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Katie Linscott's Individual Contribution Page

Spring 2013 Contributions

As part of the arsenic research team this semester, my team and I hope to develop a lab procedure for effectively testing techniques for arsenic removal and for safely disposing of arsenic waste. Specifically, we plan to research methods used for arsenic concentration measurements, types of raw water that are most effective for testing, and whether iron salts or PACl should be used as coagulants to form arsenic flocs.

As of May 10th, 2013, our team has completed our research on how to handle arsenic in the lab and on possible coagulants for arsenic floc formation. We've written out a detailed manual on arsenic safety and disposal so that next semester's arsenic team can work on getting the lab arsenic ready. We've also completed our research on appropriate raw water compositions for experiments, and on possible equipment to use for arsenic measurement. We have a list of promising coagulants we researched this semester, which we hope next semester's team will actually be able to test in the lab. Specifically, I did extensive research on the use of Alum and PACl as possible coagulants. I also researched non-coagulation methods, including granular ferric hydroxide, iron-coated sand, activated alumina, and ion exchange resins. Furthermore, I researched permanganate and hypochlorite as possible oxidizing agents for oxidizing As (III) to As (V) so that removal will be more effective. We've also outlined instructions for next semester's team on how to get the lab arsenic ready, which can be found in our final report on the arsenic page. In an effort to give next semester's team more guidance, I worked specifically on creating a mathcad file that can be used to output experimental design parameters once more is known about arsenic floc formation. I feel our team has completed the necessary background research for AguaClara to begin testing next semester.