

# Analyst Site Visit Nyrstar Tennessee Mines

15 June 2010

Stuart Gula, General Manager



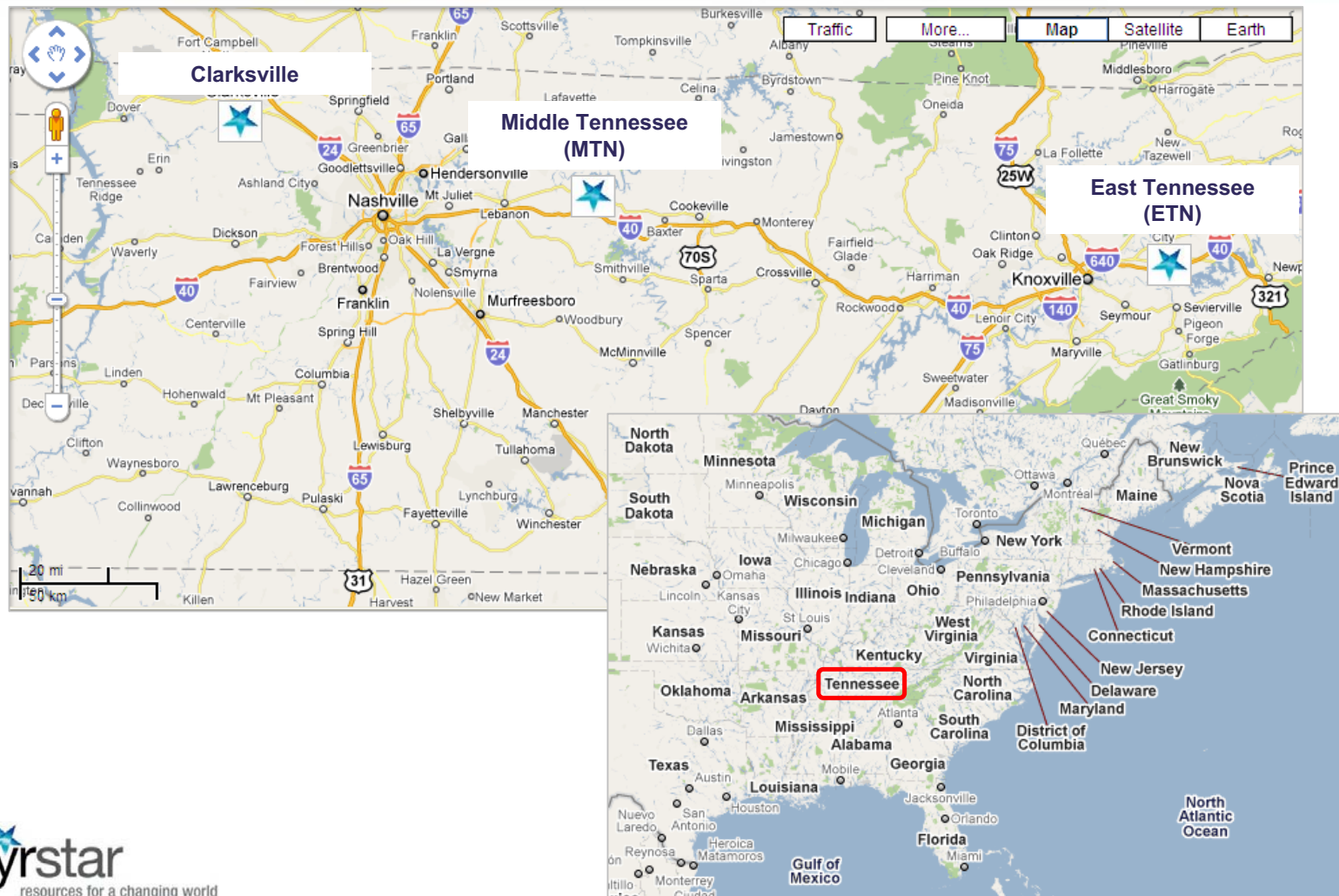
# Agenda

- Overview
- Operations
- Performance
- Synergies
- Key Initiatives
- Summary





## Overview: Location



# Overview: History

## Middle Tennessee

- 1964 New Jersey Zinc Co. (NJZ) commenced exploration near Murfreesboro
- 1968 Discovery hole at Elmwood
- 1974 NJZ Co. completed Elmwood Mill
- 1975 Union Miniere took 40% interest in NJZ Co. and formed Jersey Miniere Zinc Co.
- 1982 Gordonsville Mill commissioned
- 1984 JMZ acquired remaining NJZ Co. operations formed Union Zinc Inc. (UZI)
- 1994 Savage Resources acquired UZI and commenced development to Horseshoe Bend
- 1999 Pasminco acquired Savage resources
- 2003 Mossy Creek Mining acquired the assets operating Ag-Lime business
- 2006 Strategic Resources Corporation acquired the operation and began re-commissioning the operations which ceased in 2008
- 2009 Nyrstar acquisition

## East Tennessee

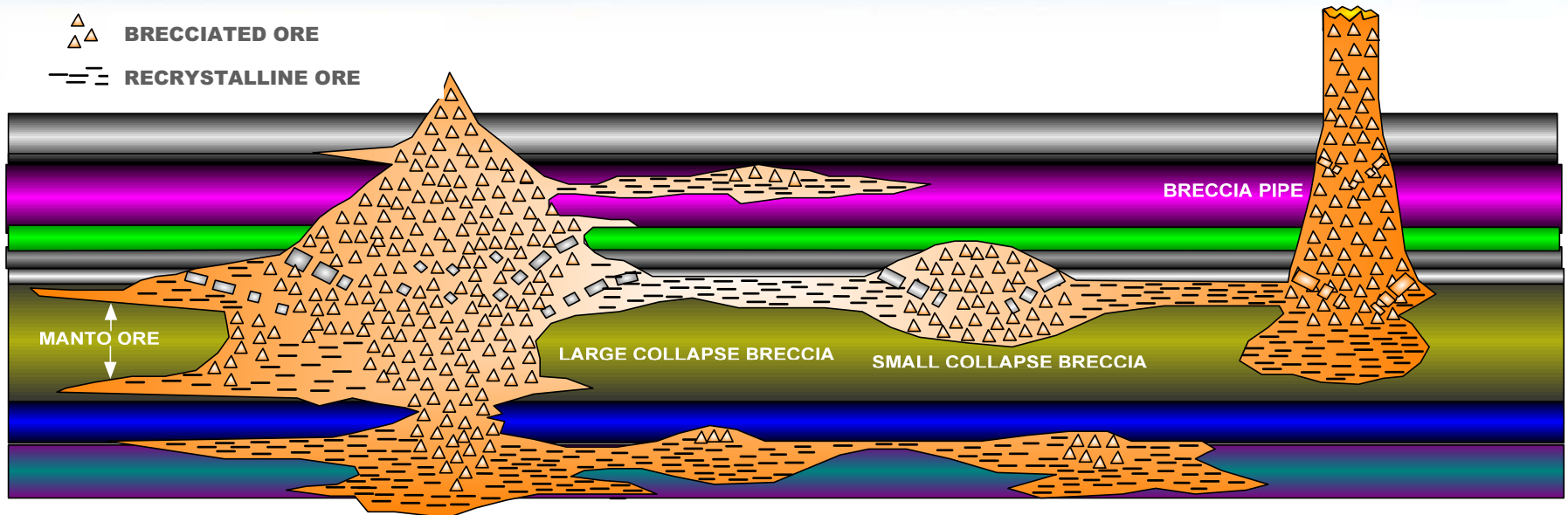
- 1850s Oxidised zinc ores discovered along Mossy Creek in Jefferson City
- 1926 Universal Exploration Co. (US Steel) opened the Davis Mine.
- 1953 New Jersey Zinc began operations at Jefferson City Mine after entering the area and 1947
- 1963 New Market Mine commenced operations
- 1988 ASARCO purchased the assets of Inspiration Development Company including the Jefferson City Mine and Mill and the Beaver Creek Mine
- 1997 Temporary closure the New Market Mine and subsequent permanent closure in 1999
- 2001 Closure of all ASARCO operations following acquisition by GROUPO Mexico
- 2006 Operations acquired by Glencore and re-commissioning began until 2008 when placed on care & maintenance
- 2009 Nyrstar acquisition

# Operations: Mining Overview

- | Each complex consists of 3 mines
- | ETN Mines
  - | Coy
  - | Immel
  - | Young (includes Mill & Stores)
- | MTN Mines
  - | Cumberland (dewatering in progress)
  - | Elmwood (dewatering in progress)
  - | Gordonsville (includes Mill & Stores)
- | Utilising random room & pillar mining approach
  - | Hoisting ~5 million tonnes per annum of ore (2.5 million per complex)
- | Average ore grade 3.0-3.5% Zn
- | Mixed Mobile Equipment Fleet
  - | Oldenberg Drills
  - | Caterpillar, Sandvik Tamrock and Dux trucks and loaders

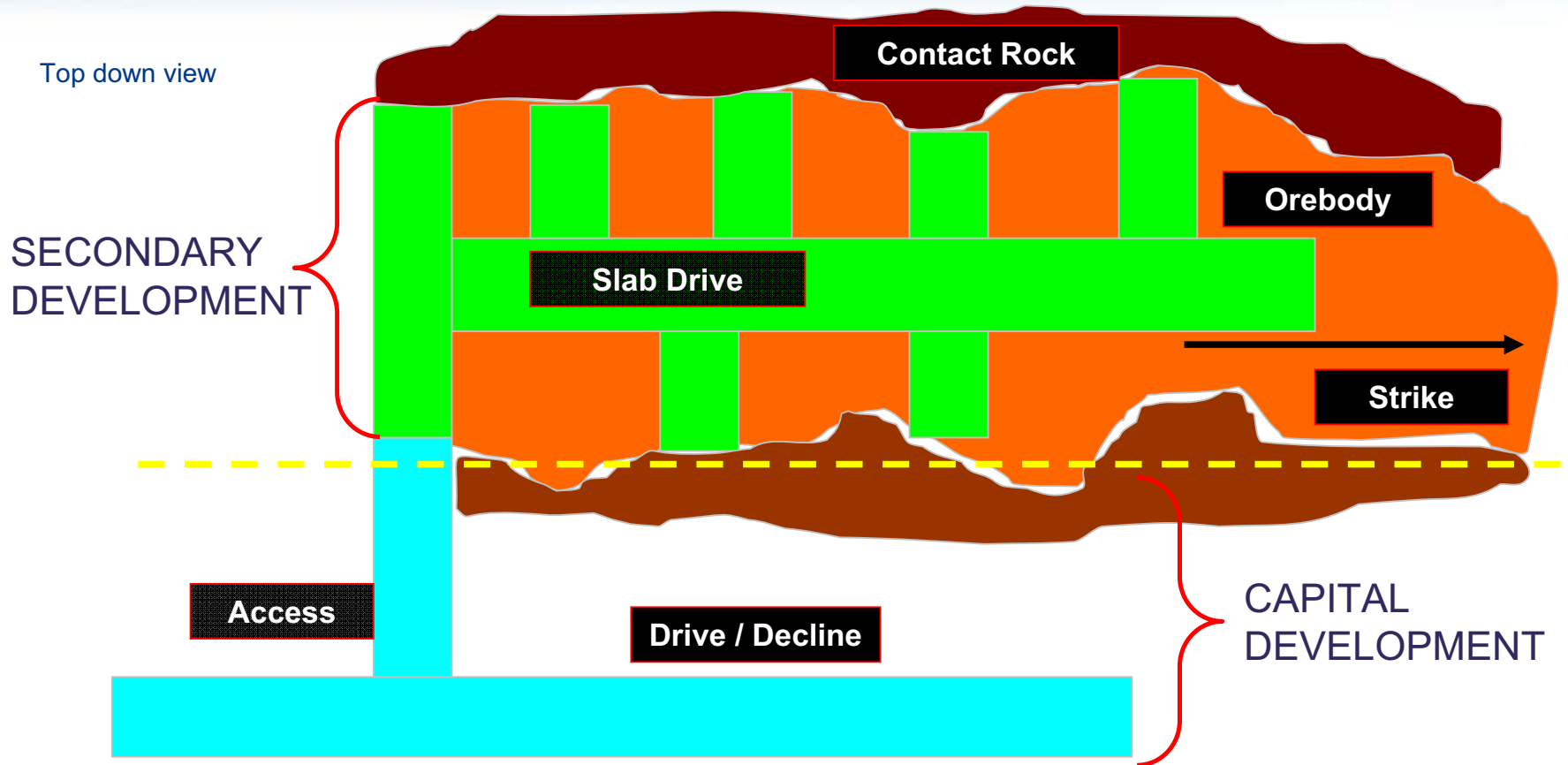


# Operations: Conceptual Geology



- | Zinc ore hosting beds are found in the Middle Mascot and Kingsport formations within favorable zones of interbedded limestones and dolomites
- | Mineralization occurs within breccia collapse structures, manto structures, and recrystalline (up to 150 feet high)
  - | **Breccia ore:** Small to large breccia bodies are the results of dissolution and recrystallization of limestone resulting in collapse of overlying dolomite and limestone beds
  - | **Manto ore:** small breccia bodies or “ore shoots” extending off of main breccia bodies
  - | **Recrystalline ore:** mineralization occurring in fine to course crystalline dolomite (recrystalline)

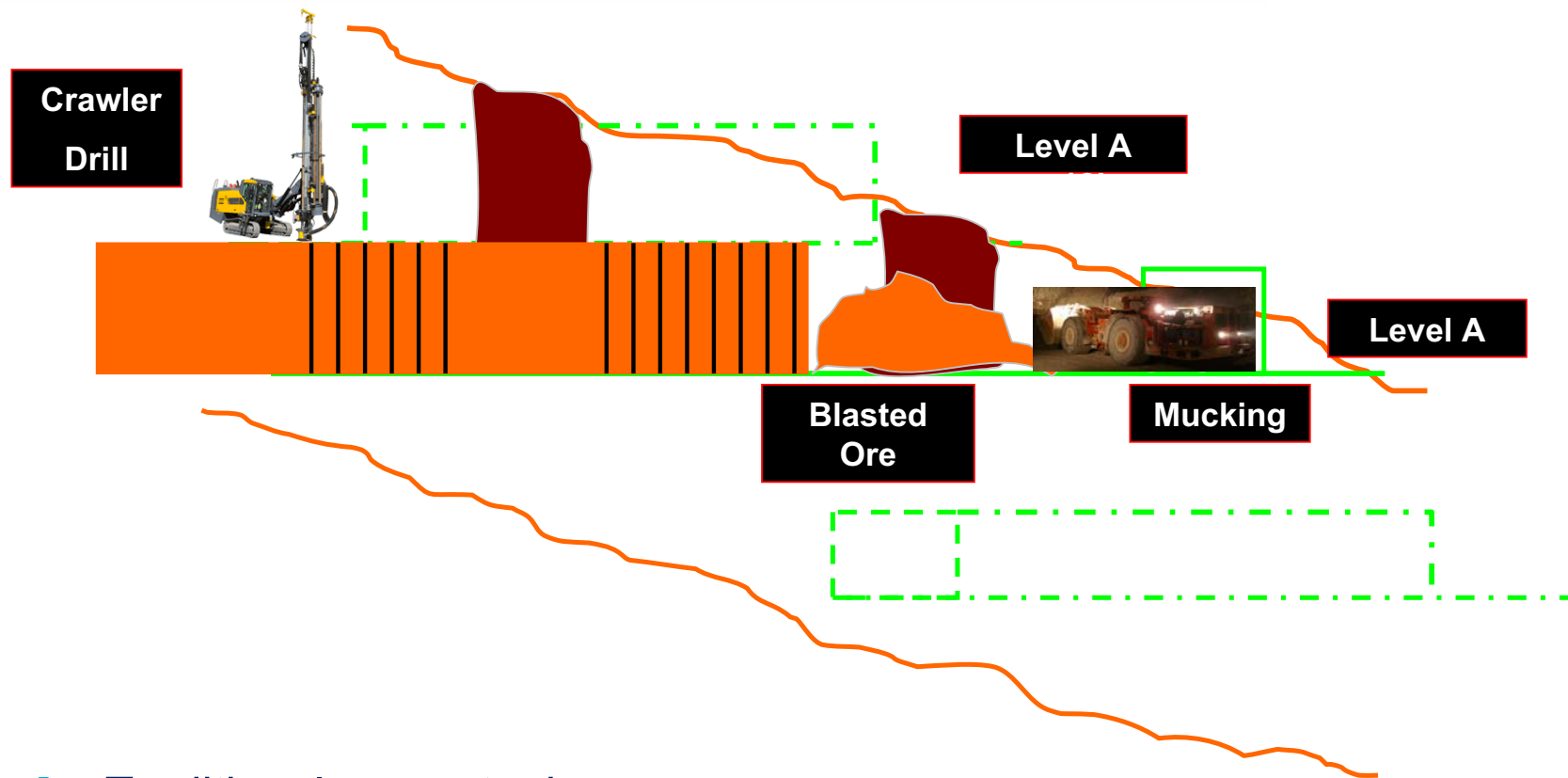
# Operations: Development Mining



Random Room and Pillar Development



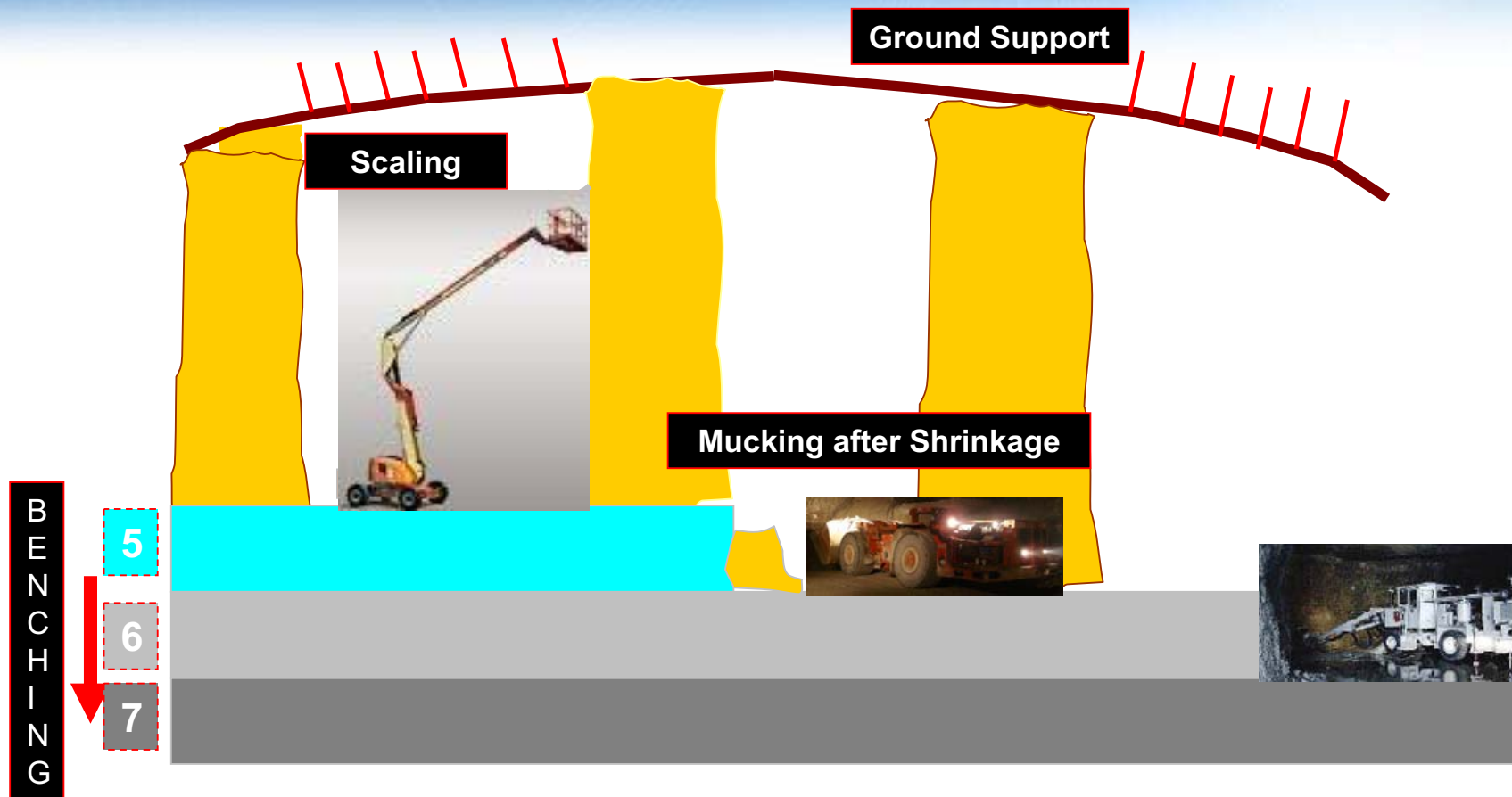
# Operations: Vertical Bench Mining



Traditional open stoping



# Operations: Horizontal Bench Mining



Multiple pass shrink stoping

# Operations: Resources

**Middle Tennessee Resources (2008)**

Category	Mt	Zn %
Indicated Underground	3.12	3.28
Indicated Surface	6.22	3.40
Inferred Surface	18.90	3.44
<b>Total</b>	<b>28.25</b>	<b>3.42</b>

**East Tennessee Resources (2009)**

Category	Mt	Zn %
Measured Underground	3.58	3.66
Indicated Surface	6.06	4.27
Inferred Surface	7.31	3.24
<b>Total</b>	<b>16.95</b>	<b>3.70</b>

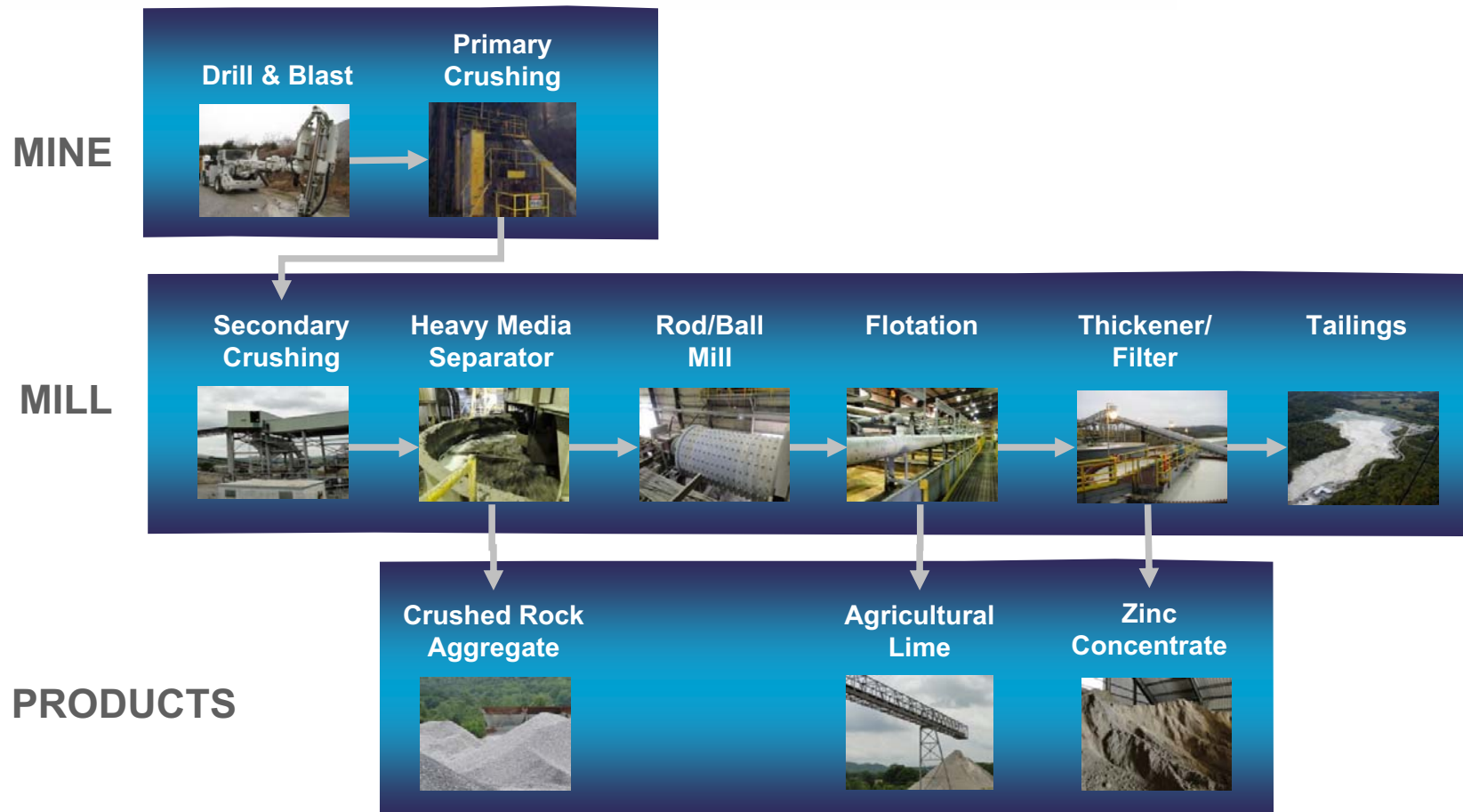
- Reviewing resource statements to ensure JORC compliance
- Updated JORC compliant resource statements expected for FY10 results
- Updated reserve statement dependent on finalisation of life of mine planning

# Operations: Milling Overview

- ETN & MTN planned ore throughput per plant
  - Crushing/ Heavy Media Separation ~350tph ore
  - Grinding/Flotation ~150tph ore
- Concentrate production
  - Approximately 100-110ktpa zinc concentrate production per complex
  - Concentrate grade ~62% zinc
- By-Products
  - Crushed rock aggregate
  - Agricultural lime
- Delivery to Clarksville
  - Barge transport from ETN
  - Truck transport from MTN



# Mining and Milling Process



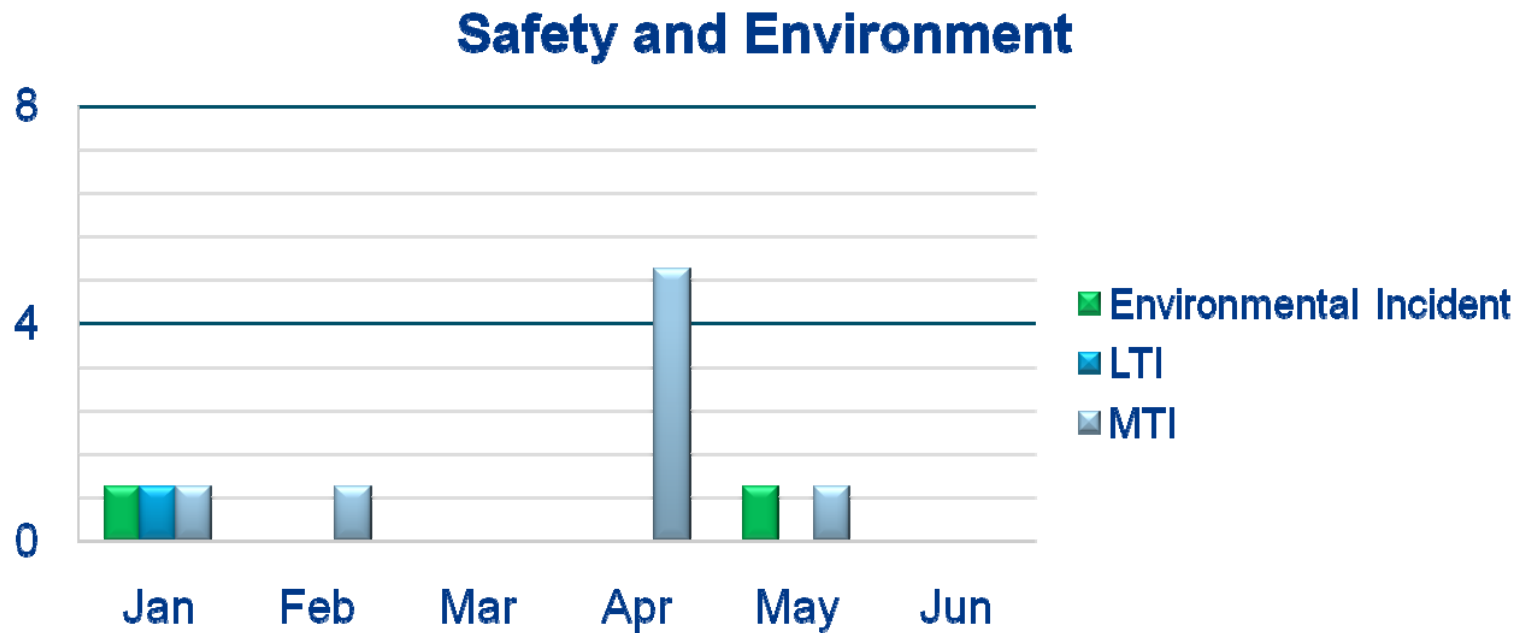


# Performance: Integration & Ramp-Up

- | Implementing Nyrstar policies and culture across both mines
  - | Values & Behaviours workshops
- | Significant recruitment effort well underway
  - | Recruiting workforce that will align with our values and behaviours
  - | Approximately 700 employees across both mine complexes at full employment
  - | Tennessee Career Centres assisting with recruitment of hourly paid employees
  - | Establishing employee consultative networks
- | Training & Development
  - | Mine Safety and Health Administration courses
  - | Nyrstar Safety Leadership program
- | Systems Implementation
  - | Implementing Nyrstar SAP for HR, Finance, Asset Management, Materials Management
  - | Implementing Nyrstar policies & procedures



# Performance: Safety & Environment



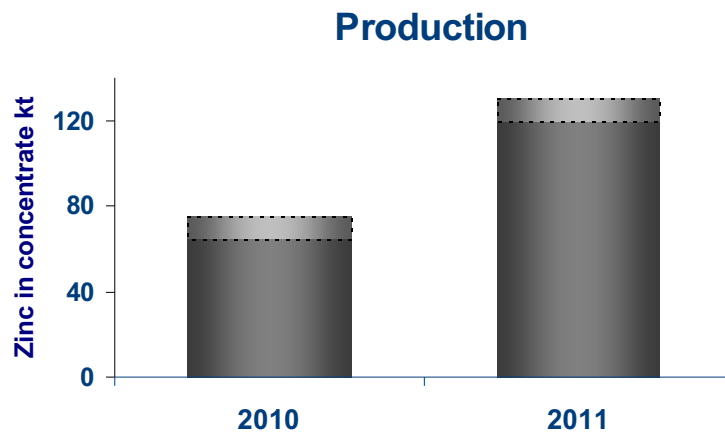
- Development of Nyrstar safety culture a priority
- Behavioural and systems based safety approach being implemented

# Performance: Risk Management

- Focused on hazard identification & risk awareness behaviours
  - Conducted business risk assessment
  - Implemented Risk Information Management Systems (RIMS)
  - Conducting safety leadership training
  - Established critical risk controls
- Working closely with Mine Safety and Health Administration (MSHA)
- Integrated Management Systems to be implemented
  - Environment ISO14001
  - Safety OHSAS18001 / AS4801
  - Quality ISO9001

		Consequence				
		Low	Minor	Moderate	Major	Critical
Likelihood	Almost Certain					
	Likely					
	Moderate					
	Unlikely					
	Rare					

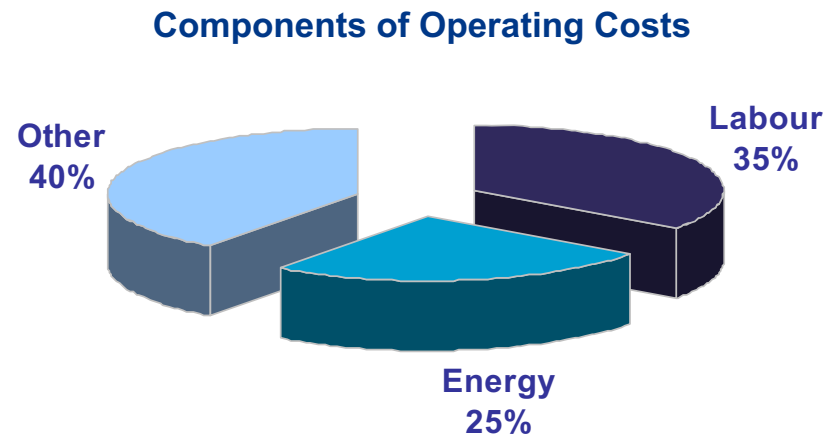
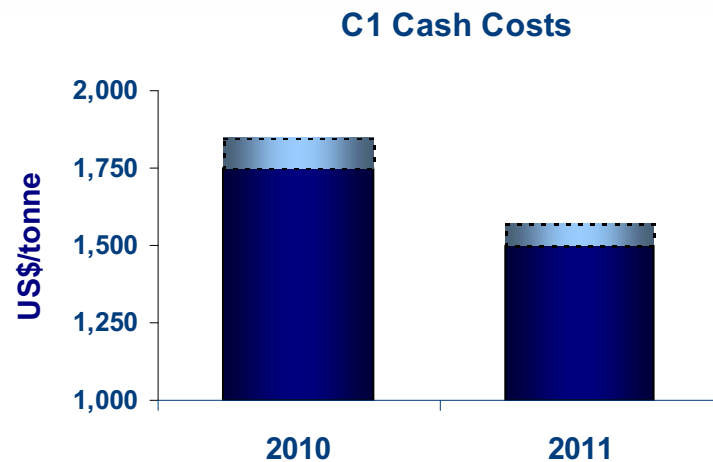
# Performance: Zinc Metal Production



- East Tennessee ramp-up well progressed, with production at 75% of capacity
- Middle Tennessee in early stages of ramp-up (Cumberland and Elmwood mines being de-watered)
- Expect to achieve full production rate of approximately 130kt zinc in concentrate by 2011



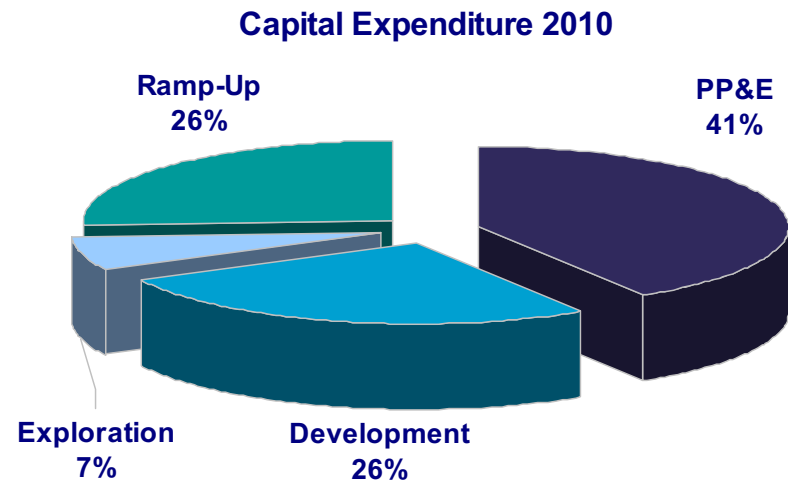
# Performance: Site Unit Costs



- Post ramp-up, expect average C1 cash costs to be approximately US\$1500-1600/tonne (and approximately 20% higher during ramp-up in 2010)
  - Operating Costs consist of approximately 35% labour, 25% energy and 40% other (predominately stores and external services)
  - Note that C1 cash costs include operating costs, by-product credits (primarily from crushed rock aggregate) and freight
  - Royalties are not included in C1 cash costs (approximately 2% of Gross Profit)
  - Opportunity to improve cash costs further through more robust mine planning

# Key Initiatives

- Reserves/Resources review
  - Exploration program in progress for replacement of depleted resources
- Major capital expenditure
  - New ball mill being installed at MTN to achieve full production capacity to be commissioned Q3 2010
  - Dewatering and rehabilitation of Cumberland and Elmwood mines
  - Tailings storage facilities
- Business improvement
  - Business strategy & planning
  - Increasing cut-off grade for reserves



# Tennessee Operations: Synergies

- There are a number of synergies as a result of Nyrstar owning both mines and the Clarksville smelter
  - The mines are now managed by a single and experienced management team
  - Opportunities for procurement savings across the two mines and smelter on key spends such as energy, stores and external services
  - Freight benefits due to convenience of location of mines and smelter
  - The Clarksville smelter benefits from improved recovery and higher production due to high grade, low impurity concentrates
  - Germanium/gallium in concentrates has potential to increase the value of smelter by-products
  - Shared Nyrstar support services between mines and the smelter



# Tennessee Mines: Summary

- Strong focus on safety, environment and risk management
- Rapidly ramping up both mine complexes
- Implementing the Nyrstar policies, systems and culture
- Reviewing reserves and resources
- Focused on continuous improvement
- Targeting significant regional synergies



# Questions



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