

Webinar #3 Questions:

1. Curious why you mentioned not to use lubrication on O-rings for the UV sleeves. We have found with the Pro 50 units they can be quite dangerously difficult to get the sleeves out but with a very small film of lube on the O-ring are very easy to get out of the reactor. NSF rated lube of course. Thanks.

We have found that trace amounts of lubricant invariably ends up getting on the UV sleeve where it inhibits the transmission of UV light thereby reducing UV dose and potentially triggering UV alarms. I agree that the sleeves can be a bit difficult to remove. If you use lubricant, I would suggest going as light as possible and being very careful to not incidentally allow any lubricant residuals to get on the main area of the sleeve during sleeve cleaning. VIQUA specifically recommends strongly against use of lubricant on the sleeves so extreme care would need to be taken to prevent accidental sleeve fouling.

2. What would be the equivalent to 0.4 to 1 mg/l be in ppm? my meter reads free chlorine in ppm
3. I Googled the conversion for mg/l and apparently it's equal to ppm lol, but I'm unsure why my health officer is saying I need 2-4ppm free chlorine

Yes, you are correct. mg/l and ppm are the same. 1 mg/l = 1 ppm

4. my PHO instructed me to have 2 to 4 ppm free chlorine, this is way too high??

This is very high and would be objectionable to most people drinking the water due to taste/smell. However, there may be some valid reasons why you have been advised to run the chlorine levels so high. For instance, if you have a limited amount of chlorine contact time between the chlorine injection point and the point where water is consumed, to compensate for the limited time, you may need to run a higher concentration so the chlorine can still be effective at disinfection. In some cases, where distribution systems are extensive and flow rates are low at the end of the distribution lines, there can be a lot of free chlorine loss from the injection point to the end of the line. Higher injection concentrations may be required to overcome these losses. We try to keep free chlorine under 1 ppm in most system designs to make the water more acceptable to consumer taste and smell preferences, but there are valid reasons why it may need to be higher to meet health objectives. I would be happy to review your system set-up and configuration with you to see if you might have room to reduce your levels.

5. We use vinegar to clean the lamp sleeve? Is this sufficient? Is CLR or Lime away better. Is vinegar NOT good?

Vinegar is not generally recommended as it contains organics which can absorb UV light. Any residuals left on the sleeve can reduce UV transmission. As an acid, it does help remove hard

water deposits though and it is far from the worst thing you could be using. CLR is better though as it is a non-organic acid and a bit more powerful.

6. Is it better to place the UV solenoid valve directly before or after the UV unit? Great presentation.

This is subject to a lot of debate. In my personal opinion, and I think most people now agree with this, it is best immediately after the UV chamber. In theory, when an alarm event is triggered or there is a power failure and the solenoid closes, there are some pathogens inside the UV chamber that have not been fully treated. Since they can “swim”, it would be possible for them to swim downstream into the distribution pipe if there were not a physical barrier (the closed solenoid) valve on the outlet. This risk is minimal for short outages but could be more meaningful as downtime increases. There is at least one advantage to having the solenoid on the inlet side though (at least for some models).... In the event that the sleeve ever shattered, water would contact the lamp, short out the lamp, cause an alarm which would close the solenoid of course. If the solenoid was on the inlet side, it would prevent a water leak from occurring. In my view, using a solenoid as a leak detection shut-off is not really what it was intended for so I prefer to use it for the very best level of pathogen protection as possible on the outlet side. I do recognize that there are differing opinions on this. For short outages, it would likely make no difference, but for longer outages, outlet side is better IMO.

7. We spoke last year regarding issues with my system. the UV treatment wouldn't work, kept giving me multiple alarms including low UV wattage, lamp failure and UV sensor issues. followed all troubleshooting steps nothing worked. upon installation this year my system installer came out to help and we discovered the sleeve wasn't quite back in place properly which wouldn't allow system to work. there was nothing in the handbook for that issue, so I just wanted to put it out there, so you were aware of what the issues ended up being and maybe to help the next person with the same issue.

Thanks!

8. When using the DPD chlorine test I suspect the manganese content of the water may be affecting the resulting readings. How can I be sure this is the case and if it is, how do I best correct for the manganese?

Yes, manganese can cause problems with DPD chlorine test method. Attached is a link that might help:

[https://support.hach.com/app/answers/answer_view/a_id/1001499/~how-can-manganese-interference-in-a-dpd-chlorine-test-be-eliminated%3F-](https://support.hach.com/app/answers/answer_view/a_id/1001499/~/how-can-manganese-interference-in-a-dpd-chlorine-test-be-eliminated%3F-)