Standard Operating Procedure for:

Operation of the Global Water Flow Meter, Model FP201 (2060R01 Flow Meter.doc)

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and

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1 Identification of the method

Operation of the Global Water, model FP201 flow meter.

2 Scope of the method

This method describes the procedures for operating the Global Water flow meter.

3 Summary of method

The flow meter records the average speed for flowing water. The probe handle can be extended from 5 feet up to 15 feet. To make a measurement, place the propeller at the desired measuring point and hold the probe in place until the reading becomes steady. The average and maximum velocities remain on the display screen. Pressing both buttons will clear and re-zero the instrument.

See SOP 2050R01 Flow Discharge for how to use the flow meter to measure stream velocity to calculate discharge.

4 Definitions

None specific for this method.

5 Health and safety

5.1 When wading in streams where water depths may be 1 meter deep or more, wear a life preserver and/or remove hip boots or chest waders. Currents can force wading field workers into deep water and water-filled boots can make swimming difficult.

5.2 When walking through densely vegetated areas along streams, be sure to look for and avoid toxic plants like poison ivy. Be sure to wear appropriate insect repellent and protective clothing for protection from mosquitoes, chiggers, and ticks. In addition, probe areas in your path with a walking stick to warn and disperse poisonous snakes like the cotton mouth and copperhead which may inhabit riparian areas.

5.3 Be sure to clean up with bacteria disinfectant soap and water after wading in streams. This is particularly important for streams that drain livestock areas, sewage treatment plant effluents, and other obvious pollution sources. Under no circumstances should you drink the water from any stream.

6 Personnel qualifications

All field personnel are required to be trained in the use of this meter prior to use. Each person should have prior coursework and experience in collecting velocity data. All field personnel should know how to swim and be able to swim at least 50 meters without a rest or touching the bottom.

7 Equipment and supplies

7.1 Field Book and Pen

7.2 Current Meter/Global Flow Probe ,Model FP101-FP201 Global Water (see SOP 2060R01 Flow Meter.doc)

- rod, cord
- display

- carrying case

8 Procedure

8.1 The Flow Probe is calibrated at the factory, so further calibration is not necessary

8.2 The computer functions are:

a. Velocity: the upper display number is the instantaneous velocity to the nearest 0.5 foot

b. The lower display number is used for the following functions:
   - Average velocity (V AV)
   - Maximum velocity (V MX)
   - Stop watch (STPWATCH), and
   - CLOCK

c. Press both buttons to re-zero the displayed function.

d. Press the right button to scroll between display screens

e. Press the left button to switch from V AV to V MX on that display screen

8.3 Make sure the propeller turns freely by blowing strongly on it.

8.4 The arrow at the bottom of the propeller housing should point downstream.

8.5 Place the meter in the desired location in the stream.

8.6 Wait for the velocity value to become steady.

8.7 When the probe is removed from the stream the average and maximum velocity values will remain on the display.

8.8 Record the average velocity value in the field notebook.

8.9 To calculate discharge, see SOP 2050R01 Flow Discharge.

8.10 Maintenance

a. After use, allow the handle and probe to dry. Do NOT allow the computer to become submerged – this can damage the unit.

b. Battery replacement: Remove the battery cover and replace the battery with 3 volt lithium cell (CR2032). The computer will need to be reset after battery replacement. See manufacturer's instructions for this procedure

c. Propeller: make sure that no debris is lodged in the propeller housing. Blow on the propeller to test to see if it turns freely.

9 Computer hardware and software

9.1 Microsoft Word: this document is prepared using Word.

9.2 The Word document file name for this SOP is: 2060R01 Flow Meter.doc

10 References

10.1 Global Water. FP101-FP201 Global Flow Probe user's manual. www.globalw.com . 1-800-876-1172. Gold River, California.

11 Tables, diagrams and flowcharts

There are no tables, diagrams or flowcharts for this method.