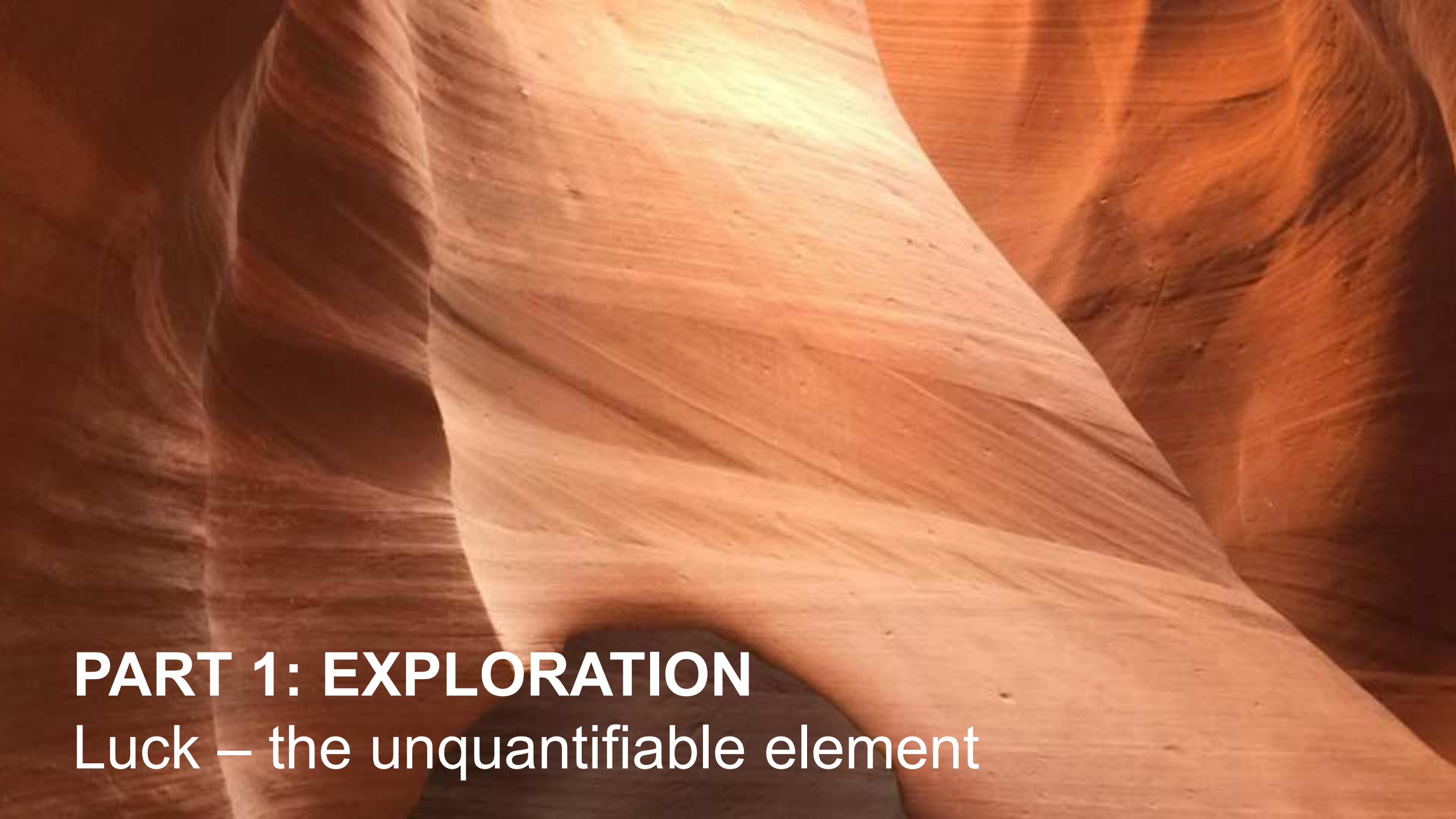
EXPLORATION TO SEMICONDUCTORS

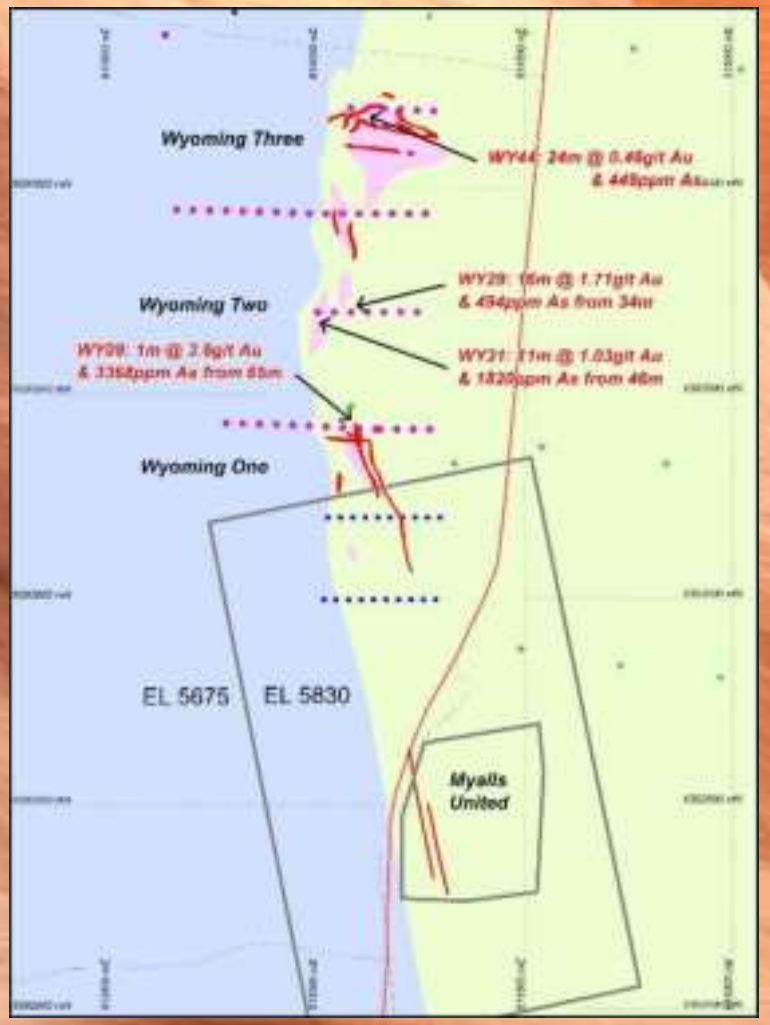


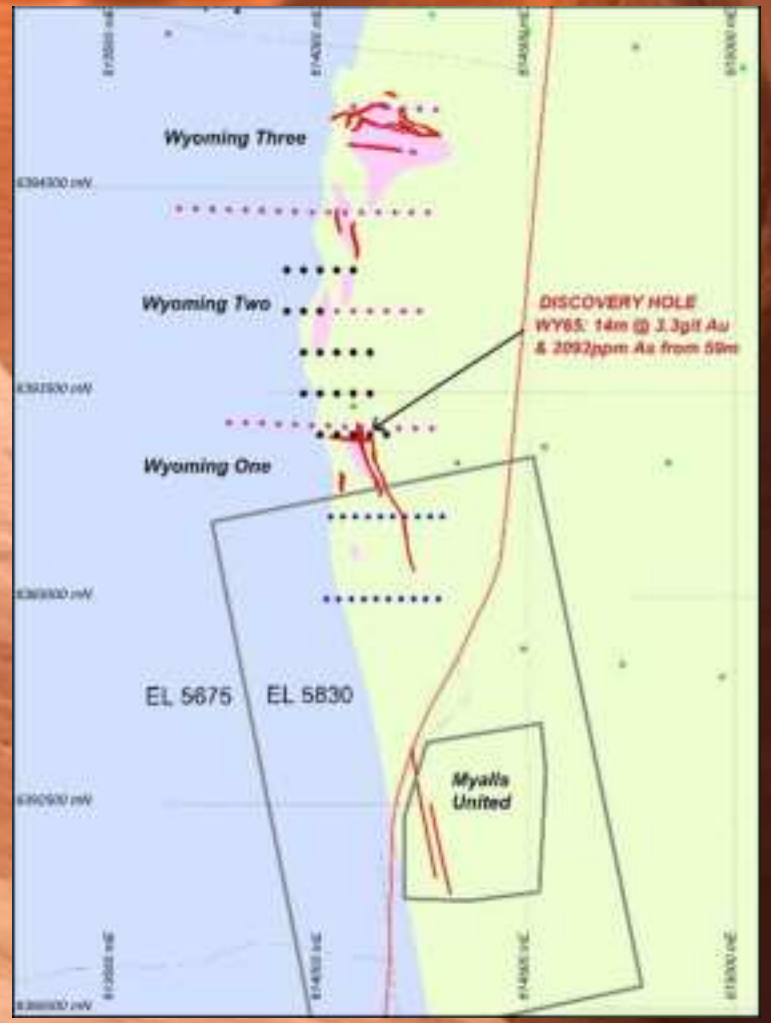
PART 1: EXPLORATION

Luck – the unquantifiable element

First 8 years – not much luck

Mud, dust & bush camps



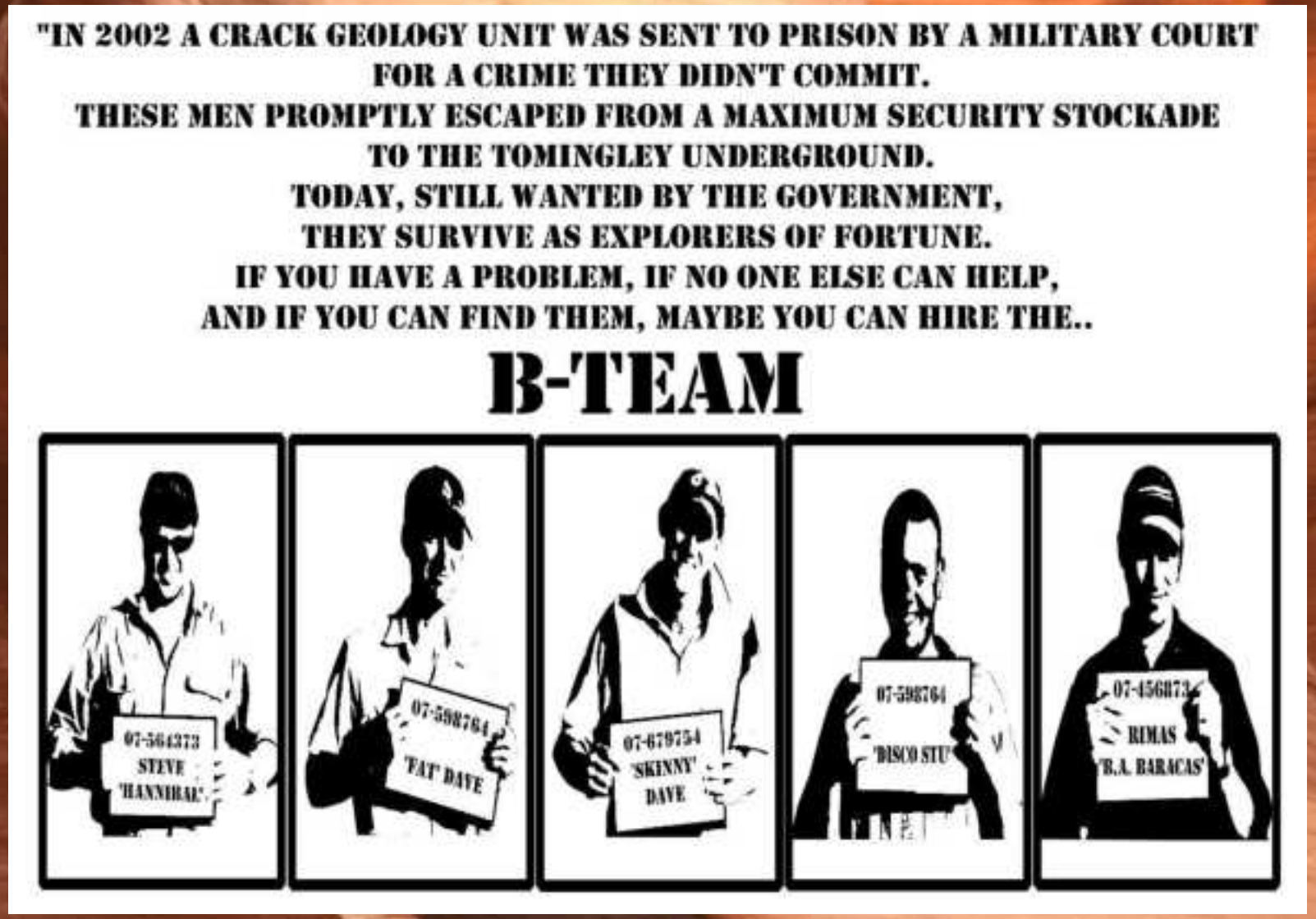


Acknowledgements: Alkane Resources – Ian Chalmers & David Meates

Tomingley – 2001-2003

Building on prior near misses

- Climax drill hole
- Compass drill hole
- Sipa drill hole
- Alkane drill hole



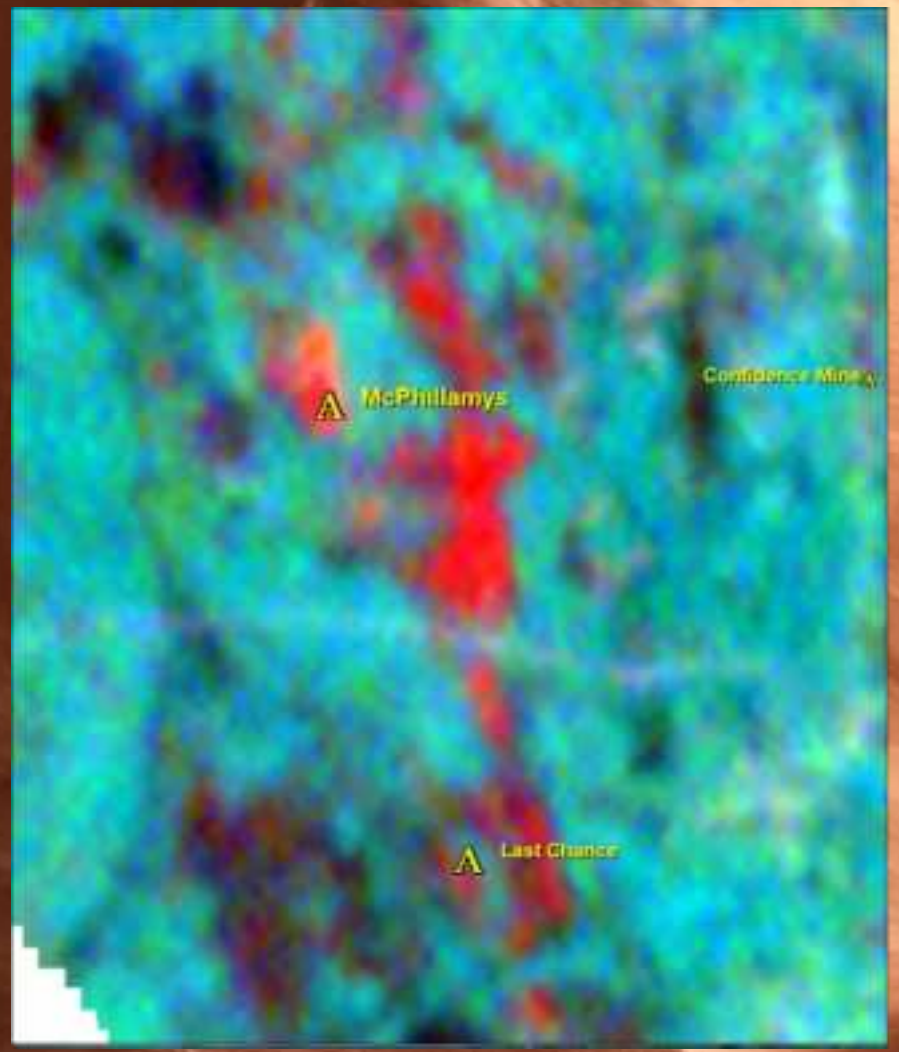
Tomingley – 2001-2003

Focussed team, only mildly subversive

Acknowledgements: Alkane Resources , “Fat” Dave Meates

Tomingley – 2001-2006

Focussed team, aggressive & lean



McPhillamy's: 2005 - 2006

Access is everything!

Acknowledgements: Alkane Resources , Newmont, Peter Duerden, Justin Tolman, “Fat” Dave Meates

McPhillamy’s: 2005 - 6

Access is everything!

Musing for young exploration geos

- Understand the exploration ecosystem - geologists don’t make discoveries on their own
  - Who pegged the ground
  - Who got you access
  - Who drills the holes
  - Who took the samples
  - Who funded it
- Learn to speak driller
- Luck – the unquantifiable
  - Recognize when you get lucky, **then be aggressive and push hard**

2007 - 2016

YTC RESOURCES LIMITED
ACN 108 476 384

aurelia METALS

First ASX listing with Chinese SOE

Hera: 2009 - 2016

- Acquisition - Good luck can be others bad luck
- Final process unlocking the ore-body

Acknowledgements: Aurelia Metals

Hera: 2009 - 2016

- Luck works in mysterious ways

Acknowledgements: The extraordinary Sallie Kairaitis

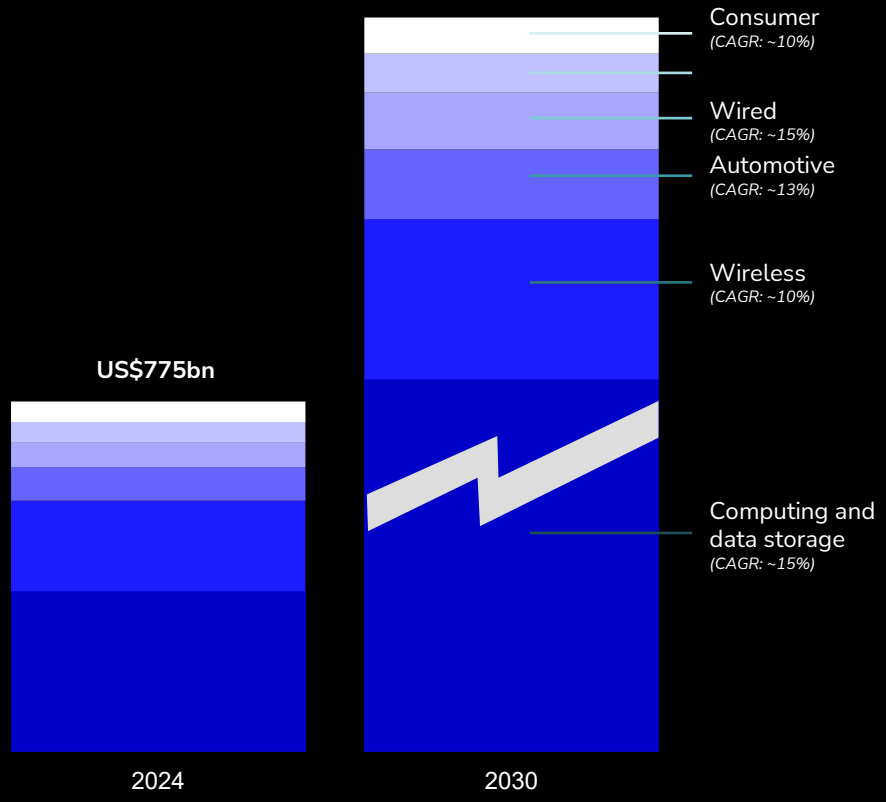
PART 2: SEMICONDUCTORS

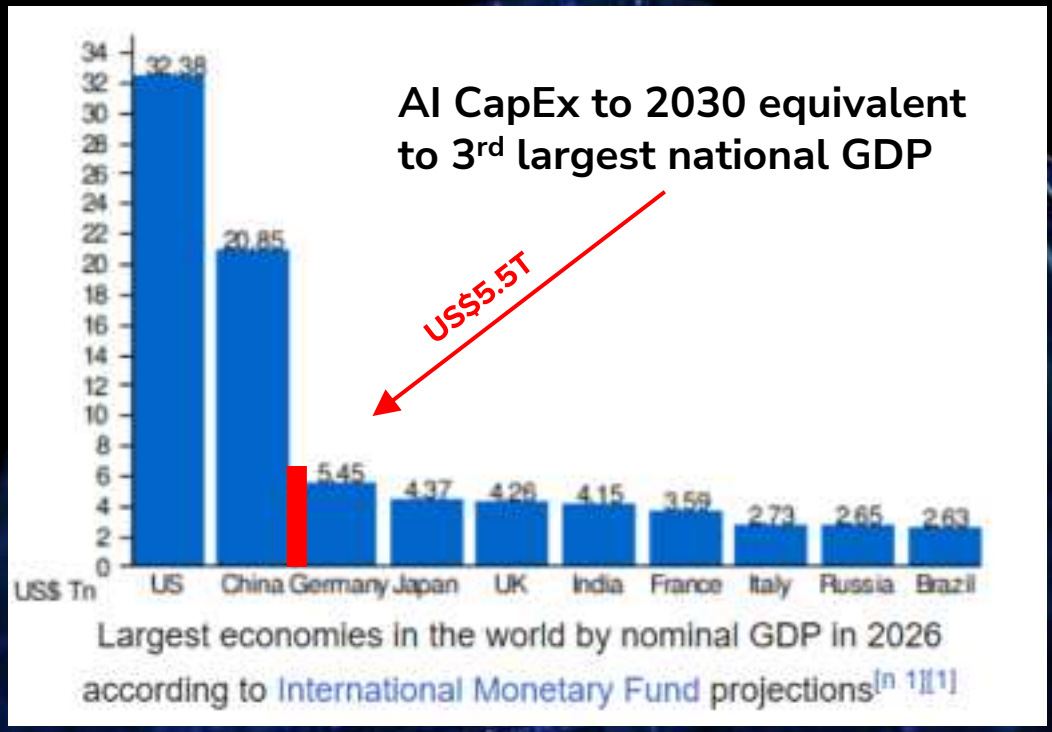
GLOBAL SIGNIFICANCE OF THE AI SEMICONDUCTOR BOOM

Surging AI adoption driving demand across the semiconductor sector – with compute and data driving majority of the scale and growth

Global semiconductor market – CapEx Expenditure

2030 Est $5.5T*





Advanced packaging, high bandwidth memory (HBM), and wide-bandgap power semiconductors are the focus areas of next generation semiconductor advancement

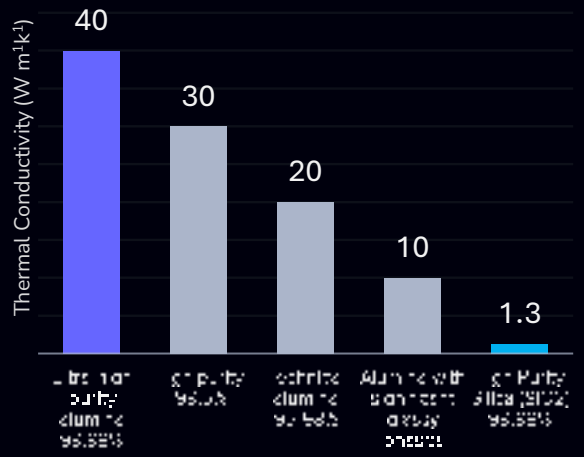
Source: JPMorgan, McKinsey & Company, World Semiconductor Trade Statistics, Gartner, Statista, PwC analysis, NextMSC, Financial Times, Factset as at 6 May 2026, Gartner. Note: 1. McKinsey & Company (January 2026). 2. World Semiconductor Trade Statistics. 3. 'Semiconductor and beyond 2026' PwC. CAGR from 2024 to 2030. 4. Factset consensus as at 6 May 2026. 5. Gartner (January 2026).

AI HEAT DISSAPTION & THERMAL THROTTLING

1 THE SWITCH TO HPA TO MANAGE DATA CENTRE COOLING

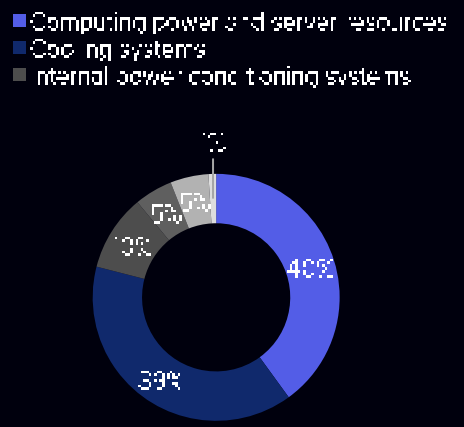
- Silica has long been used for thermal fillers in chip packaging. HPA is now emerging as the preferred material, offering superior heat dissipation and mechanical reliability for advanced semiconductors
- Chips are hitting thermal limits – materials must carry more heat out of the package – most data centres are **thermally throttled at ~85%**
- HPA enabling higher computing output per kilowatt of energy at data centre level
- **HPA vs silica: ~2–3× higher thermal conductivity for heat dissipation → ~4–5 ℃ cooler chips per accelerator**
- **With no change data centers forecast to be ~4% of global energy consumption by 2020 (Deloitte)**
- **Fleet impact scales to ~20–30 TWh/year energy savings** by 2030 with full-stack **HPA** adoption

HIGH PURITY AUMINA IS >30x MORE EFFECTIVE AT DISSIPATING HEAT THAN SILICA. HIGH PURITY IS CRITICAL FOR HIGHEST THERMAL CONDUCTIVITY



Source: UBS – "Cooler Chips – Dec 2025"

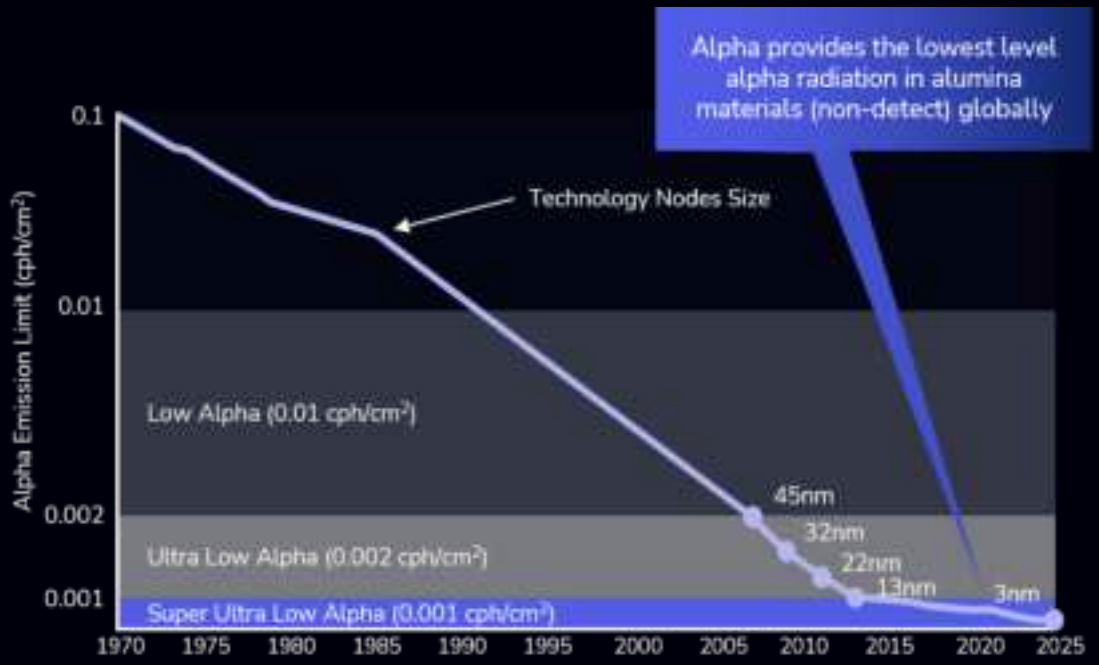
COMPUTING POWER AND COOLING SYSTEMS DRIVE MUCH OF THE CONSUMPTION IN AI DATA CENTRES



Source: Deloitte Analysis

2 HPA FILLERS REQUIRE 'ZERO ALPHA' SPECIFICATION

- Shrinking semiconductor nodes make ultra-low alpha alumina essential for reliability
- Alpha radiation causes soft errors; Alpha's unique purification process eliminates detectable Uranium and Thorium (alpha ray emitters)



HPA AND TIN – BRICKS AND MORTAR FOR THE AI BOOM

Thermal fillers in EMC
Rapid low-alpha adoption underway

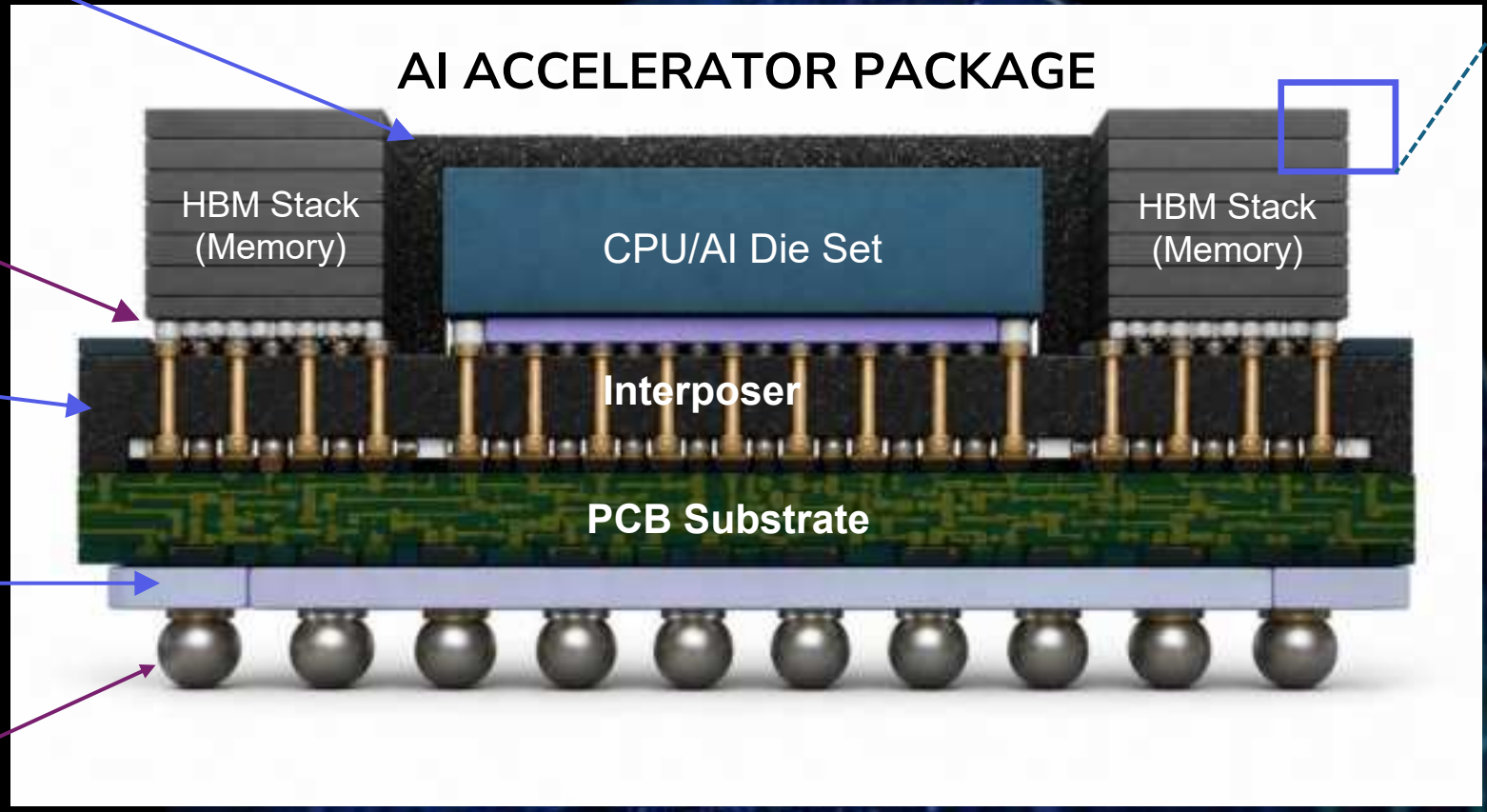
Solder Micro bumps
"low-alpha"
tin-silver-copper solder

Interposer:
Transitioning to low-alpha HPA for heat dissipation

Base Plate
Sintered alumina – transitioning to low alpha HPA

Solder Balls
tin-silver-copper solder

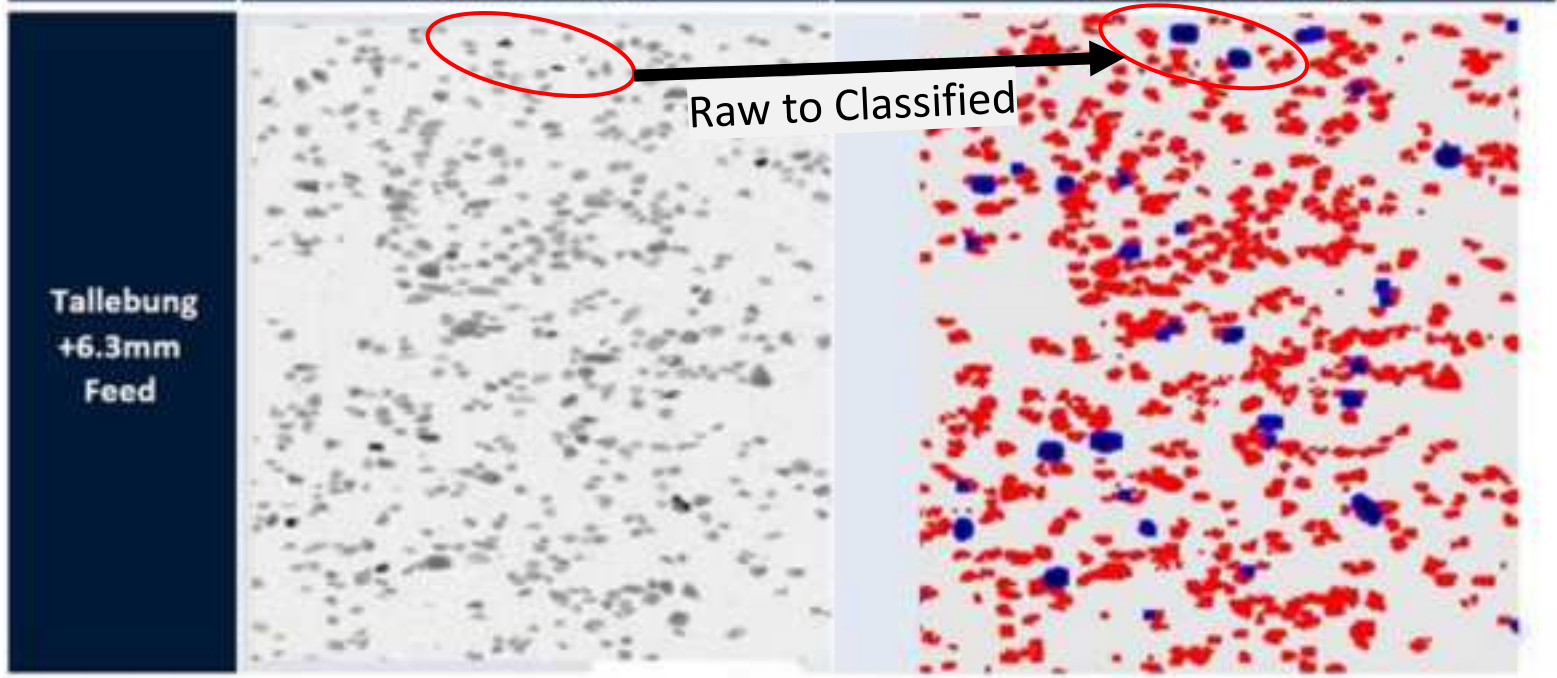
EMC = 90% ceramic (HPA) filler



TALLEBUNG TIN (NSW) - TECHNOLOGY ENABLED

- **Extremely effective sorting** of Tallebung tin achieved, as **tin is ideally present as large, discrete 'chunks'**, easily classified by the TOMRA XRT ore sorter
- 75t bulk sample testwork on full-scale ore sorters demonstrate:
  - Stage 1 Sorting: Tin upgraded from **0.17% Sn to 2.32% Sn (a 13x increase) with +94.8% Sn recovery in total.**

Table 1: Classification scheme XRT	Given colors
Low atomic density (host-rock)	Red / Orange
High atomic density (cassiterite)	Black / Blue
Background	Grey / Green



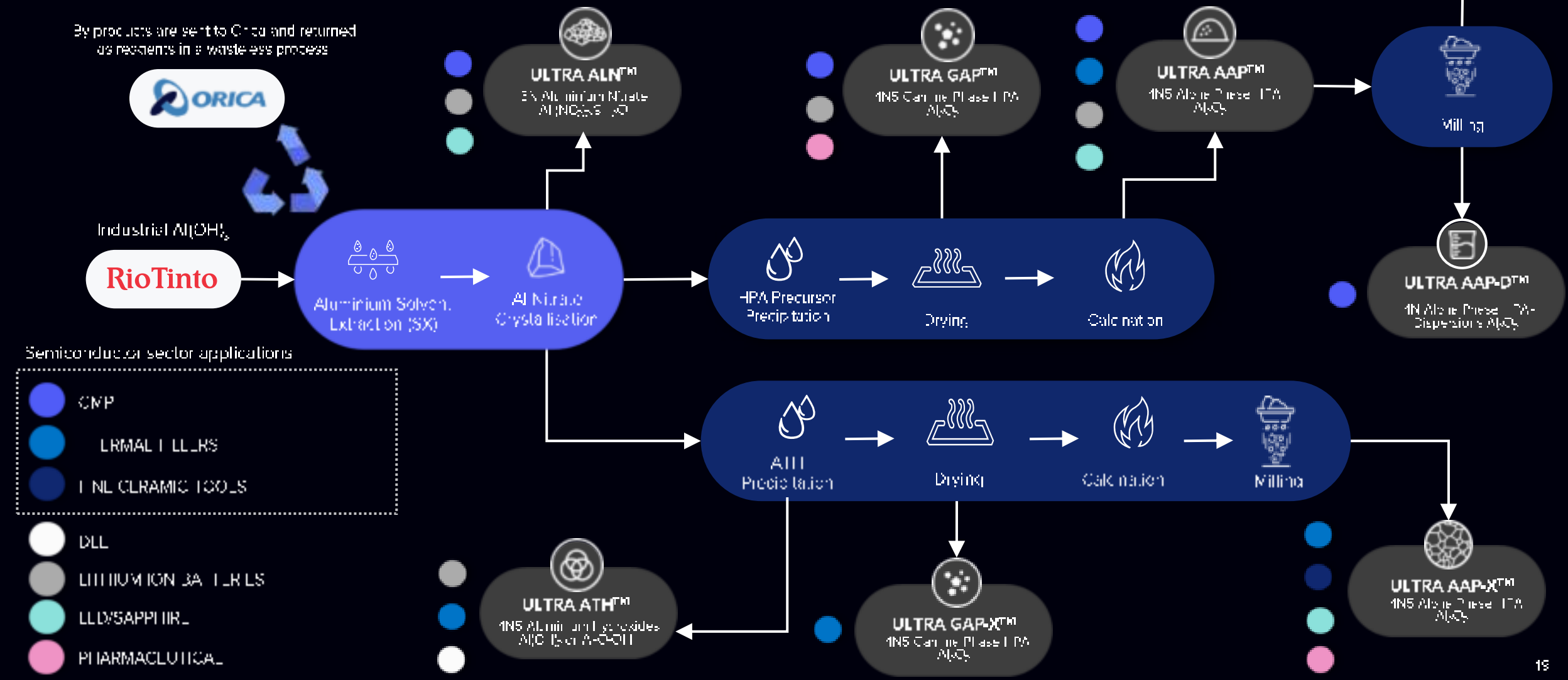
Dense tin – cassiterite "nuggets" detected by ore sorter and accepted

ALPHA HPA -THE GENESIS

ALPHA HPA - NOVEL PROCESS TECHNOLOGY

Alpha HPA

UNIQUE PRODUCT PURITY AND PERFORMANCE



STAGE ONE FACILITY

FACILITIES LAYOUT

FACILITIES LAYOUT

THANK YOU