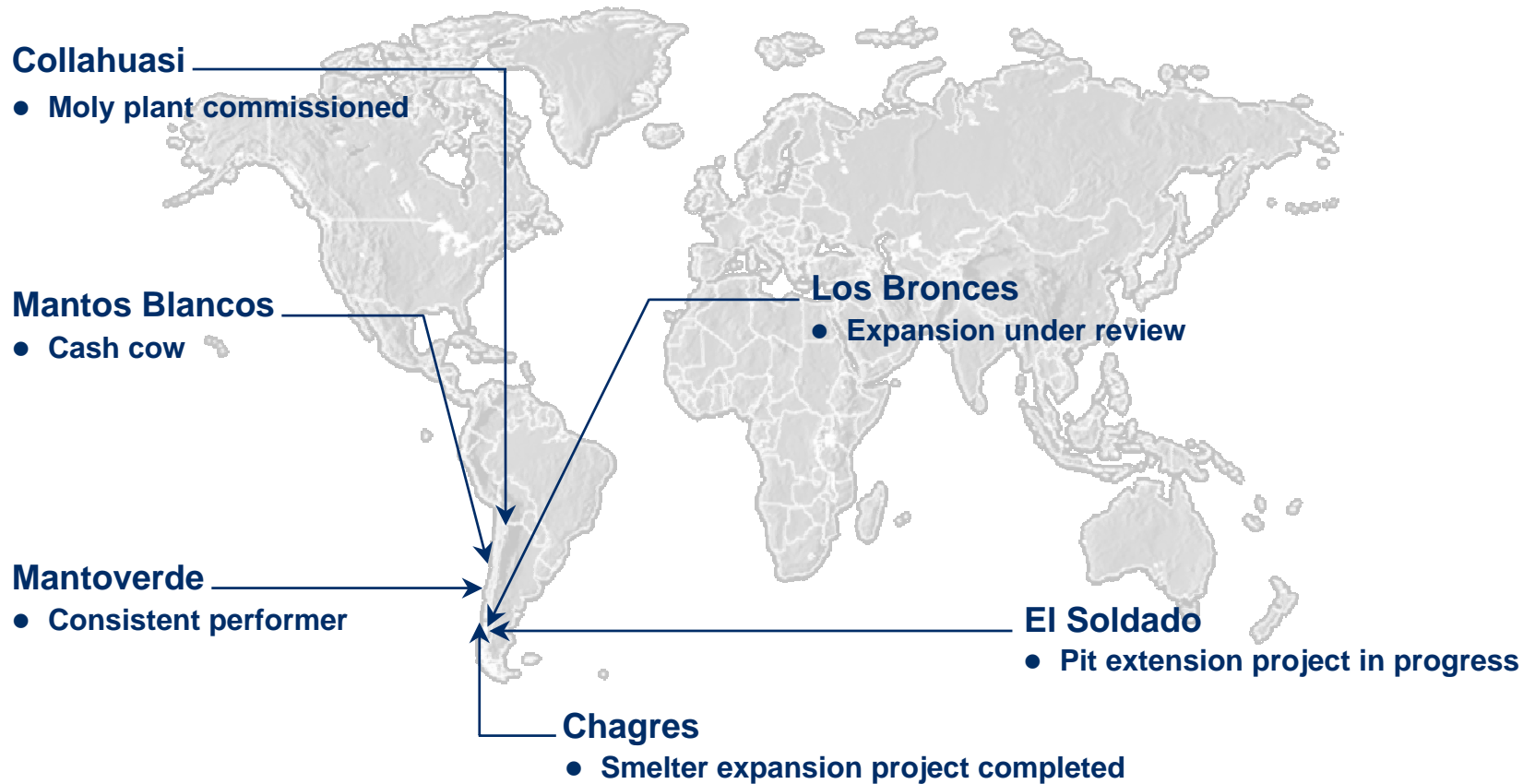
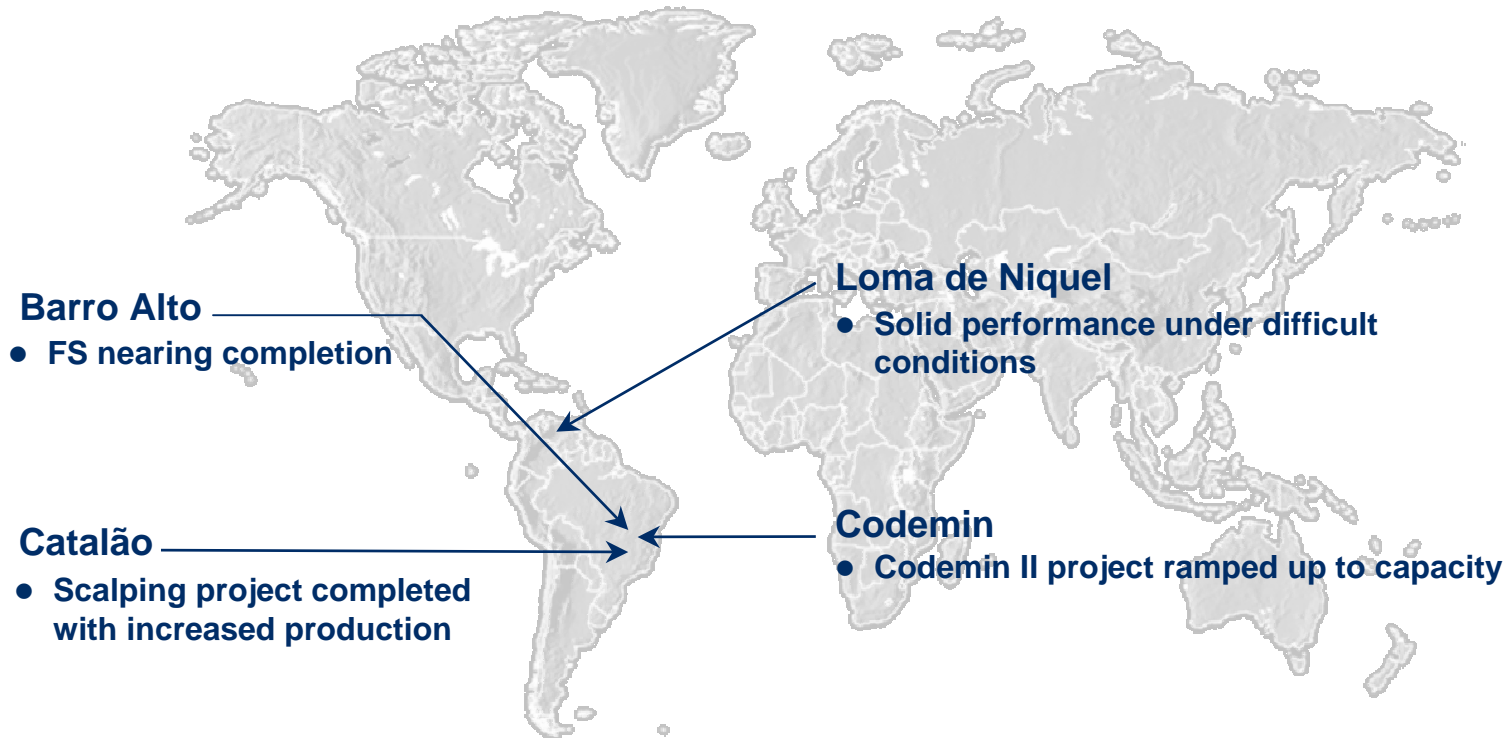


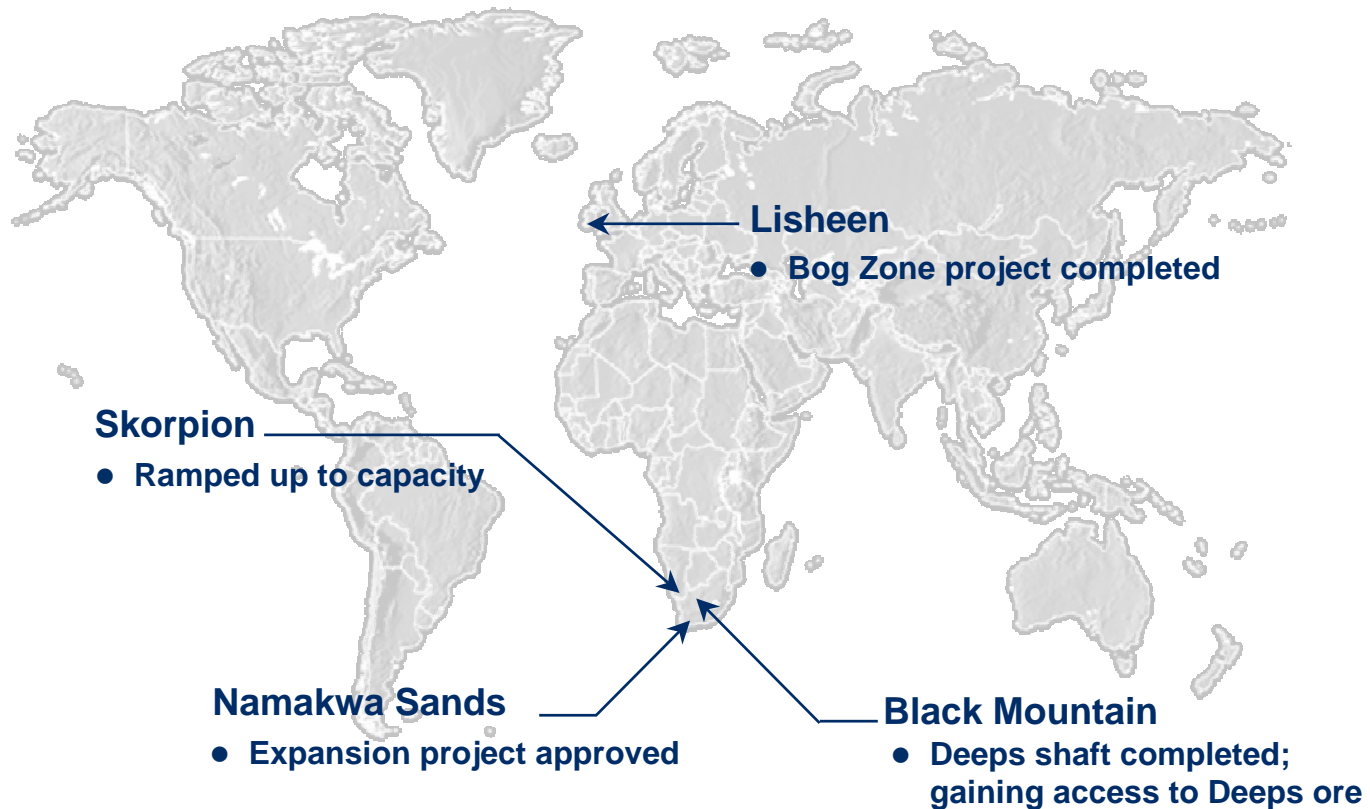
# Overview of AngloBase Metals

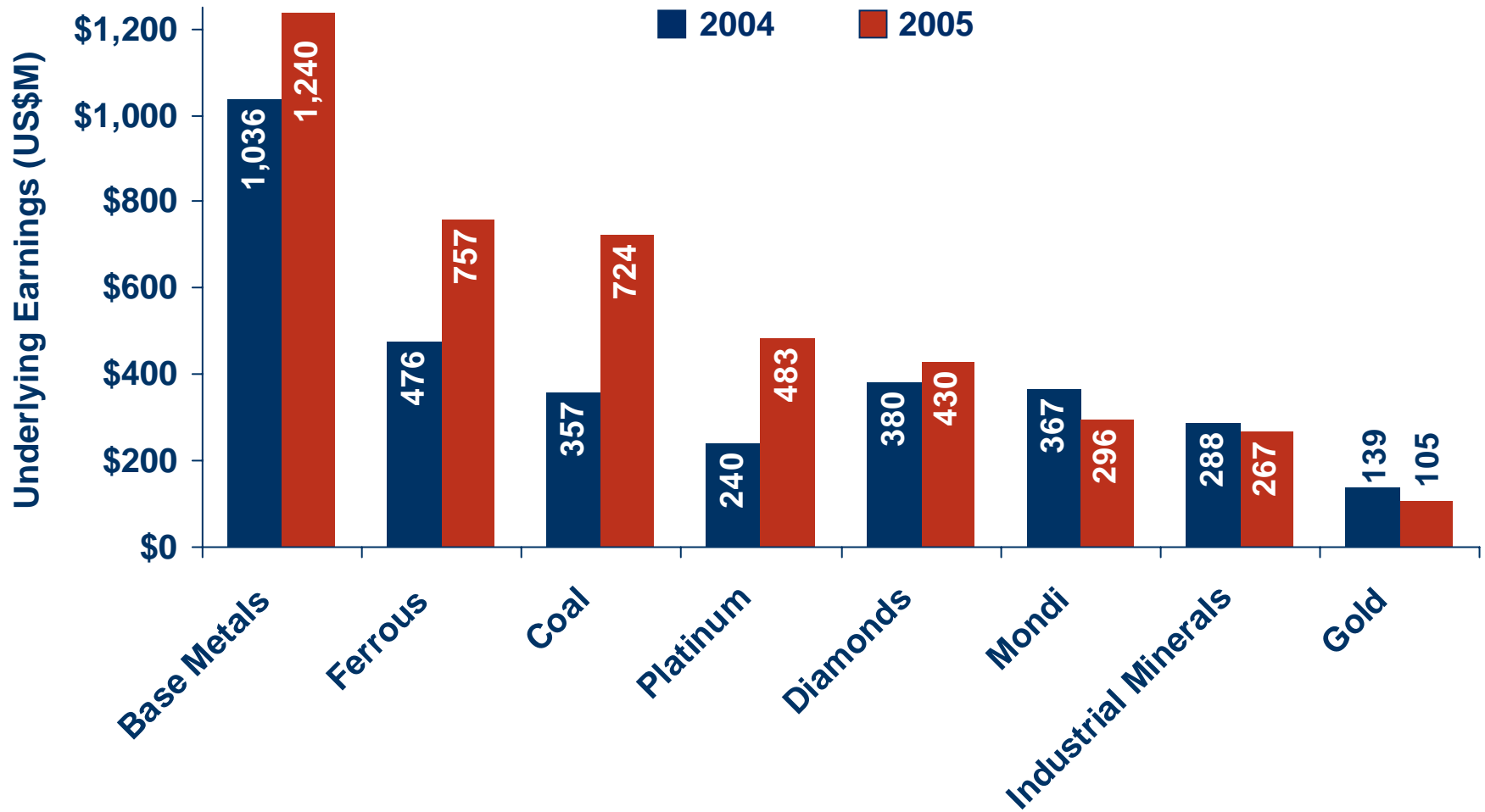
27 March 2006



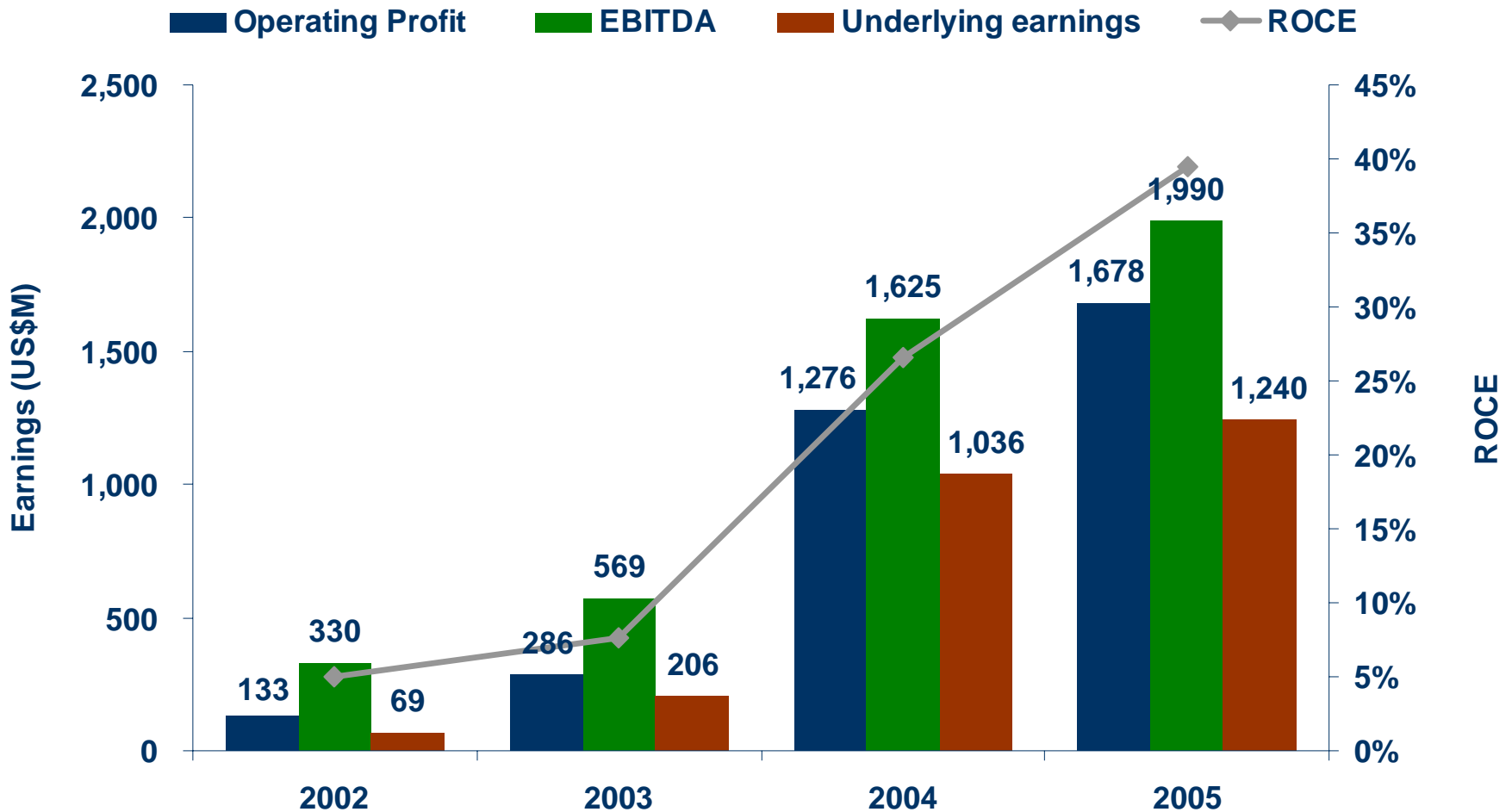




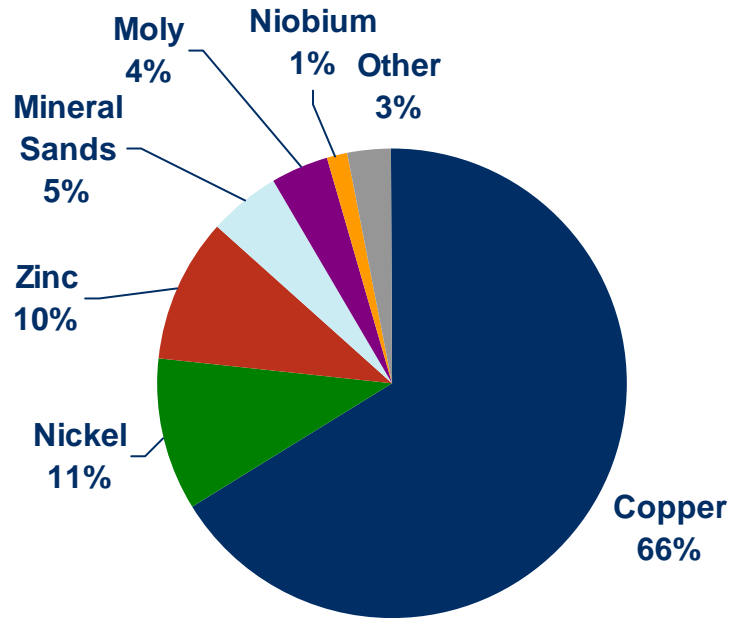




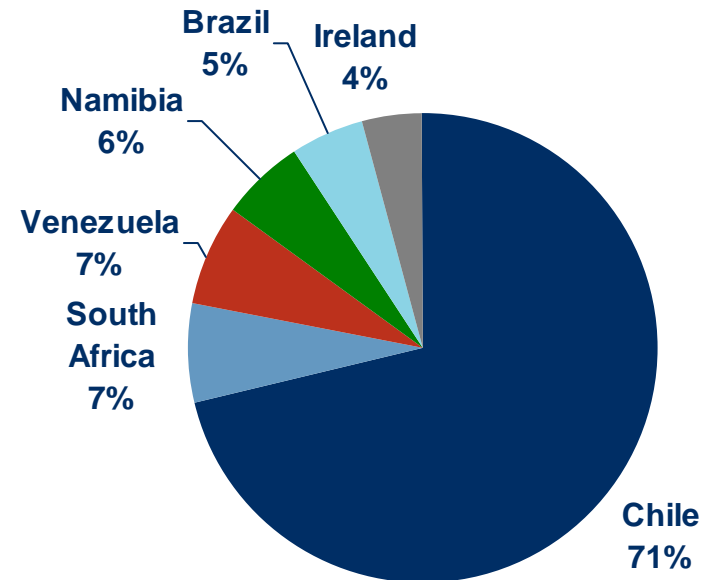
# AngloBase Financial Results



## Revenue by Commodity



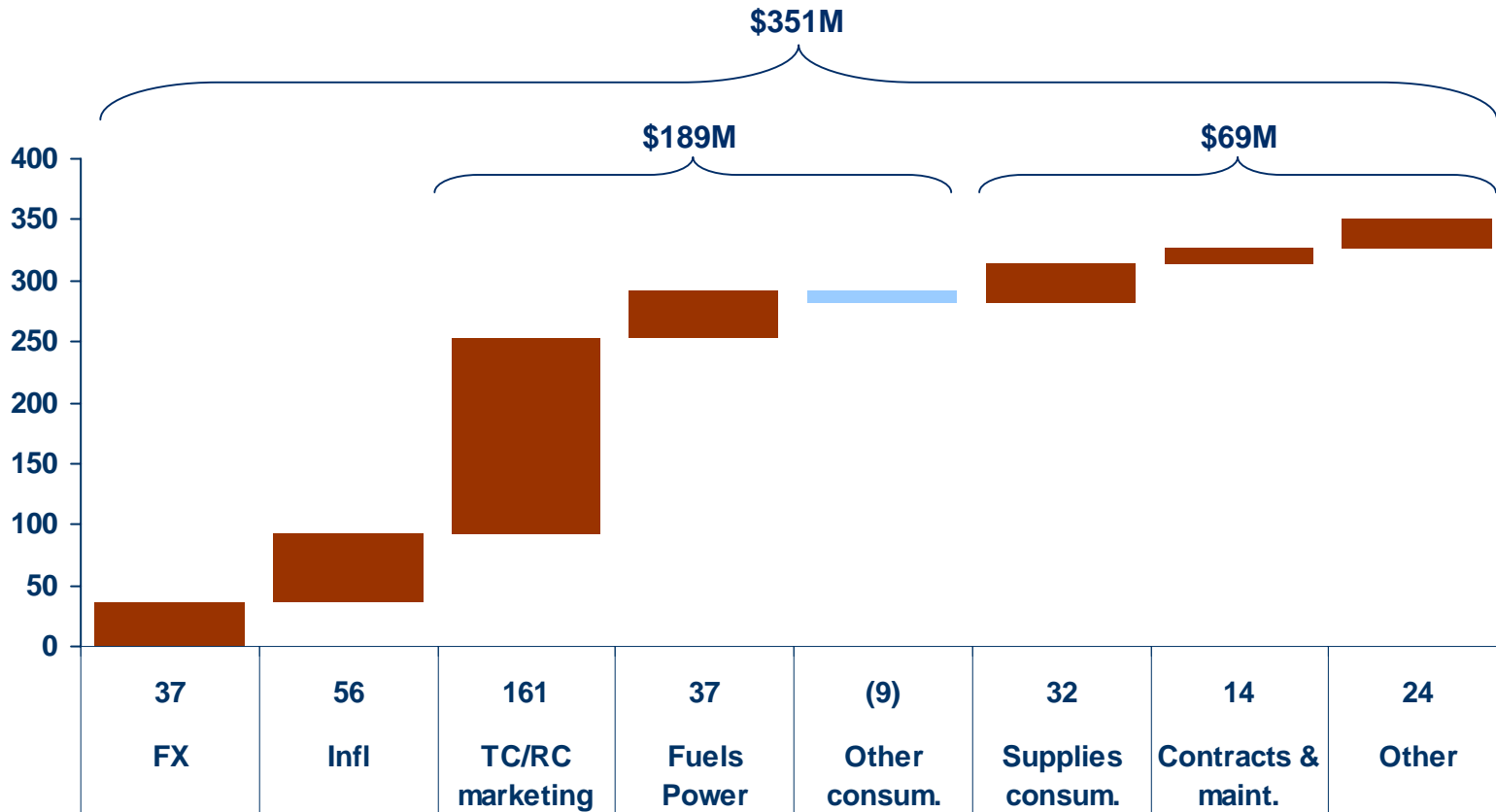
## Revenue by Location



*Note: Other includes lead, gold, silver and acid*

# Rising Cost Pressures in 2005

- CI cost savings of \$38M limited the increase in direct costs to \$69M
- Total increase in costs of \$351M over prior year

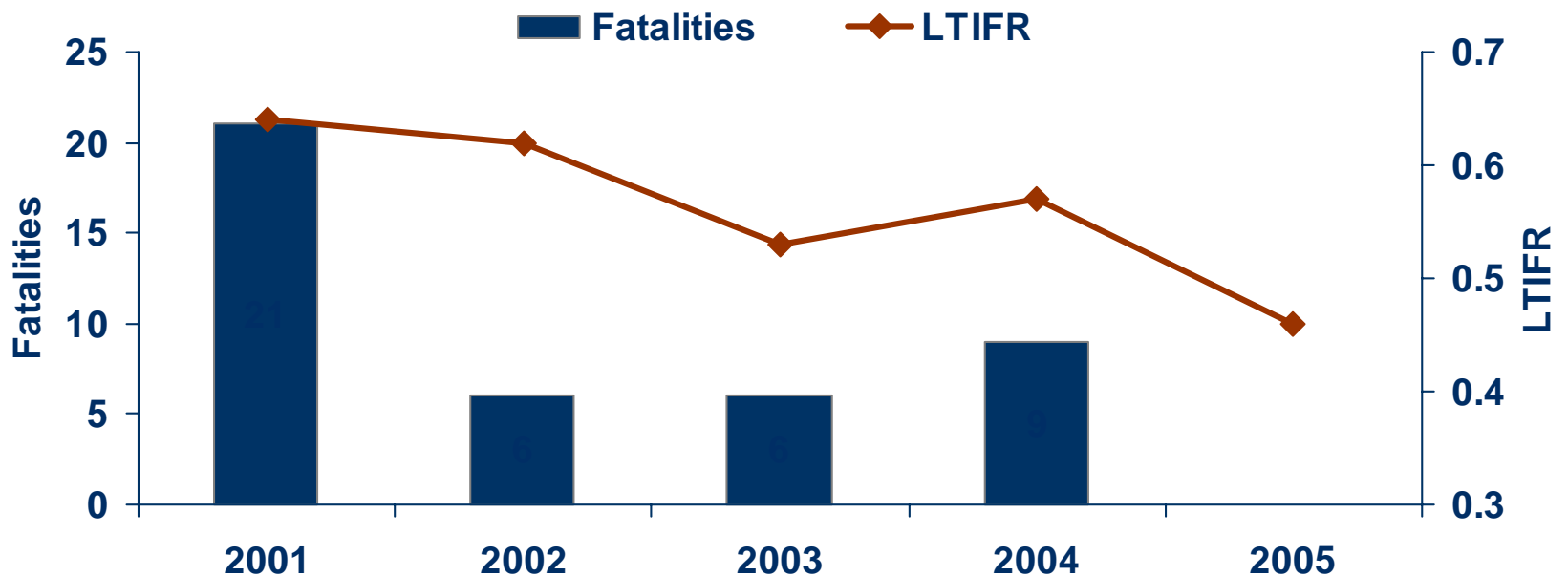


# Focus on Continuous Improvement

- **Overall objective is to**
  - Develop ingrained culture of Continuous Improvement at all levels across the Division
  - Involve all employees in generation and implementation of improvement ideas
  
- **How will we get there**
  - Targets and Performance Measurement
  - Recognition
  - Leadership

	<b>Total Cost Savings</b>	<b>Volume/Profit Improvements</b>	<b>Capex/Other Procurement</b>	<b>Total US\$M</b>
<b>2002</b>	<b>23</b>	<b>0</b>	<b>-</b>	<b>23</b>
<b>2003</b>	<b>37</b>	<b>11</b>	<b>-</b>	<b>48</b>
<b>2004</b>	<b>47</b>	<b>67</b>	<b>2</b>	<b>116</b>
<b>2005</b>	<b>38</b>	<b>73</b>	<b>11</b>	<b>122</b>

- **Last fatal incident – 28th September 2004 - 542 days fatality free**
  - Zero mindset
  - Eliminate repeat incidents
  - Simple non-negotiable rules
  
- **LTIFR – 22% improvement 2004 to 2005**



- All operations ISO 14001 certified
- 11 operations OHSAS 18001 certified – Skorpion Q2 2006
- 11 operations have completed SEAT - focus on developing the community forums and integrating SEAT learning into CEPs
- Roll-out of Integrated Risk Management
- Energy, water & CO<sub>2</sub> emissions reduction challenge!
  - Technological reductions
  - On-going incremental improvements and savings, i.e. develop a culture of saving

# Delivering Growth



- **Codemin II** - Ramp up achieved in Q1 2005
- **Collahuasi Moly plant** - Completed 6 weeks ahead of schedule and under budget
- **Chagres expansion** - Refurbishment/expansion shut-down successfully completed within schedule and budget
- **Skorpion** - Sustainable ramp up to full production achieved in 2005
- **Black Mountain Deeps** - Main shaft completed in Q1 2005. Now accessing higher grade Deeps orebody
- **El Soldado pit exp.** - Stripping commenced and on schedule

- **Barro Alto** - FS for 33ktpa project to be completed and approval sought during 2006 **US\$1000M**
- **Los Bronces** - Potential expansion to over 400ktpa, FS underway for completion in 2007, permit applications in process **US\$750M**
- **Collahuasi** - Potential debottlenecking to increase production by 20% **US\$150M**
- **Quellaveco** - FS completed in 2000 and project placed on hold, awaiting permits etc. Options under review **US\$1000M**

- **Gamsberg** - New discovery at Gamsberg East 40m @ 7.7%Zn and 10g/tAg, further targets to be tested **US\$1000M**
- **Should all the foregoing projects be approved, AngloBase could**
  - Increase nickel production by 120%
  - Increase copper production by 60%
  - Increase zinc production by 80%
- **Ore resources at Collahuasi are sufficient to further double copper production, active exploration programmes for water are in place**
- **Strong greenfield nickel laterite pipeline**
  - Morro Sem Bone
  - Jacare

- **Namakwa (S Africa)**      **Greenfield Zircon/Ti slag**      **1995 – US\$265M**
- **Mantoverde (Chile)**      **Greenfield Cu SX/EW**      **1997 – US\$171M**
- **Mantos Blancos (Chile)**      **Brownfield Cu SX/EW**      **1997 – US\$138M**
- **Collahuasi (Chile)**      **Greenfield Cu conc./SX/EW**      **1998 – US\$1800M**
- **Lisheen (Ireland)**      **Greenfield Zn concentrator**      **1999 – US\$281M**
- **Namakwa (S Africa)**      **Brownfield Ti slag smelter**      **1999 – US\$205M**
- **Loma (Venezuela)**      **Greenfield FeNi smelter**      **2001 – US\$548M**
- **Collahuasi (Chile)**      **Brownfield Cu concentrator**      **2004 – US\$627M**
- **Skorpion (Namibia)**      **Greenfield Zn SX/EW**      **2004 – US\$446M**

## Options for Growth



### Acquisitions

- Intense competition for assets
- AngloBase analysis of targets is ongoing
- Actively seeking new opportunities

### Technology

- Targeted programs
  - Dormant deposits
  - Safety & SD
  - New metals
  - New technologies

### Exploration

- Focused approach
  - Active in 13 countries, monitoring 6 others
  - Range from mature to new frontier
  - 55% grassroots
- \$50M budgeted in 2006 for base metals

- **Period 2000 – 2004 largely directed at re-structuring the portfolio**
- **Strong multi-disciplinary Business Development teams**
- **High scan rate**
- **High turnover rate : some 10 - 20 valuations ongoing at any particular time ranging from detailed on-site due diligence to desktop studies**
- **Value accretive deals difficult but well positioned to move quickly as opportunities arise**

- Available resources worldwide becoming more difficult (i.e. lower grade/higher cost/technically complex)
- AngloBase maintains a team of experienced professionals (Jhb and Santiago) continually looking for technological edge as well as driving operational excellence at existing operations
- The AngloBase technical team is able to call on the AAplc Technical Division (ATD) and Anglo Research (AR) for highly specialized skills maintained at the Centre
- Active program of applied research – venture capital model adopted with toll-gating applied to each initiative
- AngloBase partnering with AR, ATD, universities, technology suppliers and other 3<sup>rd</sup> parties

- **Dormant deposit monitoring**
- **Ore upgrading / ore sorting**
- **Microwave / radio frequency**
- **Brine leaching (ARNi)**
- **Bioleaching**
- **Comminution**
- **Energy efficient processing**

# Options for Growth - New Metals

- **Anglo Base is developing novel processes for Ti and Mg metal production**
- **These light metals have significantly superior strength/mass ratios and corrosion resistant compared to Al and many grades of stainless steel**
- **Current high production costs and security of quality supply are restricting market growth**



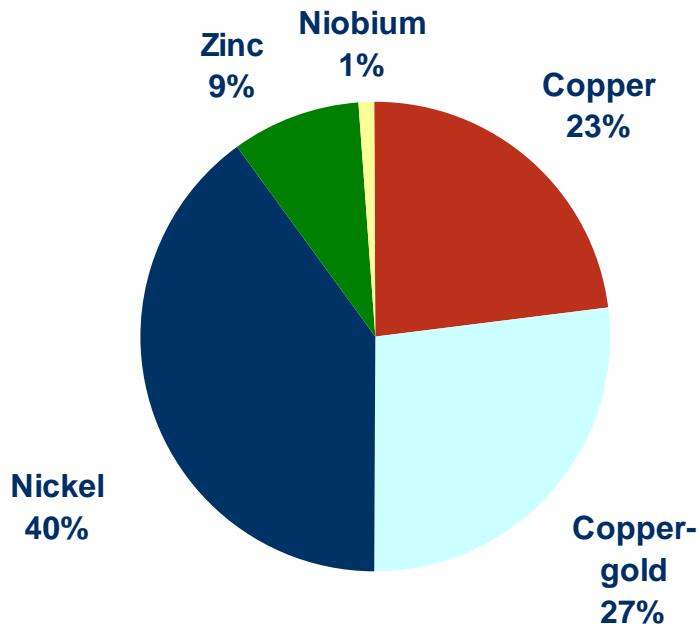
# Options for Growth - Exploration



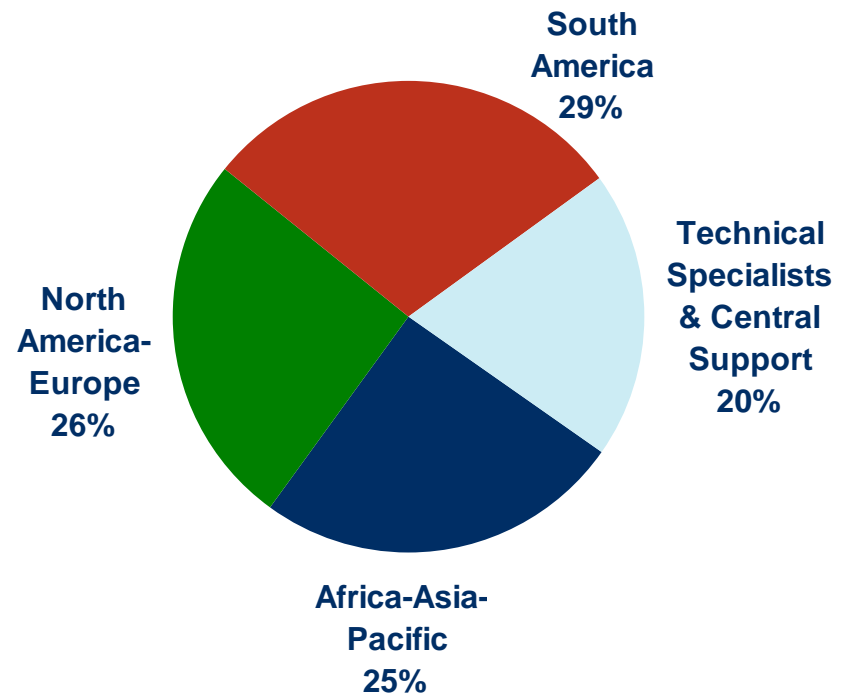
# Options for Growth - Exploration

## 2006 Exploration Expenditure \$50M

### Spend by Commodity



### Spend by Location



## Recent Successes

- **Additional drilled resources in Chile**
  - Los Bronces 700Mt @ 0.8% Cu
  - El Soldado 70Mt @ 0.8% Cu
- **Further drilling at Boyongan, Philippines to extend known resource of 219Mt @ 0.81% Cu eq**
- **Initial drilling in Mexico at Baja**
  - 31m @ 0.96% Cu



## Recent Successes

- **Brazil**
  - Advancing to resource definition at Jacare - estimate 430Mt @ 1.33% Ni
  - Pre-FS study underway at Morro Sem Bone – estimate 47Mt @ 1.76% Ni
- **Canada**
  - Encouraging intersections at West Raglan and Goldbrook
  - Best intersection 7.8m @ 2.2% Ni, 1.5g/t PGMs



## Recent Successes

- **Economic intersections at Gamsberg East**
  - 40m @ 7.7% Zn, 10g/t Ag
  - Further targets to be tested
- **Significant resource additions at Catalao, Brazil**
  - 6Mt 1.5% Nb<sub>2</sub>O<sub>5</sub>
  - 40Mt @ 11.5% P<sub>2</sub>O<sub>5</sub>

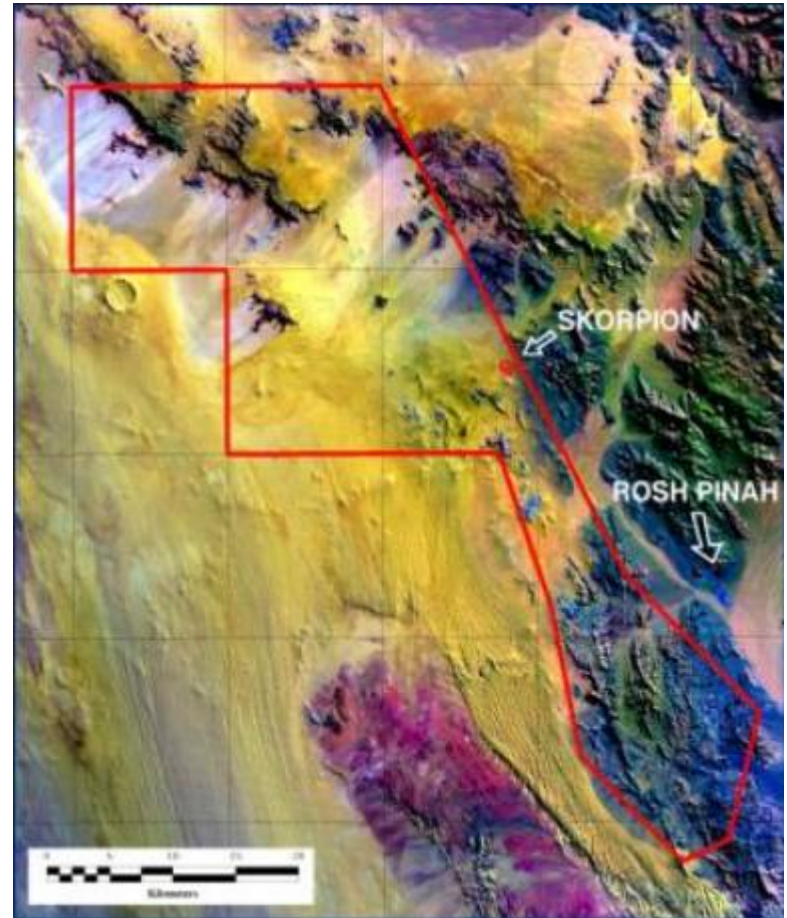


# Skorpion Zinc



- Zinc oxide/silicate/carbonate deposit
- \$450M investment
- Open pit mine
- New technology zinc refinery
- 150ktpa low cost producer with a 15 year LOM





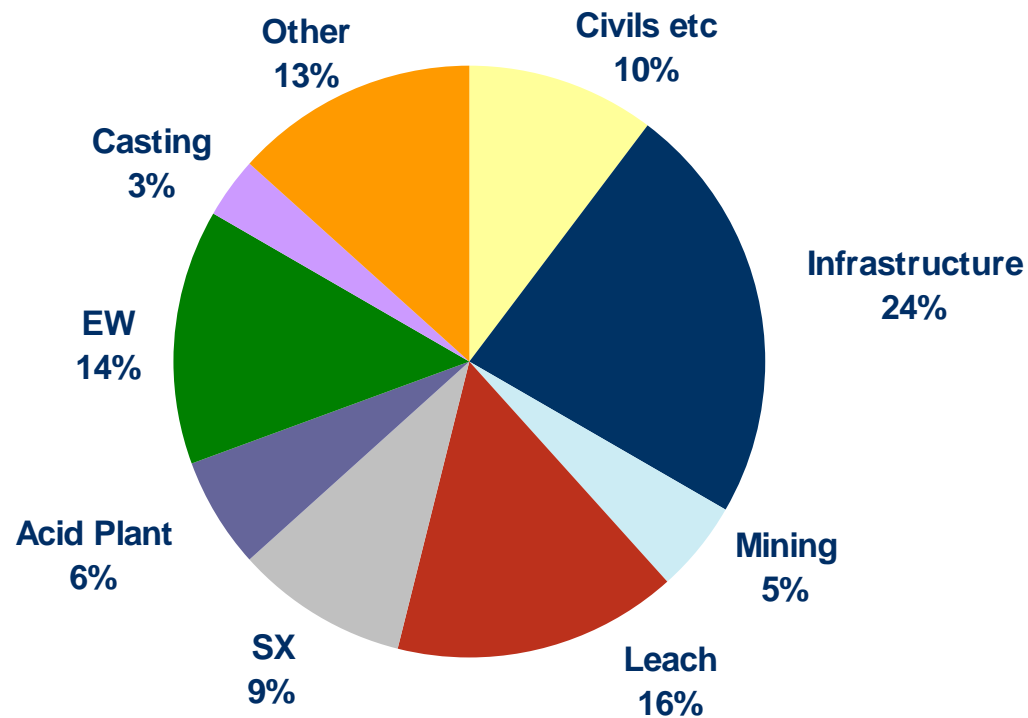
October 2000



February 2003

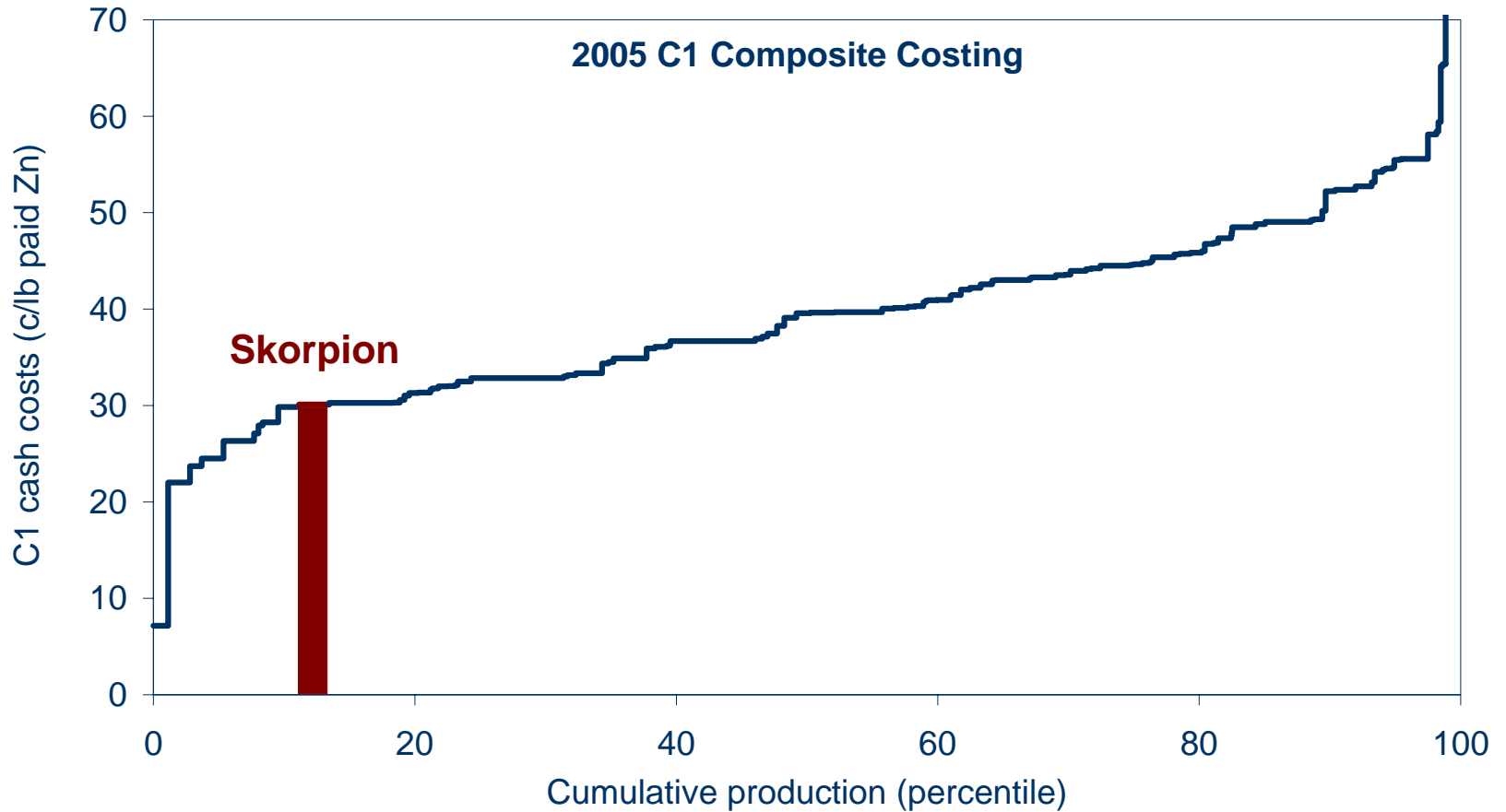


- Total capital cost \$454M (N\$3,178M)



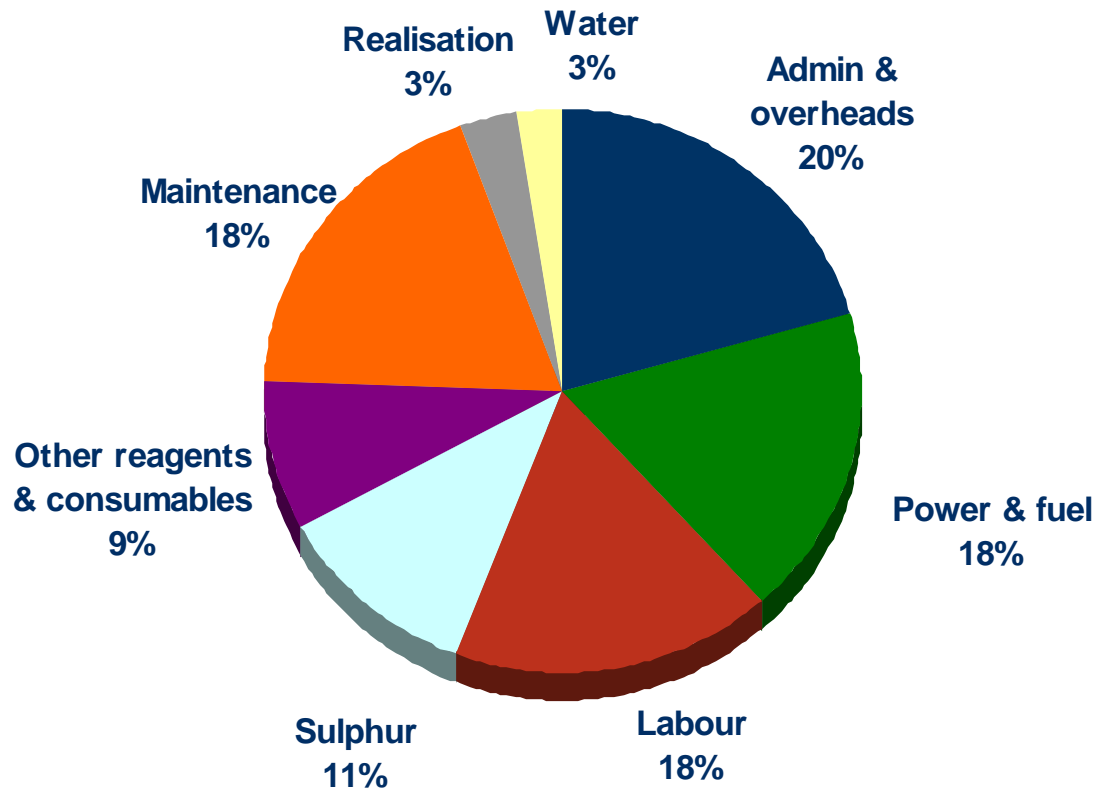
- **Project team led by owner appointed Project Manager**
- **Project implementation statistics**
  - Safety: LTIFR 0.38
  - Peak manpower strength: 5000
  - 62km of piping
  - 2,100 valves
  - 800 drives
  - 220 tanks
  - 75,000m<sup>3</sup> concrete
  - 6,000t steel





Source: Brook Hunt (except Skorpion – AngloBase)

- YTD operating cost (C1) 30.1c/lb Zn



- **Complex and variable mineralogy**
- **Variable ore grades**
- **Oxide ore could not be processed by flotation process used for conventional sulphides**
- **Readily leachable by sulphuric acid but**
  - Neutralisation could result in formation of silica gel (process fails!)
  - A number of impurities not amenable to chemistry manipulation in leach/neutralisation
  - Acid consuming impurities (carbonates, iron, manganese)
  - Unique solvent extraction technology
- **Remote - limited infrastructure**
- **Skills in Namibia in short supply**

- **Technology partners**
  - Tecnicas Reunidas (SX)
  - Umicore Engineering (formerly Union Miniere)
  - Anglo Research Labs
- **Previous work all on bench scale**
  - Process risk remained high
- **Pilot plant built at AR 1999 – 2000**
  - Significant process refinements

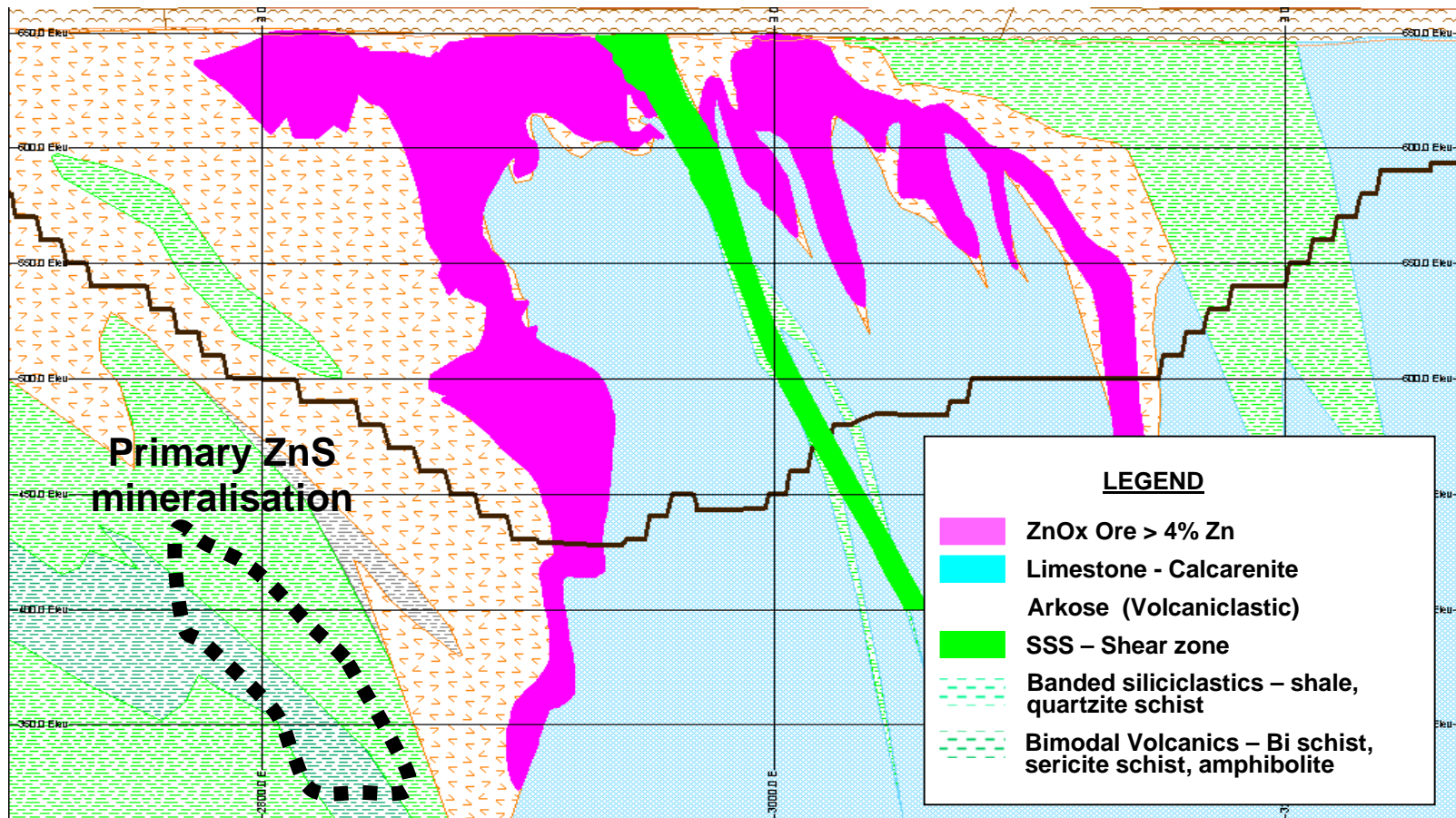


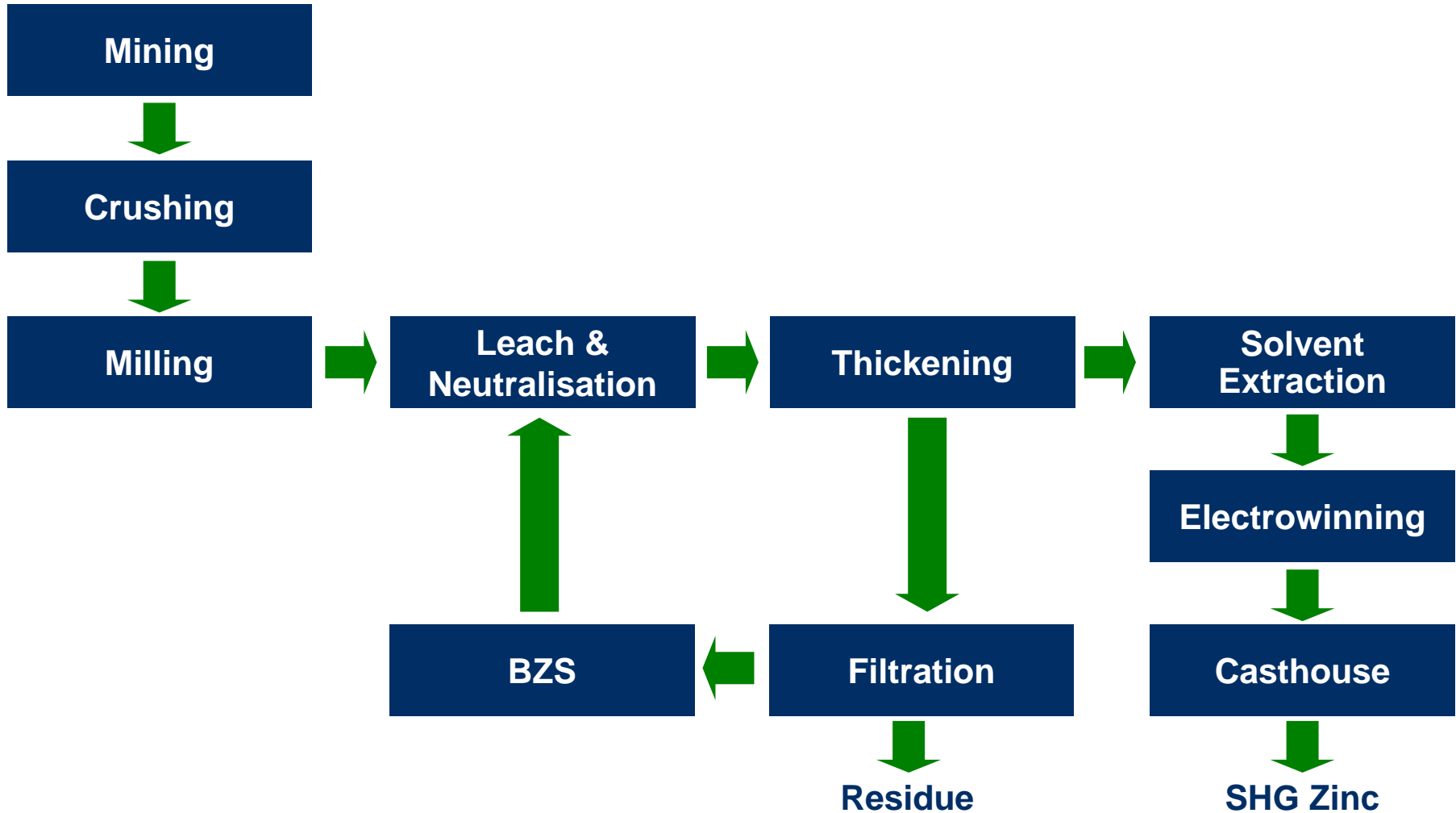
- **Further risk reduction through the construction of a training plant on site**
  - Better understanding of total process and control
  - Further refinements to process design
  - Exposure of operating staff to the process
  - Development of control philosophies
  - Remains available for further process developments



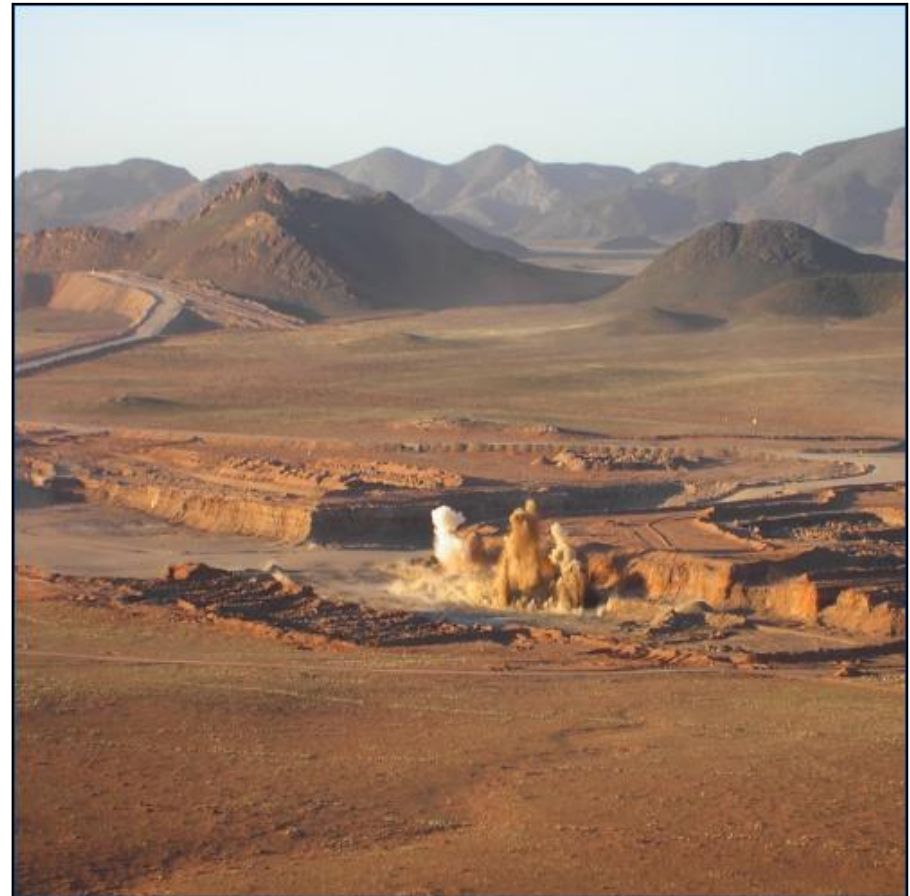
- Mild leaching with sulphuric acid
- Solvent extraction (SX) of zinc (key process)
- Zinc electrowinning/casting to ingot
- SX is an excellent barrier to impurities (core advantage)
- Well researched and piloted
- Well trained operators

- Reserves: 20Mt @ 11% Zn





- **Average mining rate**
  - 1.5Mtpa ROM ore
  - 7.5Mtpa waste
  - Average strip ratio 5:1
- **10m high benches**
- **Conventional ANFO explosives**
- **Limestone also mined from pit for use in refinery**
- **Outsourced activities**
  - Equipment maintenance and repair
  - Fuel and lubricants
  - Explosives
  - Management of tyres



- **NPV Scheduler software used to optimise mining schedule**
- **180t class excavators**
- **90t payload trucks for hauling**
- **\$6M support fleet**



- **Crushing**
  - Primary (-125mm)
  - Secondary (-12mm)
- **Homogenising stockpile**
  - Blending for consistent feed to the refinery
- **Milling (Ball mills)**
  - 100% -500micron



- **Dissolution of zinc oxides to zinc sulphate using sulphuric acid**
- **Neutralisation and precipitation of deleterious elements**
  - **Strict control of conditions to prevent formation of silica gel**
- **Pregnant liquor purified with Zn dust to remove copper, cobalt, cadmium and nickel**
- **High leach efficiencies**



- **Thickeners to recover pregnant liquor solution**
- **Filtration recovers re-acidified basic zinc sulphate (BZS) for re-processing**
- **Bleed and effluent treatment to maintain water balance**
  - Belt filtrate and PLS
  - Zn precipitated as BZS



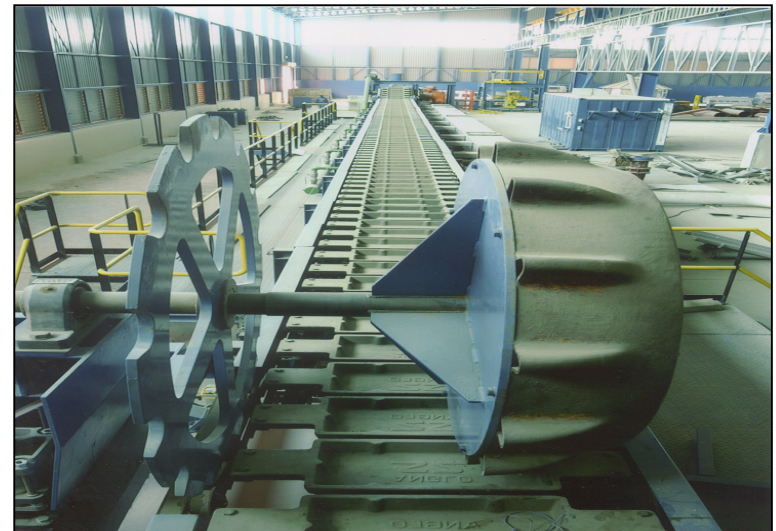
- Ore has high levels of halides
- Solvent extraction process is an effective means to cater for chlorine and other impurities fluorine, calcium, copper
- D2EHPA extractant is used – phosphoric acid based
- Pregnant solution is upgraded in SX from 30g/l to 90g/l in loaded electrolyte
- Extensive research, piloting and training of operators



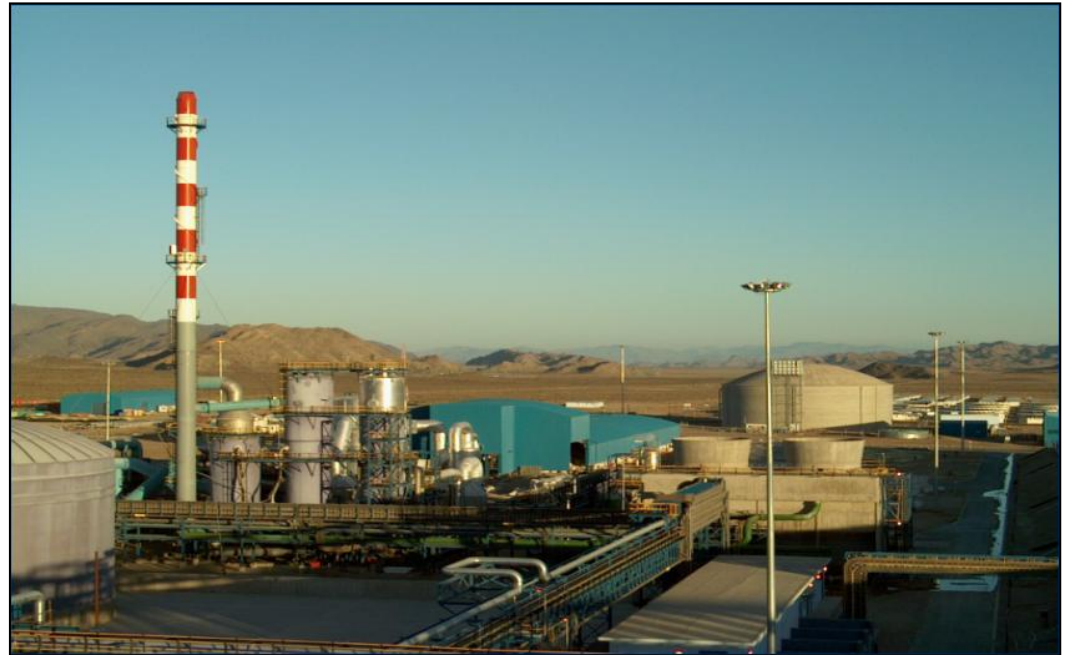
- Zinc metal deposited from zinc sulphate solution on 3.6m<sup>2</sup> aluminium cathodes Special care required to keep organics out of electrolyte
- Oxygen released at the anodes combines with H<sup>+</sup> and SO<sub>4</sub><sup>2-</sup> to form H<sub>2</sub>SO<sub>4</sub> which is recycled to SX as spent electrolyte
- High current efficiency and high current density
- Cathodes require no further purification step, SHG quality



- Cathodes are fed into an induction furnace to produce molten Zn metal for casting
- Designed for ingots: 25kg, 1&2t SHG jumbo, 1&2t CGG jumbo
- Alloys an option for the future
- Dross removal
  - Metallic dross recycled to the furnace
  - Oxide dross recycled via the leach



- Sulphur burning technology
- 1,200tpd 98.5% H<sub>2</sub>SO<sub>4</sub> acid
- Emissions well below accepted norms
- Produces steam (1,200tpd) used in the process



# Tailings and Effluent Disposal

- **1.5Mtpa tailings produced from vacuum belt filters**
- **Consists of unleached gangue, gypsum, oxides, hydroxides**
- **Effluent is disposed in HDPE lined evaporation ponds**



<u>Elements</u>	<u>ppm</u>
<b>Pb</b>	<b>5 - 10</b>
<b>Al</b>	<b>&lt;1</b>
<b>Cu</b>	<b>&lt; 5</b>
<b>Cd</b>	<b>&lt;1</b>
<b>Sn</b>	<b>&lt;1</b>
<b>Fe</b>	<b>5 - 10</b>
<b>Total impurities</b>	<b>20 - 25</b>



## Project Phase

- Acute skill shortage in Namibia
- High requirement for expat skilled labour
- Relationship with Namibian Govt. Departments excellent
- Impact of construction industry strike and supplier liquidation



## Commissioning Phase

- 600 employees – maximum 50 expats
- Skills development a priority
- Committed to develop Namibians
  - Early selection, recruitment and training
  - Training initiatives, bursaries, etc

- **Emphasis on skills development**
  - Complement of 600 and a target of 50 expats maximum
  - Expect Namibians to progress up the ranks
  - 20 bursars in various tertiary institutions in South Africa
- **Investment in training plant**
- **Training also took place in Belgium, Canada and South Africa**
- **Mining equipment simulator used during training**
- **Recruited early**
- **Rigorous selection to recruit the best**
- **Requirement for localisation**

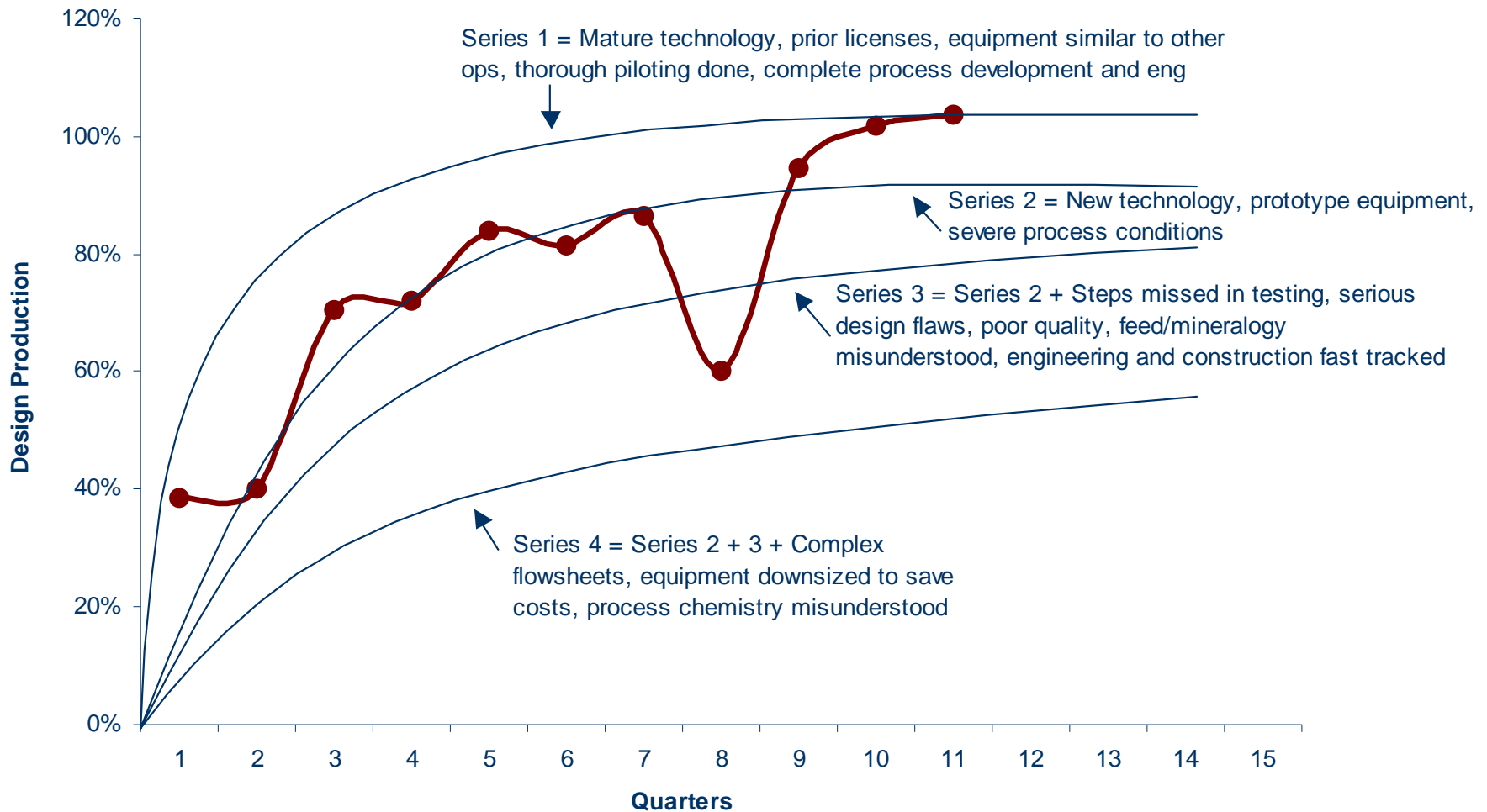
- **Skorpion lies within the Succulent Karoo biome**
  - Variable weather and fragile desert environment
  - On the edge of the “Sperrgebiet” – pristine wilderness
  
- **How has SD been applied to Skorpion?**
  - Skorpion project was developed with closure in mind
  - Workers are bussed in and out
  - Project is managed to protect and minimise impact on biodiversity
    - The size of the site was kept to a minimum
    - Road infrastructure designed to contain movement within the area
  
- **Commitment to minimise impact**
  - Thorough EIA and EMS
  - ISO 14000 accreditation

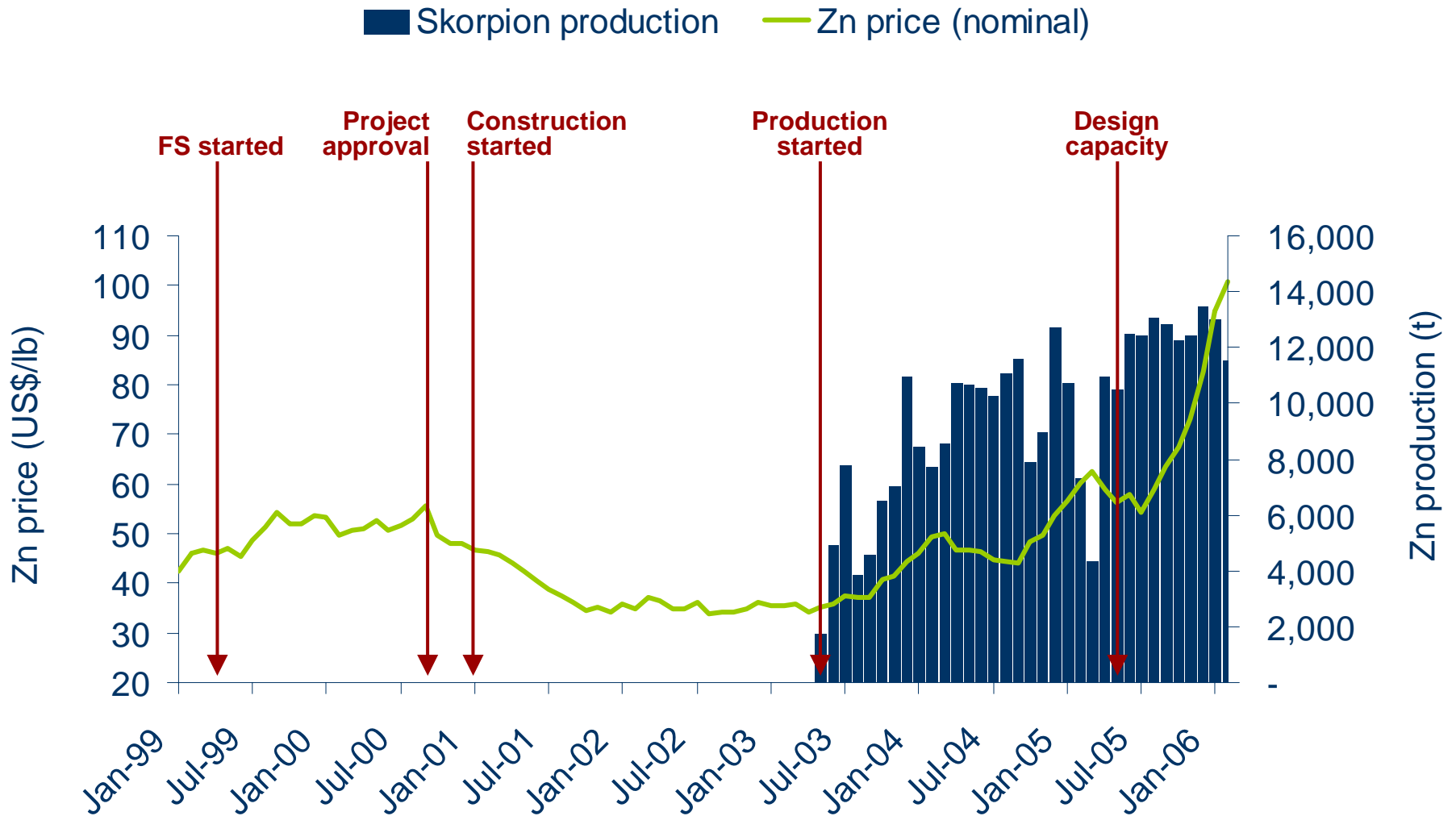
# Summary



- **Skorpion project has ramped up to full capacity**
- **Technology is working**
  - Efficiently controlled chemistry – silica, ferric iron, aluminium
  - Electrolyte purity excellent
- **Zinc product exceeds LME specifications**
- **Skorpion has integrated well into the Namibian context**
- **Capable well trained team has been developed**
- **Operating performance in line with expectations**

## Ramp-Up vs McNulty Curves





- Skorpion has been operating at or over design throughput of 150,000 tpa on a consistent basis for 10 months
- At design throughput, a cash cost of 30c/lb is being achieved placing Skorpion at the lowest decile of the industry (and as predicted in the feasibility study)
- Performance 2005
  - Zinc production 133,000 tonnes
  - Operating profit US\$42M
  - Underlying earnings US\$36M
  - EBITDA US\$83M