Soil Size Classification	Settling Velocity	Time to Settle 1 ft
Gravel	1.67 – 3.33 ft/sec	0.3 – 0.6 seconds
Sand	0.008 – 0.33 ft/sec	3 – 120 seconds
Silt	0.02 – 0.03 ft/min	30 – 60 minutes
Clay	0.005 – 0.010 ft/day	100 – 200 days
Colloids	0.02 – 1.6 ft/year	>200 days

NDDOT North Dakota Department of Transportation

27

Wind Erosion

Wind erosion is similar to water erosion except the movement of air is responsible for the movement of the soil

Disturbing the soil with equipment and vehicles can cause soil particles to become dislodged and more easily transported by wind

NDDOT North Dakota Department of Transportation

28

Wind Erosion

Wind erosion is influenced by multiple factors:

– Wind velocity

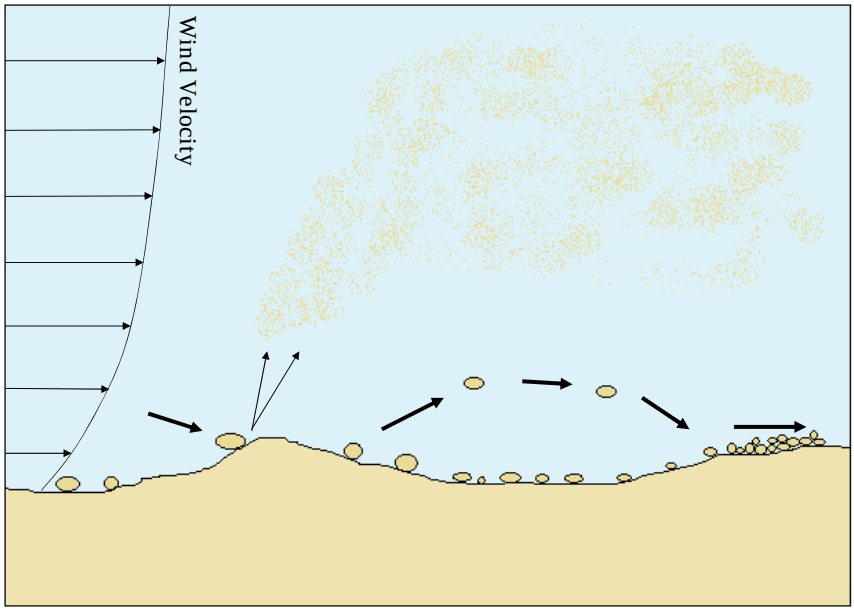
– Surface roughness

– Surface cover

– Moisture level of the top layer of soil

NDDOT North Dakota Department of Transportation

29



30

Erosion Facts (USDA NRCS Soil Quality – Urban Technical Note No. 1 "Erosion and Sedimentation on Construction Sites")

Construction sites can erode at a rate of 100 to 500 tons/acre/year

– 100 times greater than cropland

– 2,000 times greater than woodlands

NDDOT North Dakota Department of Transportation

31

Erosion Facts (Nelson J. *Characterizing Erosion Processes and Sediment Yields on Construction Sites. MSCE thesis Dept. of Civil and Environmental Engineering, University of Alabama at Birmingham 1996)*

Construction Site Runoff Research:

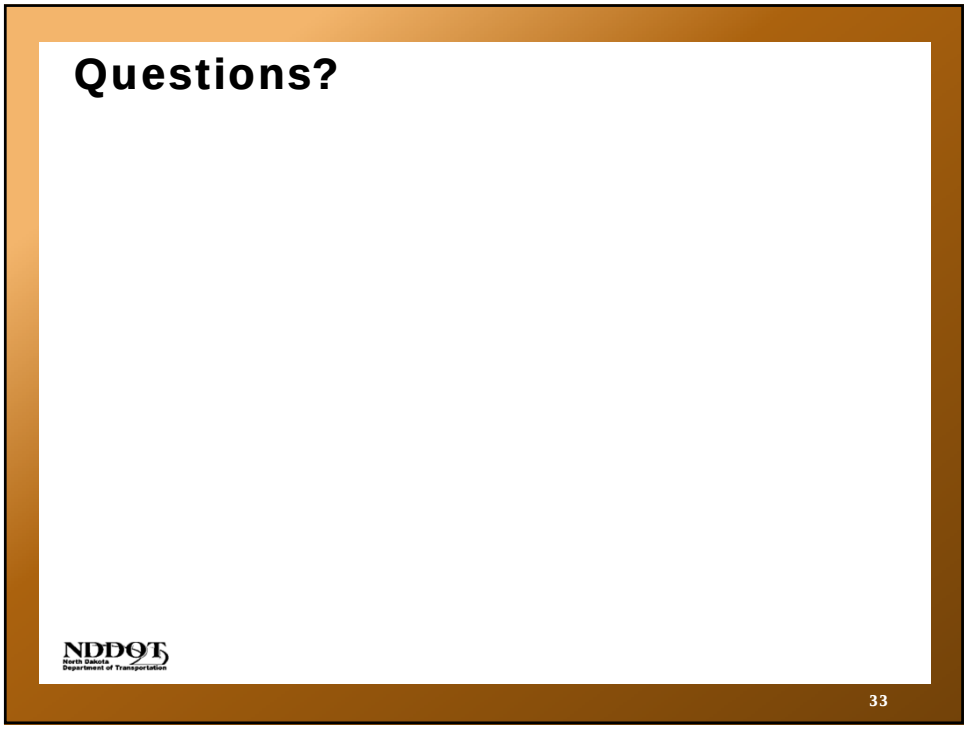
70 construction site runoff samples from the Birmingham, AL area

Suspended solid concentrations in the samples ranged from 100 to more than 25,000 mg/L (median about 4,000 mg/L)

Turbidity ranged from 300 to greater than 50,000 NTU (average of 4,000 NTU)

NDDOT North Dakota Department of Transportation

32


Questions?
NDDOT
North Dakota
Department of Transportation
33