



Water Production & Treatment Unit
Water Resources Division
Public Works Department
1228 S. Bundy Dr.
Los Angeles, CA 90025



August 18, 2014

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 958143

Re: Comment Letter – Draft Drinking Water Systems General Permit and Resolution

Dear Ms. Townsend,

The purpose of this letter is to comment on one specific area on the Draft Drinking Water Systems General Permit. We are aware that many others have commented more broadly on this draft permit in regards to the numerous policy and technical problems contained in this draft and agree that this permit solves no problem that isn't already covered by permits offered by the various RWQCBs. Furthermore, this permit would place an additional burden on systems already complying with MS4 permits and would be particularly challenging for small systems.

However, we wish to point one particular issue that has largely gone undocumented to date and that is the issue of the handheld meters and the Minimum Reporting Level associated with field measurements for chlorine residual. My background is in chemistry and I have nearly 20 yrs direct experience with taking field measurements and also with directing field crews to collect field measurements, so I am particularly suited to commenting on this issue. Here are some observations I can make from my direct experience:

- Handheld digital meters for Chlorine are beyond the skill level for a large fraction of field staff. Color Disc kits are more appropriate.
- Handheld digital meters for Chlorine will result in more false positives than the Color Disc Kit measurements because the digital meters are more vulnerable to interference (scratches on sample cells, condensation on sample cells, undissolved reagent powder, etc.) and are much more complicated to zero. Color discs require the crew to see a pinkish tint, which is independent of the scratches, condensation, and undissolved reagents, etc.
- For either digital or color disc chlorine measurements, the Minimum Reporting Level should never be any lower than 0.1 mg/l and real world readings at this level should not be expected to be only roughly accurate. Measurements down at this level of sensitivity are really pushing this technology; 0.2 mg/l is the level at which these readings can be expected to be reliable. The meters may be capable of reading lower, but field crew testing real world samples often have problems measuring accuracy at the lower limit of sensitivity.
- Handheld digital meters for pH are notoriously difficult to calibrate in the field and are subject to drift often requiring repeated recalibrations. The accuracy needed for this application does not warrant requiring digital meters. Test strips for pH are available with ranges narrow enough to be applicable.
- Handheld digital meters for Turbidity are also well beyond the sophistication level for a large segment of field crews. There is no reasonable field test available, so if turbidity measurements are desired, they should be tested in a certified laboratory.

- Handheld digital meters for Chlorine, pH and Turbidity are expensive and easily damaged. If dropped just once, they are likely broken. Color Discs for Chlorine and test strips for pH are much more appropriate for field measurements by distribution system crews.

We appreciate the opportunity to comment on the draft permit. Please feel free to contact me at (310) 434-2659 if you have any questions.

Sincerely,



Myriam Cardenas
Assistant Manager for Water
Production and Treatment

mc/s