedimentation(5282)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Rudiments of water treatment. Text: Water Treatment Plant Operation, Vol 1. Self-tests, lesson quizzes, and a final.
Water Treatment Plant Operation - Vol 1(5309)	<u>5/31/2012</u>	<u>Workshop</u>	<u>5400</u>	Text: Water Treatment Plant Operation, Vol 1, 6th Ed. Chapter tests and final exam.
Water Treatment Plant Operation - Vol 2(5310)	<u>5/31/2012</u>	<u>Workshop</u>	<u>5400</u>	Text: Water Treatment Plant Operation, Vol 2, 6th Ed. Chapter tests and final exam.
Water Treatment-Intro to Water Sources & Treatment(5279)	<u>5/31/2012</u>	<u>Operator's Group Meeting</u>	<u>1200</u>	Rudiments of water sources and treatment. Text: Water Treatment Plant Operation, Vol 1 and II. Self-tests, lesson quizzes, and a final.
Wells: Maintenance & Rehabilitation(5314)	<u>5/31/2012</u>	<u>Conference/Seminar</u>	<u>300</u>	

### Lake County Public Works(33)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Field Sampling(8079)	<u>1/1/2014</u>	<u>Classroom and Hands-on</u>	<u>120</u>	Provides the operator with the basic skills for collection of bacteriological and chemical samples; reviews proper use of routine field equipment; reviews documentation used for sample collection; discusses required follow-up after a coliform failure; reviews applicable IEPA regs and emergency protocol.
Fundamentals of Iron Removal Treatment(8078)	<u>1/1/2014</u>	<u>Classroom and Hands-on</u>	<u>180</u>	Provides basic knowledge required to efficiently operate an Iron Removal Filtration System: water source; filtration; pretreatment; media; post treatment; backwash.

#### Total Approved

### Lake Land College(232)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Advanced Water Treatment(1967)	<u>5/13/2005</u>	<u>Conference/Seminar</u>	<u>2700</u>	
Basic Water Treatment(4227)	<u>1/28/2011</u>	<u>Conference/Seminar</u>	<u>2400</u>	

#### Total Approved

### Lee Jensen Sales Company(279)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Trenching and Shoring(3069)	<u>8/19/2008</u>	<u>Demonstration</u>	<u>390</u>	JB
Power Utility - Cutting DI Pipe(3808)	<u>3/9/2010</u>	<u>Presentation</u>	<u>120</u>	JB

#### Total Approved

## Drinking Water Courses for Renewal Training Credit

Confined Space Safety Practices(5509)	<u>8/31/2012</u>	<u>Conference/Seminar</u>	<b>60</b>	Gas detection, confined space equipment and proper use, stress measurement and attendant monitoring, access and egress per OSHA requirements, 2 ways in 2 ways out rule and how to adhere to that rule with different types of access and egress equipment and personnel, manhole types and assessing step condition. Instructor will bring common confined space equipment to show attendees how to properly care and use this equipment in the field.
Excavation Standard/Competent Person Training(992)	<u>8/31/2012</u>	<u>Conference/Seminar</u>	<b>360</b>	Repair of water mains following rules set forth by OSHA. JLE
Trenching & Excavation Safety(5508)	<u>8/31/2012</u>	<u>Conference/Seminar</u>	<b>60</b>	Trenching and excavation procedures and safety per DOL and OSHA standards including grading, soil types, sloping OSHA rules for trenches under 20', OSHA rules for trenches greater than 20', when you should shore, how to get around utilities, types of shoring and proper care and maintenance.

### Lewis and Clark Community College(392)

#### Course Name and ID Number

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Instrumentation Control I, PRCS-151 NA2(5191)	<u>6/14/2012</u>	<u>Conference/Seminar</u>	<b>1800</b>	Basic instrumentation for treatment plants using simtronics and an understanding of how to operate a system via computer.
Instrumentation Control II, PRCS-252 NB2(5192)	<u>6/14/2012</u>	<u>Conference/Seminar</u>	<b>1800</b>	Basic instrumentation for treatment plants using simtronics and an understanding of how to operate a system via computer.
Safety, Health & Environment(5193)	<u>6/14/2012</u>	<u>Conference/Seminar</u>	<b>2700</b>	Safety techniques for persons (LOTO, Chemical Handling) and the environment (correct chemical disposal).

#### Total Approved

### M.E. Simpson Company, Inc.(180)

#### Course Name and ID Number

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Unidirectional Water Main Flushing(878)	<u>11/19/2002</u>	<u>Classroom/College</u>	<b>60</b>	Methods, procedures and math for proper unidirectional water main flushing. JLE
Leak Detection(3891)	<u>8/1/2012</u>	<u>On-line Class</u>	<b>60</b>	JB
Using AWWA's Water Audit Methods(6945)	<u>1/22/2013</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Use of the AWWA Water Audit software as a tool to reduce water loss in a distribution system.
Leak Detection and Water Loss(8603)	<u>7/21/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Discuss leak detection and water loss best practices
Unidirectional Water Main Flushing(8602)	<u>7/21/2014</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Discusses the correct methodology for flushing water mains.

#### Total Approved

# Drinking Water Courses for Renewal Training Credit

## Marla Braun(85)

Course Name and ID Number	Effective Date	Course Format	<b>Total Approved</b>	
			Minutes	Description:
Pipe Repairs - Tapping, Stainless Steel(243)	2/27/2001	Lecture	<b>60</b>	All stainless steel tapping sleeves, repair clamps, pipe stiffeners and saddles; applications, features, etc.

## McHenry Analytical(640)

Course Name and ID Number	Effective Date	Course Format	<b>Total Approved</b>	
			Minutes	Description:
Regulatory Requirements and Developments for Radium(9269)	5/20/2015	Conference/Seminar	<b>60</b>	Regulatory Updates
Regulatory Update on Stage 2 DBP's and Annual CCR(9270)	5/21/2015	On-line Class	<b>60</b>	Regulatory Update on Stage 2 DBP's and Annual CCR

## McWane Ductile Utility Sales(0)

Course Name and ID Number	Effective Date	Course Format	<b>Total Approved</b>	
			Minutes	Description:
The Total Cost Equation(9274)	2/19/2015	Operator's Group Meeting	<b>60</b>	Water mains and service connections

## Metropolitan Industries(108)

Course Name and ID Number	Effective Date	Course Format	<b>Total Approved</b>	
			Minutes	Description:
Control Panel Troubleshooting(2096)	5/9/2012	Conference/Seminar	<b>150</b>	

## Metropolitan Industries, Inc.(781)

Course Name and ID Number	Effective Date	Course Format	<b>Total Approved</b>	
			Minutes	Description:
Submersible Pump Repair(3267)	2/6/2009	Presentation	<b>120</b>	JB/TL/PC
Energy Saving Strategies - Commercial Pumping(4140)	11/16/2010	Presentation	<b>240</b>	JB
Energy Savings - Advances in Pump & Control System(4139)	11/16/2010	Presentation	<b>240</b>	JB
Municipal - Upgrade Your Existing System Today(4650)	1/25/2012	Presentation	<b>240</b>	Improvements to water pumping systems, storm water or sanitary lift stations including stand-by power needs, chemical feed systems, and water process treatment equipment, regular operation and maint of water treatment and dist.

## Drinking Water Courses for Renewal Training Credit

Residential Commercial Plumbing Applications(4648)	<u>2/8/2012</u>	<u>Conference/Seminar</u>	<b>240</b>	Sump and sewage pump systems, battery back-ups, water boosters, domestic hot water systems, radiant heat, solar hot water, ultra high-efficiency boilers and other plumbing-related accessories in residential of small commercial settings.
Municipal - SCADA 101(4647)	<u>2/22/2012</u>	<u>Classroom and Hands-on</u>	<b>240</b>	Supervisory Control and Data Acquisition Systems; SCADA and communication methods (phone, cell, radio, spread spec, fiber optic , etc.), software, hardware, security and surveillance, report generating.
Commercial Plumbing - Water Systems(4649)	<u>2/29/2012</u>	<u>Conference/Seminar</u>	<b>240</b>	Focus on upgrading existing domestic water bootster system through new control technologies, VFD drives, new pumping options w/improved hydraulic efficiency, booster system upgrades, upgrading pressure-reducing valve "zoned" systems,
Retro-fitting Your SCADA w/the Latest Technologies(5500)	<u>8/17/2012</u>	<u>Classroom and Hands-on</u>	<b>60</b>	Hands-on class on a variety of topics related to Supervisory Control and Data Acquisition Systems. Discussions and live demos include communication methods, software, hardware requirements and options, incorporating security into your system report generating and more.
A Discussion of Pressure Reducing Valves(6947)	<u>1/22/2013</u>	<u>Classroom and Hands-on</u>	<b>240</b>	Application, operation, maint and repair of pressure reducing valves. Hands-on demos will give attendees the ability to operate, design and Tshoot pressure reducing valves in a supervised and controlled environment.
Infrastructure Improvements - ABCs of Pump Systems(8790)	<u>9/17/2014</u>	<u>Conference/Seminar</u>	<b>240</b>	Maintenance and improvement of operations at pumping stations. This presentation includes an in-depth discussion of how certain equipment (pumps, controls and accessories) can be added to improve your present water pumping systems, existing storm water or sanitary lift stations, standby power needs, chemical feed systems and/or water and wastewater process equipment. This class is ideal for personnel involved in the regular operation and/or maintenance of water and wastewater collection, treatment and distribution systems.

### MidAmerican Technology Inc.(602)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Water Leak Detection(6848)	<u>5/16/2012</u>	<u>Conference/Seminar</u>	<b>120</b>	Locaters, leak noise loggers

**Total Approved**

### MidCentral Waterworks Assn(87)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
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**Total Approved**

# Drinking Water Courses for Renewal Training Credit

Pipe Tapping & Repair(3436)                      5/15/2009                      Other    120    JB/tl/pc

## Midstate Water Operators(93)

### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
EPA Program(698)	<u>12/11/2002</u>	<u>Operator's Group Meeting</u>	<u>120</u>	EPA update on rules and regulations. JLE

## Midwest Energy Efficiency Alliance(0)

### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Building Operator Certification, Level I(7053)	<u>8/23/2012</u>	<u>Conference/Seminar</u>	<u>4440</u>	Electrical and HVAC systems, energy conservation, codes and indoor air quality.

## Midwest Safety and Training Solutions(531)

### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Confined Space Entry and Rescue(2000)	<u>10/18/2012</u>	<u>Classroom and Hands-on</u>	<u>180</u>	2 hrs classroom, written test and 1 hr hand-on. Film and Power Point.
Shoring Excavation Competent Person Training(4297)	<u>10/18/2012</u>	<u>Classroom and Demonstration</u>	<u>240</u>	Includes 2.5 hrs classroom and written test and 1.5 hrs excavating and installing shoring protection.
American Heart First Aid, CPR, AED(7042)	<u>1/29/2013</u>	<u>Conference/Seminar</u>	<u>180</u>	Safety, EM/Disaster-Related
Industrial Truck Operation (Fork Lift)(8290)	<u>4/10/2014</u>	<u>Classroom and Hands-on</u>	<u>150</u>	Fork lift operation and inspection; safety.
Lock Out Tag Out(8300)	<u>4/10/2014</u>	<u>Conference/Seminar</u>	<u>60</u>	One hour power pointe presentation for lock out tag out refresher.

## Midwest Safety Services(0)

### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Confined Space Training(6899)	<u>12/1/2012</u>	<u>Conference/Seminar</u>	<u>480</u>	Safety, air monitoring, rescue procedures, PPE, etc.

## Midwest Technology Assistance Center(386)

### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Guide to Developing a Source Water Protection Plan(1421)	<u>1/16/2004</u>	<u>Other</u>	<u>450</u>	Collaborative CD from Montana University/USEPA/MTAC, also online via IEPA website. Operator Basics Training Series 2005 (2003 defunct) also offered but is a separate 14 hrs so must be listed seperately for RTC credit.

## Midwest Water Group, Inc.(801)

### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
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## Drinking Water Courses for Renewal Training Credit

Maintaining Water Quality in the Distribution Syst(6930)	<u>1/4/2013</u>	<u>On-line Class</u>	<b>120</b>	Residual management in the distribution system and factors that degrade residual and create issues with DBPs and bacterial pathogen management; how chlorine and chloramines react with water; DBP Stage II; tank maintenance and turn-over.
Sampling Station Practices(7798)	<u>11/1/2013</u>	<u>Conference/Seminar</u>	<b>60</b>	Review of current methods of collecting bacteriological sampling and demonstrate how to use sampling stations properly in distribution systems to ensure quality samples. Different materials (stainless steel and brass), winter sample collection practices and maintenance will be covered.
Stormwater Infiltration into Water(7734)	<u>11/5/2013</u>	<u>Conference/Seminar</u>	<b>60</b>	Covers the definitions of inflow and infiltration, how to recognize it, what the effects of it are and including excess WWTP capacity, shortened life of water valves and meters, etc. Will discuss the classification standards for inspection of Inflow and infiltration and various ways to prevent and mitigate excess stormwater inflow/infiltration into the water and wastewater system.

### Mississippi Valley Pump, Inc.(937)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Lift Station Electrical School - 5 Hr. Course(5103)	<u>4/30/2012</u>	<u>Classroom and Hands-on</u>	<b>300</b>	Understanding of basic electricity and manipulation of control panel components; hands-on control panel troubleshooting.
Lift Station Electrical School 6 Hr. Course(5104)	<u>4/30/2012</u>	<u>Classroom and Hands-on</u>	<b>360</b>	Understanding of basic electricity and manipulation of control panel components; hands-on control panel troubleshooting.
Lift Station Electrical School 4 Hr. Course(5158)	<u>5/16/2012</u>	<u>Classroom and Hands-on</u>	<b>240</b>	Understanding of basic electricity and manipulation of control panel components; hands-on control panel troubleshooting.

#### Total Approved

### Missouri Water/Wastewater(152)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Reg. Responsibilities and Protecting Public Health(5155)	<u>5/16/2012</u>	<u>Presentation</u>	<b>390</b>	Reg. Responsibilities and Protecting Public Health: Microbial sampling programs and record keeping for small water systems; water services, meters, and valves; cross-connectin control programs; the Columbia WTP and the Great Flood of 1993 - EM Ops
Plant Safety & Emergency Planning(5061)	<u>5/22/2012</u>	<u>Conference/Seminar</u>	<b>390</b>	Water-WW Plant Safety: chlorine safety; lockout-tagout; confined spaces; types of emergencies to plan for; common emergencies; documentation; communication; training.
Math Skills for Water and WW Licensing Exams(4463)	<u>10/26/2012</u>	<u>Conference/Seminar</u>	<b>360</b>	Formerly called "Math Refresher" - conversion factors, calc areas and volumes, pressure in pipes and tanks, temp conversions, chemical feed problems, basic formulas, sample problems

#### Total Approved

## Drinking Water Courses for Renewal Training Credit

Excavate Safely: Trenching, Shoring & Confined Spa(9260)	<u>2/17/2015</u>	<u>Conference/Seminar</u>	<u>420</u>	Regulatory updates; safety; emergency and/or disaster related.
Day 1 Certification Prep Course: The ABCs & 123s o(9354)	<u>3/16/2015</u>	<u>Conference/Seminar</u>	<u>330</u>	Public health, water quality, groundwater, surface water treatment, chemistry.
Day 2 Certification Prep Course: The ABCs & 123s o(9355)	<u>3/16/2015</u>	<u>Conference/Seminar</u>	<u>390</u>	Math, public health, protecting water quality, water treatment, cross connection/backflow.
Jar Testing Dynamics & More!(9523)	<u>5/26/2015</u>	<u>Conference/Seminar</u>	<u>390</u>	Asset management; Cured-In-Place Pipe; Jar testing Dynamics
2015 Technical Program & Vendor Show Day 1(9521)	<u>8/18/2015</u>	<u>DVD</u>	<u>360</u>	GIS Technology; Asset Management; Wells; Dewatering; Ground Water; Water Plant Rehab Magnets; Collection System Maintenance. No partial credits. Each roster is placed out at the end of each day so everyone must be there the entire day to get the credits advertised. Jeanne
2015 Technical Program & Vendor Show Day 2(9522)	<u>8/19/2015</u>	<u>DVD</u>	<u>360</u>	Contacts, Level Measurements; ICPP, Tanks. No partial credits. Each roster is placed out at the end of each day so everyone must be there the entire day to get the credits advertised. Jeanne

### Montana University System - Water Center(226)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Guide to Developing a Source Water Protection Plan(1242)	<u>9/12/2003</u>	<u>Computer Based Training</u>	<u>450</u>	Available by cd, web, download and PDF. Development of a Source Water Protection Plan. The cd has the 2003 Op. Basics on it for a total of 21.5 hrs (Must list Op Basics and Guide to Develop as separate courses for the 21.5 hrs) JB
Small Utility Boards(2525)	<u>2/20/2007</u>	<u>Operator's Group Meeting</u>	<u>180</u>	cd rom or online training. JB
2005 Operator Basics(1977)	<u>5/1/2012</u>	<u>Computer Based Training</u>	<u>1440</u>	Operator Basics 2005: Up to 24 hrs credit. -- Groundwater unit only: 11 hours -- Both groundwater & surface water units: 13 hours (overlap) -- Wastewater unit: 9 hours -- Water explorations: 2 hours
Arsenic & Radiocluclides - Small Systems Treatment(5063)	<u>5/1/2012</u>	<u>Computer Based Training</u>	<u>60</u>	Helps small-system personnel understand the requirements and challenges of treating their course water for arsenic or rads from the perspective of their peers who operate treatment facilities.
Contamination Explorer(2818)	<u>5/1/2012</u>	<u>Operator's Group Meeting</u>	<u>150</u>	

#### Total Approved

# Drinking Water Courses for Renewal Training Credit

Virtual System Explorer 2006(8369)	<u>1/1/2014</u>	<u>Operator's Group Meeting</u>	<b>300</b>	Simulates small water system operations for workshop presentations on set-top DVD players and tracks user progress as a computer-based DVD. Users learn the basics of system operation, as well as how to recognize system deficiencies, perform a security risk assessment, and improve the financial and management capacity of a system. The three systems featured in this program are an untreated ground water system, a treated ground water system, and a surface water system.
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## Mueller Company(77)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Mueller School(221)	<u>2/2/2001</u>	<u>Conference/Seminar</u>	<b>60</b>	Hydrant and valve maintenance. 3 parts to technical session. Worth 3 contact hours if attended all. (JLE)
Mueller Van(2788)	<u>1/29/2008</u>	<u>Presentation</u>	<b>330</b>	TL/PC
Mueller Hydrant(1188)	<u>9/9/2011</u>	<u>On-line Class</u>	<b>240</b>	hydrants, valves, brass service fitting
Hydrant & Valve Op, Maint, and Troubleshooting(220)	<u>10/18/2012</u>	<u>Conference/Seminar</u>	<b>120</b>	Hydrant & Valve Maintenance. Drilling & tapping procedures, ductile iron & PVC pipe. Dates of training may vary. (JLE)

### Total Approved

## Municipal H2O(1030)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
EPA Risk Management Program - Internal Auditing(5558)	<u>10/26/2012</u>	<u>Workshop</u>	<b>240</b>	Workshop designed to help water and ww operators understand requirements of EPA risk management program regulations. The workshop provides instructions on conducting internal compliance audits of their Risk Management Plan.

### Total Approved

## Municipal Training Corporation(979)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Water Distribution Products General Overview(5154)	<u>5/16/2012</u>	<u>Classroom and Hands-on</u>	<b>240</b>	Operation and maint of water distribution system components such as fire hydrants, gate valves, brass products (corporation valves, curb valves, service connections), souplings, tapping sleeves and saddles, and drilling and tapping machines. Hydrant portion is sometimes repair in the field.

### Total Approved

## Municipal Well & Pump Company, Inc(993)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
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### Total Approved

# Drinking Water Courses for Renewal Training Credit

Well Pump Operation and Maint(4641)

5/22/2012

Presentation

240

Well Pump & Maint  
7/10/12 Freeport; 7/11/12 Utica; 7/12/12 Aurora

## National Rural Water(381)

Course Name and ID Number

Effective Date

Course Format

**Total Approved**

Minutes Description:

Managing Water Quality in Distribution  
Tanks(8200)

4/24/2014

Operator's Group Meeting

60

Whether its mixing, piping or displacing, the need to improve the quality and age of the water in your distribution system is a challenge to the entire industry. This webinar is designed to give the participant a unique perspective on how this can be accomplished by looking at it from the viewpoint of a tank contractor whether during initial construction or for retrofitting existing tanks.

## National Safety Council(270)

Course Name and ID Number

Effective Date

Course Format

**Total Approved**

Minutes Description:

Flagger Training(951)

1/23/2003

Other

240

Appropriate PPE and flagging procedures. JLE

## Neptune Technology Group(514)

Course Name and ID Number

Effective Date

Course Format

**Total Approved**

Minutes Description:

Understanding AMR/AMI Technology(6934)

8/29/2012

On-line Class

120

Water use tracking and charting trends; how to use AMR and AMI technology to the best advantage of water systems.

## Never Gall(0)

Course Name and ID Number

Effective Date

Course Format

**Total Approved**

Minutes Description:

# Drinking Water Courses for Renewal Training Credit

Fastener Applications: Keeping Stainless Steel Fas(8807)

10/7/2014

Presentation

60 0-15min Introduction of ways that stainless steel fasteners are and are not used.

- Why stainless galls/seizes
- What actually occurs and why
- past methods to prevent

16-30min Different applications for different grades of stainless

- Importance of getting the correct stainless for application
- Things that effect grades of stainless
- Ways of reducing future costs associated with the use of stainless fasteners

31-45min Methods of eliminating galling

- Ways to speed installation, reduce construction time
- Ways of easing Handling and care
- Improving safety with coatings

46-60min Interactive demonstration galling prevention

- Attendees participate in torqueing fasteners
- Question and answer period

## North Iowa Area Community College(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>
Collection System Preventive Maintenance(8670)	<u>6/10/2014</u>	<u>Conference/Seminar</u>
Safety Refresher(8671)	<u>6/11/2014</u>	<u>Conference/Seminar</u>

### Total Approved

<u>Minutes</u>	<u>Description:</u>
<u>240</u>	PeopleService Refresher Training held at NIACC 5-6 sessions per year. Chemical Feeding; Calculations; Pumps; Safety.
<u>480</u>	Safety issues.

## North Shore Sanitary District(978)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>
LOCK OUT TAG OUT(8461)	<u>1/21/2014</u>	<u>Conference/Seminar</u>
RESPIRATORY PROTECTION PROGRAM TRAINING(8459)	<u>2/18/2014</u>	<u>Conference/Seminar</u>
CHEMICAL HANDLING(8457)	<u>3/18/2014</u>	<u>Conference/Seminar</u>
CONFINED SPACE TRAINING(8455)	<u>4/15/2014</u>	<u>Classroom and Hands-on</u>

### Total Approved

<u>Minutes</u>	<u>Description:</u>
<u>60</u>	TO PROTECT EMPLOYEES FROM INJURY DUE TO ELECTRICAL SHOCK OR UNPLANNED OPS OF EQUIPMENT.
<u>60</u>	to insure all employees are familiar with proper use of districts respiratory protection program
<u>60</u>	to insure all employees are familiar with use and handling of chemicals used at location
<u>60</u>	to insure all employees are familiar with NSSD confined space entry program.

## Drinking Water Courses for Renewal Training Credit

VEHICLE SAFETY,PROPER LIFTING AND TOOL USAGE(8444)	<u>5/20/2014</u>	<u>Conference/Seminar</u>	<u>60</u>	to insure all employees are familiar with proper vehicle safety practices
Personal Protective Gear/Equipment and Hot/Severe(8445)	<u>6/17/2014</u>	<u>Conference/Seminar</u>	<u>60</u>	to insure all employees are familiar with proper PPE
FIRST AID PROCEDURES AND PERSONAL HYGIENE(8463)	<u>7/15/2014</u>	<u>Conference/Seminar</u>	<u>60</u>	TO ESTABLISH PROPER BASIC FIRST AIR PROCEEDURES ANS WELL AS PROMOTING GOOD PERSONAL HYGIENE
FIRE EXTIGUISHER TRAINING(8464)	<u>8/19/2014</u>	<u>Classroom and Hands-on</u>	<u>60</u>	TO INSURE PROPER USE OF FIRE EXTIGUISHER
Ladder Safety & Building Hoists(8446)	<u>9/16/2014</u>	<u>Conference/Seminar</u>	<u>60</u>	to insure all employees are familiar with proper and safe use of ladders scaffold and building hoists.
Forklifts, Tractors, Skid Steer & Snow Plowing/Col(8447)	<u>10/21/2014</u>	<u>Conference/Seminar</u>	<u>60</u>	to insure all employees are familiar with safe operation of forklifts,tractors and skid steers
RIGHT TO KNOW TRAINING(8462)	<u>11/18/2014</u>	<u>Conference/Seminar</u>	<u>60</u>	EXPLAIN WHAT A SDS ,PROPER LABELING OF CONTAINERS AND PROPER PPE ARE
Accident Avoidance and Review of the Year in Safet(8595)	<u>12/16/2014</u>	<u>Conference/Seminar</u>	<u>60</u>	Includes a discussion of accidents, training and safety record of the Plant and District).

### Northeastern Illinois Public Safety Training Acad(348)

#### Course Name and ID Number

Competent Person(1419)

Effective Date

1/16/2004

Course Format

Conference/Seminar

#### Total Approved

Minutes Description:

480 OSHA 1926.650 through .652

Confined Space(1420)

1/16/2004

Other

480

### Northern Central Illinois Pipeline Association (NIPA)(0)

#### Course Name and ID Number

NIPA Excavator Breakfast(6928)

Effective Date

1/4/2013

Course Format

On-line Class

#### Total Approved

Minutes Description:

120 Regulatory updates, safety issues (JULIE), emergency and disaster-related issues.

### OAI, Inc.(908)

#### Course Name and ID Number

Hazardous Material Awareness(4229)

Effective Date

1/28/2011

Course Format

Classroom/College

#### Total Approved

Minutes Description:

240 JB

### Occupational Safety and Health Administration-OSHA(170)

#### Course Name and ID Number

Construction Safety and Health(533)

Effective Date

2/28/2002

Course Format

Other

#### Total Approved

Minutes Description:

600 Safe precedures in work place and stations.

# Drinking Water Courses for Renewal Training Credit

## Occupational Training & Supply, Inc(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Hazardous Materials Refresher(9529)	<u>7/8/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9530)	<u>7/9/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9531)	<u>7/14/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9553)	<u>7/15/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9533)	<u>7/16/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9534)	<u>7/21/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9535)	<u>7/22/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9536)	<u>7/23/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9554)	<u>7/28/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9537)	<u>7/29/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9538)	<u>7/30/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9539)	<u>7/31/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9540)	<u>8/3/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9541)	<u>8/4/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9542)	<u>8/5/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9543)	<u>8/6/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9544)	<u>8/11/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9545)	<u>8/12/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9546)	<u>8/13/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9547)	<u>8/18/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training
Hazardous Materials Refresher(9548)	<u>8/19/2015</u>	<u>Conference/Seminar</u>	<b>480</b>	This course satisfies OSHA's annual refresher training

## OmniSite(931)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
OmniSite Service Training(4360)	<u>11/8/2012</u>	<u>Classroom and Hands-on</u>	<b>420</b>	Demonstration and training on how to install a web-based cellular alarm monitor and data collector designed for drinking water and waste water treatment. AR

# Drinking Water Courses for Renewal Training Credit

## Paradigm(730)

### Course Name and ID Number

Pipeline Safety Training(3807)

### Effective Date

3/9/2010

### Course Format

Presentation

### Total Approved

#### Minutes Description:

90 JB/PC

## Paradigm Liaison Services(0)

### Course Name and ID Number

Pipeline Awareness for Excavator Operations(7126)

### Effective Date

2/27/2013

### Course Format

Operator's Group Meeting

### Total Approved

#### Minutes Description:

120 Pipeline safety and best practices for safe digging. Damage prevention and updates to State's One Call Law.

## Precision Systems(1036)

### Course Name and ID Number

Scadata-Pac User Training(5737)

### Effective Date

11/7/2012

### Course Format

Classroom and Hands-on

### Total Approved

#### Minutes Description:

450 Use of the Scadata ssystem and how it can be used to the benefit of the municipality. Topics include max the efficiency of connected systems, generating IL EPA reports, alarm notifications/setpoints, and others.

## RCAP National Training Institute(515)

### Course Name and ID Number

Security and Emergency Response Planning TTX(2287)

### Effective Date

6/28/2006

### Course Format

Computer Based Training

### Total Approved

#### Minutes Description:

720 JB/PC

## RMS Utility Services, Inc.(1027)

### Course Name and ID Number

Control Valve Maintenance(5526)

### Effective Date

9/26/2012

### Course Format

Classroom and Hands-on

### Total Approved

#### Minutes Description:

180 Pilot systems and how to make them work properly for optimal valve operation. Cleaning, diaphragm assembly, strainer and cleaning, pilot system tweaking, testing once repairs are complete. CEU will be offered for actual numbers of hours of training.

Plant Valve Maintenance & Repair(5525)

### Effective Date

9/26/2012

### Course Format

Presentation

60 Covers every type of valve found in water treatment, techniques for isolating in repairs, cleaning and inspection, maintenance and repair and changing valves to accomplish various tasks in treatment or distribution applications.

Valve Insertions(5529)

### Effective Date

10/3/2012

### Course Format

Classroom and Hands-on

60 Actual valve insertion performed at various locations. Step-by-step process including pipe preparedness, line stopping (double and single-stopping), by-pass isolation, trench safety and other factors to consider in line isolation.

# Drinking Water Courses for Renewal Training Credit

## Robinson Engineering(750)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Elevated Tank Raising & Community Involvement, Mat(9262)	<u>5/20/2015</u>	<u>DVD</u>	<u>60</u>	Training on operations of a multi-zone system, raising an existing elevated tank and also on the importance of community involvement. At Salt Creek Golf Club, 710 W. Thorndale Ave., Wood Dale IL
Village of Matteson, Elevated Tank Raising & Commu(9263)	<u>9/17/2015</u>	<u>DVD</u>	<u>60</u>	Training on operations of a multi-zone system, raising an existing elevated tank and also on the importance of community involvement. At. 15410 S. 94th West Avenue, Orland Park, IL.

**Total Approved**

## Rockhurst University(394)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
OSHA Compliance & Safety(1464)	<u>5/10/2012</u>	<u>Conference/Seminar</u>	<u>360</u>	OSHA regs, workplace safety, PPE, blood borne pathogens, emergency action plans, hazard communication.

**Total Approved**

## Rockwell Automation(338)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Safety Awareness - LOTO and Arc Flash(9551)	<u>5/13/2015</u>	<u>DVD</u>	<u>180</u>	Safety

**Total Approved**

## Safety & Training Consulting, Inc.(892)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Backhoe Safe Operations(5708)	<u>11/7/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	
Bloodborne Pathogens(5705)	<u>11/7/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	
Chlorine Handling & Safety(5707)	<u>11/7/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	
Confined Space Entry(5697)	<u>11/7/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	
Defensive Driving for NSC(5700)	<u>11/7/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	
Fall Protection(5702)	<u>11/7/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	
Fire Safety & Extinguisher Use(5698)	<u>11/7/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	
First Aid/CPR/AED(4067)	<u>11/7/2012</u>	<u>Classroom/College</u>	<u>90</u>	JB
Forklift Training(5699)	<u>11/7/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	
Lockout/Tagout(5703)	<u>11/7/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	

**Total Approved**

## Drinking Water Courses for Renewal Training Credit

Office Ergonomics(5704)	<u>11/7/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	
Pole Top & Bucket Truck Rescue for Elect Line Crew(5706)	<u>11/7/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	
Trenching & Excavation Safety(4068)	<u>11/7/2012</u>	<u>Classroom/College</u>	<u>90</u>	JB
Work Zone Flagger(5701)	<u>11/7/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	
Hearing Protection(6912)	<u>12/27/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	safety
Respiratory Protection(6913)	<u>12/27/2012</u>	<u>Conference/Seminar</u>	<u>90</u>	safety
Basic Electrical Safety(6916)	<u>12/27/2013</u>	<u>Conference/Seminar</u>	<u>90</u>	safety
Hazardous Chemical Safety(6915)	<u>12/27/2013</u>	<u>Conference/Seminar</u>	<u>90</u>	safety
Ladder Safety(6914)	<u>12/27/2013</u>	<u>Conference/Seminar</u>	<u>90</u>	safety

### Sealing Specialist, Inc.(103)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Rotating Equipment and Mechanical Seal School(284)	<u>4/27/2001</u>	<u>On-line Class</u>	<u>780</u>	Two-day school on the most common causes of centrifugal pump and mechanical seal failure and how to effect practical, cost effective cures with existing technology.

#### Total Approved

### Sensus North America(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Waterworks Workshop(6960)	<u>1/18/2013</u>	<u>DVD</u>	<u>60</u>	Water conservation and smart water networks.

#### Total Approved

### Southern Illinois Wastewater Operator Assoc(86)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Spring Southern Illinois Wastewater Operators(428)	<u>3/22/2012</u>	<u>Operator's Group Meeting</u>	<u>180</u>	DW training credit may vary due to meeting agenda. Must be DW related. Check course title for credit or check with Jewel. (JLE)/PC

#### Total Approved

### Staking University(326)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Locating Certification Seminar(4373)	<u>7/20/2012</u>	<u>On-line Class</u>	<u>480</u>	Re-approved on 7/20/12. Bi-monthly in Manteno and frequently during the year for JULIE seminars. PC Locating water mains LS

#### Total Approved

# Drinking Water Courses for Renewal Training Credit

## STARE Inc.(1015)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Confined Space(5148)	<u>5/15/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	
CPR/AED(5147)	<u>5/15/2012</u>	<u>Conference/Seminar</u>	<u>180</u>	American Heart Association Standards
First Aid(5151)	<u>5/15/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	
Hazard Communication(5150)	<u>5/15/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	
Lock-Out/Tag-Out(5152)	<u>5/15/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	
Personal Protective Equipment(5149)	<u>5/15/2012</u>	<u>Conference/Seminar</u>	<u>120</u>	

## Start Group(489)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Trench/Shoring Training (Refresher)(4586)	<u>5/9/2012</u>	<u>Presentation</u>	<u>240</u>	Excavation & trenching, soil types, shoring systems, safety and trench rescue
Trench/Shoring Training (Initial)(7680)	<u>9/6/2012</u>	<u>Classroom and Hands-on</u>	<u>480</u>	Excavation & trenching, soil types, shoring systems, safety and trench rescue
Confined Space Entry & Rescue (Initial)(7678)	<u>10/1/2012</u>	<u>Classroom and Hands-on</u>	<u>480</u>	Introductory course in confined space entry & rescue
Respiratory Protection(7149)	<u>3/21/2013</u>	<u>Classroom and Hands-on</u>	<u>120</u>	Donning respirator, how to sanitize, changing filter & air
Confined Space Entry & Rescue (Refresher)(7679)	<u>9/9/2013</u>	<u>Classroom and Hands-on</u>	<u>240</u>	Refresher training in confined space entry and rescue

## Suburban Laboratories(536)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Bad Sampling Leads to Bad Results(2024)	<u>4/18/2012</u>	<u>Presentation</u>	<u>45</u>	Method requirements; container type; COC; container-filling techniques, sample acceptance requirements, temperature; resampling criteria; reporting criteria; Q&A.
Compliance Analysis Using EPA Methods(9165)	<u>1/20/2015</u>	<u>Classroom and Demonstration</u>	<u>60</u>	Full lab tour and introduction for water operators to learn how certain compliance analyses are performed using EPA Methods.

## SunCoast Learning Systems, Inc.(1028)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Advanced Math(5540)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Math for DW and WW operators. For 10 hrs only as submitted by the vendor (MO credits 16 hrs).
Applied Confined Space Safety(5541)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>300</u>	Safety for DW and WW operators.

## Drinking Water Courses for Renewal Training Credit

Basic Environmental Chemistry(5542)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Water chemistry course.
Basic Water Works(5543)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Operation of a water utility, water characteristics, water quality standards, GW and wells, surface water production, distribution
Chemical Feed Systems & Pump Calibrations(5544)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>300</u>	Treatment plant operations using chemical feed pumps
Chlorinator Systems & Chemical Handling(5545)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Chlorine and its use in PWS
Corrosion Control Treatment Optimization(5546)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Basics of OCCT optimization
Customer Service Inspection & Cross-Connection(5547)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>300</u>	5-6 hours leads to preparation for inspector certifications
Dissolved Air Flotation(5688)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	History, advantages, disadvantages, operation of a DAF system
Drinking Water Filtration A-Z(5548)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	
Maintaining Water Quality in Distribution Systems(5549)	<u>10/19/2012</u>	<u>Workshop</u>	<u>600</u>	Microbial and DBP, water quality in commercial buildings, troubleshooting water quality complaints
Math Basics(5550)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>300</u>	
Membrane Treatment of Wastewater(5689)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Membranes in WW treatment
Operator Handbook(5551)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Advanced course for an experienced operator in SW treatment facility. Recommended to take Surface Water Prod 1 prior to this course. Source water protection, elements of optimization, opt techniques and alternative disinfectants, taste and odor control, special treatment processes, SCADA, lab methods.
Primary Sludge Fermentation(5690)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Obtaining the volatile fatty acids (VFA) needed to improve biological nutrient removal processes directly from the raw wastewater, plant records.
Pump and Motor Maintenance(5552)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Info on developing a maint program for electric motor and motor controls, mechanics and hydraulics, etc.
Surface Water Production 1(5553)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Intro to field of surface water treatment.
Surface Water Production 2(5554)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Source water management, opt techniques for treatment units and alternative disinfectants
Valve and Hydrant Maintenance(5538)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>300</u>	Valve maint., classification of valves and their purpose, backflow prevention devices, a brief history of the hydrant.
Wastewater Collection(5686)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Wastewater collection operation and maint
Wastewater Treatment(5687)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Primary sedimentation, activated sludge, fixed-film processes, pond systems
Water Utility Safety(5539)	<u>10/19/2012</u>	<u>Operator's Group Meeting</u>	<u>600</u>	Safety

# Drinking Water Courses for Renewal Training Credit

## Superior Industrial Equipment Company(898)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Pumps & Mechanical Seals(4163)	<u>12/8/2010</u>	<u>On-line Class</u>	<b>480</b>	JB/PC

## SW Central Water Plant Operator's Association(25)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Storage Tank Mixing(4012)	<u>7/30/2010</u>	<u>Other</u>	<b>60</b>	JB/tl

## Swan Analytical USA(1023)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Swan Turbidity Analyzer Operation(5348)	<u>7/20/2012</u>	<u>Classroom and Hands-on</u>	<b>60</b>	Training on turbidity instrument and turbidity monitoring.

## Swanson Flo Systems(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Automatic Control Valve Operator Instruction(6902)	<u>12/19/2012</u>	<u>Classroom and Hands-on</u>	<b>240</b>	Water loss reduction through pressure management.

## Target Solutions(453)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Combustible and Flammable Liquids(1699)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Combustible and Flammable Liquids
Compressed Gas Safety(1700)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	safety
Confined Space Entry(1701)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	safety
Disinfection Basics(3010)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Disinfection Basics
Distribution System Materials & Equipment(3012)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Distribution System Materials & Equipment
Emergency Response to Terrorism #1,2,3,4(1703)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<b>240</b>	1 RTC each, 4 modules. Must complete all 4 modules to get credit for 4 hours.
Fall Protection(3015)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Fall Protection
Filtration Basics(3016)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	Filtration basics
Fire Extinguisher Safety(1704)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	safety
Fire Prevention Safety(3014)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	safety
General Construction Safety(3018)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<b>60</b>	safety

## Drinking Water Courses for Renewal Training Credit

Hand and Power Tool Safety(1707)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	safety
HazMat Spill Prevention & Control(3019)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	safety
HazMat Transportation(3020)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	safety
Hydraulics(3022)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	safety
Incident Investigation(3023)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	safety
Industrial Ergonomics(3024)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Industrial Ergonomics
Ladder & Scaffolding Safety(3026)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	safety
Laser Safety(3027)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	safety
Lead Awareness(1708)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	safety
Lockout/Tagout(1709)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	safety
Low Voltage Electrical Safety(1710)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	safety
Machine Guarding(1711)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Machine Guarding
Maintenance on Pumps, Motors & Circuits(3028)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Maintenance on Pumps, Motors & Circuits
Mathematics Basics(3030)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Mathematics Basics
Personal Protective Equipment(1713)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Personal Protective Equipment
Respiratory Protection(1714)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Respiratory Protection
Risk Assessment Analysis(1715)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Risk Assessment Analysis
Slips, Trips & Falls(3033)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Slips, Trips & Falls
Trenching and Shoring(1716)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Trenching and Shoring
Water Industry Ground Water Treatment(4673)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Ground water, including its abundance, its relation to the hydrologic cycle, and its various uses by PWS, various regs related to GW treatment by PWS and disinfection and chlorination processes, different constituents that can occur in GW and their corresponding treatment strategies.
Water Main Installation(3034)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Water Main Installation
Welding Safety(3035)	<u>1/31/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Welding Safety
Water Industry Corrosion Control(5178)	<u>5/22/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Self-paced online training, with review exercises and case studies to reinforce the course content. 11 learning modules with a 10-question exam.

# Drinking Water Courses for Renewal Training Credit

Water Industry Principles of Debt Collections(5179)	<u>5/22/2012</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Self-paced online training, with review exercises and case studies to reinforce the course content. 10 learning modules with a 10-question exam.
Hazard Communication(7705)	<u>9/25/2013</u>	<u>Conference/Seminar</u>	<u>60</u>	In March 2012 OSHA revised its Hazaard Communication Standard to require the use of new labeling elements and the use of a standardized format for Safety Data Sheets.

## Technical Learning College(111)

### Total Approved

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Distribution Foreman CEU Course(4675)	<u>1/31/2011</u>	<u>Workshop</u>	<u>2400</u>	Storage, pumps, sample collecting, safety, emergency or disaster related, reverse osmosis, disinfection.
Arsenic(1196)	<u>1/31/2012</u>	<u>Workshop</u>	<u>900</u>	Arsenic
Backflow Awareness(415)	<u>1/31/2012</u>	<u>Workshop</u>	<u>600</u>	Review of cross-connection and backflow prevention principles, hydraulic concepts, Pascal's Law and state laws regarding backflow prevention requirements.
Bacteriological Diseases(2508)	<u>1/31/2012</u>	<u>Workshop</u>	<u>960</u>	Typhoid, E. coli, Cholerae, Hepatitis, Giardia lamblia, crypto, etc. JB
Bacteriological Sampling(4244)	<u>1/31/2012</u>	<u>Workshop</u>	<u>240</u>	Bacteriological Sampling
Basic Plumbing(4270)	<u>1/31/2012</u>	<u>Workshop</u>	<u>480</u>	Water distribution plumbing; piping, valves, backflow prevention, water quality, and hydraulic fundamentals. (AER)
Distribution 303 CEU Course(4674)	<u>1/31/2012</u>	<u>Workshop</u>	<u>1440</u>	Distribution, pumps, disinfection, emergency/disaster related, safety.
Distribution 404 CEU Course(4607)	<u>1/31/2012</u>	<u>Workshop</u>	<u>2160</u>	Water distribution and delivery methods; backflow and cross connection; disinfection processes; pumps, motors and hydraulics; waterborne diseases, membrane filtration processes and hard water; water quality concerns associated with water treatment; groundwater production and well drilling; safety concerns.
Distribution Operations CEU Course(4171)	<u>1/31/2012</u>	<u>Workshop</u>	<u>960</u>	Distribution Operations CEU Course
Groundwater Production CEU Course(302)	<u>1/31/2012</u>	<u>Workshop</u>	<u>1800</u>	Groundwater Production CEU Course
Hydraulic Principles CEU Course(4245)	<u>1/31/2012</u>	<u>Workshop</u>	<u>480</u>	Hydraulic Principles CEU Course
Laboratory Safety CEU Course(770)	<u>1/31/2012</u>	<u>Workshop</u>	<u>600</u>	Laboratory chemical safety rule or 29 CFR 1910.1450. JLE
Modern Disinfection CEU Course(4160)	<u>1/31/2012</u>	<u>Workshop</u>	<u>1200</u>	Reg updates, chemical feeding, storage, sample collecting, disinfection,.
Pipe-Fitting CEU Course(4188)	<u>1/31/2012</u>	<u>Workshop</u>	<u>480</u>	Pipe-Fitting CEU Course
Pumping Principles CEU Course(2509)	<u>1/31/2012</u>	<u>Workshop</u>	<u>960</u>	Pumps

## Drinking Water Courses for Renewal Training Credit

Pumps and Motors(4359)	<u>1/31/2012</u>	<u>Workshop</u>	<u>1200</u>	Pumps
Surface Water Production(4172)	<u>1/31/2012</u>	<u>Workshop</u>	<u>960</u>	Reg updates, coagulation, filtration, chemical feeding, pumps, storage, sample collecting.
Valve Operation and System Design CEU Course(2916)	<u>1/31/2012</u>	<u>Workshop</u>	<u>960</u>	water mains/service connections
Valves and Controls(2510)	<u>1/31/2012</u>	<u>Workshop</u>	<u>360</u>	Valves and Controls
Water and Wastewater Sampling CEU Course(304)	<u>1/31/2012</u>	<u>Workshop</u>	<u>300</u>	Water/wastewater sampling techniques and familiarization of CWA/SWDA and general EPA rules concerning sampling and preservation. Because course covers both areas only granting 2.5 hours of credit instead of the 5 requested.
Water Mains and Service Connections(4246)	<u>1/31/2012</u>	<u>Workshop</u>	<u>600</u>	Reg update, sample collecting, water mains & service connections, EM or disaster related.
Water Monitoring(4271)	<u>1/31/2012</u>	<u>Workshop</u>	<u>480</u>	Review of USEPA regs relating to proper water sampling, water sample preservation, laboratory operations, reporting, MCLs and microbiological concerns. (AER)
Water Treatment 303 CEU Course(4676)	<u>1/31/2012</u>	<u>Workshop</u>	<u>1440</u>	Reg updates, coagulation, reverse osmosis, pathogen removal/inactivation, filtration, chemical feeding/pumps, sample collecting.
Water Treatment 404 Course(4608)	<u>1/31/2012</u>	<u>Workshop</u>	<u>2160</u>	Water treatment; chemicals; membrane filtration processes and hard water; water production processes; water quality concerns with treatment; disinfection; pumps, motors and hydraulics, backflow and cross-connection; waterborne diseases.
Water Treatment CEU Course(331)	<u>1/31/2012</u>	<u>Workshop</u>	<u>600</u>	Water treatment fundamentals; filtration, chlorine treatment processes, safety, water chemistry, water sources and water quality issues. Revised - worth 40 RTCs 9-17-03. (JB). Water Treatment Fundamentals; homeland security, water treatment, SDWA rules, water production, water quality, chlorine, wells and pumps, backflow, water distribution. Revised - worth 40 RTCs 3-2-11 (AER)
Chlorine & Disinfection CEU Course(2117)	<u>2/7/2012</u>	<u>Workshop</u>	<u>1800</u>	Fundamentals of water disinfection.
Confined Space CEU Course(1195)	<u>2/7/2012</u>	<u>Workshop</u>	<u>1200</u>	Confined space familiarization, atmospheric monitoring, hazard identification, and advanced rule application and competency.
Cross-Connection ID CEU Course(4198)	<u>2/7/2012</u>	<u>Workshop</u>	<u>360</u>	First approved 1/4/11. Review of various cross connection, backflow and plumbing-related concerns and hydraulic principles.

## Drinking Water Courses for Renewal Training Credit

Distribution Advanced CEU Course(4197)	<u>2/7/2012</u>	<u>Workshop</u>	<u>1500</u>	First approved 1/4/11. Review of water distribution systems, groundwater production components and related GW mining, disinfection, valve and related components, safety and hydraulic principles.
SDWA Rules and Regulations CEU Course(303)	<u>2/7/2012</u>	<u>Workshop</u>	<u>600</u>	Water distribution, well drillers, pump installers, water treatment operators.
Utility Counter-Terrorism CEU Course(774)	<u>2/7/2012</u>	<u>Workshop</u>	<u>1800</u>	Reduce vulnerability, safety precautions, terrorism definitions, incidents and indicators. JLE
Water Treatment Process Control(2724)	<u>2/7/2012</u>	<u>Workshop</u>	<u>480</u>	Water treatment and filter operation, hydraulic fundamentals, rules of SDWA. Objectives to provide a better understanding of SDWA regs, terminology, water quality parameters.
Waterborne Diseases CEU Course(1893)	<u>2/7/2012</u>	<u>Workshop</u>	<u>2400</u>	Review of commonly found water and wastewater diseases, symptoms, and identification techniques. Covers federal rules concerning water and wastewater sampling techniques, waterborne disease control, general water quality operations and definitions, disease symptoms, disease diagnosis, history, susceptibility and disease sources.
Wellfield Operations CEU Course(4054)	<u>2/7/2012</u>	<u>Workshop</u>	<u>1800</u>	First approved 10/13/10. A detailed explanation of groundwater (GW) production and GW mining along with a detailed understanding of pumps and motors. Other topics include water treatment and distribution of GW.
Wet Lab Procedures CEU Course(2862)	<u>2/7/2012</u>	<u>Workshop</u>	<u>1440</u>	First approved 2/22/08. Reviews commonly found water and wastewater diseases, symptoms and ID techniques, sampling techniques, waterborne disease identification ND control, general water quality operations and definitions, disease diagnosis, history, etc.
Disinfection Basics(4693)	<u>2/8/2012</u>	<u>Conference/Seminar</u>	<u>1800</u>	Water disinfection, halogens, alternative disinfection processes, identification of chlorines uses, understanding biological monitoring.
Chemical Handling(2725)	<u>3/22/2012</u>	<u>Workshop</u>	<u>600</u>	Chemical Handling
Competent Person(4861)	<u>3/22/2012</u>	<u>Workshop</u>	<u>600</u>	Safety
Groundwater Protection(4863)	<u>3/22/2012</u>	<u>Workshop</u>	<u>300</u>	Groundwater Protection
Point-of-Use Water Treatment(534)	<u>3/22/2012</u>	<u>Workshop</u>	<u>600</u>	Review of different point-of-use water treatment devices and methods. Basic chemistry and water fundamentals. (JLE)
Water Quality(3096)	<u>3/22/2012</u>	<u>Workshop</u>	<u>960</u>	Water Quality
Water Treatment Fundamentals(4864)	<u>3/22/2012</u>	<u>Workshop</u>	<u>2400</u>	Water Treatment Fundamentals

## Drinking Water Courses for Renewal Training Credit

Water Treatment System Survey(4865)	<u><b>3/22/2012</b></u>	<u>Workshop</u>	<u><b>2400</b></u>	Water Treatment System Survey
Water Treatment Utilization(4187)	<u><b>3/22/2012</b></u>	<u>Workshop</u>	<u><b>1500</b></u>	Water Treatment Utilization
Bacteriological Diseases II(5349)	<u><b>7/20/2012</b></u>	<u>Workshop</u>	<u><b>1440</b></u>	
Pathogens 101(5527)	<u><b>9/26/2012</b></u>	<u>Workshop</u>	<u><b>2400</b></u>	Micro that may be present in contaminated fresh water; DBP rules and regs, sampling, coliform basics, lab methods, halogens and disinfection concerns.
Bacteriological Monitoring 109(5530)	<u><b>10/4/2012</b></u>	<u>Workshop</u>	<u><b>180</b></u>	Reviwe of EPA Rules & Regs relating to proper biological water sampling, water sample preservation, reporting, bacT MCLs and other icro concerns.
Chemical Contaminants 201(5693)	<u><b>11/2/2012</b></u>	<u>Workshop</u>	<u><b>960</b></u>	IOC, VOC, SOC; sample collection
Hazard Communication*(771)	<u><b>11/15/2012</b></u>	<u>Workshop</u>	<u><b>600</b></u>	HazCom rule or the Right to Know Law. JLE
Metalloids(6724)	<u><b>11/15/2012</b></u>	<u>Workshop</u>	<u><b>360</b></u>	Arsenic, boron, silicon, germanium, antimony and tellurium - metalloids and priority pollutants.
Pump Primer I(6774)	<u><b>11/29/2012</b></u>	<u>Workshop</u>	<u><b>480</b></u>	Review of various hydraulic principles and basic pumping foundations to properly understand the operation and function of primary water/wastewater-related pumps and equipment.
Pump Primer II(6775)	<u><b>11/29/2012</b></u>	<u>Workshop</u>	<u><b>480</b></u>	Review of various hydraulic principles and basic pumping foundations to properly understand the operation and function of primary water/wastewater-related pumps and equipment.
Pump Primer III(6776)	<u><b>11/29/2012</b></u>	<u>Workshop</u>	<u><b>360</b></u>	Reviews various pumping and motoring principles and gives an understanding of the operation and lifting of water with electricity.
Distribution Primer 1(6838)	<u><b>12/5/2012</b></u>	<u>Computer Based Training</u>	<u><b>480</b></u>	
Distribution Primer 2(6839)	<u><b>12/5/2012</b></u>	<u>Computer Based Training</u>	<u><b>480</b></u>	
Distribution Primer 3(6840)	<u><b>12/5/2012</b></u>	<u>Computer Based Training</u>	<u><b>480</b></u>	
Distribution Primer 4(6841)	<u><b>12/5/2012</b></u>	<u>Computer Based Training</u>	<u><b>360</b></u>	
Distribution Primer 5(6842)	<u><b>12/5/2012</b></u>	<u>Computer Based Training</u>	<u><b>360</b></u>	

# Drinking Water Courses for Renewal Training Credit

Distribution Basics Second Edition(7372)	<u>7/1/2013</u>	<u>Workshop</u>	<b>2400</b>	CEU Training Course Learning Goals 1. Summarize SDWA and related regulations. 2. SDWA Definitions. MCL limits and Applications. 3. Define different water distribution/groundwater treatment terms. 4. Water distribution methods and safety procedures. 5. Chlorine Fundamentals and Alternative Disinfectants. 6. Chlorination Operation, Gas, Liquid and Solid forms. Disassociation of Iorine/Water and HCL and OCL. 7. Pumping Principles and Pump Operations, including Troubleshooting and Electrical Problems. 8. Wells, Aquifer, Cone of Depression and Groundwater Protection. 9. Water Softening, Point of Use Water Filters, Carbon Filter and Reverse Osmosis. 10. Distribution Water Storage and related problems. 11. Water Quality Fundamentals, Periodic Chart Identification, pH scale, Bacteriological Monitoring and HPC. 12. Waterborne Diseases. 13. Customer Complaints, Color/Taste and Odor Troubleshooting. 14. Cross-Connection/Backflow Prevention principles and troubleshooting. 15. Water Sampling Techniques and troubleshooting. 16. Advanced Water Distribution Understanding and Troubleshooting.
Chlorination 202(7603)	<u>9/1/2013</u>	<u>Workshop</u>	<b>960</b>	All water and wastewater operators need to be able to describe chlorination procedures and properly demonstrate proper and safe operation of various disinfectants for water and wastewater treatment.
Chlorination 101(7675)	<u>9/9/2013</u>	<u>Workshop</u>	<b>480</b>	Eight hours relating to chlorine and chlorination procedures
Chlorination 404(7676)	<u>9/9/2013</u>	<u>Workshop</u>	<b>1800</b>	A comprehensive 30 hour study of chlorine, chlorination and safety procedure.
Plumbing 101(7709)	<u>10/1/2013</u>	<u>Workshop</u>	<b>480</b>	This eight hour CEU training course will train students in plumbing and backflow principles. This course was primarily designed to teach technical knowledge in basic plumbing procedures; to lay out, assemble, install, and maintain piping, fixtures, and piping systems for stream, hot water, heating, cooling, draining, lubricating, sprinkling, and industrial processing systems. Includes instruction in material selection and use of tools to cut, bend, join, and weld pipes. The student will also be able to identify and describe various backflow prevention methods and assemblies.

## Drinking Water Courses for Renewal Training Credit

Distribution Certification Review(7736)	<u>10/9/2013</u>	<u>Workshop</u>	<b>600</b>	The objective for this class is to prepare the student to successfully pass the operator certification examination, understand treatment principles and properly calculate complex mathematical formulas for: pounds per day, volume, flow and related treatment formulas.
Water Treatment Certification Review(7735)	<u>10/9/2013</u>	<u>Workshop</u>	<b>600</b>	The objective for this class is to prepare the student to successfully pass the operator certification examination, understand treatment principles and properly calculate complex mathematical formulas for: pounds per day, volume, flow and related treatment formulas.
Storage Facilities(7790)	<u>11/7/2013</u>	<u>Workshop</u>	<b>300</b>	This short CEU course will cover water storage facilities and basic maintenance and operational concerns including the EPA lead reduction Act requirements.
Valves and Fittings(7791)	<u>11/7/2013</u>	<u>Workshop</u>	<b>960</b>	This course will cover the new lead reduction requirements of the Safe Drinking Water Act and general water distribution and hydraulic principles. This course will cover the EPA Reduction of Lead in Drinking Water Rule and various distribution pipe installation materials, methods and disinfection procedures.
Water Treatment 202(7929)	<u>12/6/2013</u>	<u>Computer Based Training</u>	<b>720</b>	This is a 12 contact hour training course that covers conventional water treatment. This course covers the water treatment process from raw water to finished water ready for delivery. It covers flocculation, coagulation, filtration and chlorination along with water quality sampling and waterborne pathogen identification.
Water Distribution 202(7930)	<u>12/7/2013</u>	<u>Workshop</u>	<b>720</b>	This CEU course will focus upon the essentials of operating a water distribution system and provide 12 training contact hours upon completion. This course will start with the EPA rules concerning distribution, sampling and the new low brass requirements and go to the chlorination process, pathogen destruction and related waterborne diseases prevent, to cross-connection control and backflow prevention and finishing with valves, water mains, service connection and hydraulic principles.
Flocculation and Coagulation(8146)	<u>2/17/2014</u>	<u>Workshop</u>	<b>976</b>	This CEU course will cover conventional water treatment and will provide 16 contact hours upon completion. Groundwater and surface water contain both dissolved and suspended particles. Coagulation and flocculation are used to separate the suspended solids portion from the water.

## Drinking Water Courses for Renewal Training Credit

Basic Concrete(9264)	<u>2/10/2015</u>	<u>Operator's Group Meeting</u>	<b>120</b>	The target audience for this course is the person who works in the field and has the need or task of working with concrete or cement in their daily operations. Course Objective: To provide two hours of continuing education training in understanding the fundamentals of cement or concrete products, types, purposes, slump, additives and finishing. Course Focus This distance based CEU course will cover concrete basics, workability, concrete slump test, curing, making concrete, and pouring or building with concrete
Water Chemistry(9265)	<u>2/10/2015</u>	<u>Operator's Group Meeting</u>	<b>840</b>	This 14 hour distance learning CEU training course will examine various general aspects of commonly found conventional water/wastewater chemistry procedures which are utilized for proper examination of common found contaminants or used water chemicals. This course was designed to provide continuing education credit to water and/ or wastewater treatment operators. Course Purpose The main purpose of this course is to provide continuing education in understanding various water related laboratory procedures utilized in determining various water quality-water chemistry related concerns and MCL determinations.
pH Fundamentals(9271)	<u>2/19/2015</u>	<u>Operator's Group Meeting</u>	<b>60</b>	A review of pH primarily relating to water and wastewater sampling. This course will cover the fundamentals of pH, measurement procedures, alkalinity, acids and bases.
Basic Chemistry(9487)	<u>3/31/2015</u>	<u>Conference/Seminar</u>	<b>300</b>	Basic chemistry principles
Basic Welding(9486)	<u>3/31/2015</u>	<u>Conference/Seminar</u>	<b>360</b>	Basic welding procedures, metal joining principles and welding operation safety, fire prevention, general fire principles/reactions, Right-to-Know and OSHA fire regulations.

### Travelers(729)

Course Name and ID Number

Effective Date

Course Format

**Total Approved**

Minutes

Description:

# Drinking Water Courses for Renewal Training Credit

Flagger Certification(3243)

1/30/2009

Other

180 JB/TL/PC Re-approved 12/5/12

## U. S. Army Corps of Engineers - Western Illinois(189)

### Course Name and ID Number

Effective Date

Course Format

### Total Approved

Minutes Description:

OSHA (General Industry) Training(594)

4/10/2002

Presentation

1800 Electrical safety, and safety pertaining to digging and shoring/pipe installation/trenching. JLE

## U.S. Environmental Protection Agency Water Security Division(0)

### Course Name and ID Number

Effective Date

Course Format

Minutes Description:

Free Preparedness Tools & Resources for Drinking W(9552)

5/13/2015

Operator's Group Meeting

60 •Learn about EPA tools and resources that can support them during an emergency,•Learn about EPA tools and resources that can support them during an emergency,•Hear testimonials from utilities who have used these tools.

Preparedness Tools and Resources Webinar(9422)

5/13/2015

Conference/Seminar

60 The Water Security Division of the Office of Ground Water and Drinking Water is hosting a webinar on free preparedness tools for water utilities. This webinar will feature updates on the Climate Resilience Evaluation and Awareness Tool (CREAT), the new Mobile Website, and Incident Action Checklists for various emergencies including drought, flooding, hurricane, tornado, etc.

This webinar will benefit water utility operators and managers, state and tribal primacy agencies, drinking water and wastewater utility stakeholders, and water utility partners and associations. CEUs will be available for participating states. For any additional questions, please contact us at WSD\_Outreach@epa.gov.

## Underground Solutions, Inc.(0)

### Course Name and ID Number

Effective Date

Course Format

### Total Approved

Minutes Description:

Flowguard Underground Solutions Capabilities Prese(7087)

2/17/2013

DVD

60 water mains and service connections

Fusible PVC Underground Solutions Capabilites Pres(7088)

2/17/2013

Conference/Seminar

60 Water mains and service connections

## United Rentals(751)

### Course Name and ID Number

Effective Date

Course Format

### Total Approved

Minutes Description:

## Drinking Water Courses for Renewal Training Credit

Confined Space Training(2985)	<u>2/8/2012</u>	<u>Presentation</u>	<u>360</u>	Requirements of OSHA Standard 1910.146. Also offered an an online course (separate ID).
Confined Space Training(4692)	<u>2/8/2012</u>	<u>Operator's Group Meeting</u>	<u>360</u>	Requirements of OSHA Standard 1910.146. Also offered as classrooms/conferences/seminars (separate ID).
Excavation Safety for Competent Person Training(2984)	<u>2/8/2012</u>	<u>Presentation</u>	<u>360</u>	Requirements of the OSHA Standard 1926 Subpart P. Also offered as an online course (separate coure ID).
Excavation Safety for Competent Person Training(4691)	<u>2/8/2012</u>	<u>Operator's Group Meeting</u>	<u>360</u>	Requirements of the OSHA Standard 1926 Subpart P. Also offered as classroom/conference/seminar (separate coure ID).

### University of Phoenix(1012)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Financial Analysis for Managers FIN 324(5113)	<u>5/4/2012</u>	<u>Operator's Group Meeting</u>	<u>2700</u>	Financial analysis how to's and what not to do; improved budgeting and financial responsibility.

#### Total Approved

### US EPA(525)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Current Water Treatment and Distribution System Op(9338)	<u>5/26/2015</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Water treatment and distribution; cyanotoxins
USEPA VSAT & WHEAT(9179)	<u>6/16/2015</u>	<u>Conference/Seminar</u>	<u>780</u>	The U.S. Environmental Protection Agency (EPA) is offering a two-day, hands-on computer training course on the newly released and updated versions of the Vulnerability Self Assessment Tool (VSAT) and the Water Health and Economic Analysis Tool (WHEAT).
Biological and Microbial Aspects of Septic System (9339)	<u>6/30/2015</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Septic system issues
Corrosion Control for Drinking Water Systems(9340)	<u>7/28/2015</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Corrosion Control for Drinking Water Systems
Distribution Operation Options for Small Water Sys(9341)	<u>8/25/2015</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Distribution operations options for small water systems
UV Disinfection Systems - Treatment of Groundwater(9342)	<u>9/29/2015</u>	<u>Operator's Group Meeting</u>	<u>60</u>	UV disinfection for groundwater systems
Decentralized High-Rate Wastewater Treatment of Pe(9343)	<u>10/27/2015</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Wastewater
Treatability Databases, Cost Models, and Other Too(9344)	<u>11/24/2015</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Treatability Databases, Cost Models, and Other Tools for Water Systems
Reduction of Lead in Drinking Water(9345)	<u>12/15/2015</u>	<u>Operator's Group Meeting</u>	<u>60</u>	Reduction of Lead in Drinking Water

#### Total Approved

# Drinking Water Courses for Renewal Training Credit

## US EPA Water Security Division(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
EPA Water/WW Utility All-Hazards Boot Camp: EM Pla(9513)	<u>7/1/2015</u>	<u>Operator's Group Meeting</u>	<u>1</u>	COMING SOON - THIS COURSE STILL IN PRODUCTION The Boot Camp Training explains why and how to implement a comprehensive all-hazards program for a water or wastewater utility. Specifically, participants will walk through the various processes and steps that are involved with an all-hazards program related to prevention and mitigation, preparedness, response, and recovery. Participants also are provided with additional resources throughout the training that can later be used in developing and/or implementing a plan.

## Utility Pipe Sales(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Kennedy-St Louis Water Show(9519)	<u>5/7/2015</u>	<u>Conference/Seminar</u>	<u>60</u>	Proper maintenance and repair of fire hydrants/gate valves in water distribution system
Romac-St Louis Water Show(9518)	<u>5/7/2015</u>	<u>Conference/Seminar</u>	<u>60</u>	Proper installation of repair clamps, service saddles, and tap sleeves. tooling demonstration for large and small diameter water taps
Zenner-St louis Water Show(9520)	<u>5/7/2015</u>	<u>Conference/Seminar</u>	<u>60</u>	Better management of waer distribution system through using smart meters

## VanDevanter Engineering(255)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Basic Control Panel Training(1307)	<u>11/27/2012</u>	<u>Conference/Seminar</u>	<u>210</u>	Basic control panel training for water and WW treatment equipment and pumping systems.

## Viking Chemical Company(72)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>
Sodium Hypochlorite(207)	<u>2/1/2001</u>	<u>Conference/Seminar</u>	<u>60</u>	Review of sodium hypochlorite properties, safe handling, and material safety data sheets.

## Walters Environmental Consulting(530)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<b>Total Approved</b>	
			<u>Minutes</u>	<u>Description:</u>

## Drinking Water Courses for Renewal Training Credit

Motor Controllers(2557)	<u><b>3/30/2007</b></u>	<u>On-line Class</u>	<b>360</b>	Improve efficiency of your motors and how to replace them. 4/30/15 at Merrillville Comfort Suites
Basic Electricity(2576)	<u><b>4/11/2007</b></u>	<u>On-line Class</u>	<b>360</b>	4/23/15 at Indianapolis Wingate; 4/28/15 at Fort Wayne Quality Inn; 4/29/15 at Merrillville Comfort Suites
Coagulation and Flocculation(2574)	<u><b>4/11/2007</b></u>	<u>On-line Class</u>	<b>360</b>	3/4/15 at Fort Wayne Quality Inn; 4/14/15 at Merrillville Comfort Suites; 4/21/15 at Indianapolis Wingate.
Lab Analysis(1998)	<u><b>4/11/2007</b></u>	<u>On-line Class</u>	<b>360</b>	3/10/15 at Merrillville Comfort Suites
Disinfection(2874)	<u><b>3/6/2008</b></u>	<u>On-line Class</u>	<b>360</b>	6/2/15 at Merrillville Comfort Suites; 6/3/15 at Indianapolis Wingate Inn
Treatment Problem Solving(2877)	<u><b>3/6/2008</b></u>	<u>Conference/Seminar</u>	<b>360</b>	4/16/15 at Elkhart Comfort Suites; 6/10/15 at Merrillville Comfort Suites; 6/12/15 at Indianapolis Wingate.
Package Plant Operations(9375)	<u><b>3/3/2015</b></u>	<u>Conference/Seminar</u>	<b>360</b>	Fix and prevent common problems with activated sludge package plant systems including loss of solids, ammonia removal, bulking, foaming, and poor disinfection.
Improving Pump Performance(9371)	<u><b>3/5/2015</b></u>	<u>Conference/Seminar</u>	<b>360</b>	Keep pumps running efficiently. 3/5/15 at Elkhart Comfort Suites
Metals Treatment(9373)	<u><b>3/6/2015</b></u>	<u>Conference/Seminar</u>	<b>360</b>	Metals hydroxide precipitation with caustic, lime, or magnesium hydroxide; chelation; co-precipitation, metals sulfide precip, cyanide destruction, hex chrome reduction, ORP, polymers, clarification, and solids handling.
R.O. and Ion Exchange(9380)	<u><b>3/11/2015</b></u>	<u>Conference/Seminar</u>	<b>360</b>	Ultrafiltration, reverse osmosis, ion exchange, and activated carbon.
Wastewater Math(9377)	<u><b>3/17/2015</b></u>	<u>Conference/Seminar</u>	<b>360</b>	Prepare for the math portion of wastewater exams and is also good basic review of treatment math.
Wastewater Review(9378)	<u><b>3/18/2015</b></u>	<u>Conference/Seminar</u>	<b>720</b>	Prepare for wastewater exams.
Practical Process Control(9374)	<u><b>3/26/2015</b></u>	<u>Conference/Seminar</u>	<b>360</b>	Determining wasting rates, fixing bulking and foaming problems, and improving ammonia removal.
Water Chemistry(9379)	<u><b>5/12/2015</b></u>	<u>Conference/Seminar</u>	<b>360</b>	Fundamentals of water chemistry. 5/12/15 at Merrillville Comfort Suites; 5/14/15 at Indianapolis Wingate.
Treatment of Oils(9372)	<u><b>5/13/2015</b></u>	<u>Conference/Seminar</u>	<b>360</b>	Emulsion breaking, oil water separators, grease traps, dissolved air flotation, ultrafiltration, centrifuges, and oil and grease testing.
Sampling and Flow Measurement(9376)	<u><b>6/9/2015</b></u>	<u>Conference/Seminar</u>	<b>360</b>	Learn the proper techniques to take samples and how the different type of flow meters work.

### Water Research Foundation(1022)

Course Name and ID Number

Effective Date

Course Format

**Total Approved**

Minutes

Description:

# Drinking Water Courses for Renewal Training Credit

Reservoir Mngmnt for Supply Planning & Water Qual(5347)      7/17/2012      Operator's Group Meeting      90      Latest Water RF research on reservoir management - from 2012 AWWA Annual Conference in Dallas.

## Water Well Solutions(918)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Water Well Pump School(4280)	<u>3/14/2011</u>	<u>Lecture</u>	<u>60</u>	Training on water well pump preventative maintenance and trouble shooting pump problems. Discussion on common water well, pump failures and preventing costly failures. Talk about water well issues, bacteria, sanding, specific capacity, and cost effective solutions. LS

### Total Approved

## West Chicago, City of(527)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Operator Basics Training(7206)	<u>4/16/2013</u>	<u>Computer Based Training</u>	<u>780</u>	Self Directed CD Rom

### Total Approved

## Willing Water Works(46)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Hydrant and Valve Maintenance(9174)	<u>6/25/2015</u>	<u>Operator's Group Meeting</u>	<u>120</u>	hydrant and valve maint
IRWA(9175)	<u>8/27/2015</u>	<u>Operator's Group Meeting</u>	<u>180</u>	IRWA
Locating and Equipment(9176)	<u>10/22/2015</u>	<u>Operator's Group Meeting</u>	<u>120</u>	locating and equipment

### Total Approved

## Wisconsin Wastewater Operator's Association(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Wisconsin Wastewater Operators Association Souther(9403)	<u>5/14/2015</u>	<u>Operator's Group Meeting</u>	<u>300</u>	Bio-P; Digestion and Dewatering; Digester Mixing and Biogas Storage; Energy Savings, Public Outreach Education; WW Inspections; Beloit WPCP History and Introduction

### Total Approved

## Woodard & Curran Inc.(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>	<u>Minutes</u>	<u>Description:</u>
Confined Space Entry Training(7775)	<u>10/14/2013</u>	<u>Classroom and Hands-on</u>	<u>300</u>	Confined space, hazards, duties and qualifications, rescue and EM services, safe entry, permits, ventilation, retrieval equipment, non-entry rescue, alternate entry, hands on of calibration of air monitors, and set up equipment with entry simulation. Test required and must pass. No partial credit.

### Total Approved

# Drinking Water Courses for Renewal Training Credit

Qualified Electrical Worker Training(7774)	<u>10/14/2013</u>	<u>Classroom and Hands-on</u>	<u>360</u>	Electrical qualifications; hands-on testing of Arc rated tools; digital multi-meters; hands-on testing of digital multi-meters; electrical work practices. This is a refresher trainer held every 3 years at Monmouth IL Public Works. Course test and passing grade required for credit.
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## Wunderlich-Malec(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>
SSWWA Meeting Sept 8, 2014 Wunderlich - Malec(8769)	<u>9/18/2014</u>	<u>Operator's Group Meeting</u>

### Total Approved

<u>Minutes</u>	<u>Description:</u>
<u>60</u>	System Integration of MCCs, VFDs, and RVSS, motor starting techniques.

## Xylem Water Solutions(0)

<u>Course Name and ID Number</u>	<u>Effective Date</u>	<u>Course Format</u>
Centrifugal Pump Education Class(7091)	<u>5/1/2013</u>	<u>On-line Class</u>

### Total Approved

<u>Minutes</u>	<u>Description:</u>
<u>360</u>	Pumps