

Council of Alaska Producers Introduction to Underground Mining

House Resources Committee
Lunch and Learn
April 7, 2009

Underground Miners, c. 1900

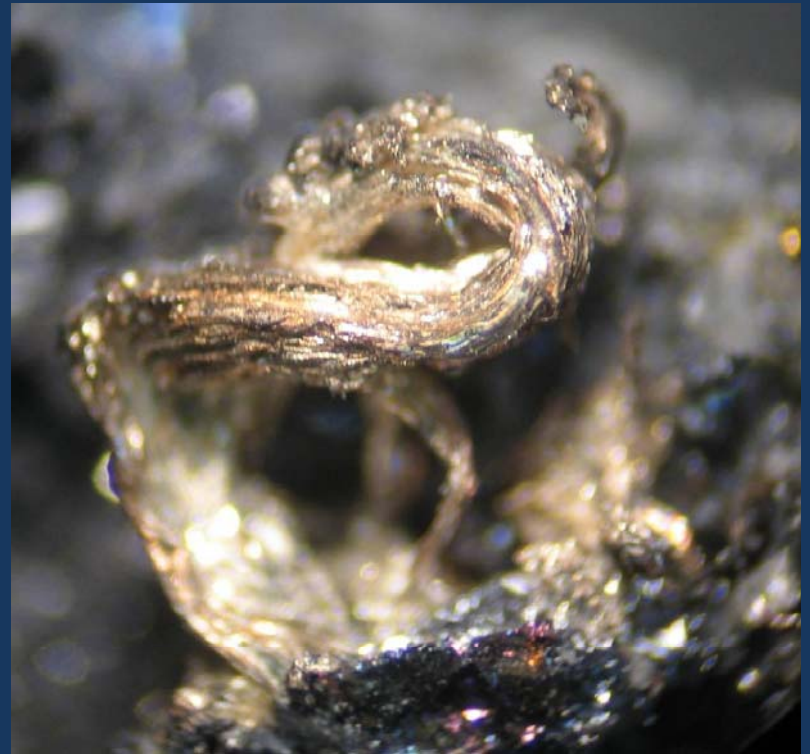


Underground Miner 2009

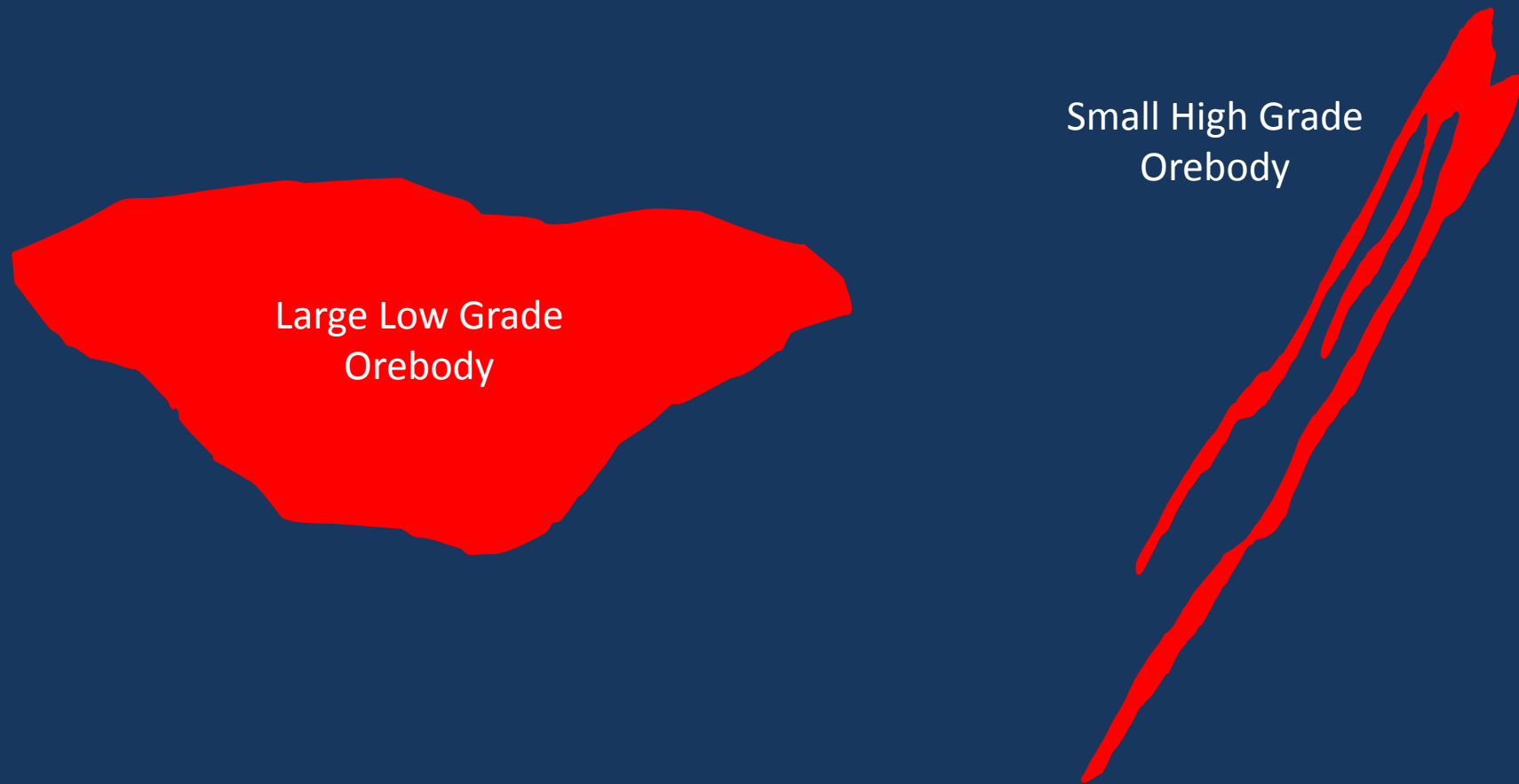


Mining Method Selection

- Deposit Type
- Deposit Size
- Deposit Location
- Advances in Technology
- Regulatory Requirements



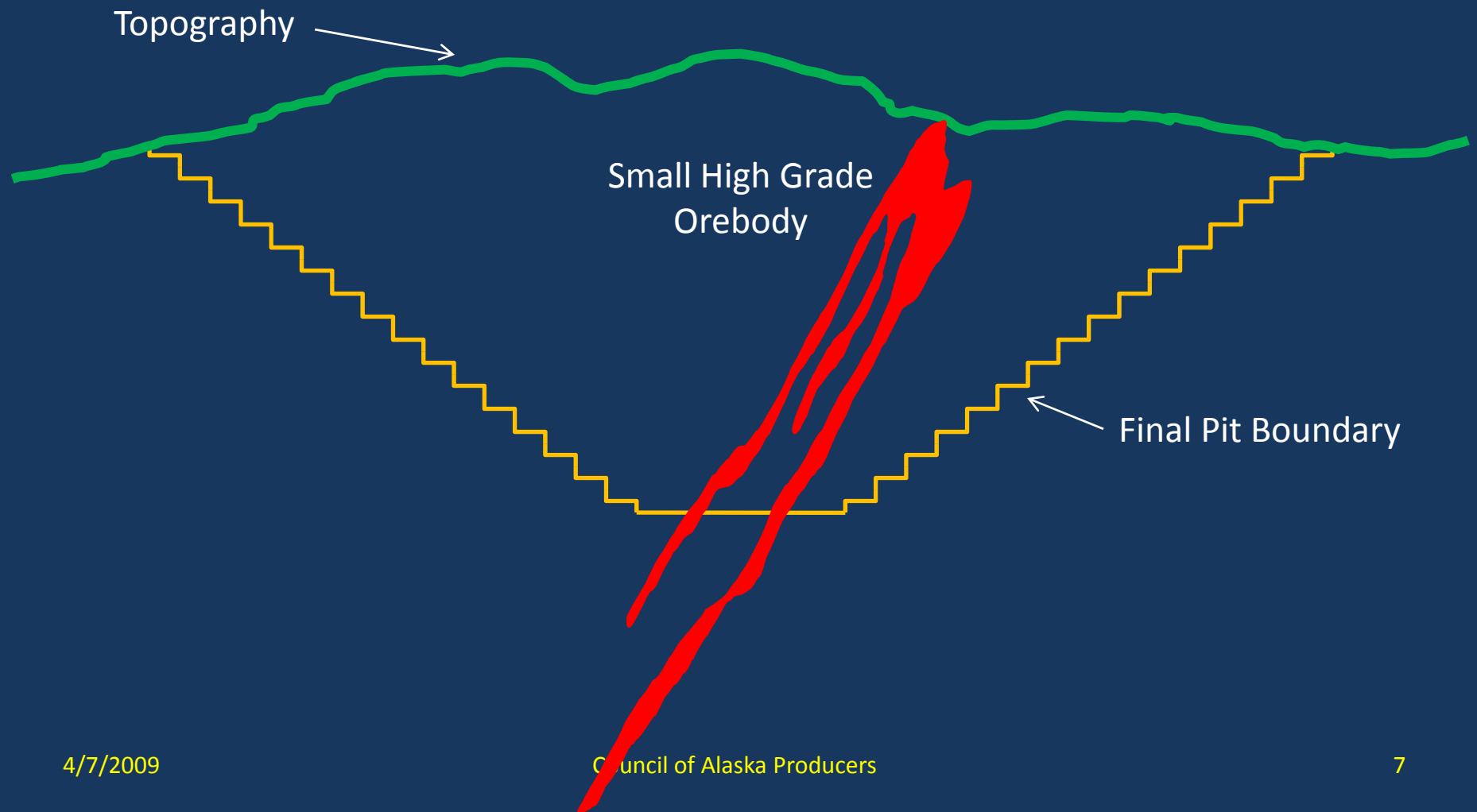
Open Pit or Underground?



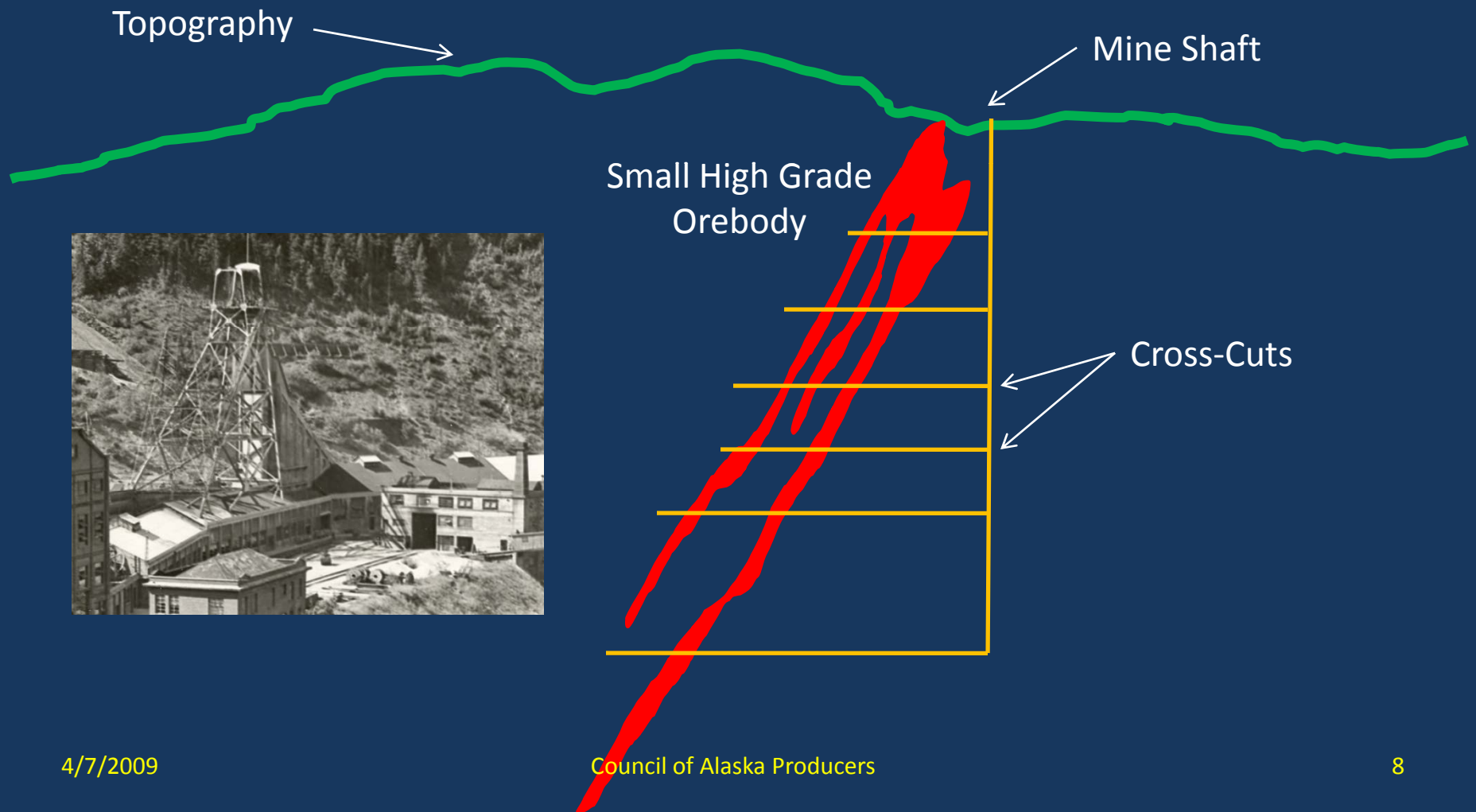
Open Pit



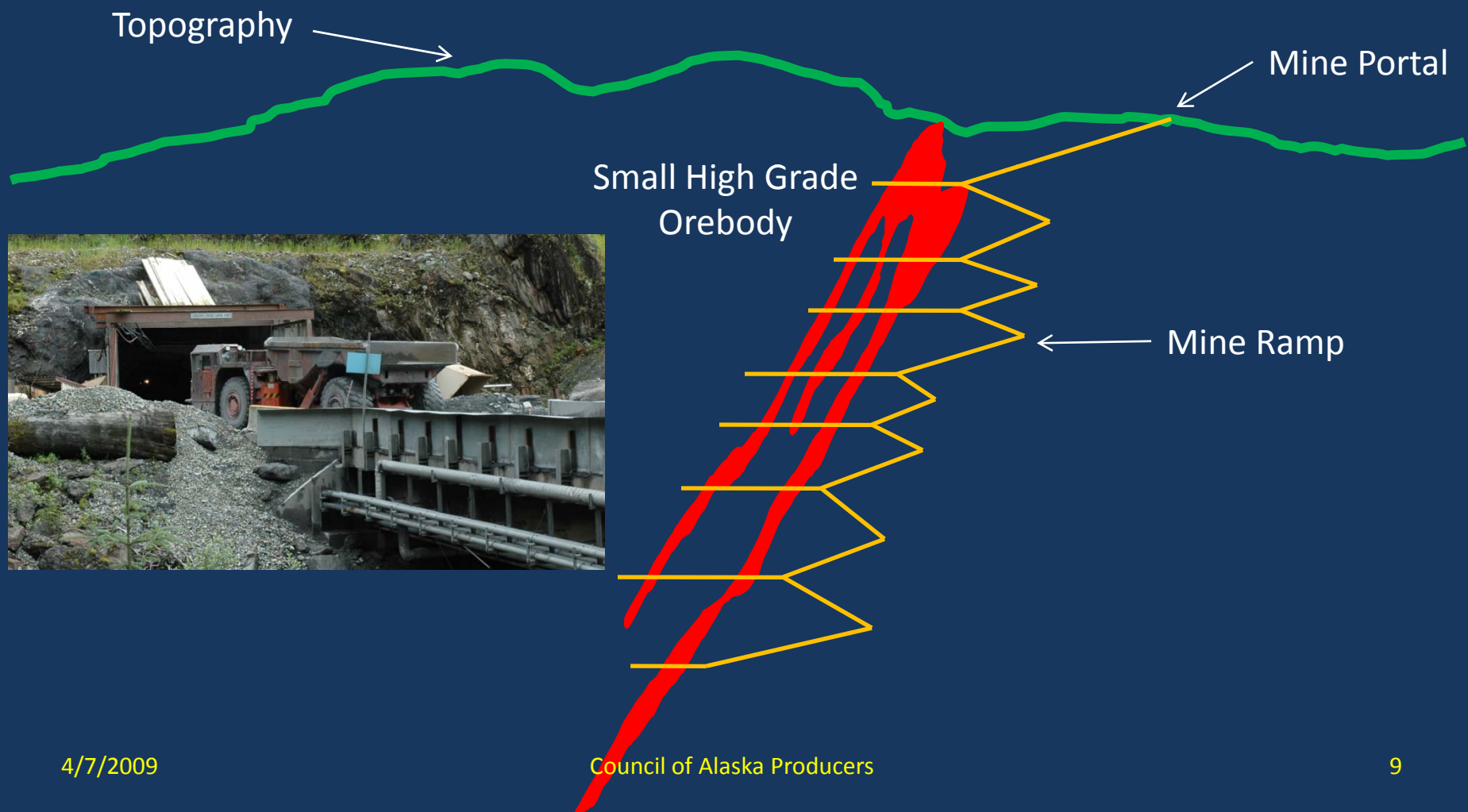
Open Pit?



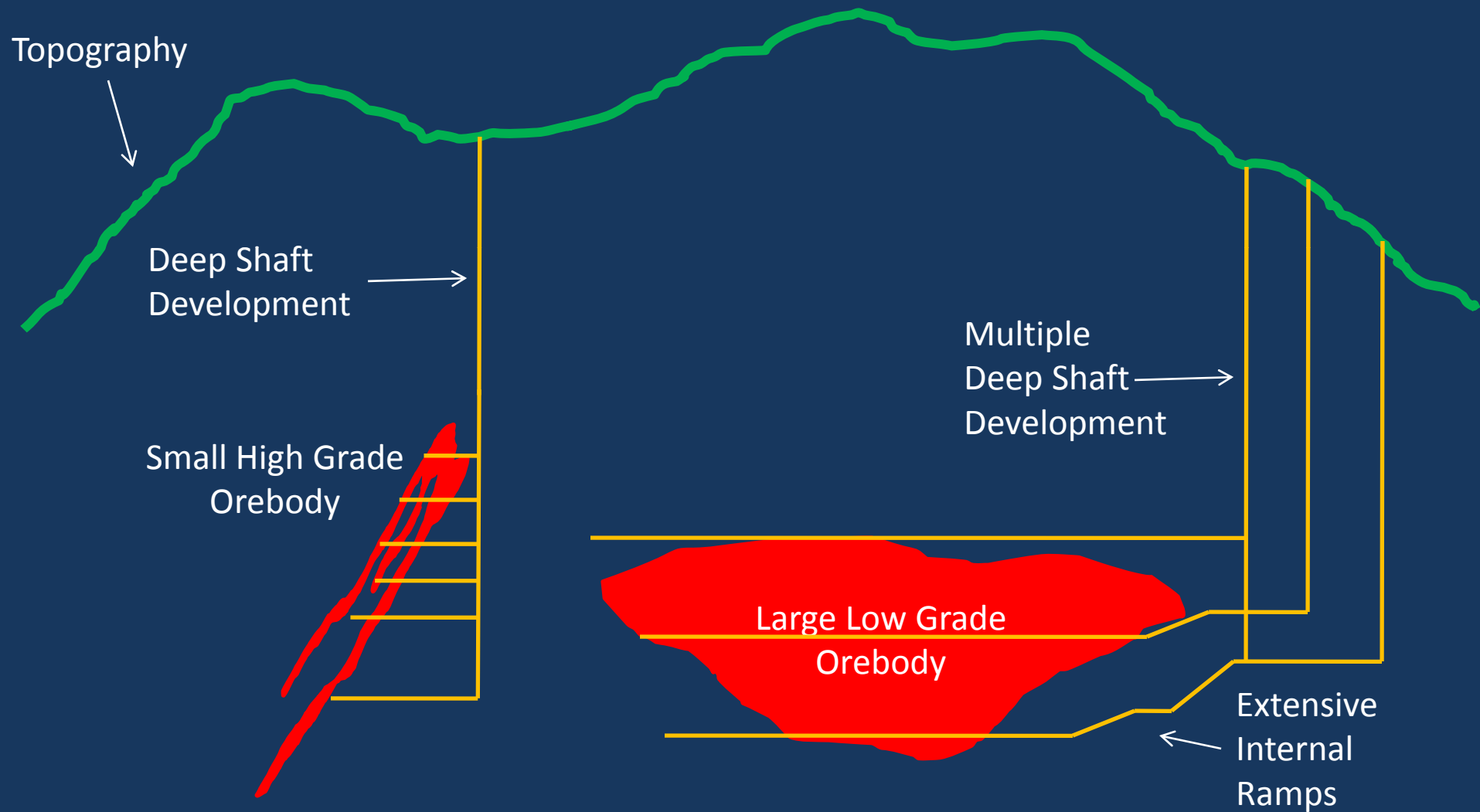
Underground Mine – Shaft Access



Underground Mine – Portal Access

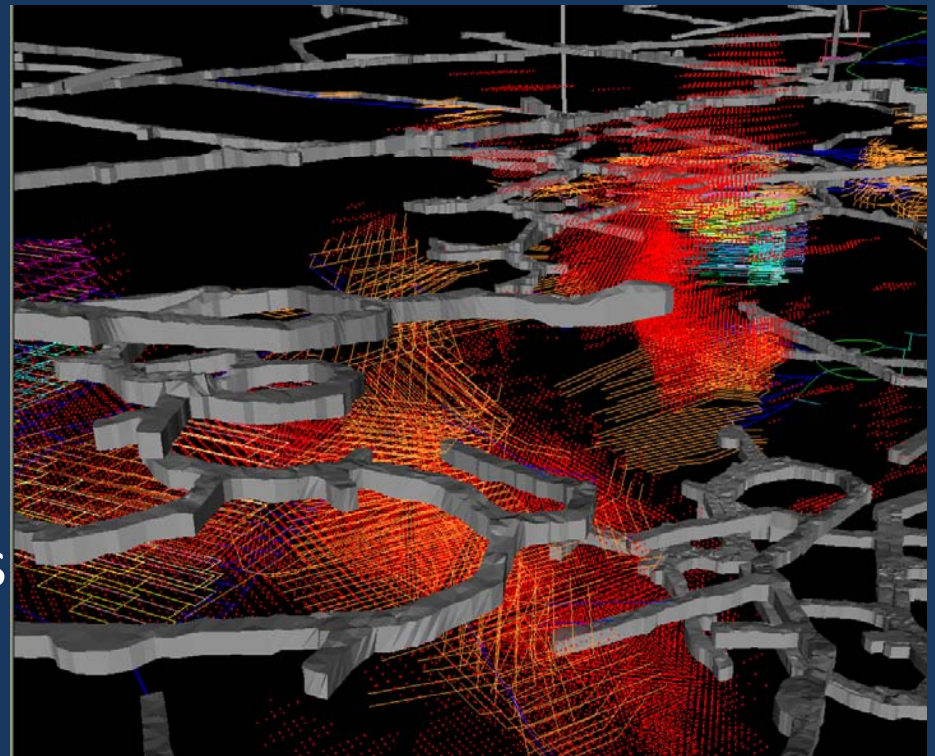


Underground Mine?

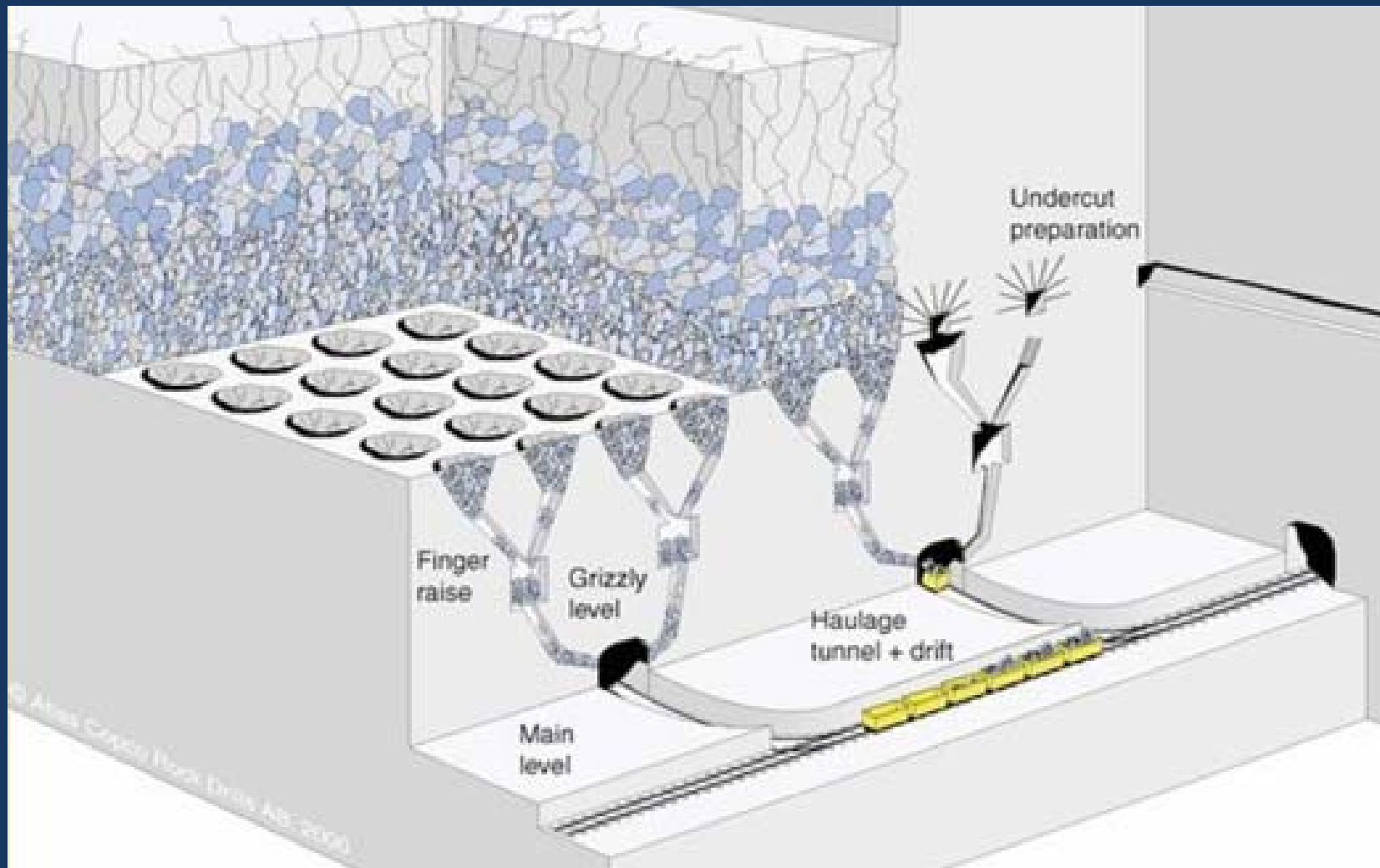


Underground Mining Methods

- Matched to Deposit Type
- Maximize Ore Extraction
- Minimize Capital
- Engineering Requirements
- Regulatory Requirements



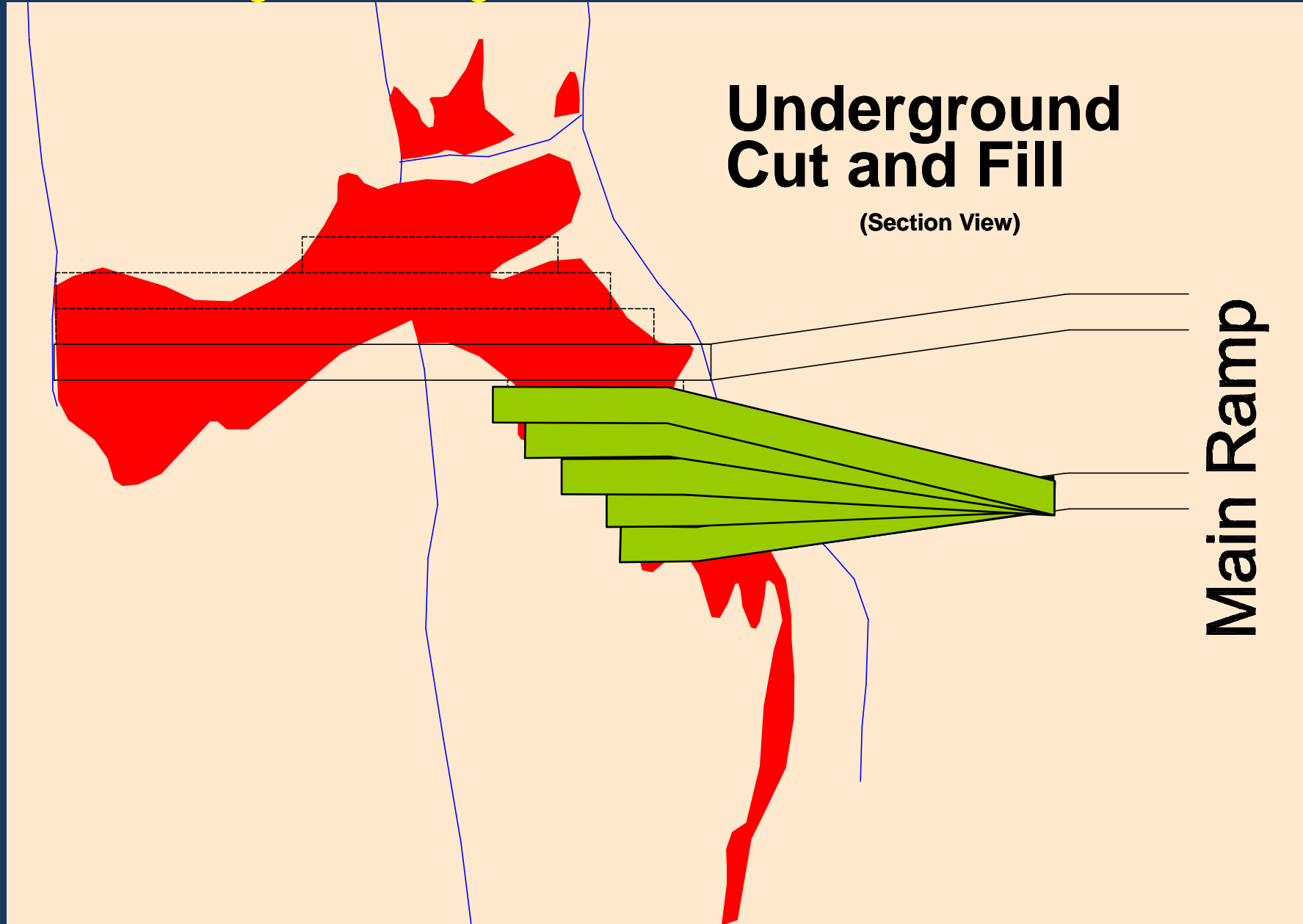
Underground Block Cave



Underground Cut and Fill

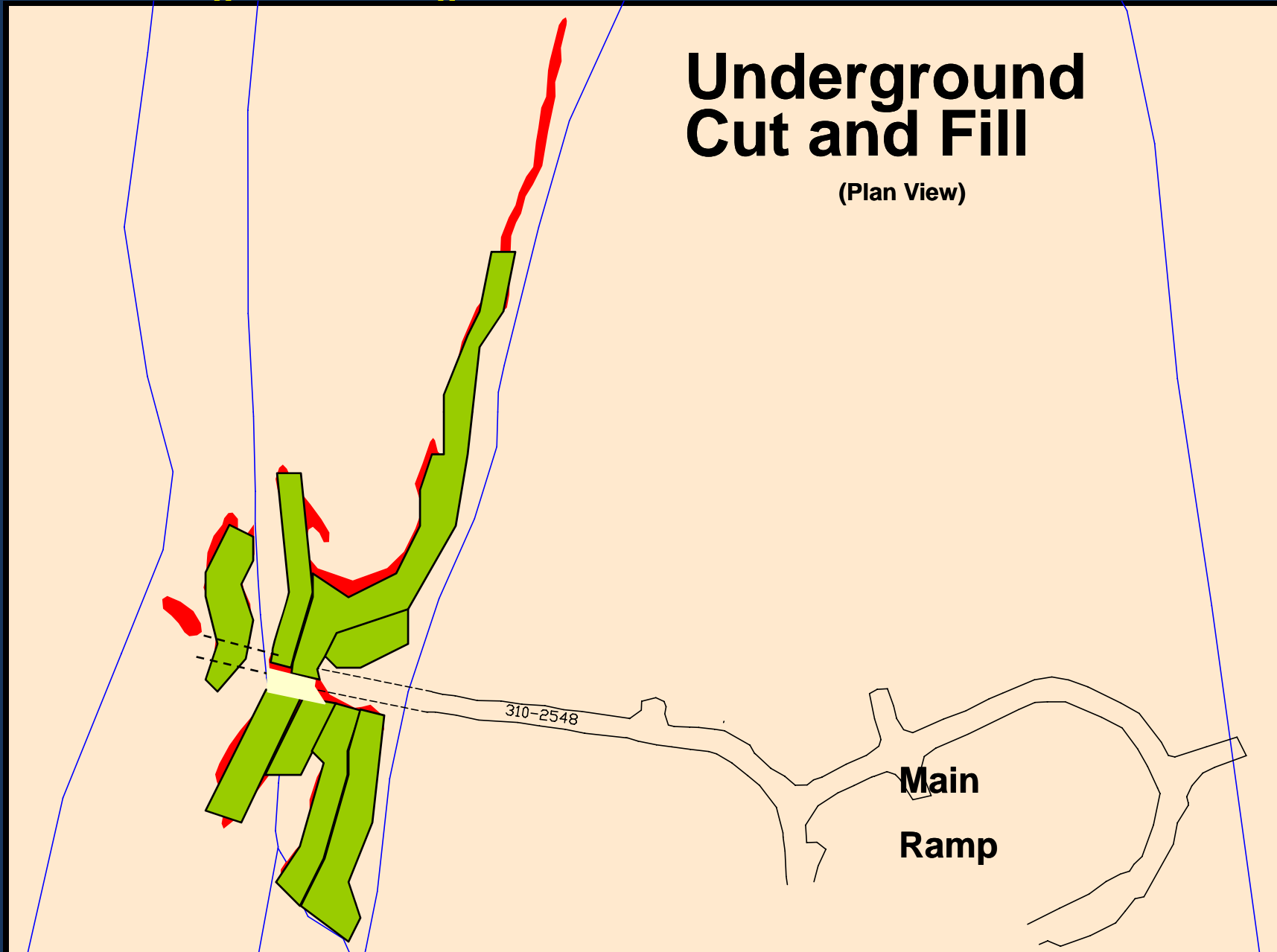
(Section View)

Main Ramp

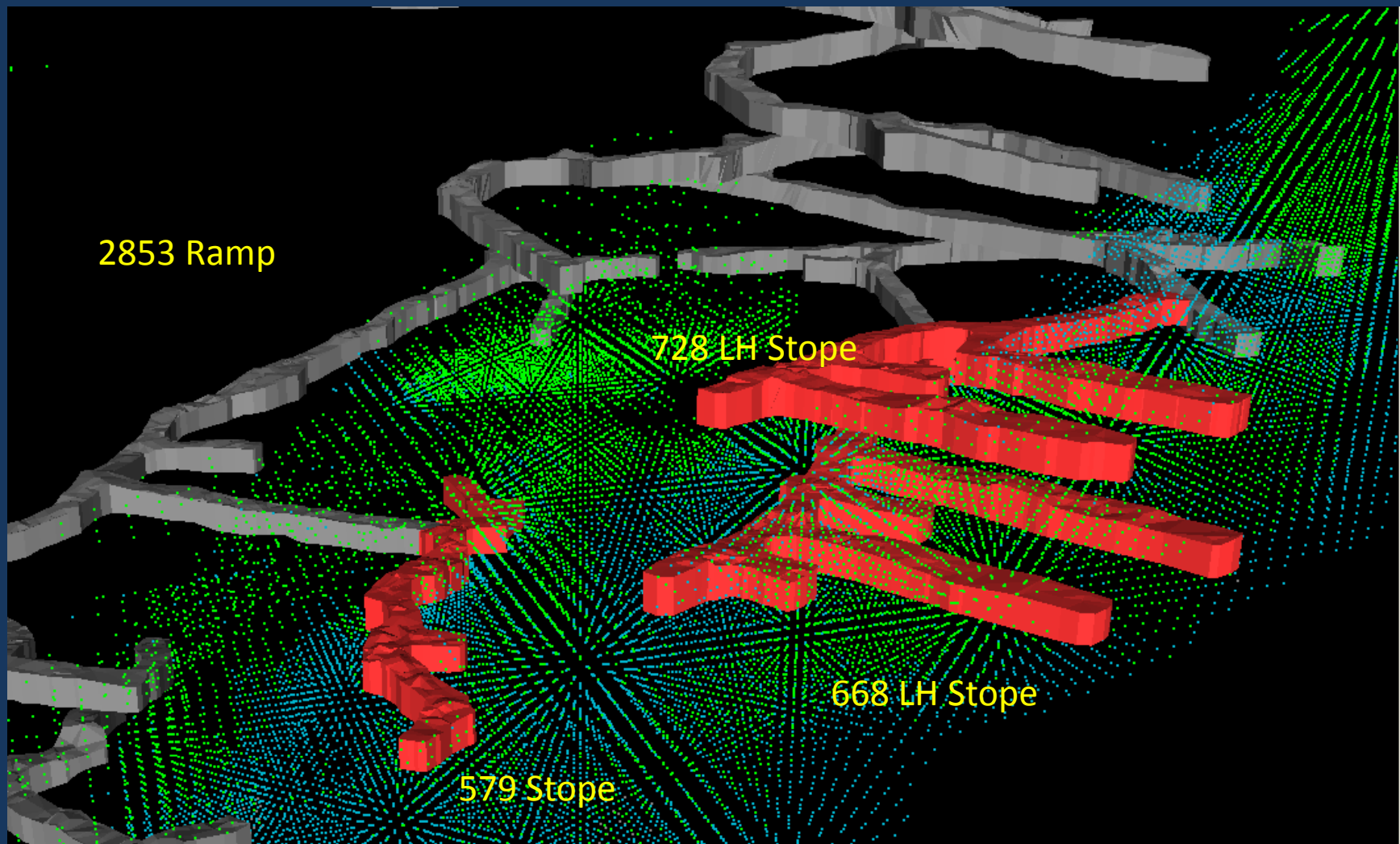


Underground Cut and Fill

(Plan View)

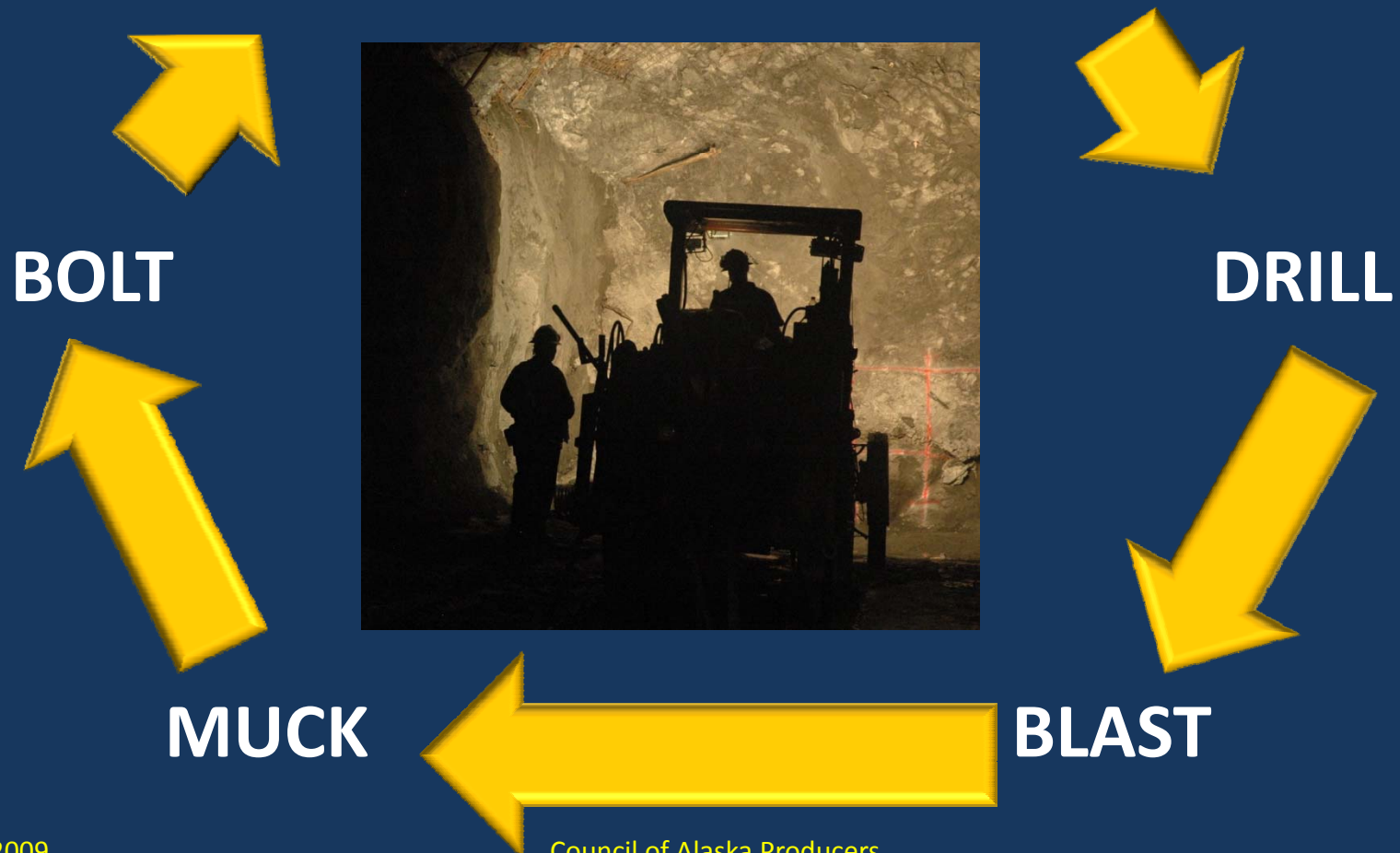


Underground Longhole



Basic Underground Mining Cycle

Geology + Engineering Control



Geology and Engineering Control



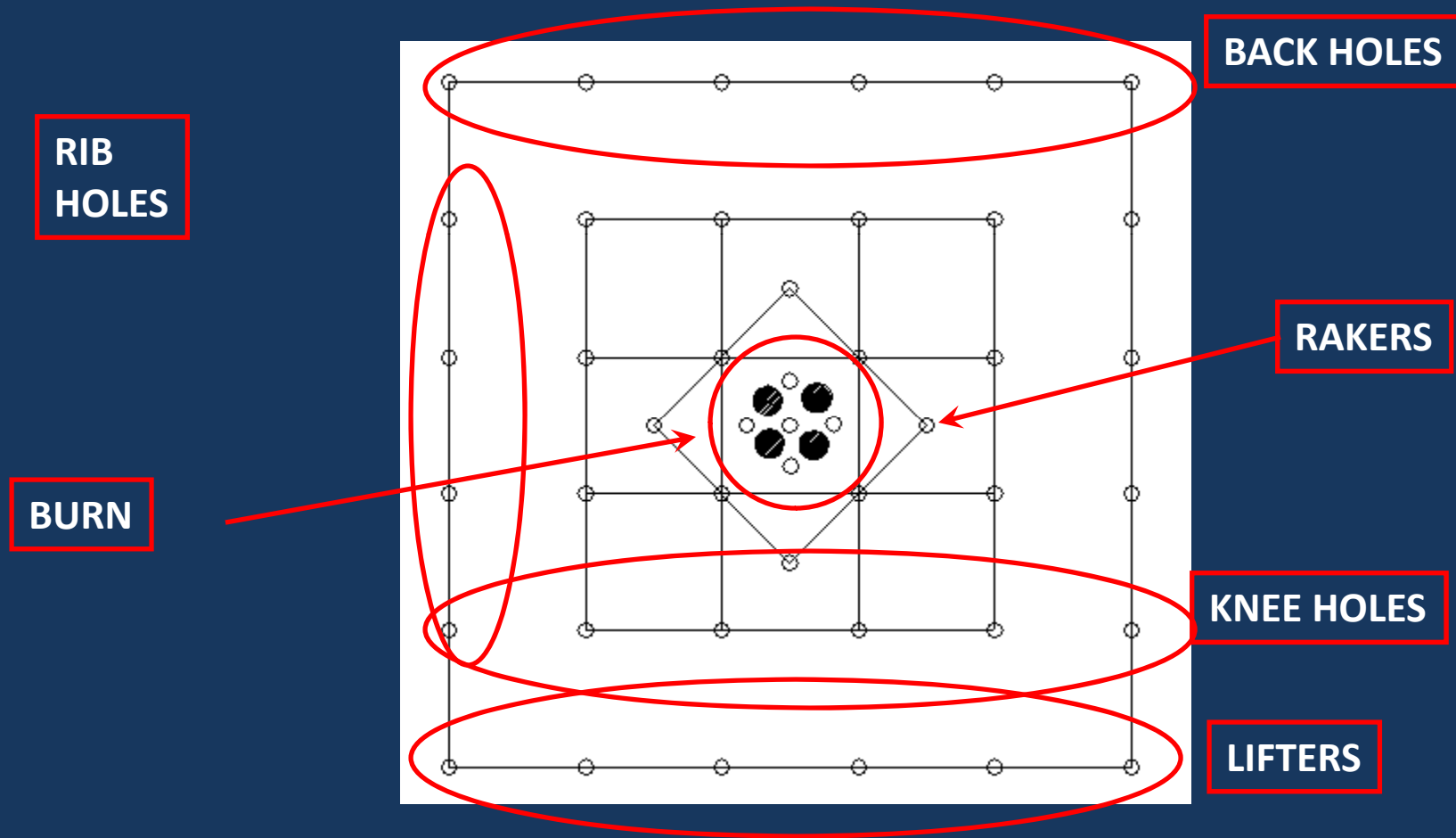
Drilling

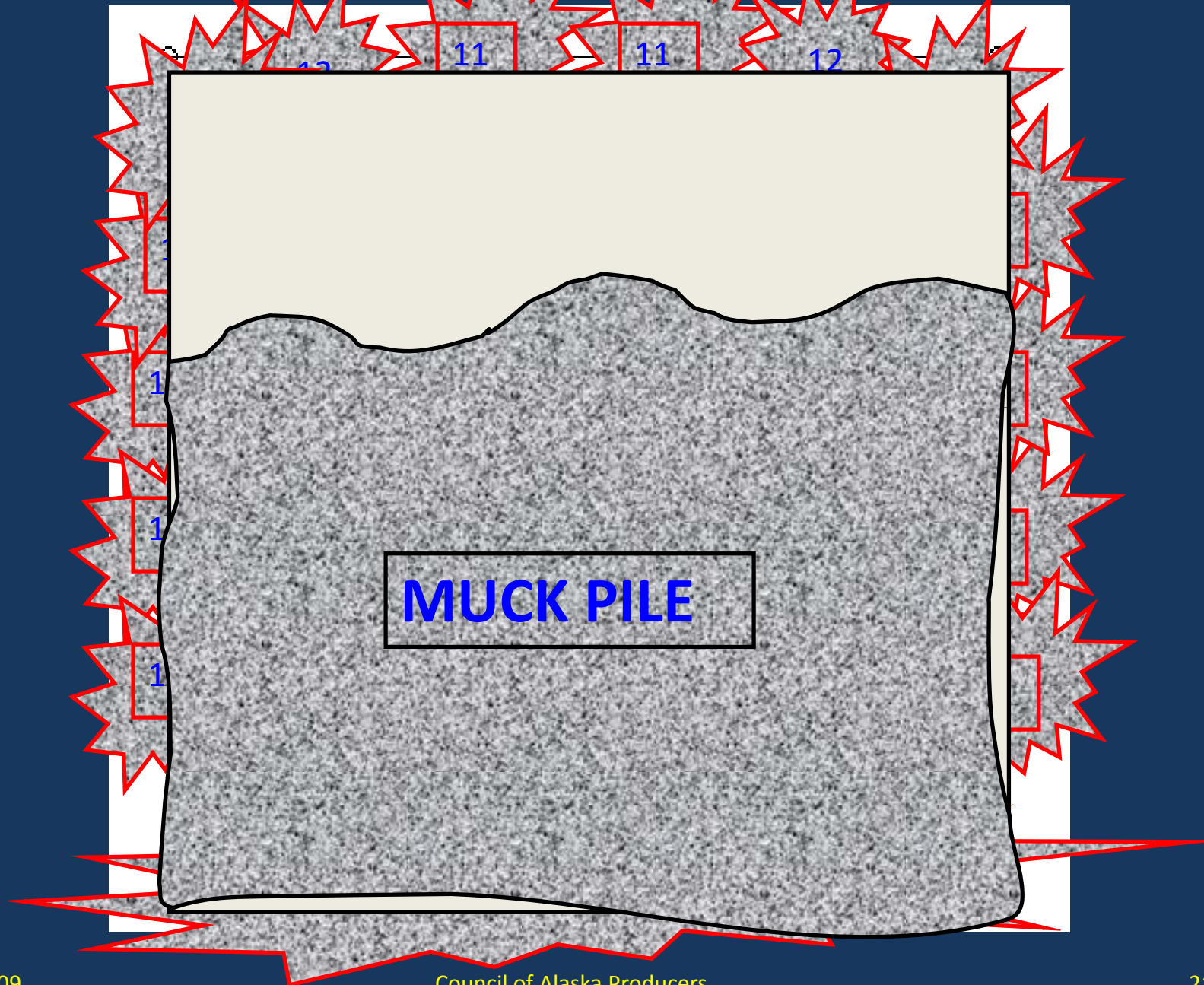


Drilling



Drill Pattern





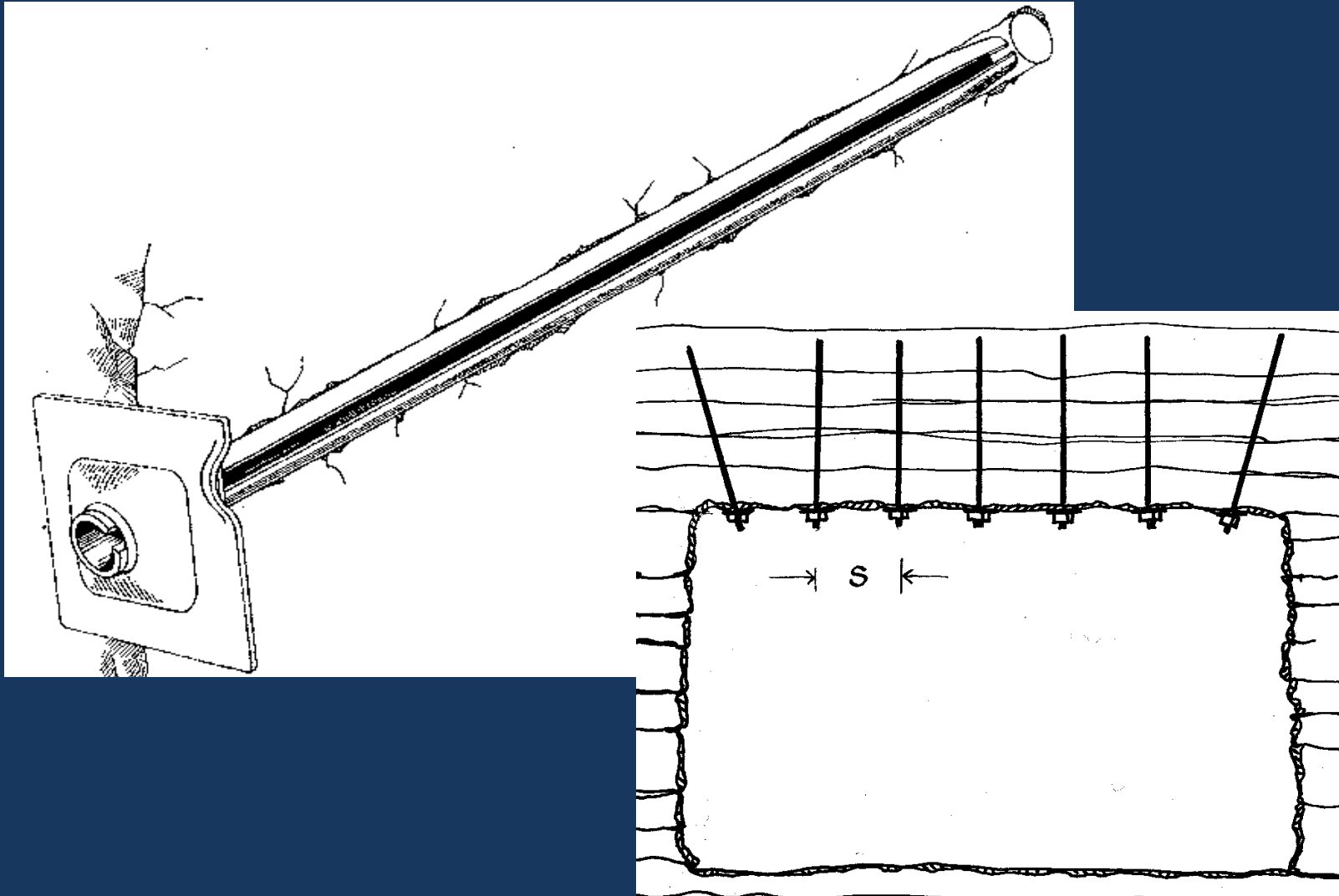
Mucking



Mucking



Bolting



Bolting



Bolting



Ground Control



Ground Control



Ground Control



Why Ground Control?



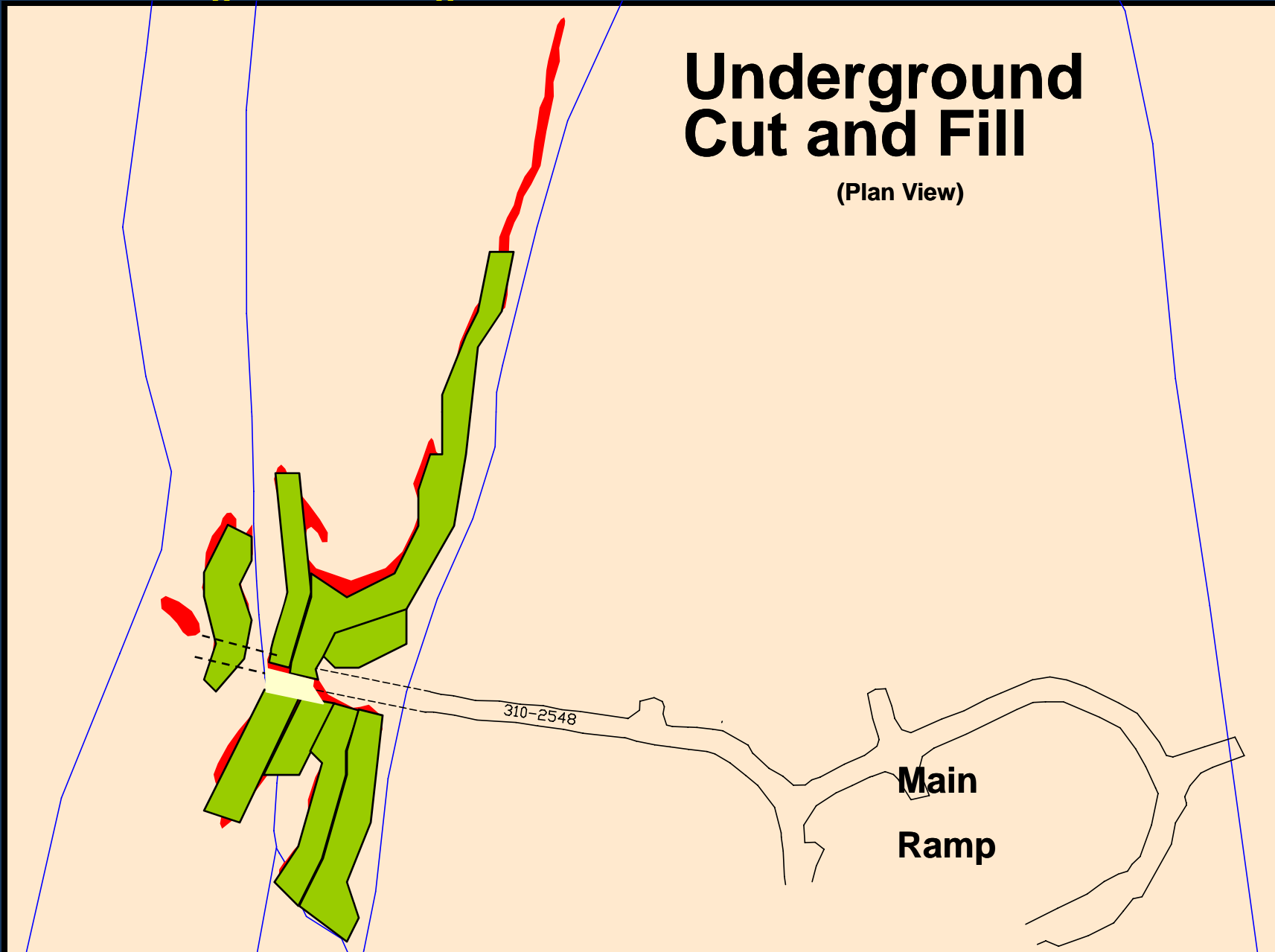
Backfill

- Waste Fill
- Conventional Fill
- Paste Fill

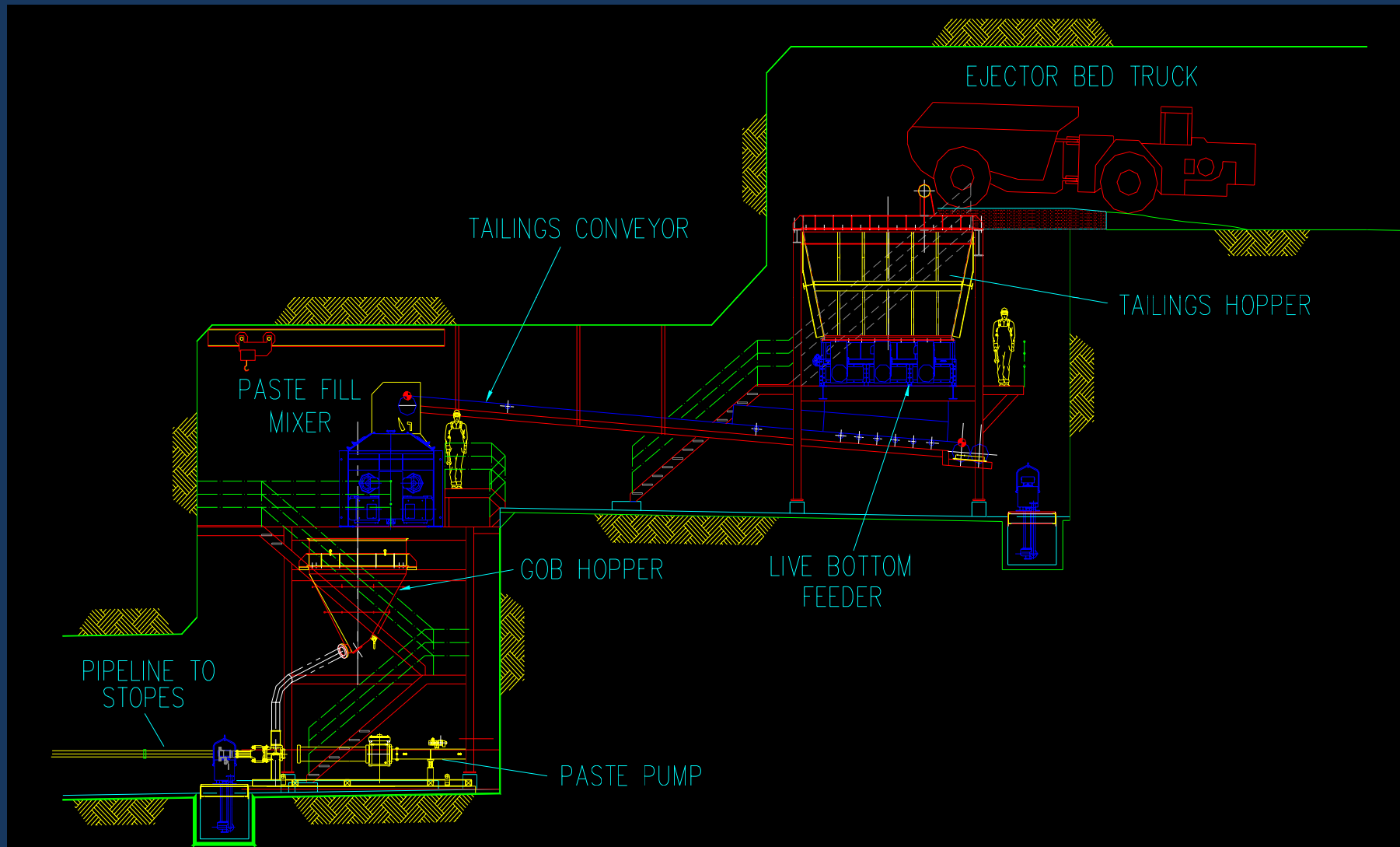


Underground Cut and Fill

(Plan View)

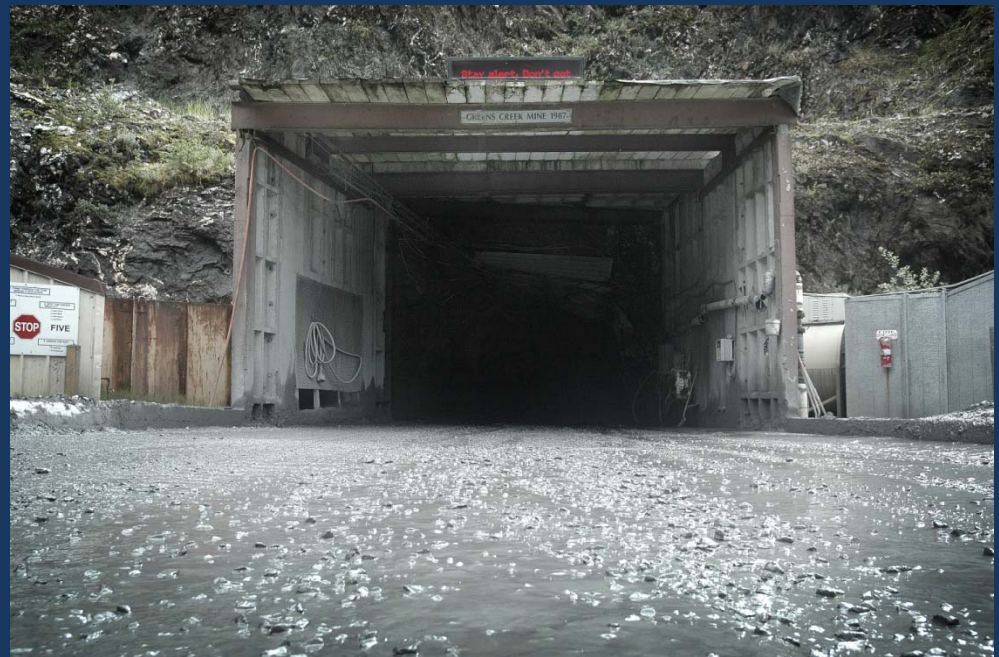


Paste Fill Plant



Underground Mining

- Alaska has a history of underground mining.
- Mining method determined by deposit type.
- Modern mining methods require a highly skilled workforce.



Thank You!

