

# Peabody Energy - Twentymile Mine; Underground Longwall

John King

University of Alaska Fairbanks

# Twentymile Mine

- Portal opened in 1983.
- Longwall operational by 1990.
- Owned and operated by Peabody Energy since 2004.
- Average coal seam thickness – 8.5 ft.
- Average depth of mine – 1,100 ft below surface.
- Approximately 6.5 miles from the portal to the headgate of the longwall.
- A world class longwall mine, holding many world records.



# Twentymile Mine

- Panels are 1,000ft wide and between 16,000 and 20,000 ft long
- Peabody is currently mining their 28<sup>th</sup> panel at the Twentymile mine
- Longwall capable of advancing 60 ft into the coal seam each shift
- Takes approximately 20 minutes for the longwall shear to complete one pass

# Longwall Mining

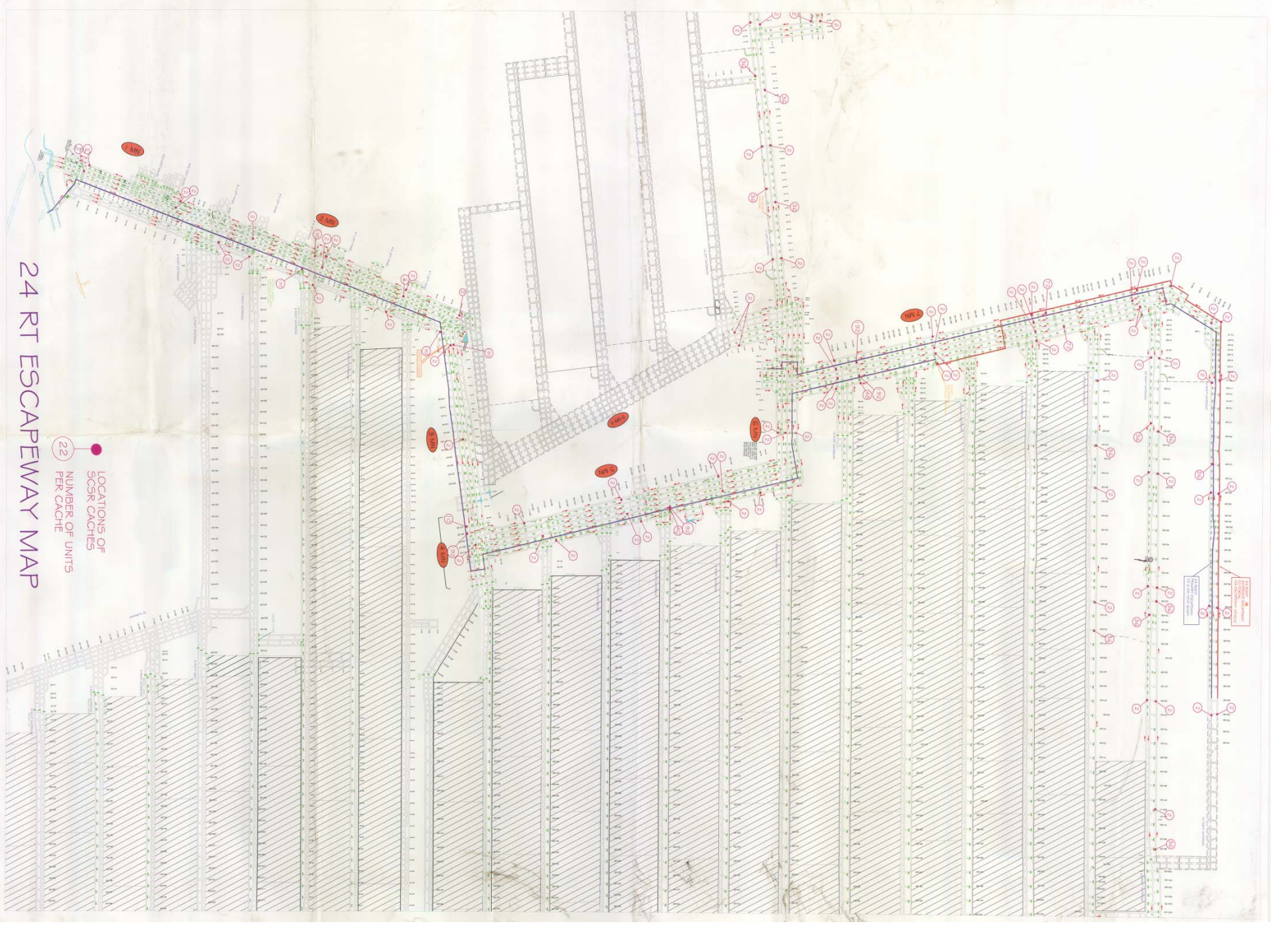
- Coal beds  $0^{\circ} < \theta < 12^{\circ}$  grade
- Mining in panels
- Coal is mined by a single or double drum shear.
- Immediate area is supported by massive “Shields”
- High productivity
- High efficiency
- High capital investment
- Requires large infrastructure

# Longwall Demonstration



# 24 RT ESCAPEWAY MAP

● LOCATIONS OF SC5R CACHES  
○ NUMBER OF UNITS PER CACHE



# Twentymile Mine - world records

- 24 hour production (longwall only);  
1999 - 65,496 clean coal tons
- Monthly production (longwall only);  
June 1997 - 1,027,485 clean coal tons
- Yearly production(longwall only);  
1999 - 7,143,737 clean coal tons