From: Garcia-Bakarich, Luis
To: Calvino, Maria Soledad; Amato, Paul
Cc: McKinley, Helen; Keener, Bill
Subject: RE: Media Inquiry: Stockton Chloramine Question
Date: Tuesday, January 19, 2016 2:15:00 PM

From what I have gathered, and I am not a chemist…

Chloramine is the combination of chlorine and ammonia. There is a little reaction and chloramine is born as a new compound (molecular) versus a mixture.
https://en.wikipedia.org/wiki/Chloramine

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From: Calvino, Maria Soledad
Sent: Tuesday, January 19, 2016 1:37 PM
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Subject: RE: Media Inquiry: Stockton Chloramine Question

Thank you, Luis. I will also direct him to R9's Chloramine website.

The other question he had was…Is Chloramine a combination of Ammonia and Chlorine? Does the combination of these two chemicals change the compounds on a molecular level? Or are they just pouring ammonia to the drinking water?
He is raising this question because Erin Brockovich wrote:
"Historically, drinking water disinfection with chlorine has been extremely successful in addressing bacterial and viral contamination. It has virtually wiped out waterborne diseases like typhoid fever, cholera, and dysentery. However, chlorine disinfection may also cause health risks. When chlorine is added to the water, it not only kills bacteria and viruses, but it also reacts with other chemicals dissolved in the water to form new compounds, known as disinfection byproducts. Some of these byproducts, such as trihalomethanes, are thought to cause cancer and pose other long-term health risks.
Chloramine, on the other hand, is a combination of chlorine and ammonia. While chlorine dissipates and evaporates into the air relatively quickly, chloramine is more stable and will last longer in the water system. The goal is to provide increased protection from bacterial contamination. Chloramine also happens to be the cheapest and easiest of the options available to water utilities. Yet even

though the use of chloramine is convenient, it may not be safe."

Thank you,

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Sent: Tuesday, January 19, 2016 1:27 PM
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Subject: Media Inquiry: Stockton Chloramine Question

As I understand the question:
"What studies did the EPA evaluate when considering chloramines for treatment of drinking water?"
The reporter is looking for a syllabus of studies.

I spoke with a person at HQ very familiar with disinfection and the rules associated. Our recommendation would be to provide the reporter with FR notices for the Stage 1 and Stage 2 Disinfection Byproduct Rules. The FRs provide lists of all the studies considered in rule development. The FRs also provide discussion that interprets the findings of those studies. Notably, the Stage 1 FR notice states on page 38682, with respect to exposure to chloramines, "No adverse clinical effects were noted in any of the studies."

Stage 1 Federal Register Notice: Vol 59, No 145, page 38668, Friday July 29, 1994
Stage 2 Federal Register Notice: Vol 71, No 2, page 388, Wednesday January 4, 2006

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