

Water Quality Chemistry Sampling - Instructions

1. Collecting the water sample

Empty your white screw-top jar and completely submerge it in the main water column of your water source. Fill to the top with water and screw on the cap.

NOTES : *Keep the jar clear of mud, algae, and plants.*

: Keep the jar out of sunlight, as possible.

: Keep the lid on the jar to conserve DO escaping.

2. Temperature

For thermometer on the side of the jar: Leave the jar (capped) a few inches under the surface of the water (waiting for the thermometer strip on the outside of the jar to acclimate to the water temperature). Wait 30 seconds and then remove the jar from the water. Immediately read the temperature (the number with the green background). Record the number in degrees Celsius (°C).

For thermometer separate from jar: After or as sample is being taken, insert thermometer strip fully into water column where water sample was collected. Keep strip fully submerged in water for 30 seconds. If possible, read strip while still submerged, otherwise read as quickly as possible after removing from water. Record the number in degrees Celsius (°C).

3. Dissolved Oxygen

1. Submerge the small glass vial into the water sample. Carefully remove the vial from the jar, keeping the vial full to the top.

2. Drop two dissolved oxygen tablets into the vial. Water may overflow when the tablets are added.

3. Screw the cap on the vial. More water will overflow as the cap is tightened.

NOTE: *make sure no bubbles are present in the vial!*

4. Mix by inverting the vial over and over until the tablets have disintegrated. This will take about 4 minutes. After the tablets have disintegrated, wait another 5 minutes for the color to develop.

NOTE: *inverting means flipping over completely over and over. Do not shake the vial.*

5. Compare the color of the sample to the dissolved oxygen color chart.

6. Record your results.

7. If time, discuss the % Saturation – see back for more details.

4. pH

1. Fill the plastic test tube to the 10 mL line with the water sample (not to the top).

2. Add one pH tablet to the test tube and cap it.

3. Mix the tablet into the water sample by inverting the tube until the tablet has disintegrated.

4. Immediately compare the color of the water in the tube to the color on the pH color chart.

5. Record your results.

5. Turbidity

1. Look for the secchi disk sticker at the bottom of the inside of the water sample jar.

2. Compare the visibility of the Secchi disk to the image on the laminated chart.

3. Write down your observations.

NOTE : *Keep this step short, so DO is unaffected.*

: If possible, read turbidity underwater while collecting the water sample.

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The saturation percentage of dissolved oxygen (% saturation) is an important measurement of water quality. Cold water can hold more dissolved oxygen than warm water. For example, water at 28°C will be 100% saturated with 8ppm dissolved oxygen. However, at 8°C can hold up to 12ppm of oxygen before it is 100% saturated.

To calculate the % saturation, locate the temperature of the water sample on the % saturation chart. Then, locate the dissolved oxygen result of the water sample at the top of the chart. The % saturation of the water sample is where the temperature row and the dissolved oxygen column intersect.

For example: If the water sample temperature is 16° and the dissolved oxygen result is 4ppm, then the % saturation is 41.

*Note: Calculations based on solubility of oxygen in the water at sea level, from *Standard Methods for the Examination of Water and Wastewater, 18th edition*.

DISSOLVED OXYGEN, PPM			
	0 ppm	4 ppm	8 ppm
2	0	29	58
4	0	31	61
6	0	32	64
8	0	34	68
10	0	35	71
12	0	37	74
14	0	39	78
16	0	41	81
18	0	42	84
20	0	44	88
22	0	46	92
24	0	48	95
26	0	49	99
28	0	51	102
30	0	53	106