

*Handout*

*Agenda Item* 814

*Date* February 8, 2018

Report to Board LGVSD

Date: 10/23/17

Re: IWA Water Reuse Conference in Long Beach

This international conference had many great speakers and attendees from all over the world.

I was impressed by the presentation of Scott Evan Miller, a Ph.D. student of Civil and Environmental Engineering, at the University of California-Berkeley.

Following is a summary of his speech, the part that addresses

Microbiology of DPR, Flow Cytometry and High-Through Put Sequencing which talks about Bacterial Quantification using Flow Cytometry.

This Process identifies 100% of the Bacteria and measures the quantity of the various bacteria in a laboratory sample in 20 minutes a fraction of the time and at a fraction of the cost compared to HPC (Heterotrophic Plate Count)

Flow Cytometry uses laser on a sample that is fluorescent dyed to determine the count and type of the bacteria through Gene Sequencing.

Using Flow Cytometry at various stages of Advanced Water Purification determines the quality of the DPR water. This makes it very effective to analyze quantities and counts of bacteria after each treatment stage.

Flow Cytometry opens the way in reasonable time and cost to determine how DPR ranks in different plants and sets base lines.

More research is needed, now that we have the means to perform quantitative analyses that helps setting targets and limits to produce the ideal water for DPR.

