

Chemistry 5995(083)/8890(013)

Metals in Medicine

Assignment 1

Due: February 11, 2020

In class we discussed the case of the Hinkley groundwater chromium(VI) contamination. This was a landmark case because it resulted in the defendants “receiving” \$333 million, the largest settlement ever paid in a direction-action lawsuit in U.S. history. Although it is an important case because it helped to address the need for improved regulation of drinking water supplies, there has been much controversy regarding the actual science of the matter. Different research agencies (environmental and university-based) have argued that the levels of the metal ion were simply not high enough to cause the numerous cases of cancer especially because it was ingested orally and not acquired nasally. They also point out that Cr(VI) could not have been the source for the diverse diseases that defendants claimed to have.

For this assignment, I want you to apply your critical thinking to survey the scientific literature and write a two page argument describing whether or not you believe that Cr(VI) could have caused the health issues that were reported. To help support your argument, you can look into aqueous speciation studies to see if Cr(VI) would have been stable enough via oral administration to have had the devastating cellular/organ effects that were claimed. Please make sure to provide references to support your argument using the ACS format. For a specific example of formatting, please refer to the formatting style of the Journal of the American Chemical Society. The assignment is to be submitted as either a word or pdf document by email (arthur.david.tinoco@gmail.com).