

# WORKSHOP ON FORESTRY RECLAMATION APPROACH

Dr. Richard J. Sweigard, Ph.D., P.E.  
Department of Mining Engineering  
University of Kentucky



*Bridging Reclamation, Science & The Community*  
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## Forestry Reclamation Approach-Step # 2

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➤ Loosely grade the topsoil or topsoil substitutes established in step #1 to create a non-compacted growth medium (upper 4 feet of the material )

# Benefits of Loose Grading

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- ❖ Facilitates proper tree planting
- ❖ Increase infiltration
- ❖ More void spaces to hold air and water
- ❖ Easier for roots to grow

**BETTER TREE SURVIVAL AND GROWTH**

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# Growth of Tree Roots

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**Cell 1- Struck-off**



**Cell 9- Compacted**

# Compacted Cell at Starfire Mine Six Years After Tree Planting



# Loose Dumped Cell at Starfire Mine Six Years After Tree Planting



# What is Loose Grading ?

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- ❖ End-dumping or direct casting of spoil
- ❖ Single pass final grading
- ❖ Low ground pressure dozer
- ❖ No “tracking-in”
- ❖ Keep rubber-tired equipment off final surface

## End –Dumping of Loose Spoil



# Compacted Reclamation Cell at Starfire Mine



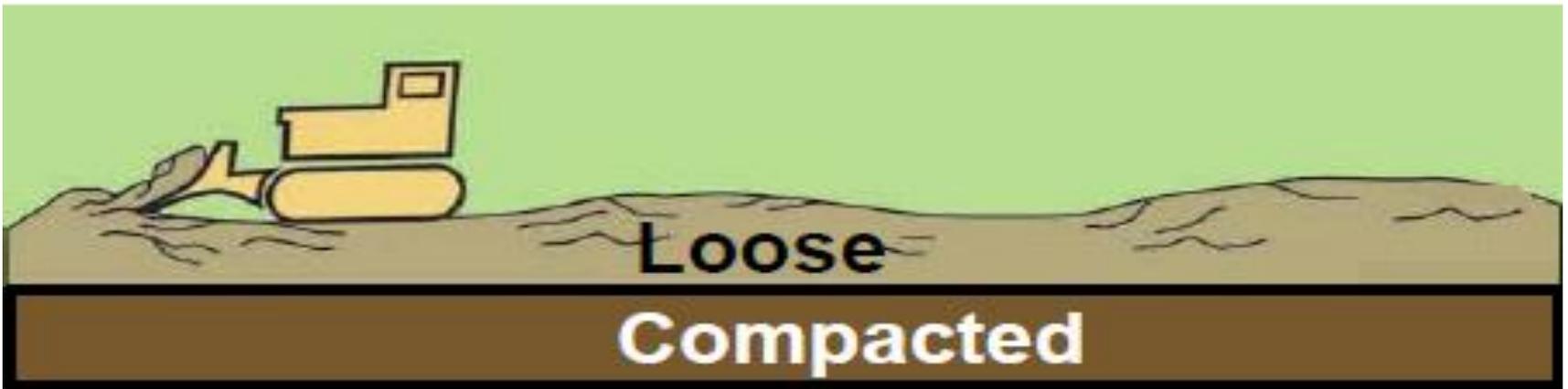
## Struck-off Reclamation Cell at Starfire Mine



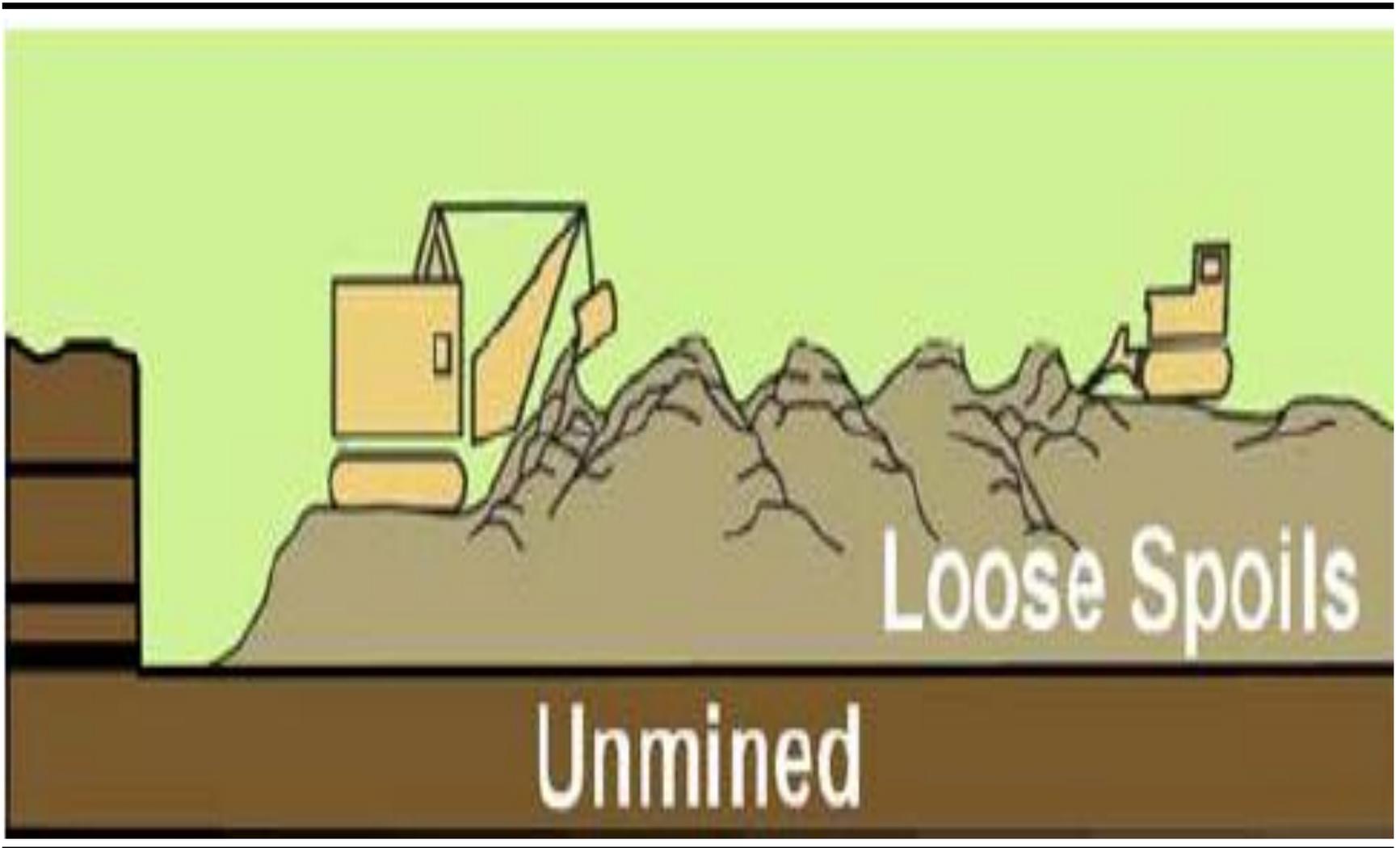
# Loose-Dumped Reclamation Cell at Starfire Mine



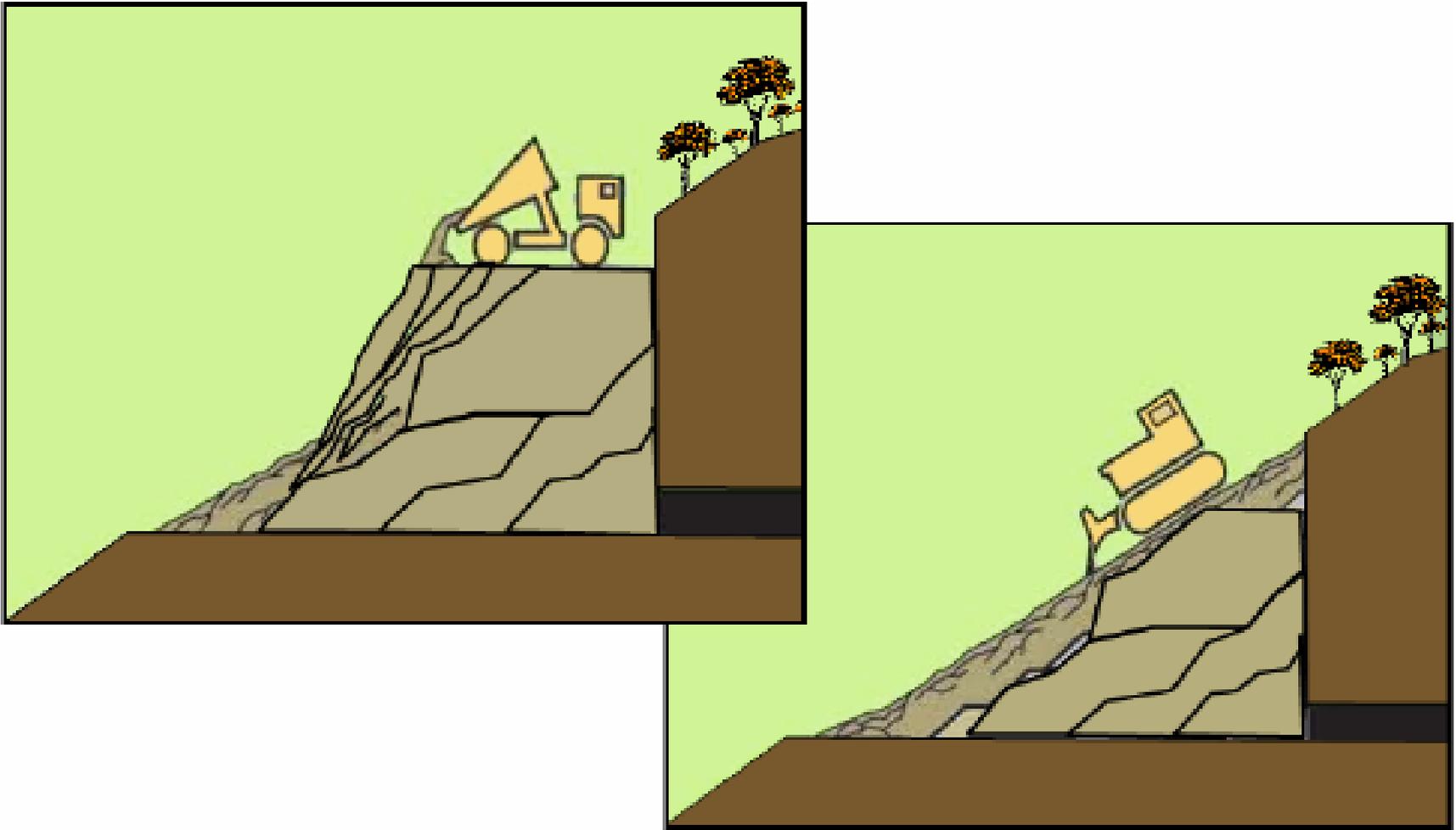
# Truck Shovel Operations on Flat or Gently Rolling Surfaces



# Dragline Operations

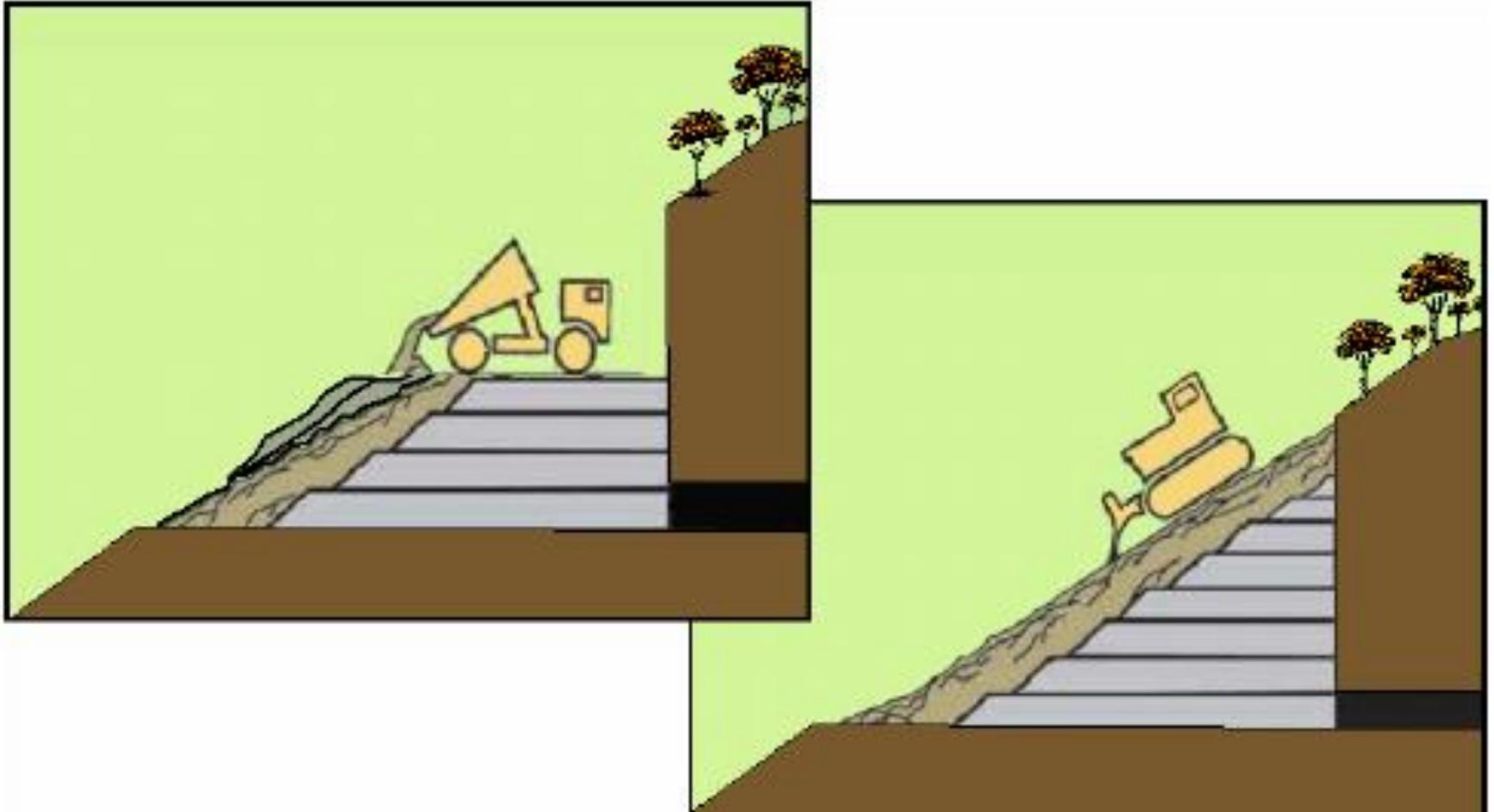


# Contour Haulback



**No Compaction Required to Maintain Stability of Slope**

# Contour Haulback



Compaction Required to Maintain Stability of Slope

# Loosely Graded Steep-Slope Site at Peel Poplar Mine( Pike County)



# Loosely Graded Steep-Slope Site at Peel Poplar Mine (Pike County)



# Overcoming Excessive Compaction

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- ❖ Ripper blades and deep plows
- ❖ First used on prime farmlands
- ❖ One direction vs. cross-ripping
- ❖ Ripping depth
- ❖ Rip when ground is dry

## Ripper Blade Attached to Dozer



# Dozer Ripping at Starfire Mine



# Deep Plow



# Cost Implications

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- ❖ Backfilling unchanged
- ❖ Less final grading
- ❖ Avoid ripping , if possible

# Obstacles to Loose Grading

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- ❖ Regulatory concerns
- ❖ Operator concerns
- ❖ Slope stability concerns

# Success of FRA at Starfire Mine

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*QUESTIONS??*