

Chloramine Conversion Treatment Cost Comparison & Other Concerns

Council Water Committee
November 13, 2013

Granular Activated Carbon Cost to Meet Stage 2 D/DBP & Bromide Regulation

- ▶ DWSP Water Treatment Design Estimate for Post Membrane GAC contactors (2012)¹:
 - Capital cost = \$16.2M
 - Capital Recovery (30 years @ 6% interest) = \$1,162,023/yr
 - Annual O&M cost = \$4.24M
 - Total Annualized Capital and O&M = \$5,406,855
 - \$0.49/1,000 gallons treated
- ▶ California Urban Water Agencies Estimate of Annualized Capital and O&M (2012)²:
 - \$0.53/1,000 gallons treated
 - 30 mgd = \$5,803,500/yr

¹ 2008 Estimate of \$15M Capital and \$4M O&M Inflated at 2%/yr for 3 years

² Triennial Public Health Goals 2013 Report

Impact to Water Rates

- ▶ Current Water Rate = \$1.60/ccf
 - 1 ccf = 748 gallons
- ▶ Cost for GAC Treatment:
 - \$0.49/1,000 gallons or \$0.37/ccf
- ▶ New Water Rate = $\$1.60 + 0.37 = \$1.97/\text{ccf}$
 - *23% Rate Increase!*
- ▶ *Current Chloramine Conversion Total Annual Capital and O&M is included in current rates*

Opposition to Chloramine Use

- ▶ Recent communications state chloramines will leach lead and copper from distribution pipes and cause corrosion problems
 - Opponents cite the work of Marc Edwards, a professor of civil engineering at Virginia Tech
 - Reference materials provided to dispel this perception
- ▶ Argument to avoid chloramines not scientifically-based, rather political pressure
 - Tulsa, Oklahoma
 - Charlottesville, Virginia

In Summary

- ▶ Chlorine alone as a residual disinfectant can no longer be used to control microbial growth in the water distribution system
- ▶ GAC is cost prohibitive to implement
- ▶ Lead leaching from pipes after conversion to chloramines is no more likely than leaching from chlorine use, provided pH is controlled
 - No history of lead and copper problems in our water system