

## Just an Old Guy Reliving Memories – by Gordon Nicholson



This past summer, I found myself in the Northwest once again and took the opportunity to see some ol' friends and re-visit my first project assignment at CH2M HILL.

First, the ol' friends that I had the pleasure of catching up with.

**John and Genevieve Filbert, OFC:**  
“Anywhere and everywhere”: more on John later.



John and Ginny



Rich and Michelle

**Rich and Michelle Frankenfield, CVO:** Rich and I first worked together on the Eugene/Springfield Metropolitan Wastewater Management Commission (MWMC) treatment facility in 1978. In my opinion, Rich became CH2M HILL's “Mr. Hydro” and supported untold hydraulic designs on many, many treatment plants. Between grandkids, travel, golf, Michelle's cooking, and Rich's bridge playing, they are always on the go!

**Jim and Kathy Black, SNG & SEA:** Jim is still catching salmon and harvesting crabs and oysters from their home on Whidbey Island, WA. Oh yeah, he and Kathy are also tearing up the golf links. Jim's 3+ years of living in Singapore supporting the Changi Water Reclamation Plant was huge! Kathy will tell you it was “tough duty” for her! LOL.



Jim, Cathy, and Gordon



Roger and Vanessa

**Roger and Vanessa Mitchell, SNG & SEA:** I met the two of them for a lovely lunch on my way from Whidbey Island to north Seattle. After leaving Singapore, Roger lent his “anything concrete” expertise to several Seattle projects. Talk about an ACE practical civil engineer!

**Mike Doleac, SEA:** Mike recently reached out to me to once again thank me for a gift I gave him 35+ years ago: “Andy the Antelope” and “Eddie the Elk.” Enough said.....you’ll have to ask Mike for more info! I visited Mike in Redmond, WA; the same home my wife and I were invited to dinner with him and his wife, Bev, 40+ years ago. I was astonished when I learned Bev has worked for the Redmond school district for over 50 years. A whole lot of kids are very, very fortunate!



**Tom Penpraze, former City of Corvallis Operations Director:** I first worked for Tom when he was Operations Director in Fairbanks, AK, and subsequently in Corvallis for many, many years. Jim Smith, CVO, and Mike Guthrie, CVO, and I spent one cold February making a facility plan in Fairbanks for their high purity oxygen treatment plant. Tom and I had lunch in McMinnville, where he and his wife, Jay, live having recently moved back to the “valley” from Bend, OR. No more snow shoveling for Tom! Go Beavs!

**Victor Ehrlich, former City of Vancouver, WA, City Engineer:** In the early 90’s, Mike Kennedy, PDX regional manager at the time, connected me with Victor wherein we supported Victor and the City of Vancouver on several wastewater collection and treatment projects for 12+ years with a super team from Corvallis and Portland offices. When I was “deported” to Singapore by Don Evans, DEN (best thing Don ever did for me! LOL), Matt Noessen, PDX, took over the reigns as Vancouver’s “go to” project manager. Victor and I on numerous occasions got together and rode motorcycles in the Northwest. Victor has since “hung up his helmet” but not me.

Now, my first project assignment.

The day I went to work for CH2M HILL, a Monday in the ‘70s, I was assigned to work with John Filbert. The previous Friday, the company signed the design and construction contract with the Eugene-Springfield Metropolitan Wastewater Management Commission for the design and construction management of their new regional wastewater reclamation plant. John was the Project Manager. I spent the first few weeks hauling sewage from Eugene and Springfield to our Corvallis lab, blending it in the “correct” proportions and running a bench scale treatability study with the assistance of Earl Hadfield, CVO lab manager, and Mark Bodegheimer, CVO. As the study came to an end, we were fortunate that Dr. Glen Daigger joined the firm and contributed

significantly to making “heads or tails” out of the copious data we had developed.

From hauling sewage, I was promoted to predesign and cutting out paper dolls of aeration basins, clarifiers, and chlorine contact chambers for John and others to stick on aerial photos to arrive at the regional plant layout.

From cutting out paper dolls, I moved on to being an EN1 design engineer under Dave Raby, CVO, who was the secondary treatment facility Lead Engineer. During the design, Dave took an assignment in the Twin Cities, Minnesota, office; and I was elevated to Lead Engineer. By then, Rich Frankenfield had joined the firm and the secondary design team. The design gave me the opportunity to work with some tremendous senior engineers: Jack Meyer, mechanical; Gene Swanson, civil; George Dotson, structural; Bill Peterschmidt, I&C; and, of course, Elmer Seegmueller, QC.

Following design, Ron Staehlin, CVO, who served as assistant project manager during design, went on to serve as the Construction Manager. For those who remember Gene Swanson, did you ever see him without a pipe in his mouth? Well, John will tell you a story wherein Gene stormed into his office one day “piping” mad. Gene was complaining that I was telling him how to design the grade around the secondary facilities! John will tell you he thought Gene was going to bite the stem off his pipe he was so mad. John asked Gene, “Will Gordon’s grading work?” To which Gene responded, “Yes, but.....” John quickly replied, “Then do it Gordon’s way!” End of discussion.

All good things come to an end; it was a blast, and I learned a ton! After final design, I moved on from Corvallis to SEA, ANC, SFO, back to SEA, PDX, and ultimately Singapore to take over as Project Director for the Changi Water Reclamation Plant design and construction at the request of Don Evans and John Filbert.

In the ensuing years, after the plant was fully operational, I drove down Belt Line Road in Eugene many times, each time trying to get a glimpse of the MWMC plant over buildings and through trees. Each time I said to myself, “Someday I’m going to stop and tour the plant.” Well, this summer, I finally paid a cold call to the facility. I walked in, said “Hello” to the receptionist, gave her a little background, and asked if I could inconvenience



MMWC Reception



Shift supervisors doing their thing.

someone for a short plant tour. I didn't know if I would be "tarred and feathered" or met with open arms. I'm happy to report the latter! Shortly, I was shaking hands with Chris, shift supervisor, who had been with MWMC for more than 20 years! Chris dropped everything and commenced giving me a "short" plant tour; short like 2-1/2 hours! He had nothing but praise for the plant designed by CH2M HILL under John Filbert's leadership!

Over the years, I've often thought about knowing what I know now, what I would have done differently in the secondary design. Three items kept jumping out:

1. Constructed 10, not 8, secondary clarifiers. We had 10 initially planned; however, Value Engineering (VE) forced us to only construct 8. I'm happy to report, under Rich Frankenfield's management, two additional clarifiers were subsequently designed and constructed. And Rich had the foresight to make the two new ones 2 feet deeper. Good call, Rich!
2. VE also caused us to design inboard launders, i.e., cantilevered 8-10 feet off the wall; not really a cost-saving measure but sold on the premise that the clarifiers performance would be improved, hence only 8 not 10 clarifiers were required. Dumb idea, which John, with Dr. Daigger's support, fought adamantly against but eventually lost the good cause. MWMC has since retrofitted all clarifiers with launders at the peripheral wall and installed density-current deflection baffles projecting from the walls - the way we initially envisioned them in the predesign!



Sec clarifiers with proper launders.

A side notes about Rich. He is probably the only person in CH2M HILL to have designed a 'spray head launder wand' to clean those ridiculous inboard launders! I guess that makes him CH2M HILL's launder wand expert along with his Hydro expertise!

3. In the late 70s, there was considerable professional debate as to what activated sludge configuration was best, e.g., complete mix, plug flow, step feed, or contact stabilization. So, what did we do? With 90 percent EPA project funding, we designed the aeration basins to provide all four configurations. Shortly after the design, Dr. Daigger introduced the firm



Aeration basins doing their thing.

to “anoxic selectors” in the subsequent design for the Tri-Cities WWTP, Clackamas County, OR. If I had to do it over again, we could have incorporated a selector in the aeration basins and dispensed with all the other configuration nonsense, saving a ton of money! Well guess what? Because of all the flexibility, we incorporated into the aeration basin design. Several years ago, MWMC was able to retrofit anoxic selectors into the aeration basins at minimal cost.

MWMC operates the basins as selectors 24/7, 365 days a year!

So, three “do overs” I often wished I would have done, now all been retrofitted into the plant. John and a host of other team members: Well done! MWMC loves your plant!

A couple of other unique aspects of the MWMC plant:

CH2M HILL was tasked with designing a 1-ton chlorine cylinder rupture containment facility; it might have been sized for the unlikely event of not one but two chlorine cylinders rupturing simultaneously. If I’m not mistaken, it was CH2M HILL’s first-ever chlorine containment facility. Marv Murry, CVO, lead mechanical designer, and Karen Hood, CVO, a recent chemical engineer hire, were given the design task. I recall there was a lot of handwringing and concern over the firm’s liability for the facility. I asked Chris, “Has the facility ever been used in a real-life leak situation?” He said ‘Yes, twice he was aware of. Both times, the containment system and chlorine scrubber worked flawlessly. Chlorine gas was never detected outside the building!’ Well done Marv and Karen!

John had the design team use four Archimedes open screw pumps for raw sewage pumping. I think Ken Clegg, CVO, was the primary treatment lead engineer. I believe Ken was also double-hatted as the digester facility lead engineer. The screws are each 36- or 48-inch diameter. In some 35+ years

of operation, each screw has been pulled out, recoated, and trough re-grouted only 2 or 3 times. The only modification to the pumps has been the belt drives were changed to electro-magnetic couplings because the belt drive “squeal” on start-up was deafening; even nearby neighbors complained. Chris said, “Best pumps ever, staff love them!” Kudos John and Ken!

Now I’m going to come clean and share a concern of mine long after the fact; something I awoke many a night wondering about!

John had me design the Return Activated Sludge (RAS) pumps without check valves, only isolation valves. Each pump discharged straight up into a common well, the flared discharge pipe elevation above the maximum water level in the well. I calculated the discharge head, the old  $V^2/2G$  kind of thing, and based on that, set an elevation for an open aluminum grated walkway above the four discharge pipes and common well. Sometime later for whatever reason, long after plant commissioning, I began to wonder, did I set the walkway elevation high enough? Besides  $V^2/2G$ , should I have allowed for some “mounding” above the discharge pipe rim? At maximum pump discharge, will the RAS water surface be above the grating? Yikes! In retrospect, I sure should have consulted with Elmer Seegmueller, our ace ‘common sense’ QC reviewer!

On my tour with Chris, the shift supervisor, I made it a point to go to the top of the RAS common well, intending to walk on the grating and observe the pump discharging below, hopefully, with dry feet! To my surprise, the open grating had been replaced by solid aluminum checker plating. I asked Chris, “Why the cover change?” His said, “For odor containment and control.” Whew! A sigh of relief! I then asked, “Chris, tell me when the RAS pumps are at maximum output. Could you stand here with the prior open grating?” His response was “Oh yeah, but your feet might get a little wet!” I shared a little about my above concern; he laughed and said, “It never was a problem; however, the solid covers definitely keep your feet dry!”

When I visited John, I shared with him the above stories, prompting many a laugh and many of those John “grins”! On leaving, one question John asked me was, “Whatever happened to the trickling filters?” Sorry to say that the filters designed and constructed by Cornell, Howland, Hayes, and Merryfield in the early 1950s were demolished after the new plant was commissioned.

All good things come to pass!