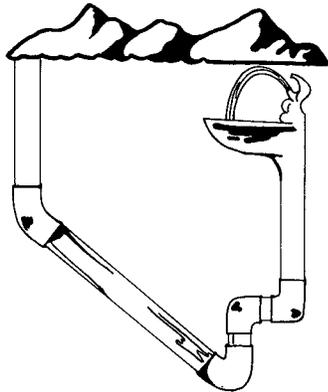


Water Lines



Water Lines is the resource newsletter and calendar of the Nevada Drinking Water and Wastewater Training Coalition.

Volume 31 Winter 2008 Issue

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Focus on Northern Nevada

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Featured Operator: Mike Ariztia of SVGID

By Joe Beard Jr., Farr West Engineering

Mike Ariztia started in the Water Industry in 1997. He applied for an entry-level position with the Sun Valley General Improvement District (SVGID), and got the job.



Mike has held several positions at SVGID. He began his service as a Service Technician I. He has also served as a Service Tech II, and III.

Mike was trained by SVGID, and sought Certification by the State. After passing the exam, Mike was certified as a Distribution Operator I. Mike kept gaining experience and studying for each exam. He was later certified as a D2, and D3. He currently holds a D4 Operator Certification.

Mike also held the titles of Inspector and Field Supervisor for SVGID. His responsibilities included inspection of subdivisions under construction, and participation in the plan review process.

More recently, Mike has been promoted to Public Works Director for SVGID. He enjoys facing new challenges every day and learning as the utility evolves.

While at SVGID, Mike has overseen a Meter Retrofit Project, upgrading over 6,000 service connections to radio-read meters. This enabled the SVGID to more efficiently serve the customer base of approximately 20,000 residents.

New projects on the horizon for SVGID include future subdivisions and commercial projects. Maintenance programs, such as GPS location of key system features and valve exercising also require attention. Training of SVGID Staff and support for SVGID Operators seeking Certification also keep Mike busy.

Mike is also active in The National Guard. After spending five years in the Army, Mike has been a member of The National Guard for the past fourteen years. With tours in Iraq and Afghanistan, Mike learned about his own abilities and leadership skills.

The Sun Valley General Improvement District was recently recognized for outstanding support of The National Guard. SVGID was honored as a Freedom Award recipient for their dedication to employees in the armed services. Mike appreciates the support shown to him by his employer when called to active duty.

Mike also has a wife and three kids to take care of. He enjoys spending time at home with them, attending many soccer games.

Did I mention that Mike also has a Back-Flow Tester Certification and a Cross-Connection Control Certification? There is always something more to learn...

Safety Zone: Prevention and Treatment of Insect Bites

By Stevan Palmer, RCAC

Did you know that in the US, over 36,000 injuries or illnesses were caused by insect and arachnid (spider) bites between 1992 and 1997? Outdoor workers, including water operators, are among the most frequent victims of stings or bites. Most insects and spiders are reclusive, and do not attack unless provoked. They may bite or sting if they feel their hive or nest is threatened, or if they become trapped between skin and another surface.

Insect bites – Bites or stings from insects are common, and often result in redness and swelling at the injured area. Insects inject venom that can sometimes cause a life threatening allergic reaction, called anaphylactic shock. Multiple stings may increase the likelihood of an allergic reaction, but death from a single sting is possible. Most people are not allergic to stings, although deaths from bee, yellow jacket, wasp, hornet and fire ant stings are three to four times more common than deaths from snake bites. Bees, yellow jackets, and wasps like to nest in undisturbed, enclosed spaces such as walls and utility boxes. Yellow jackets become particularly aggressive in the fall months, and may attack anybody in the vicinity of their nests. Fire ants, found in Southern Nevada, are very aggressive, and will attack anything that disturbs their mounds.

The best protection against bites or stings is avoidance. Be aware of where these insects tend to nest, and stay away if possible.

If bitten or stung by these insects, watch for signs of a serious allergic reaction, including difficulty breathing, faintness, swelling of the throat or tongue, or a large localized reaction (redness greater than 10 inches across). Seek immediate medical attention if you experience symptoms of an allergic reaction, or if you have a prior history of allergic reactions to insect bites. Remove any stingers remaining in the skin by scraping sideways with a thumbnail. Do not try to pull the stinger out.

Spider bites – Most spiders in the western US are harmless to people with the exception of the Black Widow and the Brown Recluse spider. Both of these venomous spiders are relatively non aggressive, and prefer to live in dry, dark, out of the way places. They may be found indoors in dark corners, boxes, papers, and even clothes, or outdoors in rocks or around buildings. Black Widow spiders, along with their egg sacs, are frequently found inhabiting meter vaults throughout Nevada in the warmer months, often in large numbers. Brown Recluse spiders are more commonly seen in Southern Nevada. The UMC Medical Center in Las Vegas reports treating two or three Brown Recluse bites a week during the summer months.

As with insects, the best protection against arachnid bites is avoidance. Clean out

spider webs in utility vaults and other enclosed spaces with a stick or other tool before you place any part of your body inside the space. Wear long sleeved shirts and gloves when working inside small enclosures. Clean and sweep out webs in and around utility buildings regularly.

Black Widow bite symptoms include local pain at the bite, followed by severe muscle cramping, abdominal pain, weakness, and tremor. Most Black widow bites are usually not life threatening, although children and the elderly are more seriously affected.

Deaths from Brown Recluse bites are also rare. Symptoms include a stinging and intense throbbing pain at the bite location. This pain may be immediate, or develop 2-3 hours after the bite. A small blister forms, and the area around the bite becomes swollen. Later symptoms include restlessness, feverishness, and difficulty sleeping. The spider venom eventually causes skin around the bite to slough away (necrosis), gradually exposing underlying muscle tissue. These wounds are often very slow to heal. If you suspect you have been bitten by a Brown Recluse, it is useful to capture the spider if possible for later identification.

A few simple precautions can prevent injury or illness due to stings and bites. Be aware of the hazards from insects and spiders, and protect yourself.

The Spigot Q & A: Focus on Chemistry



Regulatory Update: Exam Changes

By Steve Brockway, NDEP

Q 1. Negatively charged particles of an atom are called:

- a. Neutrons
- b. Electrons
- c. Protons
- d. Elements

Q 2. Substances that can not be broken down into simpler substances by ordinary chemical reactions are called:

- a. Atoms
- b. Compounds
- c. Elements
- d. Molecules

Q 3. A particle with a negative or positive charge is referred to as a(n):

- a. Electron
- b. Proton
- c. Ion
- d. Isotope

Q 4. A bond which is found within water molecules is a(n):

- a. Hydrogen bond
- b. Ionic bond
- c. Covalent bond
- d. None of the above

Q 5. Which of the following best describes the most acidic solution?

- a. pH 4
- b. pH 5
- c. pH 7
- d. pH 14

Starting with the March 13, 2009 exam, the CA/NV Section AWWA will not be writing Operator Certification exams for Nevada.

To help reduce the workload and to maintain a quality exam, the AWWA will be procuring exams from the Association of Boards of Certification (ABC).

Currently, the AWWA spends a great deal of time and effort writing questions, verifying them and getting the exam validated by the EPA. Nevada is the only state that AWWA writes exams for, so moving to ABC will free up personnel to perform other duties.

The change will not affect the application process. However, there may be a change in how the scantron sheet is filled out. This is the sheet where you fill out your name, mailing address, etc.

AWWA has taken a close look at utilizing the ABC exams, and both AWWA and Nevada believe this is a positive move for Nevada operators.

ABC has been writing exams for over 30 years, and is

recognized by most states and several foreign countries.

Conversion formulas will still be included with the exam, and the formula sheets contain all of the formulas you will need. AWWA will still conduct training, but based on the ABC exam.

With the ABC exams, operators will see slight changes in the range of knowledge and scope of study. The new range of knowledge and study materials can be found at -www.ndep.nv.gov.

The ABC does test for regulation knowledge, where the AWWA does not. When you get your results back after taking the ABC exam, included will be a list of strengths and weaknesses in the exam. This will help in knowing which areas of the exam you did well in, or not so well.

At this time, I do not know what the turnaround time will be, but should be close to the time results are currently getting to the operators.

All said, this change will be a positive move for the Operators in Nevada.

Did you know that NDEP will accept a basic community college level course in chemistry (such as Chemistry 101) as credit towards your continuing education for **all** levels of water operators? [Answers: 1.b, 2.c, 3.c, 4.b, 5.a.](#)

Chemistry Quizzes: 1. <http://lrn.org/Content/Quizzes/Qchemistry.html> 2. <http://chemistry.about.com/library/weekly/blatomquiz.htm>

Interesting info about chemistry: <http://clearlyexplained.com/technology/science/chemistry/index.html>

The Spigot is prepared by Crystel Montecinos, Environmental Consultant for Tigren, Inc. You can contact her at 775/240-1396

Featured System: Chalk Bluff Water Treatment Facility

By Joe Beard Jr., Farr West Engineering

The Chalk Bluff Water Treatment Facility provides drinking water for the residents of the Reno / Sparks area, and is operated by the Truckee Meadows Water Authority (TMWA). The Chalk Bluff Plant is a surface water treatment plant, fed by the Truckee River. Water is diverted from the river via flumes and a series of pumps, and fed to the Chalk Bluff Treatment Facility.

The facility was built in 1993, expanded in 1995 and again in 2005. The plant has the potential to be ultimately expanded to 120 MGD. Chalk Bluff currently produces up to 85 million gallons per day during peak season. During winter months, the plant treats approximately 40 million gallons per day, with 33 MG going to customers and 7 MG for the recharge program. Recharge injects treated surface water back into the underground aquifer through its wells to improve water

quality and to bank the water for use in drought years.

The treatment process at Chalk Bluff includes pre-chlorination and pre-settlement ponds for grit and sand removal, the addition of CO₂ to enhance the coagulation of poly-aluminum chloride at the rapid mixer, flocculation and sedimentation basins, filtration and chlorination. Finally soda ash is used to increase the pH of the treated water to reduce corrosion in the distribution system.

The Operators who work at Chalk Bluff describe the job as both challenging and rewarding. One challenge that Operators must face every winter is dealing with river ice. Ice from the Truckee River can build up around the intakes and restrict the flow of water into the plant. Operators can spend up to four to six weeks each winter closely monitoring the intakes and

breaking up ice flows.

Other challenges faced by Operators at Chalk Bluff are the periodic rain storms and flood events on the Truckee River. High turbidity events often accompany large amounts of rain in short periods of time, thus dramatically affecting the water quality of the river. Turbidity is greatly increased from a normal range of 1 to 2 NTU to as high as 1000 NTU. In anticipation of such events, operators take action by filling tanks and reservoirs to maximum levels enabling them to cut back plant flow rates and allow as much dirty water as possible to pass by the plant in the river. This greatly reduces the impact on treatment processes and lowers operating costs.

During such events, operators turn to a variety of different methods to determine optimum treatment dosages of chemicals. Tools operators use include online streaming current detectors and a bench top zeta potentiometer. Streaming current detectors take a continuous sample of influent water just after the primary coagulant is added at the rapid mixer. The meter continuously measures the charge of the water. Increased turbidity will result in a more negative charge and operators will react by increasing coagulant dosages to maintain optimum treatment. A zeta potentiometer



*At left:
Inside the Chalk Bluff
Water Treatment Facility*

Featured System: Chalk Bluff Water Treatment Facility

(Continued from page 4)



performs a similar function in the laboratory. A grab sample is taken and a special sample cell is filled. A cathode and anode are placed across the cell. A processor applies a small current across the cell and the particles are observed by the operator under a microscope. The processor determines the relative charge of the water, allowing operators to fine-tune chemical dosages as necessary.

The most recent challenge operators faced occurred when the flumes that convey river water to the facility were damaged by earthquakes. Some wooden sections of the flumes were destroyed, and the flumes were rendered inoperable. The entire TMWA team was involved in figuring out how to provide water to the plant while the flumes were being repaired. TMWA brought in 13 large diesel-powered pumps, and created a temporary force main to deliver water to the treatment plant. These

Above:

Truckee River Ice

Below:

Flood of 2005 - 2006

pumps were manned by operators around-the-clock. The team also took actions to help ensure the impacts on nearby neighborhoods were minimized. Pumping a majority of water during the day helped abate night-time noise. A temporary sound wall was also constructed to further reduce sound levels. The flumes have since been repaired, although the flume is now operating at a temporarily reduced capacity.

The long term solution includes a new enclosed pipeline that will run parallel with the railroad tracks on the north side of the river. Once completed, the new conveyance will have a capacity of 90 million gallons per day, as compared to the old wooden flumes which carried 55 million gallons per day to the plant, before they were damaged. The project will provide more capacity, along with a higher degree of reliability.



Wastewater Operators Certified



These wastewater operators passed certification exams for treatment and collection grades 1, 2 and 3. Congratulations to all !

Treatment grades 1, 2 and 3

Grade 1: Kenneth Buck, Terry Capron, David Joseph, Robert Zadow

Grade 2: LaToya Smith

Grade 3: Eric Gibbs, Steven Gibbs

Collection grades 1 and 3

Grade 1: Adrian Johnson, Artie Shaner, Dennis Southfield

Grade 3: Jeffrey Holzgrafe

Wastewater Laboratory Analyst grades 1 and 2

Grade 1: Mark Lowe, John Witherspoon

Grade 2: Mark Lowe, Oscar Sanchez

Industrial Waste Inspector grade 1

Grade 1: Michael Bergamini, Jon Munson

Biological Industrial Waste grade 1

Grade 1: Jeff Lambeth

New Water Operators Certified



These water operators passed water certification exams for distribution and treatment grades 1, 2, 3 and 4. Congratulations to all !

Distribution grades 1, 2, 3 and 4

D-1: Christopher Allred, Kenneth Angst, Christy Broadway, Claude Church, Cameron Dunford, Carlos Esparza, Don Geary, Jaosn Hudak, Nathan Johnson, Jennifer Morgan, John Pardick, Tahnee Praiswater, Scott Schoenfeld, Bryan Seifarh, Lisa Simcoe, Scott Underwood, Steven Wilkinson, Ronald Winward

D-2: Terrance Armstrong, Tiffany Bowling, Augustine Calleros, Jason Caughron, Wekianos Hailu, Theodore Jost, John Kinnie, Cameron Klug, William McMahan, Doyle Nicholson, William Tempelton, Ted Turner

D-3: Carey Billante, Richard Giltner, Curtis Hafen, Brett Reed Jr.

D-4: Kenneth Howell, Michael Nevarez, Michael Witt

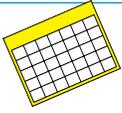
Treatment grades 1, 2 and 3

T-1: Christy Broadway, Brian Burris, Ole Chavez III, Brandon Garden, Brian Gibbs, Jennifer Morgan, Byran Moss

T-2: Philip Abbott, Anthony Carrol, Daniel Chan, Kuda Mutama, Adam Nabors

T-3: Steven Henderson, Jeremy Lustig

The NWEA Certification Board is pleased to announce that computerized exams are now being offered! Pencil and paper exams will continue to be offered quarterly for the same fees.



Training Calendar for 2009

January 14 - Yerington - Automatic Control Valves. Contact NvRWA at 775/841-4222 or nvrwa.org for more information.💧

February 10-12 - Fallon - Video training on electrical topics. Contact NvRWA at 775/841-4222 or nvrwa.org for more information.💧

February 17 - Online - Water Distribution Math Review conducted by RCAC. For more information, contact Mark Wiseman at 800/283-7222.💧

February 18-19 - Sacramento - Water Distribution Grades 1 & 2 Certification Exam Preparation conducted by RCAC. For more information, contact Mark Wiseman at 800/283-7222.💧

February 25 - Reno - Wastewater Distribution Grades 1 & 2 Certification Exam Preparation conducted by RCAC. For more information, contact Stevan Palmer at 775/750-1884.💧

March 10-13 - Stateline - NvRWA Training and Technical Conference. Contact NvRWA at 775/841-4222 or nvrwa.org for more information.💧

March 10 - Reno - Distribution Fundamentals Review for D1 and D2 conducted by AWWA. Contact Jennifer Bauza at 909/481-4688 x 2113 or <http://ca-nv-awwa.org/CA-NV/calendar> for more information.💧

March 11 - Reno - Distribution Fundamentals Review for D3 and D4 conducted by AWWA. Contact Jennifer Bauza at 909/481-4688 x 2113 or <http://ca-nv-awwa.org/CA-NV/calendar> for more information.💧

March 12 - Reno - Treatment Fundamentals Review for T1 - T3 conducted by AWWA. Contact Jennifer Bauza at 909/481-4688 x 2113 or <http://ca-nv-awwa.org/CA-NV/calendar> for more information.💧

March 13 - State Water Certification Exams (Check NDEP/BSDW website. Fee and application due 45 days prior to Exam date).💧

April 20-22 - Panaca - Video training on electrical topics. Contact NvRWA at 775/841-4222 or nvrwa.org for more information.💧

May 12 - Online - Water Distribution Math Review conducted by RCAC. For more information, contact Mark Wiseman at 800/283-7222.💧

May 13-14 - Sacramento - Water Distribution Grades 1 & 2 Certification Exam Preparation conducted by RCAC. For more information, contact Mark Wiseman at 800/283-7222.💧

Ongoing - Online - Various Training Topics offered by RCAC. For more information, contact Stevan Palmer at 775/750-1884.💧

Useful Training Contacts

University of Nevada, Reno CABNR & Cooperative Extension

UNR videoconference classes for water system operators and managers are available in most communities. To request a workshop in your area, call Crystel Montecinos at 775/240-1396 or e-mail: xtelle@aol.com.

Community College of Southern Nevada Wastewater & Water Technology Program

Info: LeAnna Risso, 702/434-6600 ext. 6418.

WWET Training in Clark County

Training for water treatment plant and distribution system operators, wastewater treatment plant and collection system operators, and other professionals working within these fields. Info: Jeff Butler 702/258-3296; see www.wwet.org for a current training calendar.

State of Nevada Water Certification Exams

All exams will be proctored on the date listed. Applications and fees are due to the state (Steve Brockway) 45 days before exam dates. A proctor will contact examinees to schedule testing. Contact Ron Penrose at 775/834-8017 for information about 2008 exam dates.

Water exams are scheduled in the first three calendar quarters of each year at locations throughout the state. Info: 775/687-9527 or http://ndep.nv.gov/bsdw/cert_home.htm. Additional info: 775/465-2045 or www.nvwea.org.

Nevada Rural Water Association

Please send requests for training through nvrwa.org, or call 775/841-4222.

💧 This symbol designates Nevada Division of Environmental Protection pre-approved training for certification renewal contact hours.

Change of Address Requested

Operator Certification Administrators have noted that a large amount of certificates are being returned to the State, because Operators have not updated their mailing addresses after moving.

Operators are asked to promptly notify the State when they have changed addresses.

Please contact Steve Brockway at 775-687-9527 or sbrockway@ndep.nv.gov.

Nevada Drinking Water and Wastewater Training Coalition

**American Water Works Association
California/Nevada Section**
www.ca-nv-awwa.org
909/291-2101

Indian Health Service
Dominic Wolf, 775/784-5327
NDEP

<http://ndep.nv.gov>
Adele Basham, DWSRF, 775/687-9488
Michelle Stamates, AB 198 Water
Grant Program, 775/687-9331
My-Linh Nguyen, Wellhead Protection,
775/687-9422

Nevada Rural Water Association
www.nvrwa.org
775/841-4222

Bob Foerster, Executive Director
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Curtis Duff
Teresa Taylor
Andy Andersen
Dan Tarnowski
David Willard

Public Utilities Commission of Nevada

www.puc.state.nv.us
Mark Clarkson, P.E., Water
Engineer, 775/684-6132
Leslie Tench, Senior Engineering
Analyst, 775/684-6140

Bureau of Safe Drinking Water
<http://ndep.nv.gov/bsdw/index.htm>
775/687-9520
Jim Balderson, SWAP, 687-9517
Steve Brockway, CEU approval, 687-9527
Patty Lechler, 687-9529
Bert Bellows, arsenic, 687-9525

Nevada Water Environment Association
www.nvwea.org
775/465-2045
Starlin Jones, 775/861-4104
Eric Leveque, 702/792-3711

Rural Community Assistance Corporation
www.rcac.org
775/323-8882
Stevan Palmer, 775/750-1844

**U.S. Environmental Protection
Agency, Region 9**
www.epa.gov/region09
Sara Jacobs, 415/972-3564

USDA Rural Development
www.usda.gov/rus/water/index.htm
Cheryl Couch, 775/887-1222, ext. 22
Kay Vernatter, 775/887-1222 ext. 28

**University of Nevada, Reno
Dept. of Civil Engineering**
Dean Adams, 775/784-1474

Tigren, Inc.
Crystel Montecinos, 775/240-1396

**UNR Colleges of Natural Resources
and Environmental Science, and
UNR Cooperative Extension**
www.unce.unr.edu/swp
Mark Walker, 775/784-1938
NDEP Board for Financing Water Projects
<http://ndep.nv.gov/bffwp/index.htm>
**Water/Wastewater Education and Training
Consortium of Southern Nevada — WWET**
www.wwet.org
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VACANT

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