

Water Recycling with Flood Benches: Benefits and Disadvantages®

Richard Wilson

Colorama and La Verne Nurseries, 1025 N. Todd Ave., Azusa, California 91702

Email: richard@coloramanursery.com

BACKGROUND

Water run-off is becoming a top issue and priority for nurseries and agriculture in general. Within 2 years, regulations will be written in California from 5 years' information gathering at sites. If you cannot contain it, it will have to be clean before discharge. If you can contain it, how can you use it to your advantage?

WATER TREATMENT: TWO DIFFERENT NURSERY COMPANIES

La Verne Nursery. We have an 8-acre reservoir that recaptures 100% of our irrigation run-off and have the capacity to capture a rain event equal to a 50-year rain event. The recaptured water first goes into a clarifier where solids drop out; then into a secondary holding pond and eventually into our primary pond where we inject chlorine-dioxide-type disinfectant plus fertilizers and then out to our plants.

Advantages.

- Reduced water/fertilizer costs
- Elimination of pathogens (we are a major avocado grafter — susceptible to *Phytophthora*)
- Practicing good stewardship of our environment

Disadvantages.

- Only built for a 50-year rain event
- Disinfectants and cleaning of clarifier (imperative to have clean water for disinfecting)

Colorama Nursery. At Colorama we have a 10 acre-ft capture reservoir and a 6 acre-ft of sanitized irrigation water. We recapture 95% of all irrigation run-off and the capacity to capture a rain event equal to a 50-year rain. Recaptured water goes into a solids drop-out culvert where we treat with chlorine dioxide, then into our large capture reservoir. From there it is filtered, treated with UV and ozone gas, and ends up in the sanitized reservoir that has a floating cover. From there it goes out to our ebb and flood benching where it will be pumped and drained off in less than 8 min.

Advantages.

- Qualifies for government grant monies
- Reduced water and fertilizer costs
- Elimination of all pathogens
- Labor savings in watering
- One extra crop turn per year from tables
- Our contribution to environmental stewardship
- Calculated payback period is 7 years for entire system (mostly from labor savings and extra crop turn)

Disadvantages.

- Only built for a 50-year rain event
- Large up-front costs on tables/plumbing
- Increase in electrical usage
- High maintenance cost for treatment plant and costs of disinfectants