

April 8, 2015.

**TO: Clerk to the Board**

**FROM: William Bourcier**

**SUBJECT: Comment Letter – Desalination Amendment**



I am writing with regard to your reply to my previous comment (Comment 28 in Appendix H) having to do with potential greenhouse gas (GHG) emissions from intakes. I appreciate your thoughtful reply and check on the estimated carbon dioxide emissions that I submitted. I do not agree with your overall assessment but agree in some cases the emissions might not be significant. What is simply not true is your statement that “there are no potentially significant effects from GHG emissions resulting from the use of subsurface intakes.” To prove this you would need to provide analytical data from existing subsurface intake systems. To my knowledge no such data are available. You or anyone else have not shown this to be true.

I had two objectives in bringing up this issue. The first was to make sure there was an awareness of the potential problem. The second, and equally important, is to point out that the issue can be addressed by simply requiring in your permitting process a GHG analysis based on the chemical composition of sampled feeds - in other words to carry out an analysis similar to what you did in your reply to my comment, based on measured carbon dioxide and methane contents of the feed. If the fluid has low potential to release carbon dioxide and methane, it is a non-issue and can be ignored. If the fluid has high potential, the GHG release needs to be addressed, and presumably that would be a factor in choice and location of intake system.

For these reasons I believe you should add to the list of factors for determination of whether or not subsurface intakes be used for feed (page 6 of draft amendment) a requirement that an analysis of potential GHG emissions be carried out. This will not be costly. The designers of membrane desalination plants all acquire these data and use them to carry out design calculations. Carbon dioxide content is important to them both for system design and scale control. The necessary information will be available, the SWRCB simply needs to request these data and an analysis of estimated GHG release for each proposed project. Note also that any GHG source of greater than 10,000 tons per year needs to be reported to CARB. The plant operator will need a GHG analysis regardless of whether it exceeds this limit or not in order to satisfy their requirements. How do you know the size of the GHG emission if you do not require that it be measured or monitored?

As far as sourcing water using subsurface intakes, you are optimistic that in general the intakes will operate in a way that fresh open seawater is pulled down and into the system. It is equally likely that fluids from lateral or deeper horizons will be drawn into the system. It is also likely that if in fact fluids from the open ocean are drawn in, they will be oxygenated compared to sediment pore waters. This increases the likelihood for increased aerobic microbial activity in the sediment causing GHG generation. The release would not be observed until the open ocean waters infiltrate the sediments and reach the intakes. So it would not even be possible to monitor the emissions until the plant has been in operation for some time.

As you know, although seemingly simple, the intake system for a desalination plant is actually quite complex. The variability and heterogeneous nature of the subsurface are difficult to predict. The simplest way to reduce the risk of improper site and intake design is to require a GHG analysis for any potential feed. A requirement for such a GHG analysis is currently missing from your Water Quality Control Plan and, in my opinion, should be added.



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