

Quality of Life – in Better Water Quality

“How my Internship Influenced my Career Choice”

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For the past decade or so, I have been in the hospitality industry, doing everything from washing dishes, bussing, bartending, and serving. While I'm grateful for this work experience in the service industry, I'm so excited I found a new career path, servicing something much greater: the planet. In order to serve the planet, the first thing that comes to my mind is water. Maybe that's due to the fact that I grew up surfing, swim every week at my LA fitness, or as a waiter have served probably a million glasses of water. In any case, our planet's livelihood is water. It's not just 70% of the earth's surface; it's in the air, glaciers, aquifers, soil and even my dog Moose. This is a precious resource I definitely want to serve.

Over the past year I enrolled in biotechnology courses at MiraCosta College, and this past summer I successfully completed a program earning a biomass production certificate. In these classes, I learned about alternative energies, lab techniques, and how to turn algae into oil – using a process called the Transesterification Technique. Algae are an outstanding alternative energy because in water, algae can reproduce and grow at an enormous rate with very few needs. Everything in this program was inspiring to me. I felt very comfortable working in the labs, and the work got me thinking about different real world applications to the science. I now know that I definitely plan to go back to school full-time and work towards a degree in the sciences. As I've also learned this degree plays an important role in getting me closer to a new exciting career in the water industry.

One of my professors at MiraCosta, Mike Fino, sent me information about a non-paid internship in Vista at a company called Assure Controls. Once I researched that this company tests water using marine plankton, I knew I had to work there. Luckily, I

got the internship. I worked about eight hours a week, and probably the only thing I did not enjoy was the 30-minute commute. My day as an intern usually started with checking email to see what was on the agenda for the day. Usually I cleaned cartridges and got them ready for water testing. Properly prepping the cartridges entails soaking them in ASW (artificial salt water). I also enjoyed making ASW. This is simply adding about 29 grams of sea salt to a little less than a gallon of bottled water making the water salty at about 30ppt (parts per thousand). Water testing at Assure Controls is done with a device called the QwikLite 100 invented by CEO Bryan Bjorndal. This device is fascinating. It's testing to assess contamination in any type of water like drinking water, sea water, etc. If there is something harmful or highly toxic in the sample, whether inorganic or organic, the QwikLite will detect it. For example it will find: copper, lead, zinc, ammonia, hydrogen sulfide, silver, cadmium, iron, phenol, polycyclic aromatic hydrocarbons, and storm drain effluents. The QwikLite utilizes dinoflagellates (marine plankton or in some forms - algae) in the actual testing process. This is a great use of a readily available natural resource in the ocean. The dinoflagellates mix with air pumping in the QwikLite which agitates the plankton enough to produce a bioluminescent glow of their own visible light.

It's so impressive that Assure Controls is testing water quality using a device fueled by marine plankton. Dinoflagellates are the most common source of bioluminescence located at the surface of the ocean, and all they need is salt water to survive. The traditional water testing process is much more costly and taxing on the environment.

There's no such thing as enough attention to the quality of our water. As I've completed my internship, I'm now anxious and eager to learn more so I can find a way to contribute to better water quality in California. Whether I'm testing water, or working in desalination this is a career that will serve me well. Especially if it means I never have to serve another glass of water in a restaurant.