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## Sealed Radioactive Source Leak Testing Procedure for Portable Density-Moisture Nuclear Gauges

This procedure is applicable for most Troxler Electronic Laboratories, Inc., Campbell Pacific Nuclear and InstroTek portable density-moisture nuclear gauges. Please verify with the manufacturer's operating instructions of your particular device if these procedures are appropriate for the device design and construction. Stuart Hunt & Associates Ltd. makes no warranties on the suitability of this generic procedure for your particular radiation device. The procedure is provided as a convenience and reference only.

### ***Procedure for Collecting Leak Test Sample***

1. Prior to collecting a leak test sample complete all of the information required by the Leak Test Sampling Certificate and Leak Test Kit.
2. Confirm that the radioactive source rod has been returned to the shielded position. The source rod handle will be pressing against the metal cap attached to the top of the index rod when the source rod is in the shielded position. If absolutely uncertain, use a survey meter to confirm the source is in the shielded position.
3. Take one (1) or two of (2) Q-tips supplied with the leak test kits. Moisten the cotton tip with water or cleaning solvent.
4. Remove the instrument panel from the gauge top shell. Locate the yellow radiation hazard warning label. Wipe the surface of the label and the immediate area around the edge of the label. Place the Qtip in the designated sample plastic sleeve. If the top shell cannot be removed, consult the operator's manual for further information on leak testing or contact a qualified service technician for assistance.
5. Take the remaining unused Q-tip supplied with the leak test kits. Moisten the cotton tip with water or cleaning solvent.
6. Turn the gauge on its side and locate the opening where the source rod extends through the gauge base. Wipe the area around and inside the opening. **Do not open the shutter.**
7. Wipe the exterior surface of the source rod<sup>1</sup> and location where the source rod enters the source shield. Place the Q-tip in the designated sample plastic sleeve.
8. Return the completed leak test kits and a signed copy of the Leak Test Sampling Certificate to Stuart Hunt and Associates laboratory for analysis. ***The time span between sampling and analysis should be kept as short as practical but shall not exceed ten (10) working days.***

### **CAUTION:**

After a leak test sample has been collected treat the samples as being contaminated with radioactive material until proven otherwise.

### **RADIATION HAZARD WARNING:**

Leak test samples are not to be taken from the source capsule. This practice will result in an unnecessary and potentially hazardous radiation dose being received by the leak test sample collector..

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<sup>1</sup> Some early models of portable moisture – density gauges have both the Cesium-137 and Americium-241/Be sources contained within the source rod. When one of these units is to be leak tested omit steps 3 and 4.