**Section 811.507 Compacted Earth Liners**

a) Requirements for a Test Liner

A test full shall be constructed before construction of the actual, full-scale compacted earth liner, in accordance with the following requirements:

1) The test liner shall be constructed from the same soil material, design specifications, equipment and procedures as are proposed for the full-scale liner;

2) The test fill shall be at least four times the width of the widest piece of equipment to be used;

3) The test fill shall be long enough to allow the equipment to reach normal operating speed before reaching the test area;

4) At least three lifts shall be constructed;

5) The test fill shall be tested as described below for each of the following physical properties using tests to ensure a statistically valid sample size:

A) Field testing techniques shall be used to determine the hydraulic conductivity.

B) Samples shall also be tested in the laboratory for hydraulic conductivity. The laboratory results shall be evaluated to determine if there is a statistical correlation to the field testing results.

C) Other engineering parameters, including but not limited to particle size distribution, plasticity, water content, and in-place density, that are needed to evaluate the full-scale liner shall be determined.

6) Additional test fills shall be constructed for each time the material properties of a new borrow source changes or for each admixture or change in equipment or procedures; and

b) Construction of a test fill or the requirements for an additional test fill may be omitted if a full-scale liner or at est fill has been previously constructed in compliance with this subsection and documentation and is available to demonstrate that the previously constructed liner meets the requirements of subsection (a).

c) The CQA officer shall inspect the construction and testing of test fills to ensure that the requirements of subsection (a) are met. During construction of the actual, full-scale compacted earth liner, the CQA officer shall ensure the following:

1) Use of same compaction equipment as used in test fill;

2) Use of same procedures, such as number of passes and speed;

3) Uniformity of coverage by compaction equipment;

4) Consistent achievement of density, water content and permeabilty of each successive lift;

5) Use of methods to bond successive lifts together;

6) Achievement of liner strength on sidewalls;

7) Contemporaneous placement of protective covering to prevent drying and desiccation, where necessary;

8) Prevention of the placement of frozen material or the placement of material on frozen ground;

9) Prevention of damage to completed liner sections; and

10) That construction proceeds only during favorable climatic conditions.