**Water SWAT Team Meeting**

*In attendance: Jeremy Overmann, Art Schmidt, John Berens, Lauren Excell, Stephanie Cash*

1. BIF Greywater Meter Updates
   1. Student Sustainability Committee (SSC) has recommended that the proposal for a permanent greywater meter be funded for the full $5000 requested
   2. Awarded amount is retained in the SSC fee fund, however, the money must be reallocated to an organization code and program code for the unit
      1. The webpage <http://www.obfs.uillinois.edu/forms/accounting-financial-reporting/> will be used to apply for codes
      2. Further instructions can be found in email from Micah Kenfield, SSC Coordinator
2. Increase Cooling Tower COC
   1. Water SWAT team will work with Campus Recreation to identity potential sites
      1. Information to acquire: List of cooling towers, how many tons of cooling, year-round vs. summer operation
      2. UI water from Illinois American Water which is partial softened at the plant, but has high alkalinity which can limit COC
   2. Jeremy Overmann, chemist with the Institutional Water Treatment Program, reviews COC & “Zero” blowdown systems
      1. COC = cycles of concentration, how many times the minerals in a batch of water gets concentrated, measured by conductivity
         1. COC is controlled by choosing a rate of blowdown (where blowdown/bleed valve at bottom of tower allows fresh water to flush out the high mineral concentration water)
            1. For example, water in Champaign is typically 400 microsiemens (unit of electrical conductance). If a cooling tower is run at 3 COC, the water in the tower will increase to 1200 microsiemens. Enough water will be blown into the system to keep it at that level.
         2. Systems with greater COC uses less source/Make-Up water per hour, however as COC increase, the potential for calcium scale also increases (which reduces efficiency and requires labor intensive cleaning)
         3. Most standard chemically treated cooling towers use unsoftened water and operate between 4-6 COC, whereas “zero” blowdown cooling towers use softened water with COC ranges from 20-100 or higher. Systems using softened water must monitor the blowdown valve (either manual or digital system). Further details and graphs can be found in email from Jeremy.
      2. Champaign Regional Office Building study
         1. Building owned by UI for state employees that uses 300 ton cooling tower
         2. Grant from Illinois Sustainable Technology Center for research project on reducing water use
            1. “Zero” blowdown cooling tower using High Efficiency Softening (HES) which softens the water before use in cooling tower (which increases COC and decreases water use from blowdown)
            2. Monthly fee of $670/month to company that holds HES patent (fee covers use, inspections, wireless communication devices etc)
            3. Research found this method to be economically viable if cooling plant is already running under 3 COC
            4. Highest COC achieved was 51
      3. Testing Lab, UI Water Stations
         1. Manages closed loop heating and cooling systems
         2. What is the name of this lab? Do they test water from cooling towers? Would they have suggestions for Campus Recreation cooling towers?
3. Scheduling
   1. Water SWAT will meet every other week on Thursdays at 4pm in the iSEE Conference Room for the remainder of the Spring 2017 semester
   2. Suggestion to invite Stephanie, student clerk, to Outlook to check staff schedules
   3. Schedule joint meeting with Agriculture, Land Use, Food and Sequestration (ALUF) SWATeam
   4. Next meeting: Thursday, March 30th at 4p in the iSEE Conference Room
      1. Moving forward with greywater design standard suggestions
      2. Updates on BIF water meter