



Massachusetts Water Watch Partnership

Standard Operating Procedure Lakes-3

For Secchi Disk Transparency

Revision 0

Marie-Françoise Walk

Marie-Françoise Walk, MA Water Watch Partnership
Blaisdell House UMass Amherst, MA 01003 413.545.5531

11-13-01

Date

Richard Chase

Richard Chase, MA DEP, Division of Watershed Management
627 Main St. 2nd floor Worcester, MA 01608 508.767.2859

11/26/01

Date

Arthur Screpitis

Arthur Screpitis, MA DEP, Division of Watershed Management
627 Main St. 2nd floor Worcester, MA 01608 508.767.2875

12/04/2001

Date

Overview

This procedure describes how to measure lake water transparency using a Secchi disk.

1.0 Equipment List

- ___ Secchi disk (8" black & white quadrant disk)
- ___ Calibrated line (either surveyor tape or cotton line)
- ___ View Scope (3 feet-long, 5"wide PVC pipe, no fiberglass window)
- ___ Two spring clip clothespins
- ___ Field Data Sheet and pencils

2.0 Measurement Protocol

- 2.1 To minimize individual differences, use a viewscope.
- 2.2 Measurements should be taken between 10 a.m. and 2 p.m.
- 2.3 A team of two volunteers performs the Secchi disk measurement. Do not wear tinted or polarized sunglasses.
- 2.4 Volunteer 1 lowers the Secchi disk on the sunny side of the boat.
- 2.5 Volunteer 2 submerses the end of the viewscope and watches the lowering of the Secchi disk.
- 2.6 When the disk just disappears, volunteer 1 clips a clothespin on the calibrated line at the water's surface.
- 2.7 The disk is lowered another one or two feet and then slowly brought up toward the surface.
- 2.8 Volunteer 1 attaches another clothespin on the line at the water's surface when Volunteer 2 can see the disk again.
- 2.9 The Secchi disk depth is the average of these two measurements to the nearest tenth of a meter.
- 2.10 Repeat the measurement with the two volunteers reversing roles.

- 2.11** Record the Secchi disk reading of each viewscope operator. Average the two measurements and record on the lake field sheet. Note that if the Secchi disk hit bottom and did not disappear from view, report the result as : "> ____" (insert bottom depth).

3.0 Maintenance

- 3.1** At the beginning of each sampling season, the calibrated line should be checked for shrinkage/stretching. Attach a cloth tape measure to the bottom of the calibrated line. Lower the Secchi disk as deep as you can without hitting lake bottom, feeding the tape measure so it is taut.
- 3.2** Compare the reading on the tape measure with the calibrated line reading. If they don't agree within 10%, you should adjust your Secchi disk readings accordingly, or switch to a fiberglass tape.