1. **Scope and Application**
   1.1 **Analytes**
      Soil Moisture
   1.2 **Reporting limit**
      None
   1.3 **Applicable matrices**
      This method is used to determine the percent of soil sample weight that is composed of water.
   1.4 **Dynamic range**
      None

2. **Summary of Procedure**
   Mineral and organic air-dried soils are measured into tins with approximately 10.00 g and 5.00 g of soil respectively. The pre oven-drying weights are recorded then the mineral and organic soils are heated for 24 hours at 110° C and 65° C respectively. After complete drying the samples are re-weighed and their post oven-drying weights are recorded.

3. **Safety Issues**
   3.1 **Physical Hazards**
      A. Sample tins should be allowed to cool for several minutes before removing them from oven to prevent burns.

4. **Sample Preservation, Containers, Holding Times**
   4.1 **Sample Preservation**
      Samples are spread on plastic sheets until thoroughly air-dried.
   4.2 **Containers**
      Samples are stored in plastic storage bags until analysis.
   4.3 **Holding Times**
      There is no holding limit.

5. **Reagents and Standards**
   None

6. **QA/ QC Requirements**
   A. Every analysis is run with a mineral (DCBX99) or organic (DCOX99) QA/QC soil standard sample. The QC soils are composed of an equal parts mixture from their respective horizons of several soils collected in the Dry Creek watershed in the Catskill Mountains of New York State.

7. **Procedure**

Author: Chris Gazoorian
Approved by Greg Lawrence
Reviewed by Ken Pearsall
7.1 Instrumentation
Lab-Line Instruments Inc. Imperial IV lab oven

7.2 Start-Up
A. Set oven to desired temperature (110° C for mineral soils and 65° C for organic soils) to allow time for heating-up until desired temperature is reached inside of oven. Check thermometer periodically to ensure temperature stabilization.

7.3 Sample Preparation
A. Label each sample tin with its respective soil coding. Indent identification into the bottom of each tin (ink will burn off at high temperatures).
B. Every analytical run should include up to forty-eight samples including at least one triplicate and a QA/QC soil standard for each soil horizon analyzed (mineral or organic).
C. Fill each tin with soil sample:
   1. Weigh and record the weight of each sample tin before adding sample.
   2. For mineral soil samples add approximately 10.00 g of air-dried soil.
   3. For organic soil samples add approximately 5.00 g of air-dried soil.

7.4 Analysis
A. Place samples into oven:
   1. Record the time soils are placed into oven for drying.
   2. Mineral soils are dried at 110° C for 24 hours.
   3. Organic soils are dried at 65° C for 24 hours.
B. Remove samples from oven:
   1. Record the time soils are removed from oven.
   2. Wait for samples to cool down to room temperature.
   3. Weigh and record sample weight.

8. Archiving requirements
8.1 Data
Analysis forms are entered into a Microsoft Excel spreadsheet which includes sample names, analysis date, times placed and removed from oven, oven temperature, tin weights and pre and post oven-drying soil sample weights.

8.2 Samples
Samples are kept for future Loss on Ignition Analysis which should be performed immediately to prevent sample disruption.

9. References
U.S.G.S. National Water Quality Laboratory, Format for SOP – Laboratory Analytical Method.
10. **Key words**
   Soil moisture, percent dry