

Stream Team Meeting Minutes  
7:30 PM Wednesday, November 5, 2003

1. Status of batteries, Passaic River rain gauge – all batteries have been replaced so there are now 7 new ones in circulation or serving as back ups. As of 10/23 the Passaic River rain gauge began working again. No one admits to fixing it. Sarah Low's theory is that perhaps the wasp spray caused the problem and once it wore off, the equipment began working again. Bill Allen asked the group whether they were interested in taking on more responsibility for maintaining the ISCO equipment. The group agreed this might be a good idea if the proper training was provided, manuals were available and volunteers are able to contact the ISCO technicians directly for technical support. Bill said he would discuss the matter with Len Hamilton.
2. Data gaps in October ISCO level and rain gauge data - as of 10/23 when the PR rain gauge came back on line, all units were functioning and October was the most complete data set in the past several months.
3. A date for training additional volunteers to do sample collections will be set once Neil returns from Alaska in early December. Roger Edwards, Chuck Whitmore and Bill Marshall all indicated an interest in the training. Neil also mentioned that it would be helpful to have one or people to help with enabling the samplers before a storm as it would cut down on his traveling around the watershed. Karen scheduled the uplands assessment of the LB sub-watershed for the afternoons of 11/18 and 11/20 if necessary to complete.
4. Roger Edwards presented his analysis of the TDS lab sample results to date. He talked with someone at the IAL lab and determined that they do use an evaporation method for measuring the TDS (in other words, the solvent part of the sample, i.e. the water, is evaporated and the remaining residues are then weighed). Roger emphasized that total ions should never add up to more than the TDS, but that the sum of the ion concentrations could add up to less because some particulate matter that gets through the filter could be included in the residues. With the parameters analyzed in the October sample, it looks like we are accounting for about 95% of the total TDS. Based on the ionic weights of the residues, Roger estimates there is approximately a 1.5:1 ratio of the number density of chloride ions to sodium ions. If these ions originated solely from a NaCl source, a 1:1 ratio would be expected. This could mean that the additional chloride originated from other salt sources such as  $\text{CaCl}_2$  or  $\text{MgCl}_2$ , or that ion exchange may have removed some of the sodium from the solution. When the numbers of positively charged cations and negatively charged anions are considered, it is apparent that one or more anions, additional to those measured, must be present to achieve charge balance. Roger's hypothesis is that carbonates may be the missing link, though Neil added that these might be difficult to get an accurate measure of because they interact with  $\text{CO}_2$  in the air. Potential sources to look into further are the delayed impact of road salts (in other words, once they enter the soils, they will continue to leach into the groundwater and thus potentially infiltrate into the stream, contributing to TDS under baseflow conditions) and the impact of the natural geology. Todd suggested comparing TDS levels in Loantaka to a more pristine stream with similar geology (e.g., a source in Jockey Hollow that has been protected from development).