

## Spring Issue 2019

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## 2019 ANNUAL CONFERENCE

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## PRESIDENT'S MESSAGE - Larry O'Connor

# SUMMER Vacation



Hello O2WA members. We last met at the conference in Bend. I think all went well and we are working to bring more of these events, one for the fall at the Best Western in Hood River NOVEMBER 9, 2019 and next annual conference MARCH 20/21, 2020 at the Valley River in Eugene. We hope to see you all there. I expect you are all busy as the rain has finally let up for a few days ... more in the forecast, hey it is Oregon.

I have been fortunate to have just returned from a vacation in Europe. It always amazes me how much more history there is in other parts of the world. We spent a little time in Amsterdam, Brussels, Brugge Belgium, Reims and Paris France. The last time I was in Paris, Eric Frommers travel guide was "Europe on \$5 a day". That probably gives you an idea how long ago that was. To be honest I wouldn't have gone at all but my wife told me I had to. Her perspective is we had better go now while our health allows for it. As a nurse for 40 years, she has seen many who wait to travel until they can't. She frankly told me that she won't be pushing me around in a wheel-chair.

So we went and I can't begin to tell you how much good it does to get away for a bit. To recharge our batteries, get a different perspective on how other people live and enjoy the world. To see churches that took 100 years to build, statues and artwork that are amazing. We have history here but only a couple hundred years of it. We are such a new country by comparison.

My point in all of this is to just say that our work will always be there. If you have an opportunity to travel and get away, go camping, go fishing or whatever, just do it while you are able. I think we are all hard wired to just work, take a break when you can.

My thanks goes out to Trent for being the past president, for stepping up when the need arose and for helping to guide our organization. It is very gratifying to be affiliated with all the board members and members that make our industry excel. It is the professionalism and the continuous desire to learn that makes our industry stand out. Let's see what we can accomplish in this year. It goes without saying we would all be lost without Belinda Rasmussen, Executive Director.



## NATIONAL ONSITE WASTEWATER RECYCLING ASSOCIATION

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**Question:** I recently customers experience more alarms shortly after start up than in years past. What has changed?

**Answer:** There are a few primary factors. Some involve changes to a particular control panel and others are related to recent changes in floats.

The new dual mode control panels that can be configured to operate in either demand mode or time dose mode have a couple of important features that installers need to pay close attention to. First, make sure the panel is programmed to operate in the intended mode. The default setting is “Time Dose: On” and needs to be changed in the field if your system is intended operate in demand dose (change the setting to “Time Dose: Off”). Where you land the float wires on the terminal strip is very important as it pertains to the intended operating mode. There is also a terminal link that is installed at the factory that is only needed on one of several potential configurations – it needs to be removed for all the others to operate as intended. If you do not remove it, you will experience intermittent short duration high level alarms.

The other recent change was from mercury floats to mechanical floats. The mechanical floats have a 2-inch swing between trigger points (about a half inch below level to about 1.5 inches above level. This needs to be accounted for when setting your floats, especially in demand mode. For example, if the space between you Pump On and Pump Off floats in a 1,500 gallon partition dosing septic tank was 3 inches using mercury floats, the volume per dose would be about 95 gallons. The same settings with the new mechanical floats would result in a 5-inch volume (1.5 inches above the Pump On float to one half inch below the Pump Off float) and a volume per dose of almost 160 gallons. Another issue related to the new floats is they often come with a longer tether length. Coupled with their slightly different shape, they appear to get stuck more easily than their mercury predecessors on the walls and support pipes. This can be difficult to diagnose so it is important to be very thorough and deliberate in your approach to troubleshooting (don’t simply reach in and pull the float stem out).

## **2019 ANNUAL CONFERENCE, MEMBERS MEETING & FUND RAISER IT TAKES A VILLAGE!**

**This year’s conference at the Riverhouse Convention Center was great success.**

**223 attendees earn CEUs. Thanks to Clinkscapes Portable Toilets - FMI Truck and Pape’ Machinery Truck, Trailer and Backhoe. These were used for hands on class demonstration.**



**Exhibitors at this year’s show...**

**Advanced Wastewater Promotions, HD Fowler Company, RepCo Sales Agency, Aerobic Septic Systems, FMI Truck Sales & Service, Ferguson Water Works, Willamette Graystone, Infiltrator Water Technologies, Mike Hamer, Inc., GT Gordon & Associates, RootX, Craft3, Roth North America, Lely Tank & Waste Solutions Bend Win Supply, Lowridge Onsite Technologies, Bancorp Insurance, Matzke Sales, Orenco Systems, Norwesco / Davis Sales, Pape’ Machinery.**

**Thanks to volunteers that made this conference possible: Scott Davis, Lissette Hamer-Anderson, Trent & Lorry Clinkscapes, Perry & Penny Dunlap, Pat & Patty McVay, Dennis & Cindy Boeger, Larry O’Connor, Chris Rhodaback, Bob Sweeney, Dustin Kenton, Claudia Hill, Doug Dilley, Brian Rabe, Scott Hammerschmith and auctioneer Jeff Strasheim assisted by his wife (?).**

**Over \$19,000.00 Raised from Auction & Raffle! Thanks to all that participated.**

Immediate past-president Trent Clinkscales and former long-term board member and past-president Brian Rabe were appointed to the Technical Review Committee (TRC) to participate in the 2019 rule-making process. Board member Claudia Hill has attended several of the meetings and has offered input during the public participation process. The TRC is an advisory body that makes recommendations to the Oregon Department of Environmental Quality (DEQ). However, DEQ staff is only required to consider the input from the TRC and is not obligated to accept its decisions.

The TRC has met several times (every few weeks) since November 2018 to discuss a wide variety of proposed changes ranging from relatively minor clarifications to major changes that affect various members of the regulated community (some positively, some negatively). The draft revisions are expected to be out for public comment this summer with the goal of going to the Environmental Quality Commission (EQC) at their November 2019 meeting for approval with an effective date of January 2020. Belinda will send out an email notification via Constant Contact as soon as the public comment period is announced so that members can review and comment on the proposed changes. Please take the time to provide thoughtful and constructive commentary to the proposed changes.

A summary of some of the more significant changes are outlined below:

**Site Evaluation Expiration** – It is proposed to have all site evaluations conducted after the effective date of the revised rules expire after 10 years. There has been much discussion regarding current approvals but most recent rule language appears to have all previous approvals expire 10 years after the effective date of the revised rules with provisions for a site evaluation review to make sure conditions have not changed that would negate the original approval. The proposed review fee would be 50 percent of the site evaluation fee.

**Expand the definition of major maintenance** to include replacement of distribution or drop boxes by licensed installers or maintenance providers without needing to get a permit.

**Eliminate single compartment dosing septic tanks.**  
**Introduction of Treatment Standard 3** to provide a higher standard for nitrogen removal in areas with shallow unconfined aquifers overlain by soils with rapid or very rapid permeability and other sensitive locations.

**Hydrosplitters** – development of construction standards for pressure-assisted distribution.

**Subsurface drip** – proposed standards to enable use of subsurface drip following advanced treatment (sand filter, gravel filter, or alternative treatment technology).

**Accessory Dwelling Units (ADU's)** – proposed sizing to provide consistency as changes to land use rules appear poised to enable these on parcels outside the Urban Growth Boundary (UGB).

**Removal of the TRC from the rules** – The TRC appears to be the only such committee specifically addressed in rule within all the programs within DEQ. A similar committee can be formed as-needed in the future with more flexibility under existing rules.

There have been other topics and there are several other proposed changes. The TRC represents a cross-section of the industry but we do not necessarily represent all perspectives and the level of support for various changes varied among individual member.

In addition, the DEQ may alter the rule language in the final editing that may result in a different outcome than envisioned by the TRC. So, stay tuned and be sure to take some time out of your busy summer schedule to review the final language of the draft rule changes when they are released for public comment. I can assure you that I will.

In previous columns, I have discussed texture, porosity, compaction, and other factors that affect the movement of water through soil. In this column, I want to discuss another important factor: structure. The Oregon onsite rules do not directly address structure in terms of drainfield sizing – the primary factors are texture, effective soil depth, and depth to (and type of) water table. Structure, however, is an important consideration.

Structure is the term used to describe the size, shape, and relative cohesiveness of soil aggregates. A soil where the individual soil particles (sand, silt, and clay) do not adhere to one another are described as having no structure. Structureless soils that predominantly consist of sand are described as single grained. Structureless soils that predominantly consist of silt and clay are typically described as massive.

Primary porosity is used to describe the pore size and volume between the individual soil particles and is directly related to the particle size distribution. Soils that are more uniform in particles size will have more total pore space than soils that have a wider range of particle sizes. For example, if you envision a gym full of basketballs (uniform size), there will be more air space between the balls than if you had a gym full of equal parts basketballs and tennis balls. The tennis balls would fill in many of the spaces between the basketballs. If we imagine that the basketballs are sand particles and the tennis balls are silt particles, and then we mix in clay particles in the form of ping pong balls in this example, there would be even less pore space since the ping pong balls would fill in many of the spaces remaining between the basketballs and the tennis balls. The net result would be less total pore space and a smaller average pore size.

Most natural soils resemble the last combination (a mix of basketballs, tennis balls, and ping pong balls; aka sand, silt, and clay). However, the individual particles are typically held together into aggregates by organic matter (the primary glue for soils). Aggregates are often irregularly shaped with larger pore spaces between aggregates. This is called secondary porosity and this element is very important to the movement of air and water through soil. As another example, imagine a unit of lumber neatly stacked on one hand and another unit of lumber assembled into a framed structure, such as a house or a shop. There is very little pore space between the individual boards in the stack of lumber and there is a tremendous amount of pore space after the lumber is aggregated into walls, trusses, and joists.



Structureless soils lack secondary porosity. This is an important consideration when selecting and placing capping fills and building so-called engineered fills. It is important to minimize the handling of natural soil sources to maintain as much of the structural integrity as possible during removal, transportation, and placement. This will minimize the time necessary for the soil to heal and behave like a natural soil. Soil sources that are “manufactured” such as those made by blending sand and compost will often take more time to heal after placement. It is important to get a cover crop, such as grass, established as quickly as possible to assist with the healing process. Irrigation is important not only for supporting the cover crop, but also by introducing additional wetting and drying cycles, both of which aid in the development in secondary porosity.

That’s all for now. Remember, Soil Rocks!

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**FALL MINI-CONFERENCE**  
**6 HOURS OF CLASS TIME AVAILABLE**  
**SATURDAY, NOVEMBER 9TH**  
**BEST WESTERN HOOD RIVER**



After pumping the septic tank, in addition to checking the inlet and outlet baffles, the tank should be examined for any cracks or holes where water can infiltrate or leave the tank depending on soil conditions. Sometimes precast concrete tanks have holes in the bottom to allow water to drain out if they are sitting outside at the manufacturing plant. There are two potential problems with holes like this: one is the infiltration which can add unwanted water to the system if the soil around the tank becomes saturated; and the other is that water can leave the tank so the water level in the tank fluctuates. This can allow the scum to move into the outlet baffle, causing plugging; or if there is not an effluent screen, it allows solids to move to the soil treatment area, which causes plugging in the soil.



Tank walls should be evaluated to verify they are watertight. Cracks in the walls can often be identified by excessive staining along the crack. If the tank is a midseam tank, the seam should be closely examined. Methods and materials for sealing midseam tanks have improved dramatically over the years; but if the tank is older, there is a higher probability that there is a problem. Areas at the bottom of the tank where the wall meets the floor should also be evaluated to make sure it is watertight. Again, with newer tanks and better construction, this is not as much of a problem as in older tanks of questionable origin.

Any holes or cracks should be filled. If there are cracks in the tank — this sometimes occurs during tank installation — they should be evaluated for their impact on the structural integrity of the tank and either be repaired or the tank replaced. Most often replacing the tank is the best approach with large cracks or problems at the junction of tank walls and the bottom.

Location of the tank should be evaluated in terms of whether it is in an area where water can run off from another location over the tank. Examples of questions to answer include:

- Is the tank in a drainageway or depression?
- Does the land slope up beyond the tank location?
- Do roof gutters empty over the area?
- Is the tank below the level of the driveway?

Any extra water should be directed or routed away from the tank location. Depending on the situation this can be done by changing where the roof downspouts are located, creating a berm to protect the tank from runoff, or in extreme cases installing a curtain drain.

Any risers or inspection ports should be examined to see that they are properly sealed to prevent water from entering if the surrounding soil becomes saturated. A good indication of a riser not being watertight is if there are roots present. It not only means it is not watertight, but that the problem has been there for a long time. If a manhole riser has been retrofitted to provide ease of locating and access, it is sometimes difficult to get it properly sealed. The fix of course is to replace, reseal or reseal the riser to make it watertight.

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*About the author Jim Anderson is connected with the University of Minnesota onsite wastewater treatment program and is an emeritus professor in the university's Department of Soil, Water and Climate. Send him questions about septic system maintenance and operation by sending an email to [kim.peterson@colepublishing.com](mailto:kim.peterson@colepublishing.com).*

