**Dissolved Oxygen**

1. Fill one dissolved oxygen bottle (round glass bottle with glass stopper) with the sample A water up to about the middle of the neck of the bottle. Fill the other bottle with sample B water.
2. Add the contents of one Dissolved Oxygen 1 Reagent packet and then contents of one Dissolved Oxygen 2 Reagent packet to each bottle. Stopper the bottles carefully. To avoid trapping air bubbles in the bottles, incline the stopper slightly and quickly insert the stopper. Make sure there are no air bubbles (hold cap on and turn upside down). Add additional sample water if air bubbles are present.
3. Grip the bottle firmly, and hold the stopper with your thumb; shake vigorously to mix (turn bottle upside down and right side up repeatedly). A flocculent (floc) precipitate will be formed. If oxygen is present the floc will be brownish orange in color.
4. Allow the samples to stand until the floc has settled halfway down in the bottle, leaving the upper half of the sample clear. Shake the bottles again (turn bottle upside down and right side up repeatedly). Again, let it stand until the upper half of the sample is clear.
5. Remove the stopper from each bottle and add the contents of one Dissolved Oxygen 3 Reagent Powder Pillow to each bottle. Carefully re-stopper the bottles and shake to mix. Make sure there is no air bubble (add more sample water if there is). The floc will dissolve and a yellow color will develop if oxygen is present.
6. Fill the plastic measuring tube over the top with the yellow colored solution prepared in steps 1 through 5. Pour this measured amount into the square-mixing bottle. One for sample A and one for sample B.
7. Using the eyedropper (holding it straight up and down above the bottle), add Sodium Thiosulfate Standard Solution one drop at a time to the mixing bottle. (Be careful not to empty entire eyedropper. You need to be able to count the drops.) Swirl the glass bottle to mix after each drop and count each drop as it is added. Continue to add drops until the sample changes from yellow to colorless. Use a white background to ensure that the sample is colorless.
8. Record the number of drops as the DO value on the data sheet. Rinse all glassware with distilled water.

**Nitrate Test-Low Range**

1. Rinse one of the test tubes twice with the water sample to be tested by capping the tube and shaking vigorously. After rinsed, fill the tube to the bottom mark or line (5 mL) with the water sample. Do all these steps for both sample A & B.
2. Add the contents of one NitraVer 6 Nitrate Reagent packet to each tube. Cap the tubes and shake for three minutes. Then allow the tubes to stand undisturbed for 30 seconds. Unoxidized particles of cadmium metal may form (unlikely); if they do, they will settle to the bottom of the tube.
3a. IF you see Cadmium particles: **You must refer to the CREEK CONNECTIONS HANDBOOK for instructions. Do not proceed with the following steps.**
3b. IF you do NOT see Cadmium particles: proceed to the next step.
4. Add the contents of one NitriVer 3 Nitrite Reagent packet to each tube. Cap the tubes and shake for 30 seconds. A red/pink color will develop if nitrate is present (no color = 0 nitrates). Allow the tubes to sit for at least 10 minutes, but no longer than 20 minutes before using the color comparator (black box). While waiting, do the next step.
5. Fill another test tube to the 5 mL mark (bottom line on tube) with untreated water sample. Place this tube in the outermost opening of the black box.
6. Once at least 10 minutes has passed, insert the tube with chemicals added into the centermost opening of the black box. Hold the box up to a light source (sky, window, or lamp) and view through the openings in front. Rotate the disc to obtain a color match, then read the mg/L nitrate value through the scale window. Record this value on the data sheet. If this value is 1mg/L of nitrate or greater, the results are not accurate enough and you must proceed to the high range (1-10 mg/L nitrate) test instructions (See Creek Connections Handbook). Rinse all glassware with distilled water.