

**August 2016 Updates to Sections 3, 4 and 5 of the HODH-HEER Technical Guidance Manual  
(Sections with significant updates highlighted in red)**

**Section 3: SITE INVESTIGATION DESIGN AND IMPLEMENTATION (updated)**

- Site Investigation Design and Implementation (Section 3.0)
- Site Investigation Scoping (Section 3.1)
- Systematic Planning of Site Investigation, including (Section 3.2):
  - Systematic Planning Steps
  - Rationale for COPCs
  - Use of EALs
  - Decision Unit basics
  - Screening for Potential Environmental Hazards
  - CSMs
- Site Conceptual Models (Section 3.3)
- **Selection of Decision Unit, including (Sections 3.4 and 3.5):**
  - Designation of Surface DUs
  - Designation of Subsurface DUs
  - Investigation of Large Areas
  - Example DU Designs (residential, commercial/industrial, schools, subsurface, stockpiles, sediment, etc.)
- Sampling and Analysis Plans (Section 3.6)
- Quality Assurance Project Plans (Section 3.8)
- Site Investigation Reports (Section 3.9)
- Environmental Hazard Evaluation (Section 3.10)

**Section 4: DECISION UNIT CHARACTERIZATION (updated)**

- Characterization of Decision Units (Section 4.0)
- **Sampling Theory and Variability of Contaminant Concentrations in Soil, including (Section 4.1)**
  - **Nature, causes and implications of contaminant concentration variability (aka “distributional heterogeneity”) in soil**
  - **Implications for sample collection and data interpretation**
  - **Use of DU-MIS methods to improve data representativeness**
- **Use Multi Increment Samples to Characterize DUs, including (Section 4.2):**
  - **Minimum number of increments vs contaminant release scenario**
  - **Target MI sample mass**
  - **Spacing of MI sample increments**
  - **Collection and evaluation of replicate sample data**
  - **Laboratory processing and subsampling**
  - **DU-MIS approaches for VOCs**
  - **Collection of MI samples for subsurface**
  - **Collection of MI samples for stockpiles**
- **Use and interpretation of discrete sample data (Section 4.3)**
- **Common investigation mistakes and problems (Section 4.4)**

## **Section 5: SOIL AND SEDIMENT SAMPLE COLLECTION (updated)**

- Reorganized in terms of progression of field work;
- Initial Site Inspection (Section 5.1)
- Site Preparation (Section 5.2)
- Surface Soil Sample Collection (Section 5.3):
  - Sample collection tools vs soil types
  - Collection of samples from pits, trenches and stockpiles
- Subsurface Soil Sample Collection (Section 5.4)
  - Sample collection methods
  - Increment subsampling
- Collection of MI Stockpile Samples (Section 5.5);
- Collection of MI Samples for VOC Analysis (Section 5.6)
- Collection of MI Samples for Sediment (Section 5.7)
- Field Documentation (Section 5.8)
- **5.9 Equipment Preparation / Decontamination**
- **5.10 Investigation Derived Waste**
- **5.11 Field Work Completion**

## **Section 8 FIELD SCREENING METHODS (new)**

- Field Screening Methods Overview (Section 8.0)
- Selecting a Field Screening Method (Section 8.1)
- Data Quality Control and Documentation (Section 8.2)
- Field Screening Methods and Documentation (Section 8.3)
- Field Screening Methods for Selected Contaminants (Section 8.4)
  - Metals (portable XRF)
  - Petroleum
  - PCBs
  - Dioxins
  - Volatiles
  - Pesticides
  - Explosives
- Field Screening with Sensors and Probes (Section 8.5)
- Field Screening Equipment to Support Health and Safety Programs (Section 8.6)