

The Time has Come

By David Branham, Wastewater Technician

It had been a busy summer for me, full of meetings and conferences. As I traveled one of the many roads that a circuit rider travels, I was contemplating and trying to digest a lot of information that had been passed my way. CMOM (capacity management operation and maintenance) for the collection system and a new TMDL standard concerning using NTUs as an additional standard for effluent discharge was foremost on my mind. The NTU issue had come to the forefront of discussion at DEQ and was in the public comment stage, and alarmingly some groups are pushing for a NTU standard of one or less.

For those of you in the wastewater industry that are not familiar with NTUs, it is a standard that was previously mostly used in water production. Not so many years ago a “one” was the standard accepted limit for drinking water. In other words, it is drinking water quality and one of the questions I had was; “how many wastewater facilities in operation today can meet this standard?” Not many I’m afraid. A few maybe that have a very good tertiary treatment system. And alas, the number of wastewater systems in this state that have tertiary treatment I can count on one hand.

My mind was racing with the thoughts of every wastewater system in the state installing tertiary treatment, the cost would be astronomical and not to mention, just not practical. As I left the Nehalem area and headed north I decided to stop at Manzanita, a small town located in the northern coast area. Manzanita had recently installed a state of the art micro water filtration system and I was curious to see how this type of system compared to the flocculation, coagulation filter method of treatment. The water production industry has been using this type of treatment for many years and it appears that the cost factor has finally matched the technology to make it feasible to use for water production.

As I entered the Manzanita facility I was met at the door by John Handler, the operator of the facility. Upon my request, John was gracious enough to offer me a tour of the new facility. All the bells and

whistles that one would expect at a new facility were very impressive and I was trying to absorb all that John was explaining to me about the process and new equipment. As we stepped up to the primary intake filter, I stopped dead in my tracks. At a small inspection window on the filter, was revealed an astonishing thing. “What’s all this debris I see?” I asked. “Oh that, nothing,” John said. “I get all kinds of stuff out of the river, leaves, frogs, sticks and most any other thing that is in the river.” As I stood there dumbfounded like I had just been hit by a bolt of lightning, I asked “you mean this doesn’t plug up the works and do you suppose this type of filter system would work for wastewater.” I asked. “Yea, I suppose so,” John said.

As the months passed by and the seasons turned to winter I found myself at yet another conference. I had spent the summer and fall putting out warnings to all the systems that I could about the new proposed CMOM and NTU rules. Twenty or more proposed new rules, stipulations, and restrictions are to be placed on wastewater treatment and discharge in the near future. The plant I had visited in Manzanita was ever in my thoughts and mind. If only this type of system could be converted over for use in the wastewater industry it could solve many forthcoming problems that are going to be placed on wastewater treatment, such as nutrient removal and heavy metals.

As our winter conference wound down to its conclusion, I found myself on the road to Odell, a small hamlet located on the northern slope of Mt. Hood. Odell lies in the heart of pear growing lands with the town and surrounding area served by the Odell Sanitary District. The wastewater treatment facility, like many in the state, was built in the boom days of the 70s and has reached its useful life. As I pulled into the parking lot, Mark Beam, the operator and manager of the system walked over to greet me. Mark and his assistant have had more than their share of plant upsets and mechanical problems due to many factors such as growth and expansion of fruit processing facilities and just old age. The facility is a “donut” style plant of activated sludge and was more than ample to meet 1970s standards. But with new more restrictive standards that are in place today the sewer district

had been seriously looking to upgrade the plant to meet today's more stringent standards.

Mark and I discussed several issues that he was addressing, and as I was about to get into my car to leave I asked Mark. "By the way, what have you heard about the new up-grade on the plant?" Oh Mark said. "The district has chosen to replace the entire system with an MBR." "That's good," I told Mark, "the SBRs are a good system and they do a very good job." "No," Mark said. "You misunderstood what I said". "I said MBR". "Have you seen any of these systems" he asked.

Now I must admit that my ignorance was definitely showing, but Mark took the situation in hand and said to me, "come on back in and I will show you what we have chosen for a facility replacement". What Mark laid out on the table that day was totally fascinating. As you have probably guessed by now, MBR is the acronym for (membrane bioreactor) made specifically for the treatment of wastewater. What I saw that day was the answer to many of the concerns I had been fretting about for many months. I had intended to devote this article to that very process; however, as many of you know and as I have often stated, I tend to get rather windy and I have already made this article overlong. I can see the editors waving the red flag and saying that's enough Dave we only have so much space. So I will leave you, hopefully, with your taste buds tantalized as to just what is the MBR treatment system.

So with that I must close, but I promise that my next article will be devoted to the merits and advantages of the MBR process. Dave