



Excess Spoil Disposal Configuration

Presented by:

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Why no water on backfill?

- High permeability of backfill
- Broken and mixed overburden from blasting and excavation
- Backfill has no defined horizons
- Change to pre-mining stratigraphy
- No aquicludes until pavement
- Infiltration from ditches

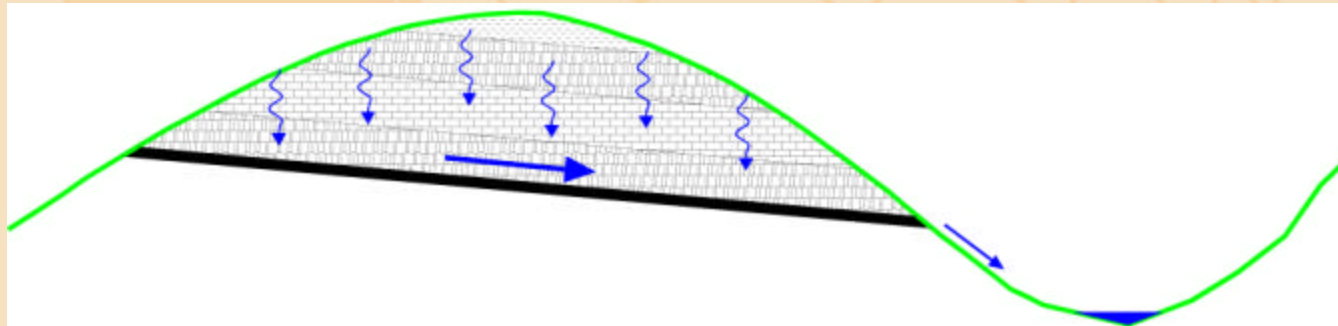


Where is water?

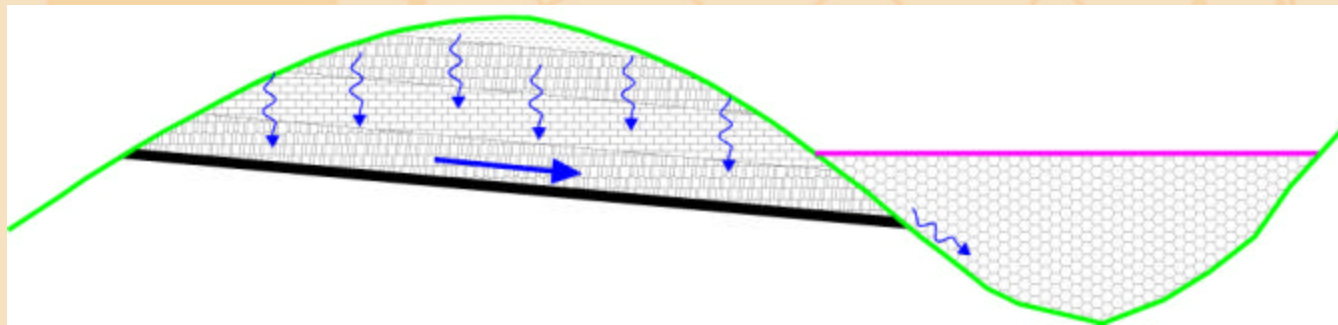
- Storm flow in ditches
- Subsurface flow on coal pavement
- Subsurface flow discharge at down dip outcrop
- Some outcrop discharges covered by valley fill
- Discharge at toe of valley fill
- Very few surface flows
- Some ponds on solid benches



Subsurface Flow



Subsurface Flow (with fill)

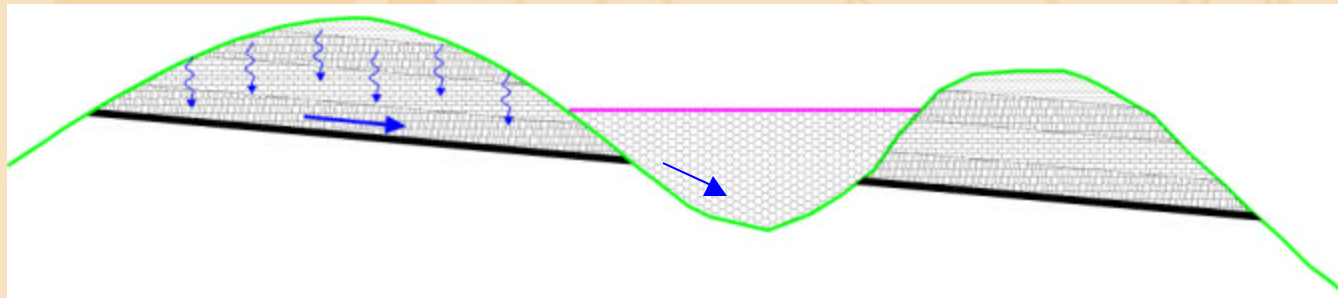


Alternative Backfill Configuration?

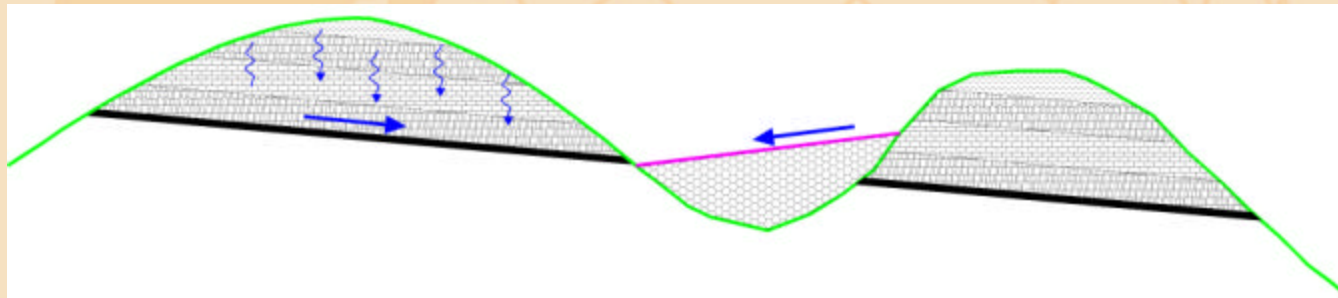
- Objectives
 - Intercept groundwater discharge
 - Decrease ditch gradients
- Alternative Configuration
 - Construct combination conventional / side-hill fill
 - Tilt top surface of valley fills to one side
 - Create incised groin ditch with flatter slope



Typical Valley Fill Regrade



Modified Valley Fill Regrade



Evaluation of skewed fill

- Advantages
 - Intercepts flow at outcrop
 - Collects some surface flow
 - Increases probability of perennial flow
- Disadvantages
 - Increased flow rate in single ditch
 - Concerns with regulatory stipulations for side hill fill
 - Some increase in fill haulage height



AOC Model

- Provides an objective and reproducible means to define AOC
- Allows a subjective approach to be replaced with a volumetric definition
- Optimizes the placement of spoil
- Volumetric approach gives operator flexibility over final design
- Allows landforming, stream restoration and aquatic habitat projects

