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To: SF Water Department

From: Jeff Shields, Associate, Citizens Concerned About Chloramine

Subject: The use of chloramines in San Francisco's public drinking water.

Problem: We at Citizens Concerned About Chloramine (CCAC) are very troubled by the decision of San Francisco legislators to add chloramine to our public drinking water. The use of this disinfectant began two years ago, replacing the previous disinfectant, chlorine. We feel that this was a mistake, and that chloramine should be taken out of the water purification process.

Evidence/Policy Context/Background: Ever since Anton Van Leeuwenhoek invented the microscope, people have known that there are microbial forms that exist in water (Symons, 1998, p.87-98). From this understanding came ideas like Germ Theory, which Louis Pasteur developed, explaining that these microorganisms in water can cause serious health problems to humans (Ibid). These few important stepping-stones have helped us progress our thinking about water today. However, we seem to be at a point where some strict evaluation is necessary. There are living things in the water, living things that may threaten our health. But, we must make sure that we are not adding substances to the water that make it more dangerous. We need to really think about the root of water contamination and be careful with the types of purification techniques that we use.

In 2004 San Francisco decided to add the disinfectant, chloramine, to the city's water supply in replace of chlorine (fluoride is also added). The logic of this decision is clear: the federal laws were addressing problems with high levels of disinfection byproducts (SFPUC, 2006). Chlorine was causing high levels of these byproducts, so SF went with a new disinfectant on the market: chloramine. However, since chloramine's introduction there have been some major concerns. In Washington D.C. and Greenville,

N.C., they have seen evidence of elevated toxic lead in their drinking water (Renner, 2006, p.3129-3130). Both increases have occurred once chloramine was introduced to the water. In the article by Rebecca Renner, she states that “The monochloramine may lead to high PB levels by oxidizing Pb in service lines, solder, and brass to soluble Pb.” (Ibid). Also, in another article on this issue Switzer (2006) states that “there is significant uncertainty around the health impacts of these iodinated DBP’s” coming from chloramine (p.3384-3387). This would run counter to the intended goal of erasing dangerous DBP’s.

Criteria: From a number of different perspectives, this change makes sense. Firstly, what is important here is that San Francisco is providing clean and healthy water to its residents in an equitable way. Every resident should be able to access water that is pure and safe. Lower income residents should not be forced to drink contaminated tap water while wealthier, educated people are able to go out and purchase bottled water. We need to be able to trust our water supply. Ensuring that San Francisco’s water is treated completely and efficiently is the only way we can make this happen.

From an economic standpoint, this change makes sense as well. The amount of plastic bottles that result from this fear of tap water is a problem. This trash adds to the already daunting task of managing “waste” in SF. The public health demands more attention to this issue. This problem is stronger than any simple disinfectant.

Another large issue here is a political one. There are big business polluters peppered throughout the bay area. A lot of the contamination of drinking water is caused by large agriculture and livestock activities (2003, p.22-25). Kathleen Cooper emphasizes that “...they are such obvious sources of water contamination and... they are so minimally regulated.” These polluters need to be addressed.

Alternatives: Before chloramine, chlorine had been used for decades. This disinfectant, while still controversial, has proven to be a useful tool in killing various contaminants. There are reasons to dispute the use of chlorine as well, but for now it is important to revert back to chlorine. While doing this, the City should explore other purification techniques. SF does do this to some extent. I have read about their desire to recycle drinking water and the idea to desalinate water from the ocean (SFPUC, 2006). But, there are more ideas out there that should be explored. First of all, where does the water contamination start?

In the article, “Trusting the Tap,” Cooper (2003) discusses the importance of protecting water, using a multibarrier approach (p.22-25). The most important aspect of this approach is stopping contamination where it starts. Needless to say this is not an easy task. Research will have to be done, and systems will have to be questioned. There is no simple answer to the water contamination problem. But, different techniques are out there.

The Natural Resource Defense Council noted in 2001 that SF received a rating of “Poor” for their water quality between 2000 and 2001 (NRDC, 2006). One of the reasons they mentioned was that San Francisco does not filter the water supply that comes from Hetch Hetchy. I suggest that San Francisco set up a filtration system for their drinking water. In 2006, Logsdon, Horsley, Freeman, Neemann, and Bud discussed how bacteria is evolving and becoming more resistant to chemicals like chloramine (2006, p.150-162). Filtration is becoming more and more necessary. Specifically, sand filtration is a highly used technique for treating contaminated water (Ibid). This type of filter could be a good fit for San Francisco.

Outcome Matrix

Alternatives	Criteria		
	Reduce toxins In water	Accountability (who's polluting?)	Efficient water purification
Revert back to Old method (Chlorine)	+	-	-
Regulate polluters more strongly	+	+	-
Invest in filtration system	+	-	+

Recommendations/Conclusions: I highly recommend that the San Francisco Water Department take chloramine out of the drinking water. It is potentially dangerous to the many individuals here in San Francisco. At the same time I recommend that you revert back to chlorine as the disinfectant, but for a limited amount of time. I urge you to set a goal for intensifying regulation of key polluters in order to nip this problem in the bud. However, since contaminants do come from other sources, it is important for a filtration system to be set up in order to screen out any dangerous substances or microbes. Additionally, I recommend filtration in the form of sand. This seems to be a natural and efficient way of purifying drinking water. Thank you.

References

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