



FALL 2015 • Newsletter of Arizona Water Well Association for our Members and Friends

AZWWA MEMBERSHIP MEETING



Saturday, October 24, 2015

Location: Kelly Pipe

1617 S. 40th Ave.

Phoenix, AZ

(see page 5 for map)

8:30am- Meet and Greet/Networking

9:00am – Guest Speaker

Franco Godoy, HPC/WellJet General Manager

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*Contact Debbie Hanson Tripp to submit
material and/or photos for the Newsletter.*

Message from the President

Dear Friends:

First of all, it was great to see everyone who attended the picnic and chili cook-off. All of the contestants did a great job and the chili was delicious. I would like to thank all the volunteers and participants who contributed to this fun event. Thanks for a great time! I would also like to thank everyone who donated to the auction; it turned out to be very successful and we appreciate the effort. Also, on Friday's membership meeting, Mr. Jesse Richardson gave an excellent presentation and I would like to thank him for the great insight and information.

With that being said, all of us on the Board of Directors are looking for people interested in taking a position on the Board. If you are interested, please contact Debbie Hanson Tripp directly at admin@azwwa.org, or you are welcome to attend any one of our meetings.

The next meeting will be held on Saturday, October 24, 2015 at 9:00am. at Kelly Pipe, located at 1617 S 40th Ave. in Phoenix. Our guest speaker will be Franco Godoy, HPC/WellJet General Manager, who will be talking about water well development and rehabilitation. We look forward to seeing you there!

Lastly, as we all know, it is already Fall and the Holidays will be here before we know it. I would like to wish everyone safe travels and Happy Holidays this coming Season.

All My Best to You and Yours,
Nate Little
President

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In Times of Drought, Well Drillers In High Demand Across Arizona

Reprinted from an interview on National Public Radio in July with Ralph Anderson of Arizona Beeman Drilling. This is a partial reprint of his interview due to space but you can read it in full at <http://kjzz.org/content/166487/times-drought-well-drillers-high-demand-across-arizona>.



(Photo by Will Stone - KJZZ)

Ralph Anderson runs Arizona Beeman Drilling, one of the major water well drilling companies in the state. Because of the drought, the industry is seeing growing demand from water companies and farmers.

Ralph Anderson stands next to a rig 60 feet high and capable of drilling a well 2,000 feet deep. It once occupied an oil field, but now sits in a neighborhood outside Phoenix in search of the desert's most valuable resource: water. At this particular drill site, they are putting the final touches on a well, about a thousand feet deep, that will eventually make its way into the taps of Valley residents. Dirty water spills through a metal grate, known as a shale shake.

"It's been about a four- to five-year recovery, but now because of the drought in California that stripped away a lot of the drill rigs," Anderson said. That leaves people like Anderson in Arizona holding the bag. Many cities and water companies are trying to beef up their well infrastructure, but the industry has flocked to California's Central Valley.

Brian Betcher manages the Maricopa-Stanfield Irrigation and Drainage District, south of Phoenix. His growers rely on water piped in from the Colorado River via the Central Arizona Project and much of that could get cut back in 2017, meaning Betcher has to get his wells in order. "There are only a few people that are expert enough to do repairs to old wells. So, you have to grab them when they're available," said Betcher.

Arizona has about 9 million acre feet of water banked away underground — that's how much residents in the Phoenix metro area use in close to a decade.

Given all that water and the growing demand, Ralph Anderson expects his drill company will be busy for years to come. "We're looking at water being our lifeblood. It's something we can never get enough of," Anderson said.

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Senate Appropriations Bill Could Modify Silica Rulemaking

June 2015 - During a mark-up of the U.S. Senate's appropriations bill providing funding for the Occupational Safety and Health Administration, Senator John Hoeven (R-North Dakota) introduced an amendment that would require OSHA to conduct a small business review and commission an independent study to further examine industry costs of compliance with a final silica rule.

The amendment required the study and small business review be completed before a new rule could be promulgated. It was adopted in the Senate, and the bill will now go to the Senate floor for consideration. A similar amendment has not yet emerged in a House of Representatives version of the bill.

NGWA filed comments on the proposal silica rulemaking in 2014, highlighting key differences between water well drilling and blast hole or quarry drilling.

NGWA impact: Because of the number of NGWA members who are small businesses, the amendment is a favorable development in ensuring small business owners have been adequately considered in drafting a final rule on silica. Any new regulations on silica would likely apply to water well contractors to some extent due to the amount of silica used and created during the drilling process.

First U.S. Tar Sands Mine to Open in Utah

Compiled by Amy White, Associate Editor
Reprinted from WorldWide Drilling Resource Enews Flash

Book Cliffs in eastern Utah is a remote area rich in minerals, oil, and gas resources.

Canadian-based company U.S. Oil Sands (USO) is set to open the first tar sands mine in the United States at this location.

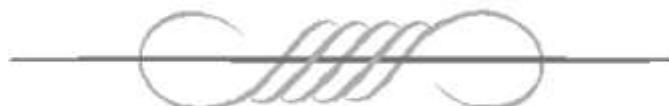
USO invested \$100 million to obtain rights to 50 square miles in the vicinity of Books Cliff. The company claims it will have the smallest land footprint of any commercial oil sands mining project, due to a revolutionary new extraction process. By simultaneously mining and reclaiming the same plot of land, USO aims to return the land back to its natural state far sooner than traditional methods.

This reclamation process is a first in oil sands mining. USO estimates their surface footprint will be 90-95% smaller than typical oil sands mining projects (on a per barrel basis). The company will also use a biodegradable, nontoxic solvent derived from citrus fruit to extract bitumen from mined oil sands without the need for tailings ponds.

A significant portion of imported bulk petroleum in the U.S. originates in the sands of northeastern Alberta. This will be the first project of its kind in the U.S. in more ways than one.

Utah has an estimated 12 to 19 billion barrels of oil resources, mostly located on public lands. USO plans to start producing 2000 barrels of oil per day from the state later in the year.

Phases of the simultaneous mining/reclamation process is set to begin in Utah this year.



AZWWA Welcomes New Safety Director



John Flower, Safety Supervisor with National EWP, graduated from Dartmouth College in 1999 where he played Division IAA football. After graduation, he headed to Alaska and started working in the Prudhoe Bay oilfield as a floor hand and later, on an offshore rig in Cook Inlet, AK. In 2004, he traveled to the U.S. South Pole Station in Antarctica as part of a scientific ice drilling program. He spent three Antarctic summers drilling 10,000 ft. holes into the ice to create a neutrino telescope. When John wasn't drilling in Antarctica, he spent time on projects ice drilling in Greenland and also out on the sea ice within 13 miles of the North Pole.

In 2007, John began working for Boart Longyear as a rotary driller in the Piceance Creek oilfield in Colorado as well as other areas across the western U.S. In January 2011, he joined National EWP at their AZ office as a Safety Supervisor. John's most important job is training and working with the crews out in the field. He's able to use both his experience as a driller and his formal training (which includes being a certified third party crane trainer for the Crane Institute of America) to ensure that the crews understand how to work safely.

At our July meeting, John said he is honored to be able to work with the AZWWA as our Safety Director and looks forward to being a safety resource for our members. His contact information is John Fowler, National EWP, 1200 West San Pedro Street, Gilbert, AZ 85233; PH:480.558.3500. Cell: 480.352.2041, Email: jfowler@nationalewp.com



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Map to October 24 meeting location

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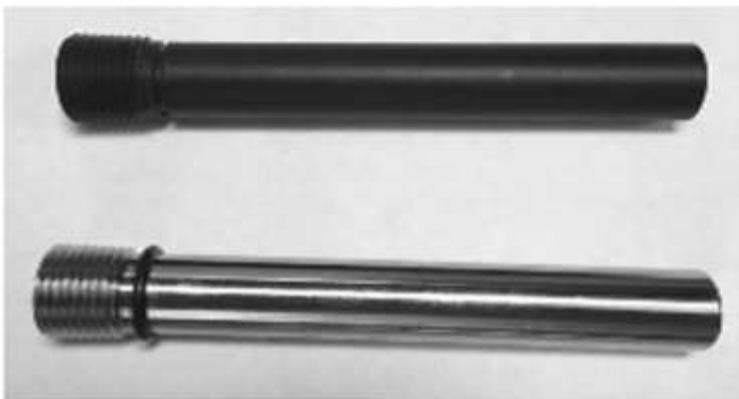
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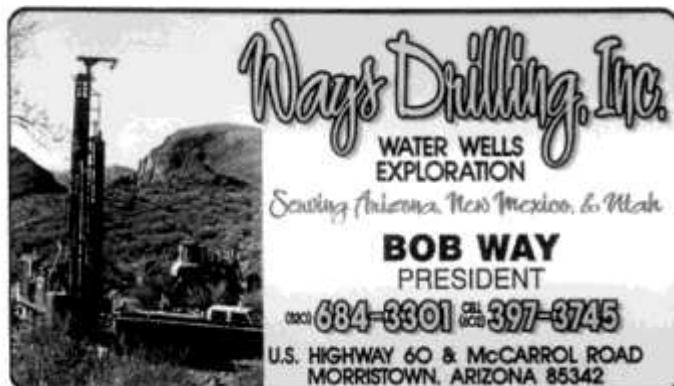
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No One Drills Water as Well

The image shows a large, white industrial drilling rig with a tall mast and a circular platform at the top. It is positioned in a field with some sparse vegetation and trees in the background. The sky is clear and blue.

AzWWA Membership Meeting

July 24, 2015

Goldwater Lake, Prescott



Guest Speaker, Jesse Richardson, Jr. (L) and AZWWA President, Nate Little (R)

Our July meeting and annual steak fry was held at Goldwater Lake in Prescott the evening of Friday, July 24th and what a great turnout!!! Our Guest Speaker, Jesse Richardson, Jr. Esq., Policy and Research Advisor for the **Water Systems Council** talked about ‘Updates on Legal and Legislative Issues Impacting Arizona Water Wells, Pending Lawsuits, Calls for Reform, Exempt Well Litigation & Texas v. New Mexico, etc.’ His talk was entertaining and very informative which generated discussions both later that evening and at our picnic the next day about how some of these issues may – or will – affect us.

Another subject brought up was how some manufacturers are selling to local stores or facilities instead of through qualified, knowledgeable and professional water well distribution networks. With the public **buying products from these ‘local’ stores, they are bypassing our water well distributors**, wholesalers and contractors so our members not only lose revenue from the sale of these products but also income generated during installation and/or maintenance. This discussion raised questions as to what we can do about it because of the way some of these manufacturers are doing business, is cutting into the livelihood of our members.

Several other issues were discussed and John Fowler, National EWP, our new Safety Director, was introduced. He was received with welcoming applause and comments.

Gabe Tregaskes volunteered to become the Secretary/Treasurer for the AzWWA. Welcome and thank you, Gabe, for volunteering.

Our next meeting was set for October 24th in Phoenix. Kelly Pipe volunteered to host this meeting so we look forward to seeing many of you there.

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The AZWWA would like to say

“THANK YOU”

to Gicon Pumps and Equipment

for providing lunch at our picnic and grilling the Burgers and Hot Dogs!!



and

“THANK YOU”

to Mitchell Lewis & Staver

for providing all our beverages



Why Are Well Drillers Judged on Performance Instead of The Quality of Construction As Other Contractors Are?

By Gary L. Hix, R.G., CWD/PI

Water well drilling may be the only contracting trade that has their work evaluated and judged on performance (i.e., gallons-per-minute and water quality) rather than on the quality of the work that went into constructing the well itself. Water wells are too often rated and ranked according to GPM and water quality while almost nothing is mentioned about the challenges that were overcome by the contractor. Organizing and bringing together all the necessary equipment, man power, materials and supplies in order to accomplish the task of making a water well that delivers groundwater is nothing short of amazing.

Few people have a true respect for what a water well contractor actually accomplishes. We bring life sustaining water from deep underground and deliver it to the kitchen table and the children's bath. It's truly amazing work that is done by only a select few. Where would dry states like Arizona be without the water well contractors that have been drilling wells for people to drink from ever since we were a Territory? Yet, water well drillers contribution to the growth and development of this state is barely recognized in the history books or public journals.

What is often mentioned is the performance of a given well in terms of the GPM that it either does or does not produce. Is it fair to hold the well driller accountable to a performance standard of an object that he contracted only to be constructed on the land owner's property? A well driller will almost never guarantee water well quantity or quality when offering to drill and construct a water well. How can he? He didn't make the aquifer and he didn't put the water in it. The performance of a water well is far more dependent on the aquifer than the drilling and well construction process. The quality of the water often depends on how long the water has been in the aquifer and what minerals are present in the aquifer materials. If time and nature did not put a supply of quality water in the aquifer beneath the owners land, the well driller is not to blame.

I believe the reason that people are so eager to judge a water well contractor by the performance of the well he just drilled is that there is so little to see of the labor and materials that was provided. About ninety-five percent of what a water contractor provides and installs is out of sight deep in the ground. The owner doesn't have much to stand back and look at like they would if it were a house or a barn, so they look just at the wells performance.

As a former water well contractor, I can say that it's very disheartening to hear a home owner complain about a contractor's invoice for the water well just drilled and constructed on their land when it doesn't appear to measure up to their quantity or quality expectations. Unless there was a specific guarantee of well performance quantity or quality written into their contract before the well was started, then the proper judgment of the contractor's work is the actual construction of the well. The GPM and the water quality of a well are not the true measuring stick of a water well contractor's work.

As a water well consultant, and occasional expert witness, I have had to assist a few water well contractors explain this to dissatisfied well owners, and to judges, why a well's performance is what it is. A water well driller can't make a well that produces better than what the aquifer is capable of. To make a well be the best it can be for a given aquifer typically will cost the well owner more money than they're willing to pay for. Most home owners would rather take the best well they can afford. When an owner insists on going with the lowest bidder for their well, well then, that's often just what they get. Well performance and life expectancy of a well is often a function of the cost. The lowest bidder often provides the lowest quality of materials and work.

A water well can be a once in a lifetime construction effort and many people get into it without sufficiently understanding what it takes to make a good water well and/or what makes a good water well contractor. Most home owners don't know how to judge one water well contractor's price from another. But judging any well strictly on its performance after its done isn't giving proper credit for the amazing accomplishment it is. Whether it's a little or a lot, if you got water, thank the well driller!



Gary is a Registered Professional Geologist in Arizona, and a Certified Well Driller / Pump Installer by the National Ground Water Association and a certified Professional Geologist by the American Institute of Professional Geologists. He is Past President of the AzWWA and a former licensed water well contractor in Arizona.

AZWWA Member at Work



AZCA's DR-24 arrived in San Simone, AZ. for drilling a water well using the Dual Rotary method advancing 14-inch diameter Roscoe Moss casing.



AZCA's personnel ready to drill the 700 foot well while advancing the Roscoe Moss 14-inch casing. Left to right back row: Gary Hix, Roy Brown, Calvert Ashley, Jesse Eastin, Nealing down: Salvatore Servin, Luis Dominga



The 12-inch diameter DHH with special 14-inch plus under reamer bit for advancing the Roscoe Moss casing to 700 feet in bedrock.



Left: Close up of the 12-inch hammer and under reamer bit with fold out wings.



Right: Jesse grinding down the larger diameter Roscoe Moss casing to fit into the Foremost® dual rotary diverter

The AZWWA would like to thank everyone who donated items to our auction AND the winning bidders who purchased them!!!!

“Thanks” also to Nate Little (Arizona Beeman Drilling) and David Stuart (Preferred Pump & Equipment) for a great job conducting the auction.
It was a lot of fun!!!

“THANK YOU” everyone!



Nate Little, Arizona Beeman Drilling



David Stuart, Preferred Pump & Equipment

More pictures on page 29!

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If we don't have it, we'll find it!

How the Proposed WBGCA Would Work

Carol Broder Arizona Range News, September 23, 2015



Alan Seitz, chairman of the Willcox Basin Groundwater Conservation Area (WBGCA) group, shows a map of the basin to Rep. Martha McSally and her staff members Chase Kassel and Sarah Pacheco, during McSally's meeting last month with the Willcox-San Simon Natural Resource Conservation District.

Early in September, members of the Willcox Basin Groundwater Conservation Area (WBGCA) working group presented its concept to lawmakers and lobbyists in Phoenix. In February this year, the group proposed the WBGCA, which ultimately would have to go before the Arizona State Legislature.

A key component of the proposed WBGCA is that it would freeze existing large irrigation uses, but allow for converting "established larger irrigation rights to new uses with increased efficiency." "What we are proposing would change some opportunities," said Alan Seitz, the group's chairman. "It would create rights people don't have right now."

In the case of the Type-3 withdrawal authority, "when we transfer water throughout the valley further than 10 miles, we will have well impact reviews that have to be done. It will have to show that you're not adversely impacting your neighbor's well."

The group presented its proposal to State lawmakers in Phoenix on Sept. 2, so that the bill could be introduced in the 2016 legislative session by Rep. David Stevens.

Stevens, who has attended "about half" of the water group's meetings in Willcox, called the Phoenix meeting "productive," with leaders in the realty, agricultural and ranching communities discussing their issues. "The more people involved, the better the product," he told the Range News.

The water group received feedback on issues that had not been previously addressed in the WBGCA, Stevens explained. "There is still a long way to go. It's a work in progress. We're just trying to make sure that we're on the same path." He said that the WBGCA concept still has some opposition, but is progressing. "Anything worth doing is tough," said Stevens, adding, "Everybody's got to give up something."

Since the Groundwater Management Act of 1980, the State of Arizona has not had a third option on the books, something that the WBGCA group is trying to change. Currently, there are two available water management tools designed to directly manage groundwater withdrawal and use – Active Management Areas (AMA) and Irrigation Non-Expansion Areas (INA).

Groundwater withdrawn from inside an AMA may be subject to withdrawal fees, metering, annual reporting, conservation requirements and other provisions; while that withdrawn from inside an INA may be subject to metering and reporting, said Arizona Department of Water Resources (ADWR) Public Information Officer Michelle Moreno.

In October 2014, then-ADWR Director Michael Lacey and his staff began meeting in Willcox with a group of farmers, vintners, and Pearce-Sunsites area homeowners "to discuss water management strategies for this area."

What the water group is proposing is a third management area, not changing either the AMA or the INA. During its Sept. 2 presentation, the water group talked about specific groundwater withdrawal (irrigation) authorities. The WBGCA will create two different sub-types of irrigation authorities – irrigation grandfathered authority (IGA) and Low Water Use Irrigation Authority (LWUIA).

Irrigation Grandfathered Authority – Grandfathered Irrigation Rights

Existing groundwater uses on lands irrigated at any time in the five years prior to the creation of the groundwater conservation area (GCA) would be grandfathered in as irrigation grandfathered authorities (IGFAs).

The IGA and its associated certified acres would have a pumping limitation (water duty) of five acre-feet per acre per year. Irrigation measuring and annual reporting would be required. The shape of the certified acres is flexible – not limited to the exact historical acreage irrigated.

Field shapes may change as irrigation technology changes – square to circle, for example – as long as the lands are adjacent, the overall acreage does not increase and overall irrigation efficiency does not decrease.

(Continued on page 19)



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Modifications and mobility of the certified acres is also allowed for flood damaged or poor soils, as long as the new irrigated acre is within the same farm unit and overall acreage is not increased. An IGFA authority may be permanently retired in whole or in part, down to a 10-acre feet per year minimum.

IGFAs may be converted to a Type-3 authority in whole or in part, down to a 10-acre feet per year minimum, with a 50-percent reduction in volume at the time of the conversion.

At the time the GCA is created, lands with substantial capital investment qualifications would qualify as certified acres and receive an IGFA withdrawal authority.

Certified acres that have had their associated IGFAs retired or converted to a Type-3 that has been transferred from the original acres, may be brought back into production with the transfer of an appropriate irrigation authority with its annual pumping limit.

IGFAs have a one-year overrun allowance, where any volume exceeding the pumping limit must be made up the following year. The following year, the pumping limit is reduced by the volume of the previous year's overrun.

Irrigation Grandfathered Authority – Historical Exemption

For lands that were irrigated at any time in the 25 years prior – but not five years prior – to the GCA's creation, an IGFA authority may be issued for the historically irrigated acres with a total volumetric limit based on a water use of 2.5 acre feet per year, instead of five.

The resulting IGFA volume is fully portable within the historically qualifying acres, up to the IGFA's volumetric limit. Alternatively, upon request, ADWR may issue the land owner a Type-3 right of appropriate volume, based on this calculation, without the need to resume irrigation activities.

Metering or alternate use calculation and annual reporting are required.

Land owners must apply for the exemption, and put the approved irrigation authorities to use within five years after the GCA is established or the exemption expires.

IGFAs created under this exemption have a one-year overrun allowance, where the volume exceeding the pumping limit must be made up the following year. The following year, the pumping limit is reduced by the volume of the previous year's overrun.

An IGFA created under this exemption may be converted to a Type-3 in whole or in part, down to a 10 acre-feet per year minimum. A 50-percent reduction of the IGFA volume would occur at the time it is converted. An IGFA created under this exemption may be permanently retired in whole or in part, down to a 10 acre-feet per year minimum.

A Type-3 right created under this exemption may be transferred to the new owner in whole or in part, down to a 10 acre-feet per year minimum, for any allowable use; and may be permanently retired in whole or in part, down to a 10 acre-feet per year minimum.

Type-3s created under this exemption have a one-year overrun allowance, where any volume exceeding the pumping limit must be made up the following year.

The following year pumping limit is reduced by the volume of the previous year's overrun.

New low water use authority – Low water use acres

Lands more than two acres, which were not irrigated during the historical time frame(s), may be brought into cultivation with certain limitations.

The two new withdrawal authorities are known as low water use irrigation authorities (LWUIA), while the lands associated with them are known as low water use acres (LWU).

The new LWU acres must be irrigated using high efficiency methods and are permanently assigned a water use of 1.5-acre feet per acre. Creation of new LWUIA, without the conversion of other existing irrigation acres, are limited to a 10-percent increase of the total acreage determined to be historically irrigated five years prior to the GCA's creation.

New LWUIA authorities are limited to no more than 40 acres at a time. Once LWU acres are put into production (or significant improvements made) owners may apply for additional LWU acres.

There is no upper limit of new acres converted to LWU acres with extinguishment or transfer of IGFA irrigation authorities creating Type-3s.

New LWUIA authorities created (LWU lands not irrigated with Type-3s) will be assessed a one-time aquifer impact fee at the time of the irrigation authority's creation.

LWU acres, irrigated with either a Type-3 or a LWUIA, may be reconfigured as IGFA acres for increased efficiencies, or due to flood damage or poor soil conditions, as long as the overall acreage is not increased and irrigation efficiencies do not decrease.

LWU lands may be irrigated with exempt wells.

The total volumetric pumping limit of the new LWUIA authority is based upon acreage and 1.5 acre feet per acre. LWUIAs may not be converted to a Type-3.

The total volumetric pumping limit if LWU acres irrigated with a Type-3 is the volumetric limit of the Type-3 withdrawal authority.

Metering or alternate use calculation and annual reporting is required.

An LWUIA authority may be permanently retired. LWU lands that have had their associated LWUIA withdrawal authority retired may be brought back into production with the use of a new appropriate irrigation authority.

LWUIAs have a one-year overrun allowance, where any volume exceeding the pumping limit must be made up the following year.

Irrigation users in general

Annual use reports will be required, as well as metering or acceptable alternative calculation methods, may be used. Annual withdrawal fees will be required for irrigation users.

While the local GUAC would have the final say, the water group recommends that the money be put “into a pot and be used to fund re-charge projects, buying water rights in retiring a farm, or for grants or matching funds to homeowners in distress,” Seitz said.

Irrigation users would be encouraged to adopt best management practices (BMP) conservation practices through a grant incentives program.

Irrigations users would have a one-year overrun allowance, where any volume exceeding the pumping limit must be made up the following year.

The following year's pumping limit would be reduced by the volume of the previous year's overrun.

Type-3 Authority

Type-3 withdrawal authorities are created by calculating the historically irrigated acres.

For IGFA irrigation authorities, a conversion factor of five acre-feet per acre is used with a 50-percent reduction assigned at the time of conversion. They may also be created under the “historically irrigated acres” exemption.

ADWR will also issue Type-3s for existing industrial users (non-municipal, non-agricultural users). They may also be created by converting an industrial Type-3.

Type-3 authorities are fully portable within the GCA; may be used for any purpose – municipal, industrial and agricultural; and may be used with any type of well – exempt or non-exempt.

Type-3s transferred more than 10 miles from its original or current place of use will require a well impact review.

Irrigation authorities may be retired in whole or in part, down to a 10 acre-feet per year minimum, and may be transferred (sold or leased) in whole in part (10 acre-feet per year minimum) to create a Type-3.

(Continued from page 20)

Type-3s may be applied to both exempt wells (that pump 35 gallons per minute or less), as well as non-exempt wells. Using a Type-3 requires metering and reporting and paying annual withdrawal fees.

Type-3s have a one-year overrun allowance where any volume exceeding the pumping limit must be made up the following year. **The following year's pump limit is reduced by the volume of the previous year's overrun.**

Industrial Type-3

Created for industrial users, this Type-3 withdrawal authority would be calculated on the highest annual use in the five years preceding creation of the GCA. A 50-percent volume reduction would be applied to industrial Type-3s at the time of conversion to a normal Type-3 for any new use (agricultural, industrial or municipal).

An industrial Type-3 is tied to its original place of use (within one-half mile). Moving it more than one-half mile away triggers its conversion to a normal Type-3 with a 50-percent reduction in volume.

An industrial Type-3 authority may be permanently retired in whole or in part.

Using the industrial Type-3 requires metering or acceptable alternative calculation method and reporting use.

An industrial Type-3 has a one-year overrun allowance where any volume exceeding the pumping limit must be made up the following year.

The following year's pumping limit is reduced by overrun's volume the previous year.

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HazCom

By John Fowler, Safety Supervisor for National EWP and AZWWA Safety Director

One of the most common hazards we deal with in both the drilling industry and the pump services industry are the chemicals we use every day. From the diesel fuel we use to power our equipment, to the chemicals we use in our drill mud, to the chemicals we use to develop a well, each has a hazard and certain precautions that must be taken when handling that chemical. But how do we know what these hazards are? These are identified in what used to be called the Material Safety Data Sheets (MSDS's), but are now simply called Safety Data Sheets (SDS's). And more has changed than just the name.

In 1983 OSHA first introduced their Hazardous Communication System for the manufacturing industry. They expanded this to cover other industries, and then in 2012 OSHA decided to join the United Nation's Globally Harmonized System of Classification and Labeling of Chemicals (GHS). This system is intended to standardize the way chemicals are labeled and the format of the SDS sheets themselves. The hope is that by standardizing the way hazards are communicated, more people, especially "low and limited literacy" workers, will be able to protect their health. And as of June 1st, 2015, this now applies to us and our operations.

OSHA defines hazardous chemicals as "any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiate, combustible dust, pyrophoric gas, or hazard not otherwise classified." A physical hazard would include a chemical such as an acid. The acid would cause damage to your skin if you handled it without the correct PPE. A health hazard would be a chemical such as benzene, a common additive used in gasoline that is known to cause cancer. If benzene is breathed into the lungs in sufficient quantities, years down the road you might develop cancer. A simple asphyxiate is a chemical such as carbon dioxide. Carbon dioxide replaces oxygen, so breathing in this chemical would replace the oxygen in your body. A combustible dust can be something as common as sugar dust. You might think of sugar dust as harmless, but in 2008 an explosion caused by sugar dust killed 14 people. Pyrophoric gases are gases that will naturally ignite at temperatures below 130 degrees F. These gases are often non-metal hydrides with names like arsine, phosphine and silane. And a "hazard not otherwise classified" means just that: anything else that has a hazard, but does not fall into the categories above. As you can see, we deal with hazardous chemicals all the time.

So, what exactly has changed and is changing? The biggest changes affect the chemical suppliers themselves in two main areas: Product Labeling and SDS Standardization. Previously, it was up to the chemical company to design the labels on their products. Now with the new rule there is a set of labeling guidelines they need to follow. Product labels need to have the following six sections:

- Name, address and telephone number of the chemical manufacturer, importer or other responsible party
- Product Identifier: This is decided on by the manufacturer, but must match section one in the chemical's SDS.
- Signal Word: There are only two signal words-- Warning and Danger. Only one word will be on the product, regardless of how many different hazards that chemical presents. If one chemical has both a hazard that qualifies for a "Warning" signal word and a hazard that qualifies for a "Danger" signal word, the product will only use the higher level "Danger" signal word.
- Hazard Statements: Describe the hazard of the chemical and the degree of the hazard. The statements will be standardized and use the same wording, so they are the same across all manufacturers.
- Precautionary Statements: There are four parts of the precautionary statements--Prevention (PPE for example), Response (What to do if the chemical is spilled or enters the body), Storage and Disposal.
- Pictograms: International symbols that convey the hazard without language barriers

(Continued on page 25)

Those of us who have spent time looking at multiple MSDSs know that each MSDS used to be unique with the information placed in whatever order the chemical manufacturer decided upon. This led to confusion when looking for critical information within the MSDS. The new SDSs have a standardized format that should make looking up information much easier. Once you have learned to navigate one SDS, you will know how to navigate them all. Each SDS is divided into 12 mandatory and 4 non-mandatory sections:

- Identification: Product Identifier matching what is on the product label
- Hazard Identification: Hazard Class, Signal Word, Hazard Statement, Pictogram, Precautionary Statements
- Composition/Information on Ingredients: What is in the chemical
- First Aid Measures
- Fire Fighting Measures
- Accidental Release Measures
- Handling and Storage
- Hazard Controls/Personal Protection: PPE
- Physical and Chemical Properties: Odor, pH, Flash Point, etc.
- Stability and Reactivity
- Toxicological Information
- Ecological Information (Non-Mandatory)
- Disposal Considerations (Non-Mandatory)
- Transport Information (Non-Mandatory)
- Regulatory Information (Non-Mandatory)
- Other Information: Date SDS was built or revision date

Most of the burden lies on the chemical manufacturing companies, but OSHA has laid out a schedule they expect all companies to follow. The first date on the schedule was December 1st, 2013. From that point on, all employees are expected to be trained on the new label and SDS format. This is training that can be done in house, **and is really just explaining to your employees about the change and what it means. That the SDS's will have a different format and the products themselves will have different labels.** The OSHA website is a great resource, and if you visit the OSHA website at <https://www.osha.gov/dsg/hazcom/index.html> there are useful fact sheets and guides to help you through this. The training should focus on the following areas:

- How to read SDS's
- First Aid requirements and emergency response information
- Location of the written Hazard Communication Program, list of hazardous materials and Safety Data Sheets.
- Description of the jobs where these hazards are present.
- The physical and health hazards of chemicals they are exposed to in the workplace.
- Personal protection requirements for chemicals in the workplace.
- Ways to observe and detect the presence of hazardous chemicals in the workplace.
- Labeling requirements and explanation of labeling systems.

As with any training, make sure that you have a sign in sheet for the class and that you have documented the training with a policy sign off sheet. If you have people who are working in your facility and have a possible exposure to

chemicals they also need to be trained on your HazCom policy. You should have annual refresher training and training whenever you introduce new chemicals with hazards you have not covered. One of the best ways I have found to reinforce this training out in the field is to visit a work site and pick up a jug of some chemical and ask: "what would happen if I drank some of this?" When the crew realizes that you are serious they will be forced to go to the SDS book and find the section that answers your question. It is great practice for the crews and is a good way to make sure you have SDS's for your chemicals.

The second date on the OSHA schedule was June 1st, 2015. As of June 1st OSHA expects "compliance with modified provisions of this final rule." This means that OSHA expects everyone to have updated their Hazardous Communication (HazCom) programs and be using SDS's instead of the old MSDSs. Where can you get the SD'Ss? The best resource is your chemical supplier. Even stores such as NAPA will give you the SDS of any product they sell. Also, be aware that if you have work scheduled at a mine, as of June 1st many no longer accept MSDS's of products when you are trying to have products approved for your project. They are asking for the most up-to-date SDS's.

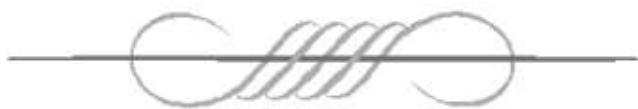
The third date is June 1st, 2016. The summer has flown by, and this date is less than a year away. By June of next year, everyone is expected to update their "alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards." In other words, by next year you should be completely transitioned to the new system with any bugs worked out. The chemical suppliers can sell and ship chemicals using the older system until December 1st of this year, and then all chemicals will need to be compliant with the new labeling system.

So, where should you start? If you are a little behind, it's not too late to catch back up. Unless you are producing chemicals, the only real changes that affect you and your employees are that your employees need new training, and that the employers need to update their Hazardous Communication (HazCom) program. If you don't have a HazCom program, this is a great time to create one because you are going to need it. What exactly is a HazCom program? It is a document that puts your hazards, procedures and PPE all together in one place. It will explain that you are compliant and understand the new standards. It will make clear that you label products, have the correct SDS's for the products, train your employees and maintain records. It will explain who is responsible for the program and who monitors and supervises the employees in the field. Your HazCom program should be reviewed with any new employees and reviewed with your existing employees as changes occur or simply as a refresher. The OSHA website is a great resource, and it even has sample HazCom programs you can use. If you visit <https://www.osha.gov/dsg/hazcom/solutions.html> there are several programs you can look at.

The first part of building your HazCom program is knowing what chemicals you have at your facility and out in the field. This is done by simply walking around your facility and your work sites and writing down the chemicals that you use and their quantities. The OSHA website even has a blank Chemical Inventory list you can download and use: https://www.osha.gov/dte/grant_materials/fy09/sh-18796-09/sample_hazcomprogram.doc. If this seems like too much or you have a large amount of chemicals you deal with, there are companies which will come in and manage your chemical inventories for you. Some will keep them online, so you and your employees can download the latest SDS, and some have a service where your employees can call and tell them what chemical they are using, and the service will answer any questions about it.

Once you know what chemicals you have, you need to understand the hazards of each and whether or not your people have the training and PPE to keep from being harmed. For example, the gel that we use for drilling has silica in it, so you need to be aware of this and the risk of silicosis for your employees. Once you have decided what PPE your employees need you must make sure that your employees are trained on how to use that specific PPE. Some PPE, like respirators, need the employee to be medically cleared and fit tested before that employee can use the PPE. Typically your suppliers can help explain the proper use and care of the PPE and there are even videos on the internet that walk you through the whole process of donning (putting on), doffing (taking off), cleaning and storing the PPE.

Hazardous Communication might at first seem like a very boring and abstract topic, but the shift from the old MSDS system to the Globally Harmonized System has made this an important subject to understand. In the end it is all about protecting the people who are working with the chemicals. Just like we want to make sure our employees are not getting cut or breaking bones, let's make sure that they are not being exposed to hazardous chemicals. You typically see broken bones and cuts right away, but with chemical exposure the health problems may show up 20 or more years down the road.





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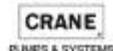
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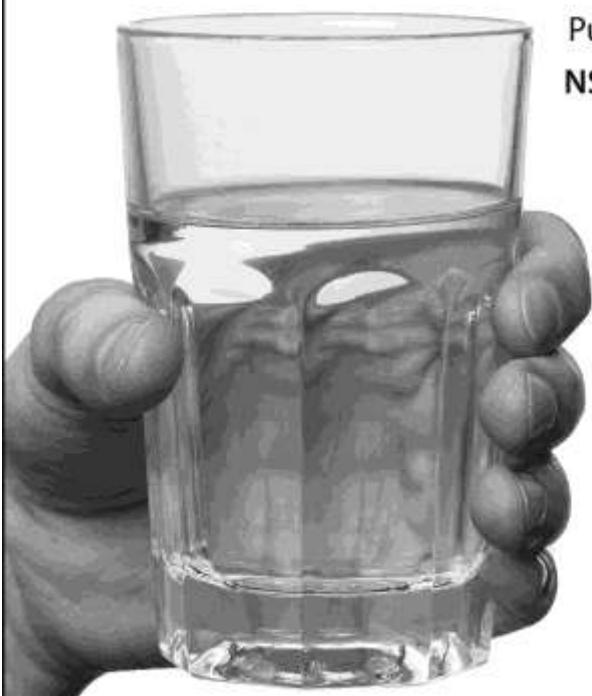
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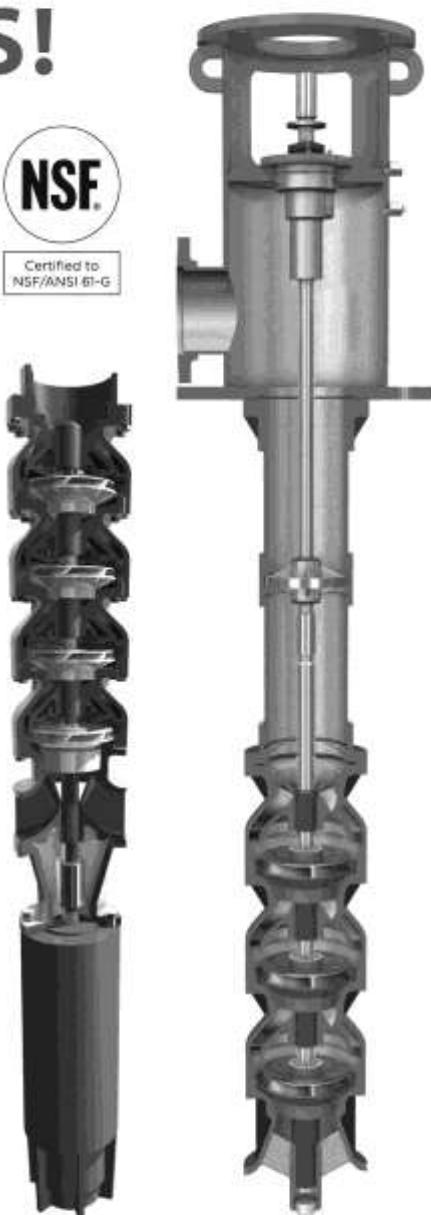


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- Acceptance by aforementioned Arizona institution. The Committee will take into consideration any requests or attendance at schools outside of Arizona.
- Full time enrollment. The Committee will take into consideration requests for less than a full schedule.
- Maintain a 2.5 grade point average.

The above qualifications are in reference to university or junior college enrollment. However, the Committee will consider requests for trade school or other participation at reduced levels of financial support if such education is deemed beneficial to the family's business effort.

A completed Scholarship Application, including a resume, a letter of endorsement from the applicant's parents or employer and a transcript from the last educational institution attended is required.

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For more information or questions, please contact our current Scholarship Chair or the AZWWA office. To request a Scholarship Application, please contact the AZWWA Administrative office directly.

Scholarship Chair

Fred Tregaskes

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PH: 480-404-2788

AZWWA Office

Debbie Hanson Tripp

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Events Calendar

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| October 6-9, 2015 | Water Systems Council Fall Members' Meeting; Loew's Ventana Canyon, Tucson, AZ |
| October 7-9, 2015 | WaterSmart Innovations Conference & Expo;
Las Vegas, NV; Details at
www.WaterSmartInnovations.com |
| October, 24, 2015 | AZWWA Fall Meeting; Kelly Pipe, 1617 S. 40th Ave, Phx,
Speaker: Franco Godoy, HPC/WellJet General Manager |
| December 15-17, 2015 | NGWA Annual Convention/Expo – Las Vegas, NV;
Details at www.NGWA.org |
| January 2016 | AZWWA Winter Meeting; Date and location to be announced |
| February 11-12, 2016 | Mountain States Groundwater Expo – Aquarius Casino & Resort Laughlin, NV
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