

**ADVANCED GEOCHEMISTRY OF NATURAL WATERS  
LABORATORY EXERCISE 1**

1) Using the five NBS buffer solutions, make a calibration curve of pH vs. mV. Is the curve perfectly linear? If not, why not?

2) Next calibrate the meter using its internal calibration option. Use the pH 7 and 2 buffers.

After calibrating, check and record the pH of the pH 4 buffer. How close is the measured pH to 4.0? Referring to your calibration curve from 1 above, offer an explanation for any observed deviation. What is the best strategy for calibrating a pH electrode and meter if you want to obtain the highest degree of accuracy for a series of solutions thought to be within a certain range?

3) Now determine the pH of tap water and the pH of deionized water (DIW). Record your observations? Is the pH of the DIW exactly neutral? If not, why? Are the pH readings for tap water and DIW stable with respect to time? Why or why not?