

NEH Part 631, Chapter 5, “Engineering Geology Logging, Sampling, and Testing”
Summary of Revisions and General Notes

1. Formatting
 - This draft meets formatting requirements for handbooks as agreed to by the Management Services Division’s Directives Team and the Conservation Engineering Division.
 - Part of the formatting requirements resulted in all the tables, graphs, photos, figures, or other illustrative diagrams to be labeled as Figures.
2. The 2012 version of Chapter 5 replaced the following:
 - Parts of 210-NEH, Section 8, “Engineering Geology”, which was released in 1978.
 - Soil Mechanics Note 4, Packaging Undisturbed Core Soil Samples, 1973.
 - Geology Note 4, Photography of Rock Core Samples, 1984.
 - Geology Note 5, Soil Sample Size Requirements for Soil Mechanics Laboratory Testing, 1991.
3. 631.0501, Safety
 - Safety in field investigations was updated with references to Title 210, National Engineering Manual, Part 503, “Safety”, and Occupational Safety and Health Administration (OSHA) 1926.1407. Safety practices were updated to current guidelines.
 - The OSHA trench safety exhibit, Figure 5-1, was updated to be consistent with written policy. The trench depth in the 2018 figure indicates a depth of five feet while OSHA’s written policy has a depth of four feet. The trench depth in the figure was modified to written policy of trenches greater than four feet will need a protective system.
4. 631.0502, Logging Earth Materials
 - Figure 5-2 was added as an example to photograph soil and rock samples before packing in bags or core boxes to preserve sample integrity.
 - Figure 5-3 was updated with latest NEH references and American Society for Testing and Materials standards.
 - Figure 5-5 was added to describe discontinuities of joint, fault, and shear breaks of samples.
 - Figure 5-6 was added for information in describing surface roughness of sample joints, faults, and sample breaks.
 - Figures 5-7a and 5-7b updated the graphic logs of geologic profiles.
 - Software programs were listed to help manage data and produce graphic logs, fence diagrams, and site maps.
5. 631.0503, Sampling Earth Materials
 - Figure 5-13 was moved from section 631.0505, Testing Earth Materials. The split-tube sampler was covered in subsection (b), Standard Penetration Test (SPT).
6. 631.0504, Samples
 - APHIS information about shipping soil samples from quarantine areas was added to safeguard the spread of peats.
 - Figure 5-22, an example of a core box, was added to show rock core placement and notation.
 - Figure 5-26 was updated to show notation on a rock core box end.
 - Figure 5-27 was updated to show a photograph of a rock core box.
7. 631.0505, Testing Earth Materials
 - ASTM D1452 reference for power-auger boring was added to this section.

- Sections on wash borings, rotary drilling, Overburden Drilling Eccentric Casing System (ODEX), and sonic drilling were removed from Chapter 5 because these drilling methods are covered in 210-NEH-631, Chapter 2, “Engineering Geology”.
 - Pocket shear vane tool was added to this section (see Figure 5-30).
 - Pocket penetrometer was added to this section.
 - Geophysical methods were removed; this topic will be covered in a new NEH chapter.
8. 631.0506, References
- References were added and updated to reflect new and changing technologies.