

## Why is it taking so long to get data back from the water quality samples?

MSI is striving hard to provide accurate, independent, sound scientific information on the status of the water quality in the Animas River. Many of you may be wondering what is causing the delay between actually taking a water quality sample and then receiving data back for contents of dissolved metals in the water.

### The life of a water sample

1. There are two main commonly used sampling techniques used to determine water quality, grab samples and composite samples. MSI deployed staff into the field at 10 am on Thursday to collect grab samples on the hour. A grab sample is a single sample taken at a specific time. The grab sample represents a snapshot of the water column at a certain time. MSI took grab samples by hand every hour until 4pm on Friday when staff installed an automated water sampling device that continues to take grab samples every 2 hours.
2. Once samples are taken from the river they must be transported to a water quality laboratory. Sometime this requires samples to be overnight shipped or driven a few hours away if the laboratory is not locally present. Laboratories that test for heavy metals in water samples are highly specialized and require very specific equipment in order to assess a sample.
3. Once in the laboratory, the samples undergo vigorous testing through various types of highly specialized equipment that varies depending on the metal for which they are being tested, and the selection of analytical parameters associated with the quality assurance guidelines. This process takes some time, especially when testing for different types of metals since some metals require that the sample sit for a period of time to allow the metals to settle at the bottom of the aqueous solution.
4. While the samples are in the laboratory, quality control measures are taken to ensure accurate data analysis.
5. The holding time in the laboratory to test for heavy metals in an aqueous solution can sometimes take up to 14 days.



**Amanda Kuenzi of MSI labels bottles to be placed into the ISCO (automated water sampler) at the Animas River on Friday.**

Many factors can affect the quality of a sample and the extent to which the sample is representative of the general body of water. Accurate results are only obtained using appropriate techniques and equipment. It is important to measure not just the concentration of metals in the water, but also the duration, which is why MSI began monitoring before the plume hit Durango and now continues to monitor the same location as the plume attenuates. MSI will continue to monitor the water quality to provide sound information that will help build the big picture story through long term monitoring efforts that are currently being formulated through MSI and our partners.