AUSTPAC RESOURCES N.L.

ANNUAL GENERAL MEETING

13th November, 2002

Proprietary Technology for the Titanium Dioxide (TiO_2) Industry

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CORPORATE OBJECTIVE

TO CREATE SIGNIFICANT AND SUSTAINABLE WEALTH FOR SHAREHOLDERS

- By becoming one of the largest producers of ultra high grade synthetic rutile
- By licensing technologies for non-SR applications to generate additional income

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ERMS → Ilmenite Upgrade

EARS → Acid Regeneration

ERMS + EARS → Ultra High Grade SR = ERMS SR

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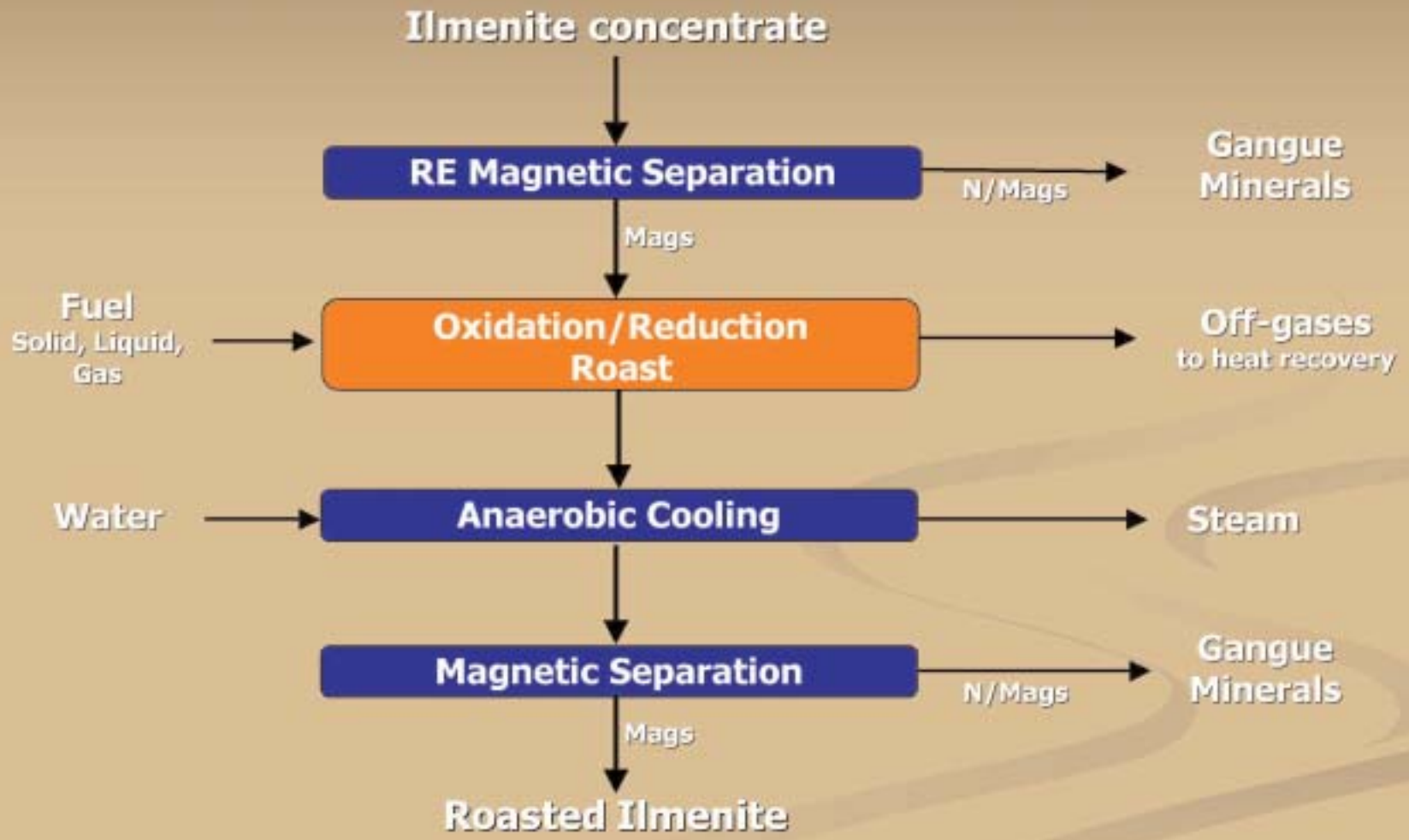
Roasting



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Ø 500mm Fluid Bed Roaster at Pilot Plant

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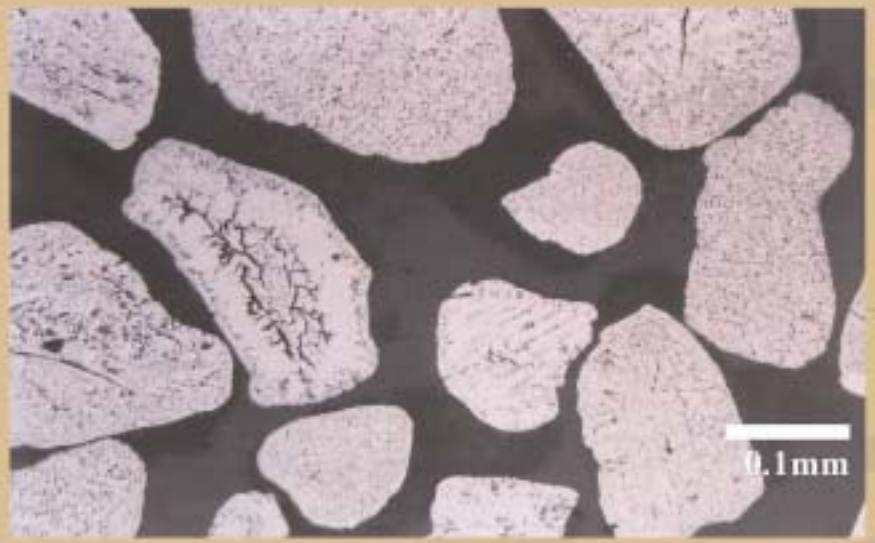
Unroasted Ilmenite

Oxidised Ilmenite



Reduced Ilmenite

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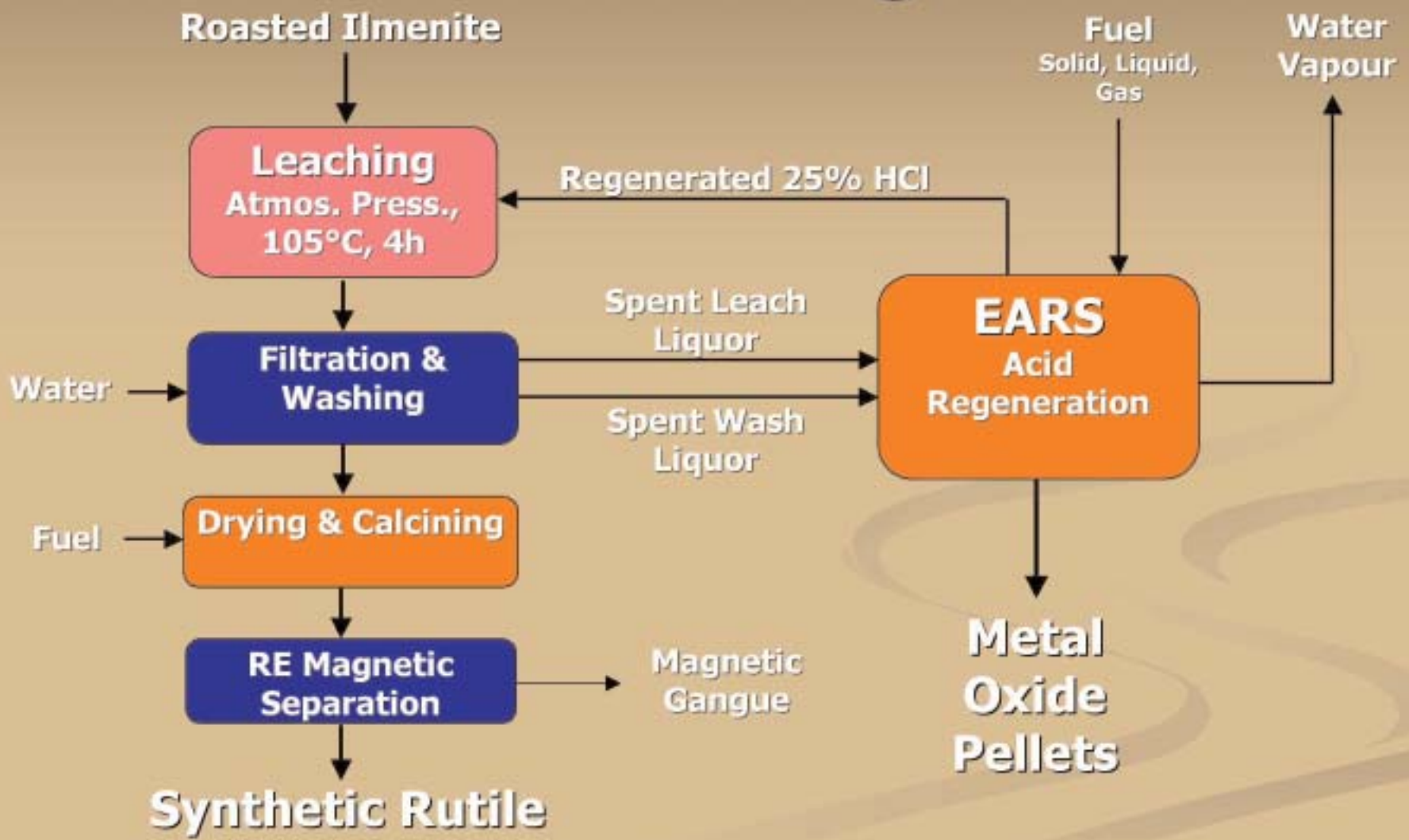
Leaching



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Leach Vessels at Pilot Plant

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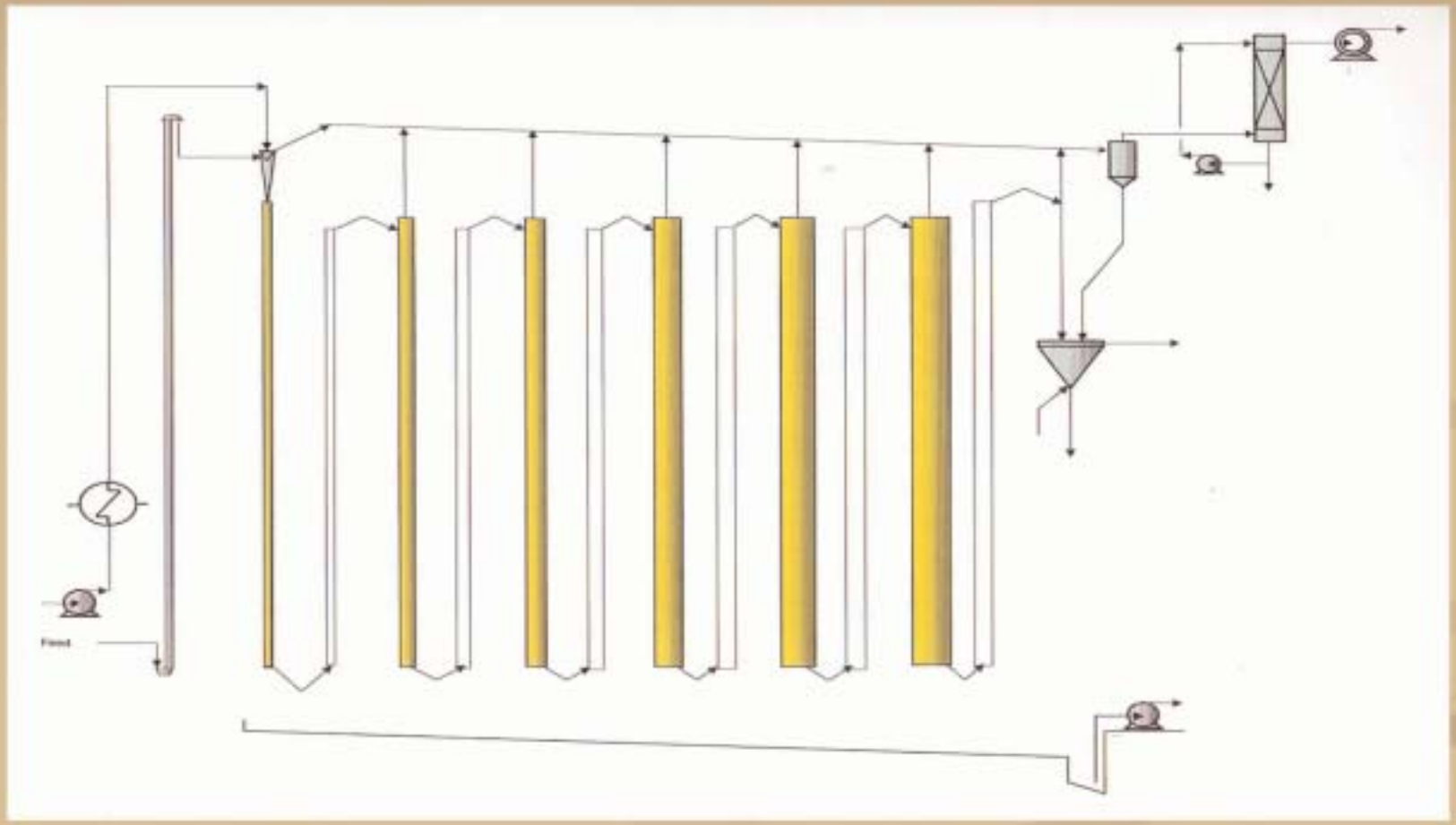
Continuous Leach Reactor

(Patent pending)



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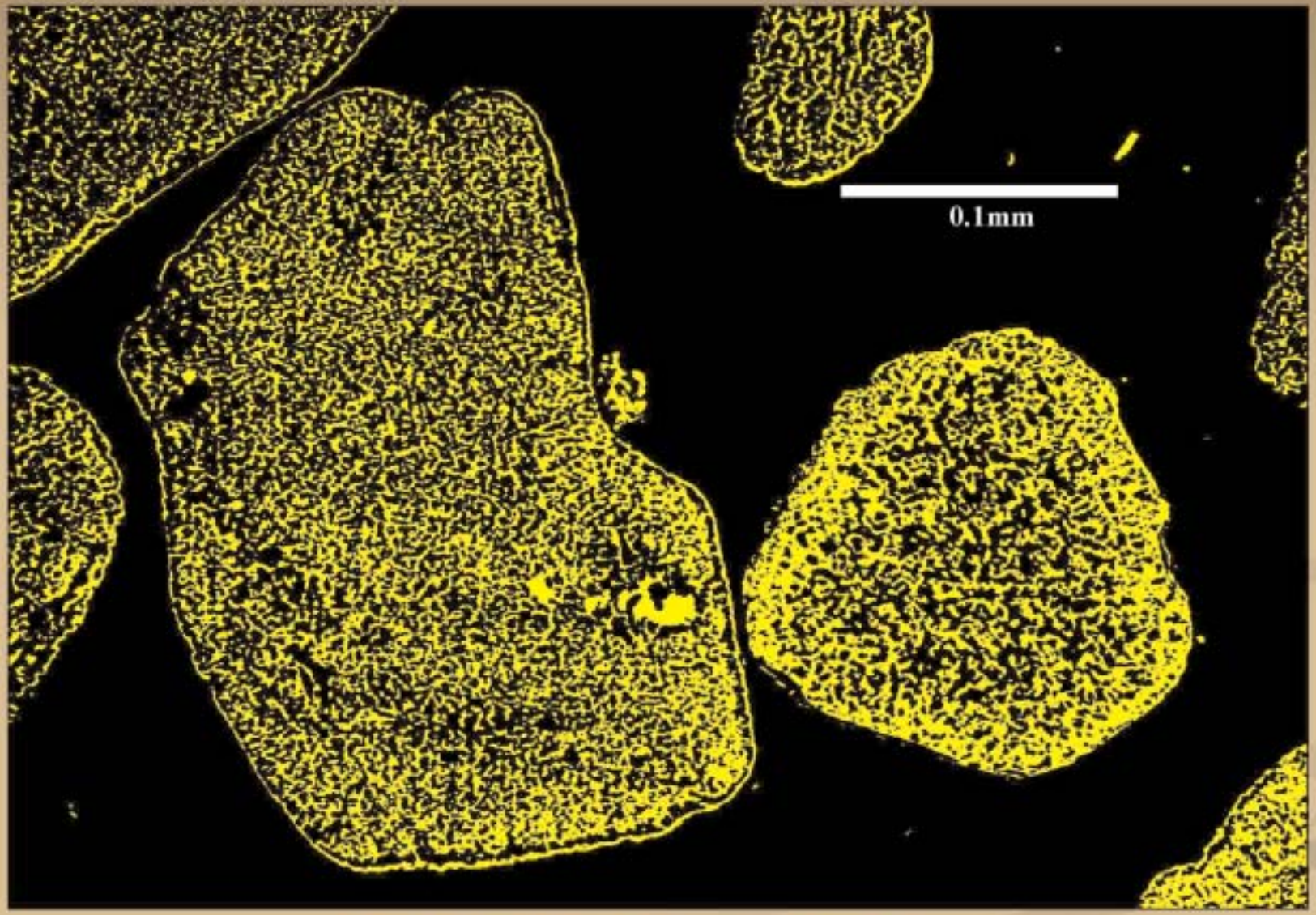

ERMS Synthetic Rutile

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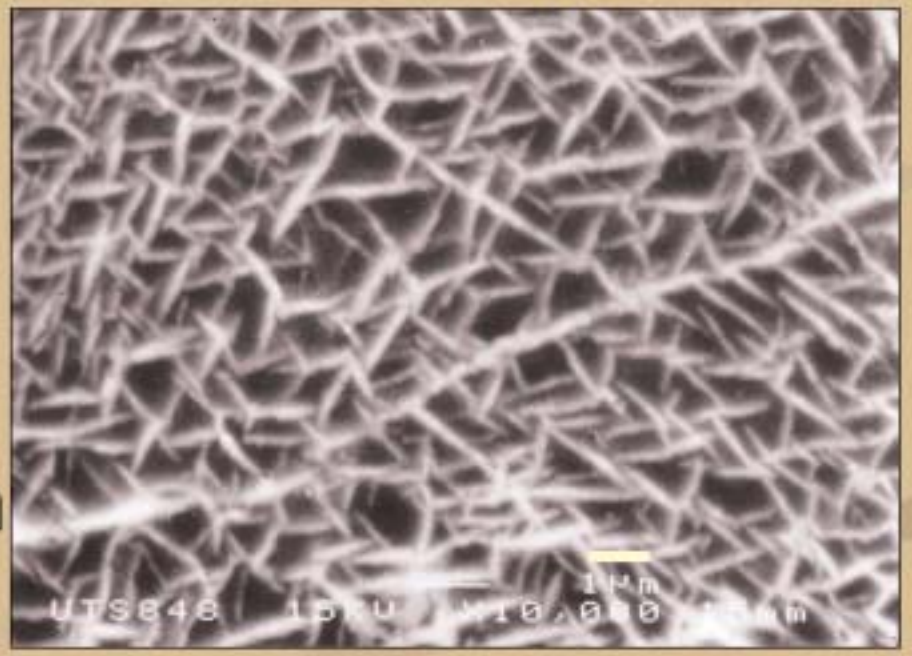
ERMS SR

Typical Chemical Analysis

TiO_2	97.50%
Fe_2O_3	0.82%
SiO_2	0.77%
Al_2O_3	0.13%
Cr_2O_3	0.02%
CaO	0.02%
MgO	0.01%
MnO	0.01%
U+Th	<15ppm



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THE TiO_2 MARKET

Where does ERMS Synthetic Rutile fit?

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THE TiO_2 INDUSTRY

- 95% of titanium used in TiO_2 pigment form
- US$8 billion industry; 3% pa growth
- Mature industry – top 5 producers account for 74% of global capacity
- Two manufacturing processes – Chloride and Sulfate processes

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CHLORIDE vs SULFATE

- Chloride (60%), Sulfate (40%)
- Chloride growing at expense of sulfate: better product, less waste, wider end use
- Chloride route proprietary; entry barrier

BUT

- Chloride process requires high grade feedstock

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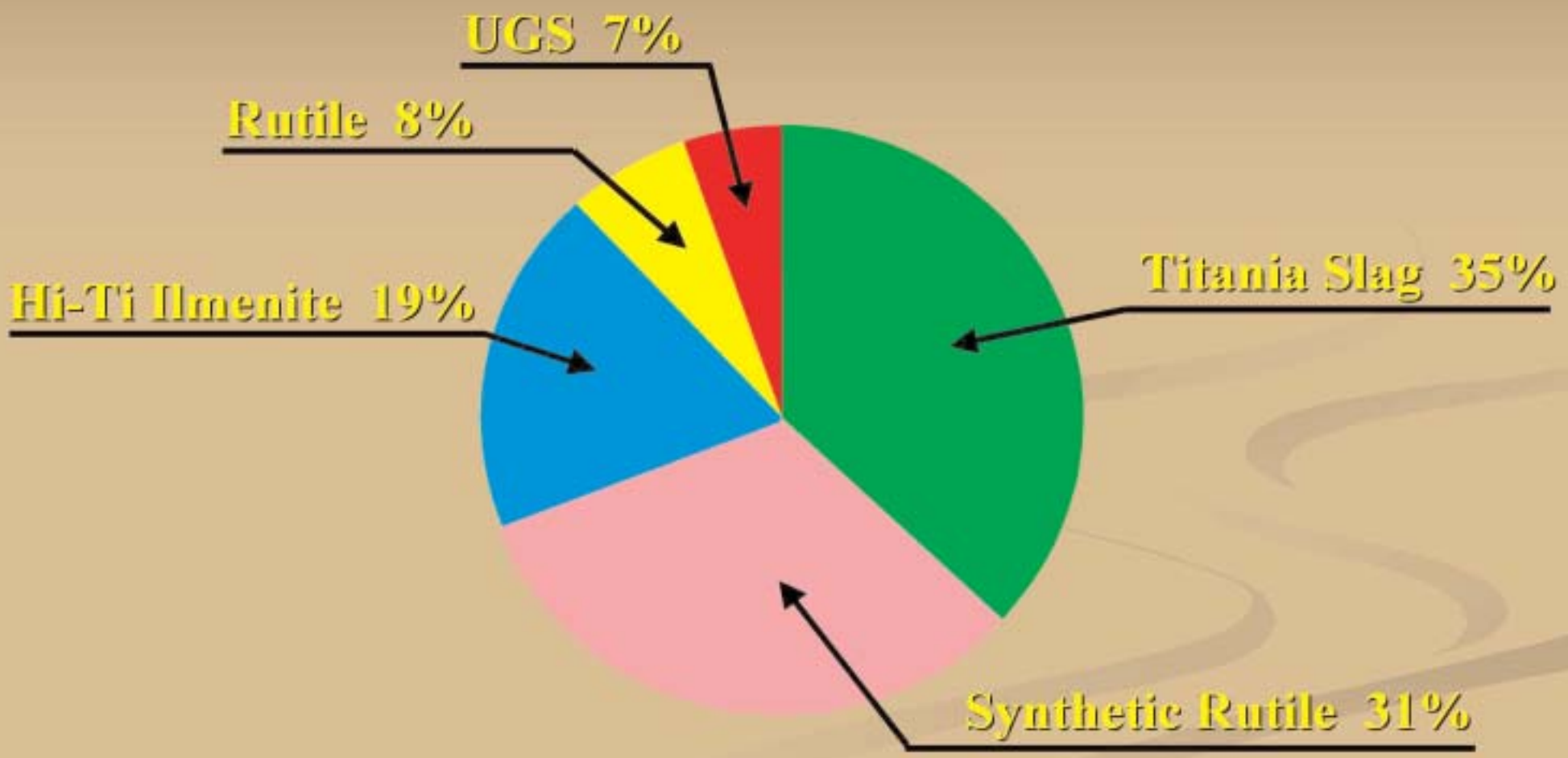
CHLORIDE FEEDSTOCKS



Source: Mineralex Agencies

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ILMENITE UPGRADING

Process	Ilmenite Feedstock	Impurity Removal	Economic Limitations
Titania Slag	Low TiO_2	None	Power Cost
Becher SR	High TiO_2	Minor	Coal, Fe Oxide
Benilite SR	Wide range	Good	Acid, Fe Oxide
ERMS SR	Wide range	Most	None

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THE QUALITY DIMENSION

ERMS SR - a premium feedstock for TiO_2 pigment and titanium metal

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THE ENVIRONMENT

- Solids
  - Saleable iron oxide pellets
- Liquids
  - No liquid effluent, all water recycled
- Gases
  - Scrubbed water vapour (steam)
  - Dioxins and Furans – not detectable
- Energy
  - Waste heat used to generate electricity for the plant
- ERMS SR is the most environmentally acceptable process

THE COST DIMENSION ($US/t)

Process	Capital	Operating	Price	Margin
ERMS SR	**450**	**130**	**430**	**300**
Becher SR *	550	150	400	250
Titania Slag	970	190	380	190
Benilite SR	750	260	410	150

Note: ** The Becher process is ore and coal specific.*

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THE COMPETITIVE ADVANTAGE OF ERMS SR

- Applicable to all grades of ilmenite
- Simple, cost-effective process, low scale-up risk
- Ultra high quality synthetic rutile product
- Low capital and operating costs
- High margin business

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AUSTPAC'S PROJECTS - 2002

- Newcastle Pilot Plant . . . . . Operational

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UNIQUE PILOT PLANT

- Fluid Bed Roasting (ERMS)
- Magnetic Separation
- Bulk Leaching
- Fluid Bed Calcining
- Agglomeration
- Acid Regeneration (EARS)

OVER 70 DIFFERENT TYPES OF ILMENITE SUCCESSFULLY TESTED

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PILOT PLANT UPGRADES

After-burner ensures off-gases are clean

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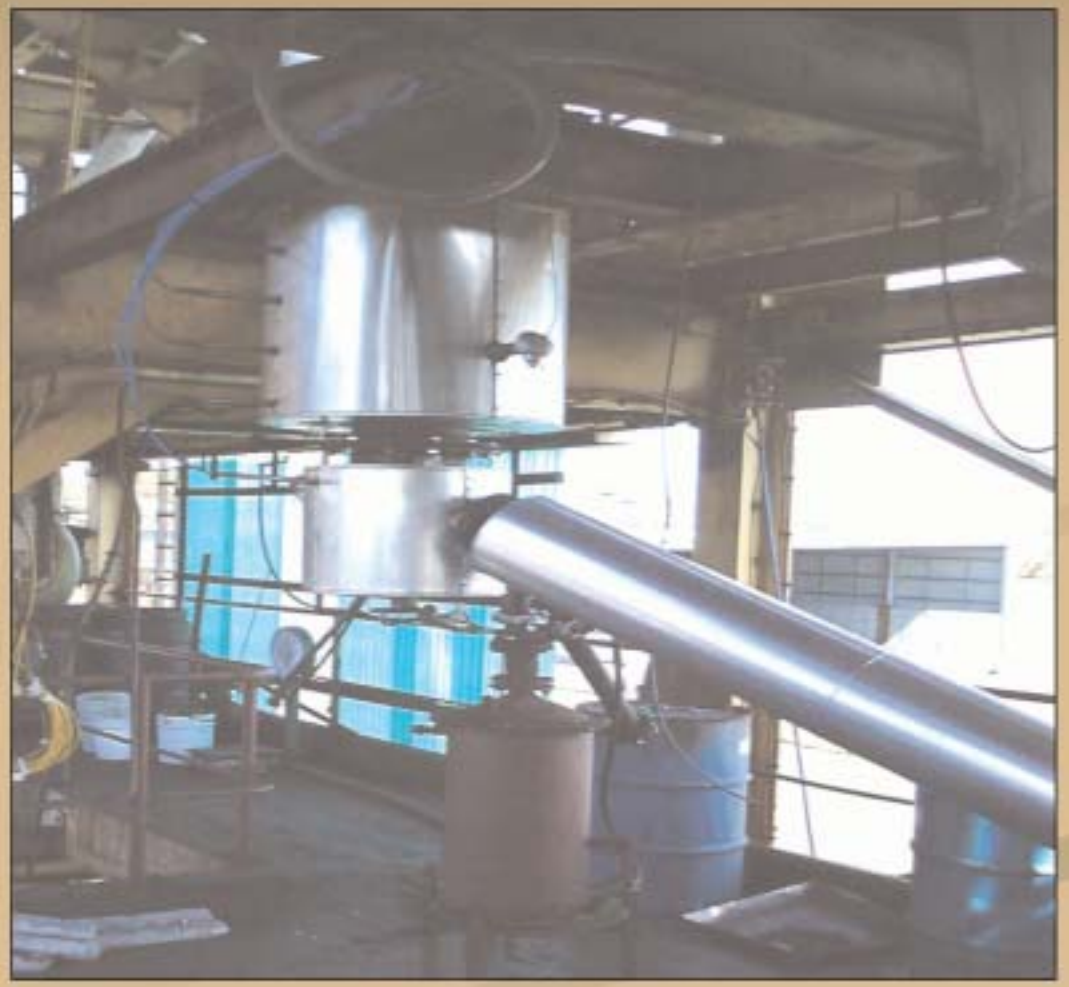
PILOT PLANT UPGRADES

New 250mm roaster installed for low temperature roasting; used for BeMaX's test program; greatly enhances the pilot plant's flexibility



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AUSTPAC'S PROJECTS - 2002

- **Murray Basin**
  - Ilmenite beneficiation . . . . . BeMaX (2003); others
  - WIM 150 . . . . . R&D Program

MURRAY BASIN

- Now a significant heavy mineral resource base
- Corporate consolidation underway
- BeMaX, MBT, Iluka, Sons of Gwalia?
- Only one current producer
- Ilmenites contain chromite – need upgrading
- Austpac – priorities
  - Ilmenite – roasting to remove chrome
  - ERMS SR plant – JV with MB producer
  - WIM 150 – R&D at pilot plant to unlock giant resource

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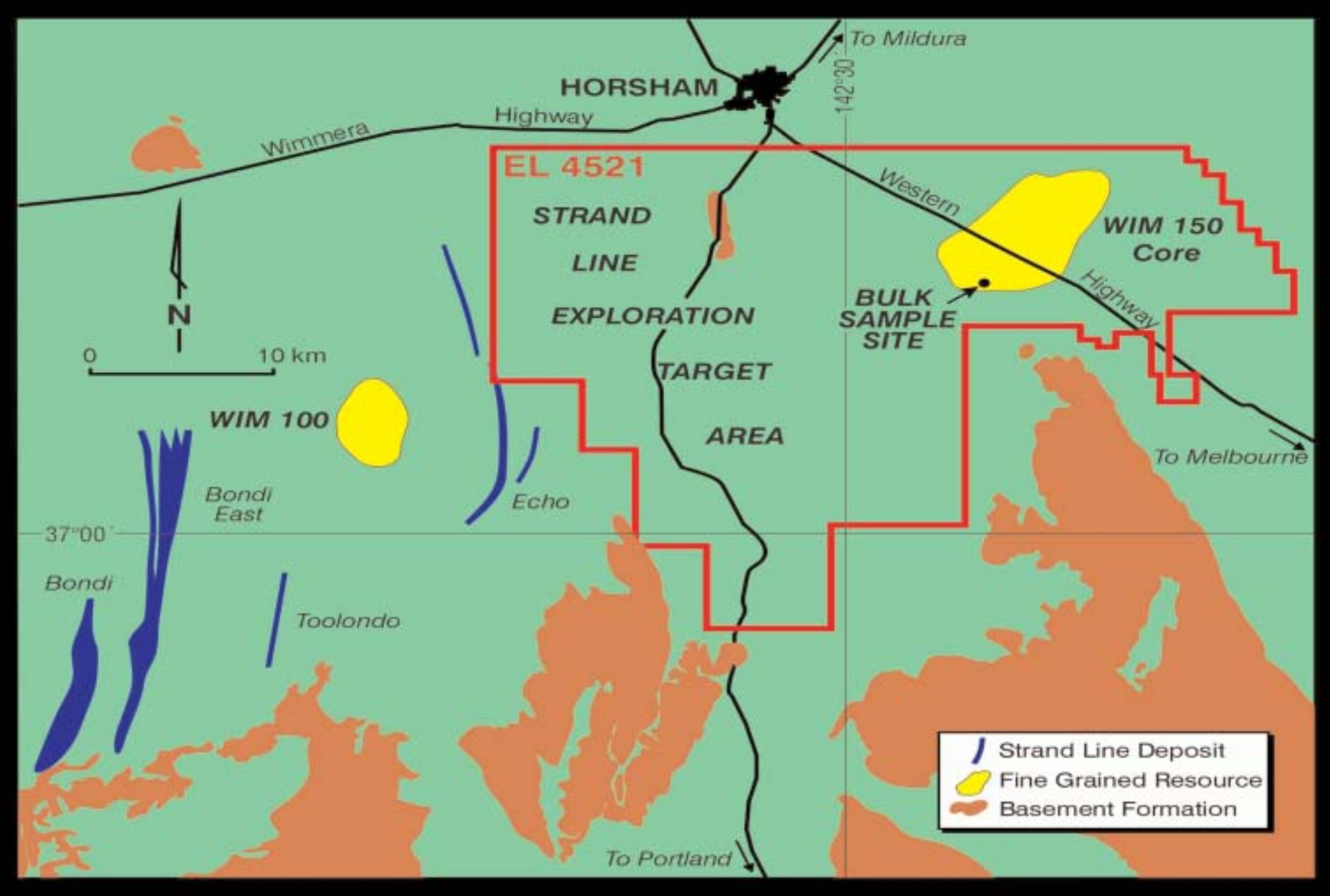
HORSHAM
To Mildura
142°30'
Wimmera
Highway
Western
Highway
EL 4521
STRAND
LINE
EXPLORATION
TARGET
AREA
WIM 150
Core
BULK
SAMPLE
SITE
N
0
10 km
WIM 100
Bondi
East
Echo
To Melbourne
37°00'
Bondi
Toolondo
To Portland
Strand Line Deposit
Fine Grained Resource
Basement Formation

E.L. 4521 PROGRESS IN 2002

Drung South Bulk

Sample Site

Rehabilitated as a farm dam

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E.L. 4521 PROGRESS IN 2002

Coarse-grained heavy minerals drilling program

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WIM 150
Fine Grained Minerals Program

0.1mm

0.1mm

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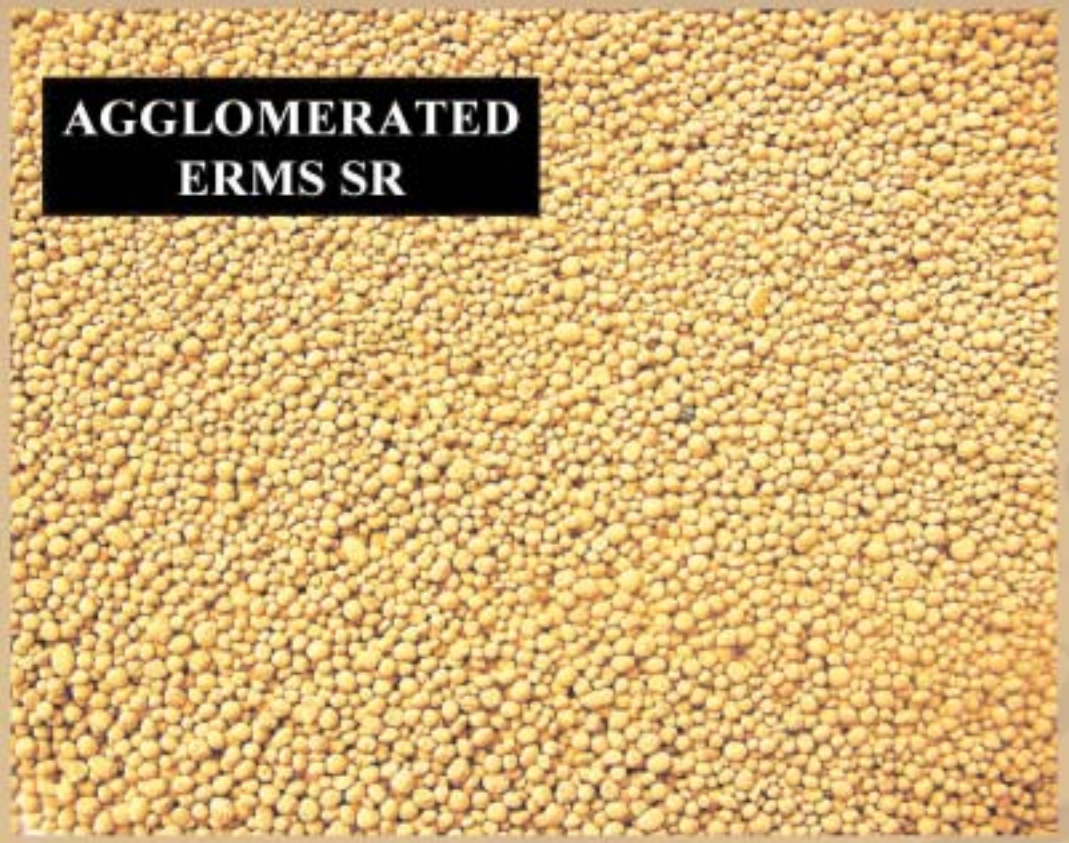
WIM 150
Fine Grained Minerals Program



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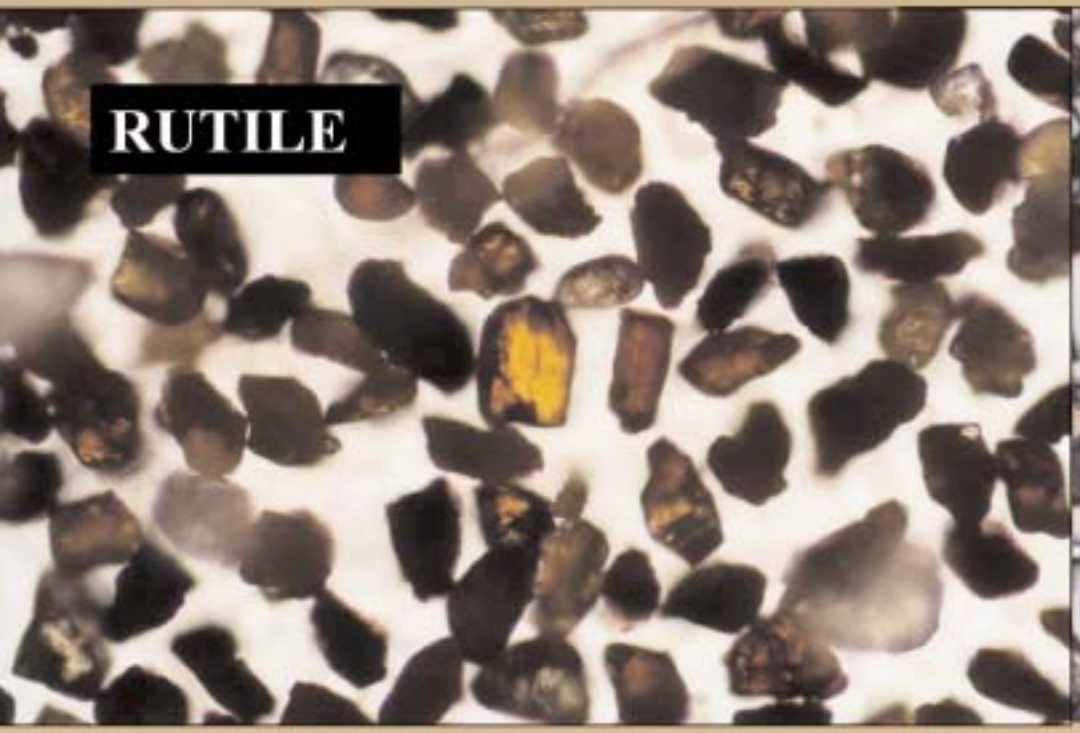
WIM 150
Fine Grained Minerals Program



0.1mm

0.1mm

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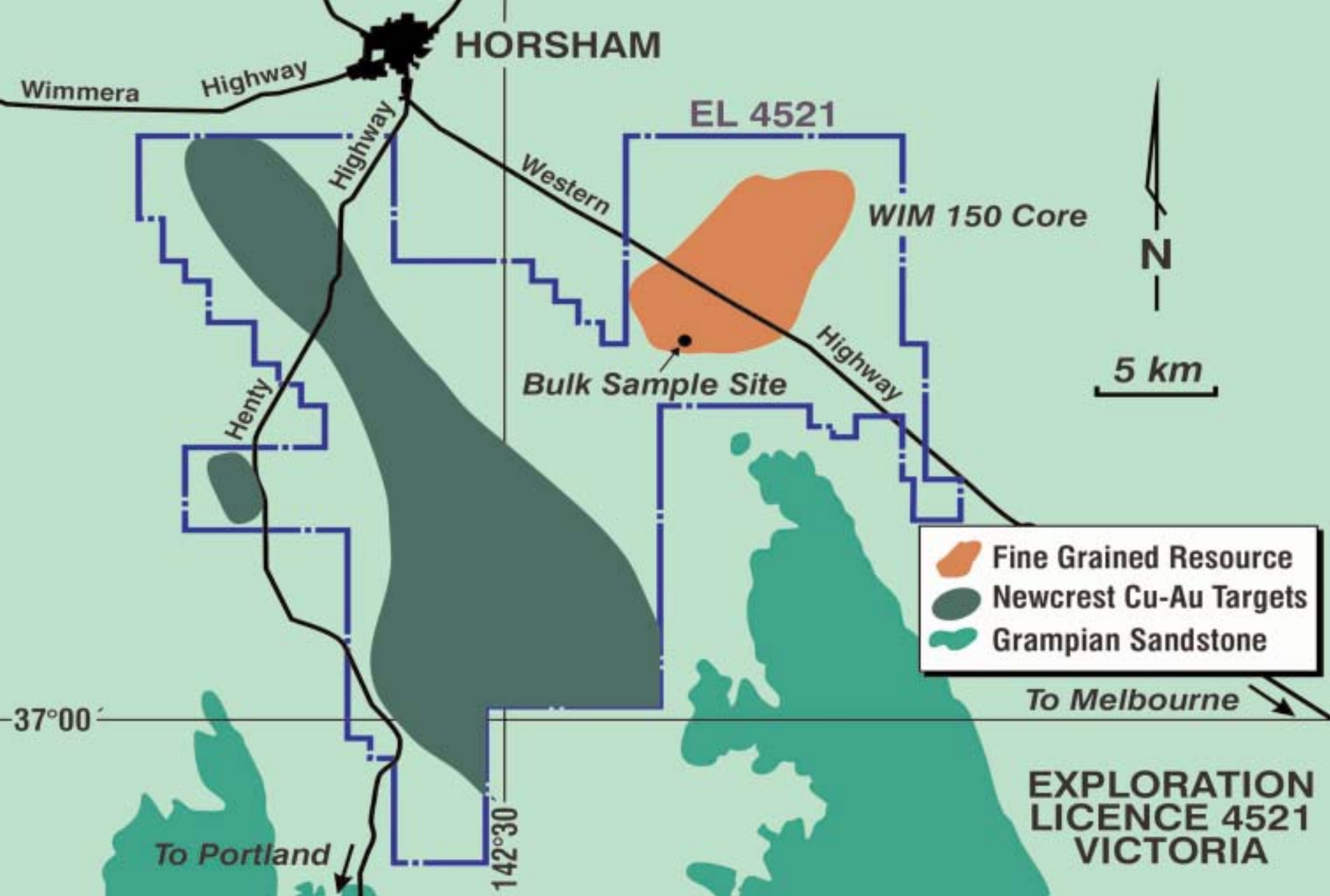
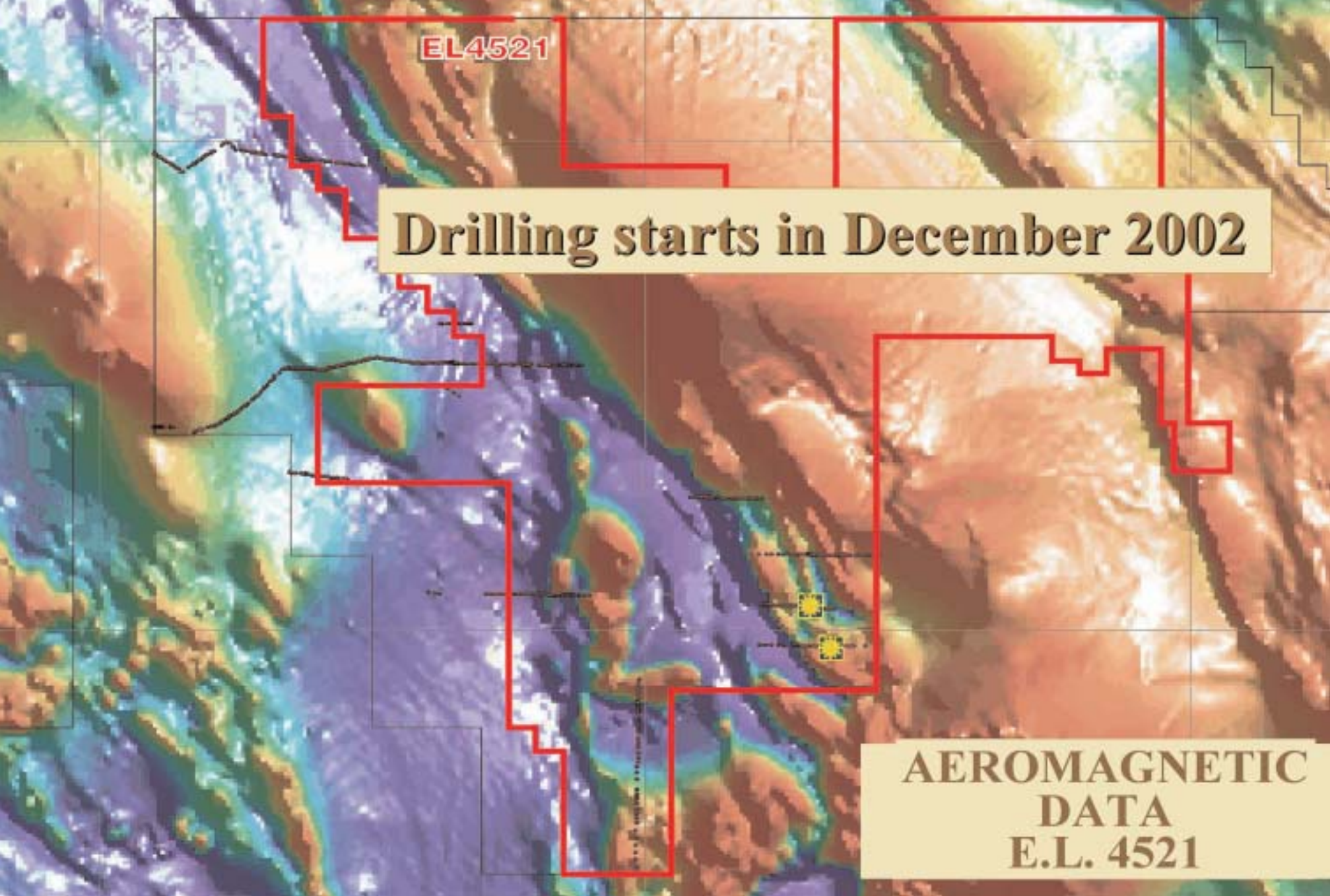

HORSHAM
Wimmera
Highway
Highway
Western
Highway
Henty
EL 4521
WIM 150 Core
Bulk Sample Site
N
5 km
Fine Grained Resource
Newcrest Cu-Au Targets
Grampian Sandstone
To Melbourne
37°00´
142°30´
To Portland
EXPLORATION
LICENCE 4521
VICTORIA


EL4521
Drilling starts in December 2002
AEROMAGNETIC
DATA
E.L. 4521

AUSTPAC'S PROJECTS - 2002

- India
  - New Projects
  - AusRutile J.V. (Ticor/IRE)

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INDIA'S MINERAL SANDS

- Vast HM resources
- Exceptional grades (10% to >23% HM)
- 50-52% TiO_2 ilmenite - sulfateable only
- ERMS SR process ideal for Indian ilmenites - produces ultra high grade SR for pigment or titanium metal
- Value addition is a Government priority

OVER 80% LOCATED IN THREE STATES

OSCOM PROJECT 23% HM >23 Mt Ilmenite 50% TiO_2
ANDHRA PRADESH 19% HM 22 Mt Ilmenite 50% TiO_2
TAMIL NADU 11% HM 77 Mt ilmenite 53% TiO_2
INDIA CONTAINS 20% OF WORLD ILMENITE
BHUTAN
BURMA
Mumbai (Bombay)
Chennai (Madras)
OSCOM PROJECT
ANDHRA PRADESH
CHAVARA
TAMIL NADU
QUILON
MANAVALAKURICHI
MINERAL SAND DEPOSITS INDIA

AUSRUTILE JOINT VENTURE

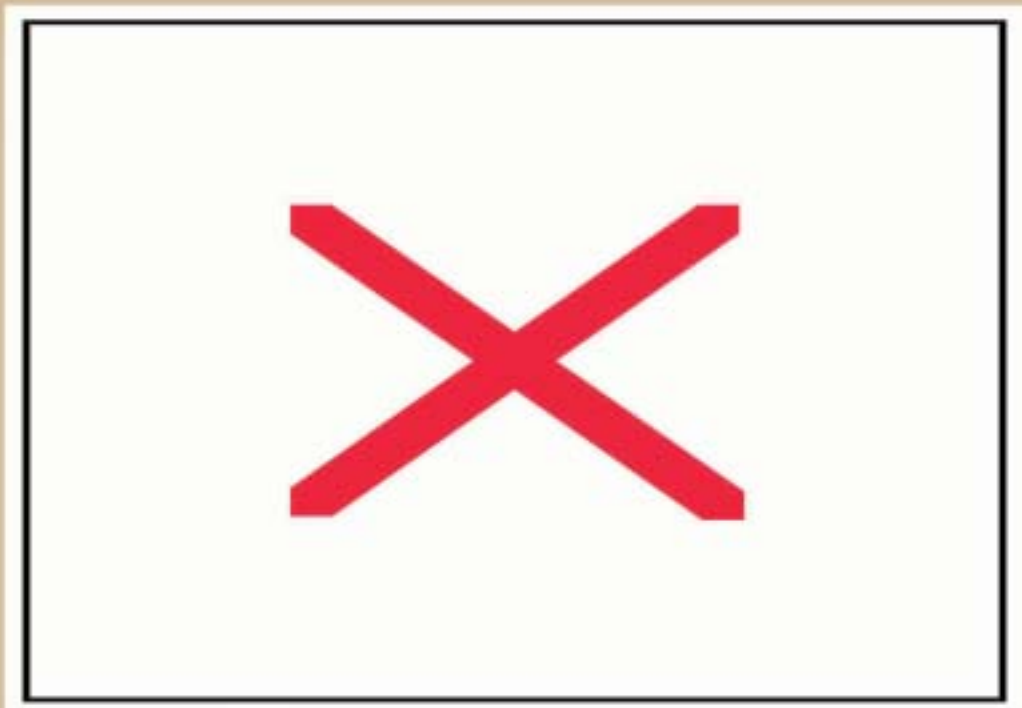
ORISSA, INDIA

PARTICIPANTS

IRE – Resource

APG – Technology

TOR – Funding



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AUSTPAC'S PROJECTS - 2002

- New SR Project . . . . . .SR Plant – New JV

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Why 30,000 tpa?

- New high grade feedstock
- Trials by pigment producers and Ti-metal manufacturers
- >25,000 tonnes SR required for market trials to establish sales contracts
- Potential for contracts >70,000 tpa

30,000 tpa ERMS SR Plant
Cash Flow

■ Sales pa @ $US 430/t	$A	25	million
■ Operating Cost pa	$A	9	"
■ Net Cash Flow pa EBITDA	$A	16	"
■ CAPITAL COST	$A	40	million

30,000 tpa ERMS SR PLANT

AUSTPAC - THE FUTURE

- Technology is proven, plant design criteria are confirmed at +/- 10%
- JV will assure supply of low cost ilmenite from large resource base for long term production
- Build 30kt SR plant; secure off-take agreements, generate revenue and showpiece technology
- Obtain financing for 100kt plant
- Proceed with world class SR facility

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