

## TROUBLESHOOTING 6.5.4

Contact the instrument manufacturer if the suggestions in table 6.5-4 fail to resolve the problem.

- ▶ Check the voltage of the batteries.
- ▶ Always start with good batteries in the instruments and carry spares.

Table 6.5-4. Troubleshooting guide for Eh measurement

[±, plus or minus; mV, millivolts; *emf*, electromotive force]

Symptom	Possible corrective action
Eh of ZoBell's solution exceeds theoretical by ±5 mV	<p><u>Check meter operation:</u></p> <ul style="list-style-type: none"> <li>• Use shorting lead to establish meter reading at zero mV.</li> <li>• Check/replace batteries.</li> <li>• Check against backup meter.</li> </ul>
Excessive drift	
Erratic performance	
Poor response when using paired electrodes	<p><u>Check electrode operation:</u></p> <ul style="list-style-type: none"> <li>• Check that electrode reference solution level is to the fill hole.</li> <li>• Plug questionable reference electrode into reference electrode jack and another reference electrode in good working order of the same type into the indicator electrode jack of the meter; immerse electrodes in a potassium chloride solution, record mV, rinse off and immerse electrodes in ZoBell's solution. The two mV readings should be 0 ± 5 mV. If using different electrodes (Ag:AgCl and Hg:HgCl<sub>2</sub>), reading should be 44 ± 5 mV for a good reference electrode.</li> <li>• Polish platinum tip with mild abrasive (crocus cloth, hard eraser, or a 400–600-grit wet/dry Carborundum™ paper), rinse thoroughly with deionized water. Use a Kimwipe™ if these abrasives are not available.</li> <li>• Drain and refill reference electrolyte chamber.</li> <li>• Disconnect reference electrode. Drain and refill electrolyte chamber with correct filling solution. Wipe off connectors on electrode and meter. Use backup electrode to check the <i>emf</i>.</li> <li>• Read <i>emf</i> with fresh aliquot of ZoBell's solution; prepare fresh ZoBell's solution if possible.</li> <li>• Recondition electrode by cleaning with aqua regia and renewing filling solution—<b>this is a last resort.</b></li> </ul>