Appendix 6—Troubleshooting problems with water-quality monitors

Symptom	Possible problem	Likely solution
	Water Temperature	
Thermistor does not read accurately	Dirty sensor	Clean sensor
Erratic monitor readings	Poor connections at monitor or sensor	Tighten connections
Monitor slow to stabilize	Dirty sensors	Clean sensor
Readings off scale	Failure in electronics	Replace sensor or monitor
	Specific electrical conductance	
Will not calibrate	Standards may be old or contaminated	Use fresh standards
	Electrodes dirty	Clean with soap solution
	Air trapped around sensor	Thrust sensors up and down to expel air
	Weak batteries	Replace batteries
Erratic monitor readings	Loose or defective connections	Tighten or replace
	Broken cables	Replace cables
Monitor requires frequent calibration		Replace monitor
	Dissolved oxygen	
Meter drift or excessive time for monitor to stabilize	Temperature compensator has not equilibrated with temperature of stream	Wait for temperature equilibration
	Fouled sensor	Clean or recondition
	Stirrer or pulse mechanism not working properly	Replace
Erratic monitor readings	Bad connection at monitor or sensor	Tighten connections
	Fouled sensor	Clean or recondition
Monitor slow to stabilize	Gold cathode tarnished	Buff with ink eraser or recondition sensor
	Fouled membrane	Recondition sensor and replace membrane
	Silver anode blackened	Replace sensor and soak fouled sensor in 3% ammonia for 24 hours
Monitor will not zero	Zero-DO solution contains oxygen	Add additional sodium sulfite to zero-DO solution
Monitor will not calibrate	Membrane damaged	Replace membrane
	Electrolyte diluted	Replace membrane and electrolyte

Appendix 6—Troubleshooting problems with water-quality monitors—Continued

Symptom	Possible problem	Likely solution
	pH	
Meter will not calibrate	Buffers may be contaminated	Replace buffers
	Faulty sensor	Replace
Slow response time	Dirty sensor bulb	Clean sensor
	Water is cold or low ionic strength	Patience
Erratic readings	Loose or defective connections	Tighten
	Defective sensor	Replace sensor
	Turbidity	
Unusually high or erratic readings	Entrained air bubbles on the optical sensor.	Follow manufacturer's directions
	Damaged sensor	Replace sensor
	Dirty sensor	Clean following manufacturer's directions
	Water in connections	Dry connector and reinstall