



# CANAL ANALYTICAL & ENVIRONMENTAL SERVICES

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## Hexavalent Chromium Sampling Instructions

### Background:

Hexavalent chromium ( $\text{Cr}^{6+}$ ) concentrations tend to change in solutions that have a certain degree of chemical reactivity. However, adjustment of the solution pH to 9.3-9.7 reduces the solution reactivity and stabilizes the hexavalent chromium so its concentration will reliably remain unchanged for at least 28 days.

### Procedures:

A few milliliters of ammonium sulfate buffer has been pre-added to the sample bottles. You are given two sample bottles to allow two attempts at a successful sample pH adjustment. Only 1 bottle is needed for analysis. Do not rinse the buffer out of the bottles.

- 1) Fill the bottle to its shoulder with a grab sample.
- 2) Measure the pH with a calibrated probe (keep calibration records)
- 3) If the pH is below 9.3;
  - a. Add 1 drop of sodium hydroxide solution to the sample.
  - b. Cap and mix well.
  - c. Measure the pH again.
  - d. Repeat until the pH is between 9.3 and 9.7. Do not over-adjust the pH! A pH of 9.5 is not "better" than a pH of 9.3.
- 4) Write the adjusted pH **on the bottle and on the chain of custody** line where the hexavalent chromium sample is identified.
- 5) Return both bottles to the laboratory.

### Safety:

The sodium hydroxide solution is concentrated enough to do damage to your skin and **ESPECIALLY YOUR EYES**. Wear gloves, safety glasses, and long sleeves. See the included SDS for additional information.