

Title: Calibration & Maintenance of Measurement and Recording Equipment		Control Number: SLD 17
Revision: 2.0	Effective Date: Aug. 7, 2009	Section: O&M
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## 1.0 Purpose

This procedure describes the process for calibration and maintenance of measurement and recording equipment.

## 2.0 Scope

All measurement and recording equipment requiring maintenance, standardization or calibration, used for measuring or recording data related to drinking water quality, is covered under the scope of this procedure.

## 3.0 Definitions

- None

## 4.0 Procedure

- 4.1 The Waterworks Supervisor responsible for Water Quality shall be responsible for the calibration and maintenance of measurement and recording equipment.
- 4.2 pH meters, colorimeters, master thermometer (primary equipment), turbidity meters and fluoride meter (secondary equipment) shall be calibrated or maintained as required by the equipment manufacturer.
- 4.3 The Waterworks Supervisor responsible for Water Quality shall inspect new measuring or recording equipment, and review the manufacturer's manual, to establish calibration / standardization / maintenance requirements. The Water Quality Supervisor shall ensure calibration and maintenance work orders are created as required, as per the **Maintenance SOP**.

### **Calibration**

- 4.4 pH meters, colorimeters, master thermometer (primary equipment), turbidity meters and fluoride meter (secondary equipment) shall be calibrated annually by the manufacturer.
- 4.5 Both the equipment manufacturer and the Waterworks Supervisor responsible for Water Quality shall maintain a calibration schedule.
- 4.6 The equipment manufacturer shall be issued a Purchase Order where applicable as per the Purchasing Manual, and subsequently shall calibrate all applicable equipment.
- 4.7 The equipment manufacturer shall provide calibration certificates for each piece of equipment upon completion of calibration.
- 4.8 The original certificates shall be held by the Water Quality Coordinator and copies shall be held by the Waterworks Supervisor responsible for Water Quality
- 4.9 Each item shall be uniquely identified by a serial number either on the item itself or on its container. Calibration certificates shall cross reference the serial numbers.

### **Other Maintenance**

- 4.10 Operators shall receive on-the-job training for standardization or other maintenance for each type of equipment.
- 4.11 All chlorine residual test kits shall be standardized weekly, as per manufacturer's manuals. Kits shall be stored in a locked cabinet.
- 4.12 pH meters shall be standardized daily prior to use, during the period of use, as per applicable manufacturer manual requirements.
- 4.13 Digital thermometers shall be standardized annually against a calibrated Master thermometer. Thermometers found to be out of range shall be replaced.
- 4.14 Pressure gauges shall be neither standardized nor calibrated as they are discarded when not performing, based on Operator experience. Pressure gauges shall be used for investigative work.

## **5.0 Associated SOPs**

- SOP – Maintenance

**6.0 References**

- DWQMS Element 17 Calibration of Sampling, Testing and Monitoring Equipment
- Activity Service Levels and Procedure Work Instructions (Hansen)
- Purchasing Manual
- pH Meter Calibration Procedure
- Manufacturer's Manuals

**7.0 Records**

- Calibration Records
- Work Orders
- Purchase Orders for Calibration Services

**8.0 History of Changes**

Revision	Date	Description	By
2.0	Jul. 22, 2009	Sections 4.1, 4.2, 4.3, 4.4, 4.5, 4.8, 6.0	E. Wu