

EFA Soil Samples
Cherokee Co.
Road S-348
Tube Labeled: Sample #1

Preliminary Remarks:

Available sample length was approximately 20 inches. That sample was divided into two 10 inch halves. The top 10 inches were designated 1A and the bottom 10 inches were designated 1B. Each half was subjected to a series of flow velocities. Each flow rate had a time duration of 1 hour or a total erosion amount of 50 millimeters.

The logging rate parameter of the "Erosion" program was set to 1 second. This logging rate will be the same for all of the following tests.

For sample designated 1A: (top 10 inches)

Soil Description: Reddish clayey Loam w/ Sand Loam pockets and small stones.

Test #1A-1
File name Tube1A Run1.txt
Velocity 0.3 m / sec
Total push 2 mm
Test duration 1 hour

Remarks: Mini scour holes developed when small sand pockets eroded.

Trim 4 mm

Test #1A-2
File name Tube1A Run2.txt
Velocity 0.6 m / sec
Total push 4 mm
Test duration 1 hour

Remarks: Small scour holes and scoured trenches.

Trim 6 mm

Test #1A-3
File name Tube1A Run3.txt
Velocity 1.0 m / sec
Total push 7 mm
Test duration 1 hour

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Remarks: Scour holes developed diagonally on left and right side of flow. A scoured trench eventually connected the two.

Trim 25 mm

Test #1A-4
File name Tube1A Run4.txt
Velocity 1.5 m / sec
Total push 50 mm
Test duration 0.286 hours

Remarks: Scour rate was very fast. Machine push rate could barely keep pace.

Trim 25 mm

Test #1A-5
File name Tube1A Run5.txt
Velocity 2.0 m / sec
Total push 50 mm
Test duration 0.081 hours

Remarks: Machine push rate could not keep pace with scour rate.

Testing Terminated on 1A

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For sample designated 1B: (bottom 10 inches)

Soil Description: Reddish Sand Loam w/ Loam pockets to fine-grained Sand

Test #1B-1
File name Tube1B Run1.txt
Velocity 0.3 m / sec
Total push 1 mm
Test duration 1 hour

Remarks: No significant erosion visible.

Trim 6 mm

Test #1B-2
File name Tube1B Run2.txt
Velocity 0.6 m / sec
Total push 9 mm
Test duration 1 hour

Remarks: Root structure protected the center of the sample while scour holes

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developed on the right and left side of the flow.

Trim 6 mm

Test #1B-3

File name Tube1B Run3.txt

Velocity 1.0 m / sec

Total push 23 mm

Test duration 1 hour

Remarks: Root structure protected the backside of the sample. Front of the sample eroded at a higher rate than the back causing a wedge-shaped profile.

Trim 25 mm

Test #1B-4

File name Tube1B Run4.txt

Velocity 1.5 m / sec

Total push 15 mm (before test termination)

Test duration 0.038 hours

Remarks: Flow rate scoured into the sample to a depth of 2.5 inches in only 136 seconds. Machine push rate could not keep pace. Scoured material was a fine-grained sand.

End of Testing for Tube Labeled "Sample #1"