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TIN MINES LTD

## Cairns Hinterland Tin Project

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**ASX:** CSD

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# Mt Garnet Project location

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# **HERBERTON TIN FIELD BRIEF HISTORY**



# Herberton Tin Field History

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- 1875 – Tin discovered by James Venture Mulligan.
- 1879 -Jack, Newell, Brandon, Brown proved payable tin in Prospectors Gully, where Herberton town now stands
- Became one of the richest tin finds in Australia
- Mined for over a century, with over 2,000 named mines worked
- Mining stopped 1985 due to tin price collapse
- No operating tin mines today



# Herberton Tin Field History

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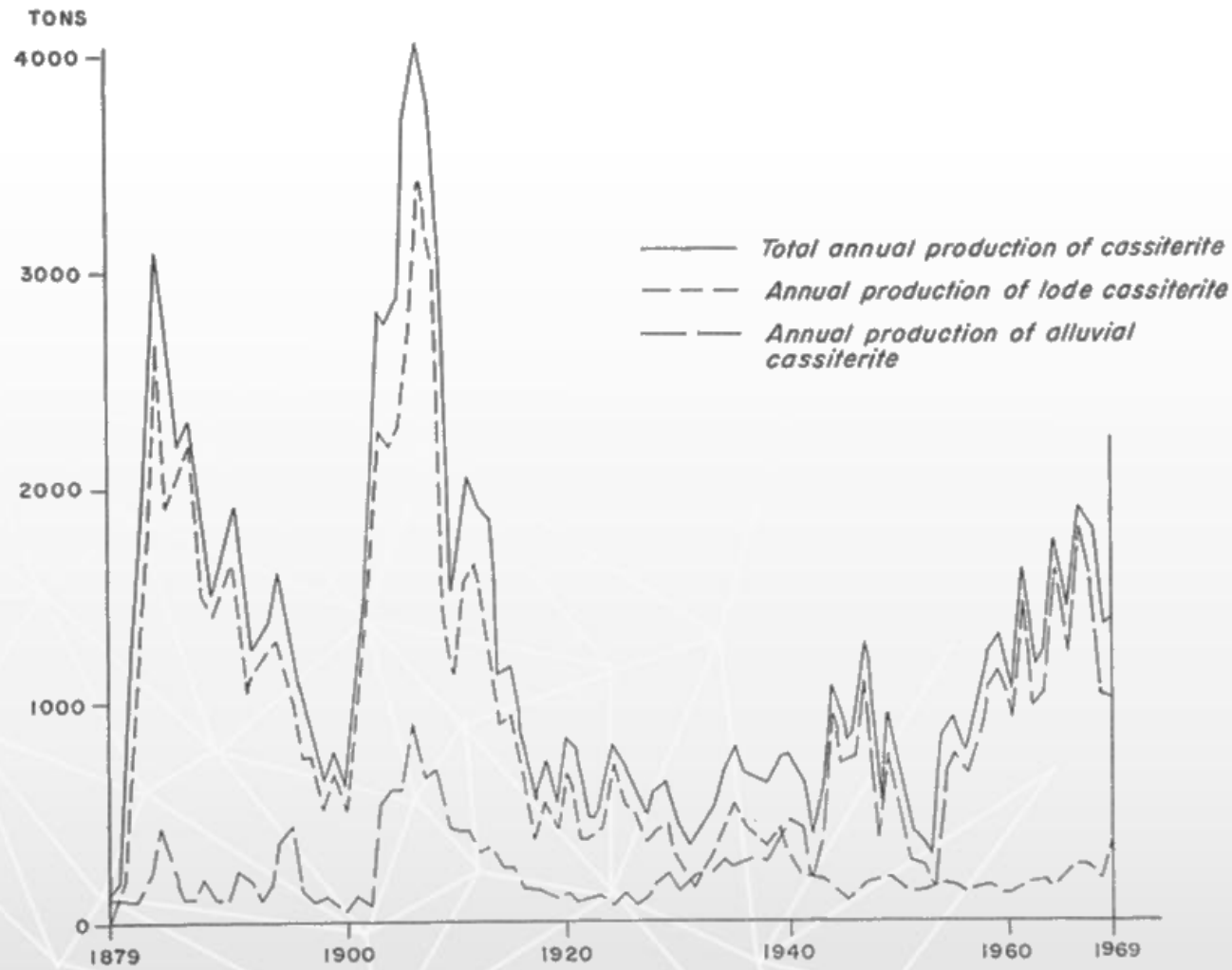
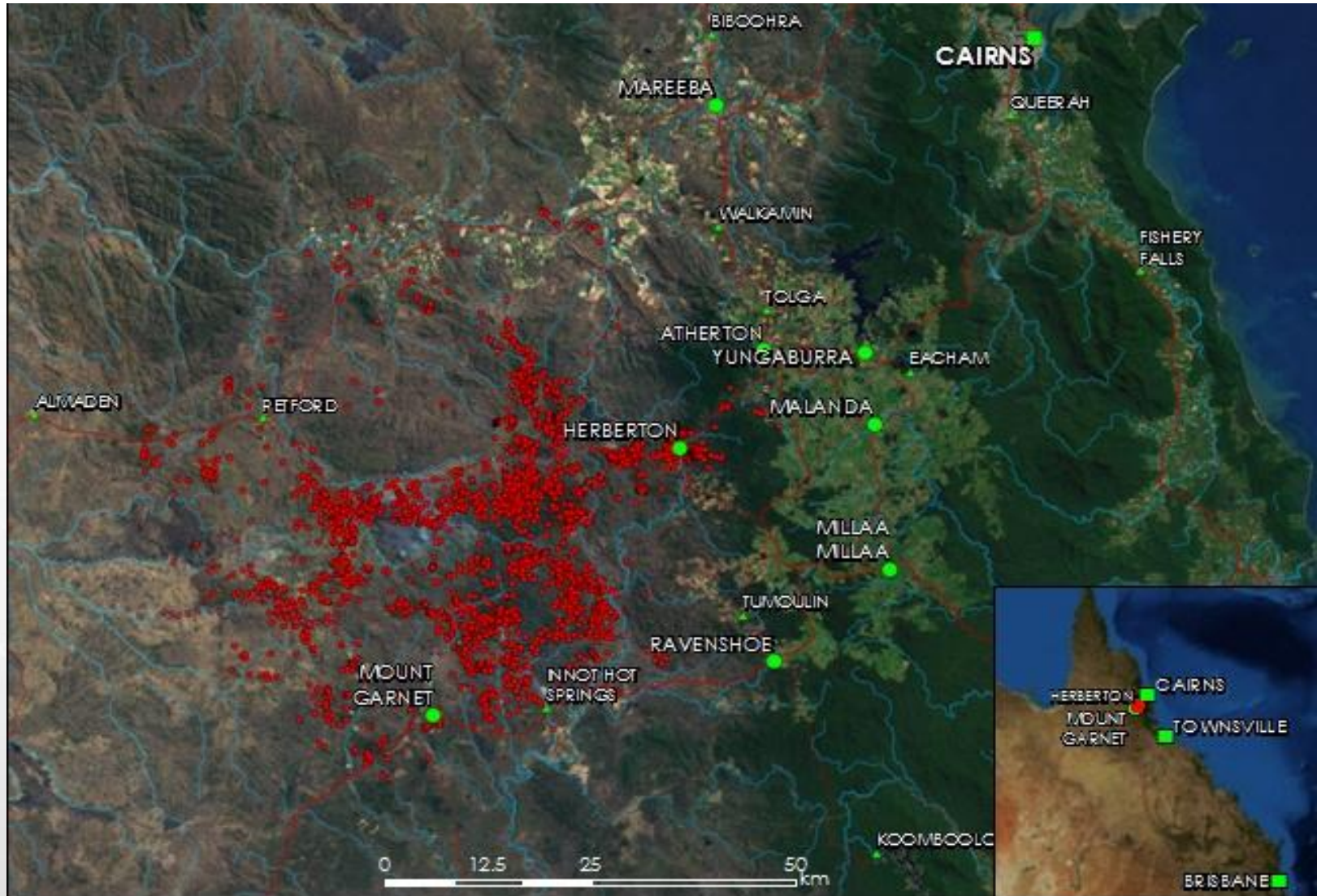


Figure 12. Tin production, Herberton Tinfield.

# Herberton Tin Field

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Historic Tin Mines in Herberton Tin Field:



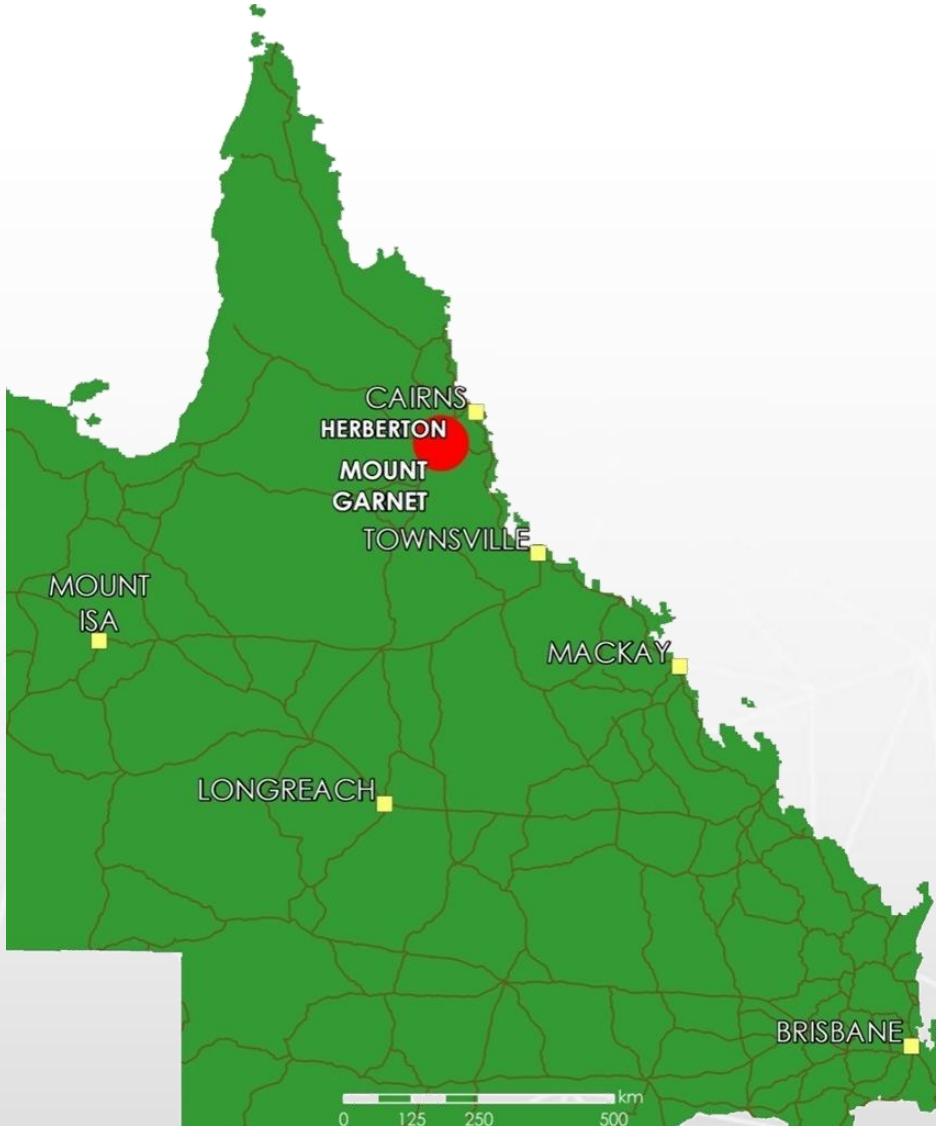
# **NEW TIN SUPPLY FROM HISTORIC TIN FIELD**



# Large Mineralised Area

Queensland, Australia, showing Herberton Tin Field (in red)

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- Large area of over 5,000km<sup>2</sup>
- Initial mining was very high grade, decreasing over the 100+ years of mining
- Massive potential for a 'second generation ' of the Herberton tin field mining large volume /low grade tin
- Significant volumes of low grade open pit minable ore remains
- Enormous Potential

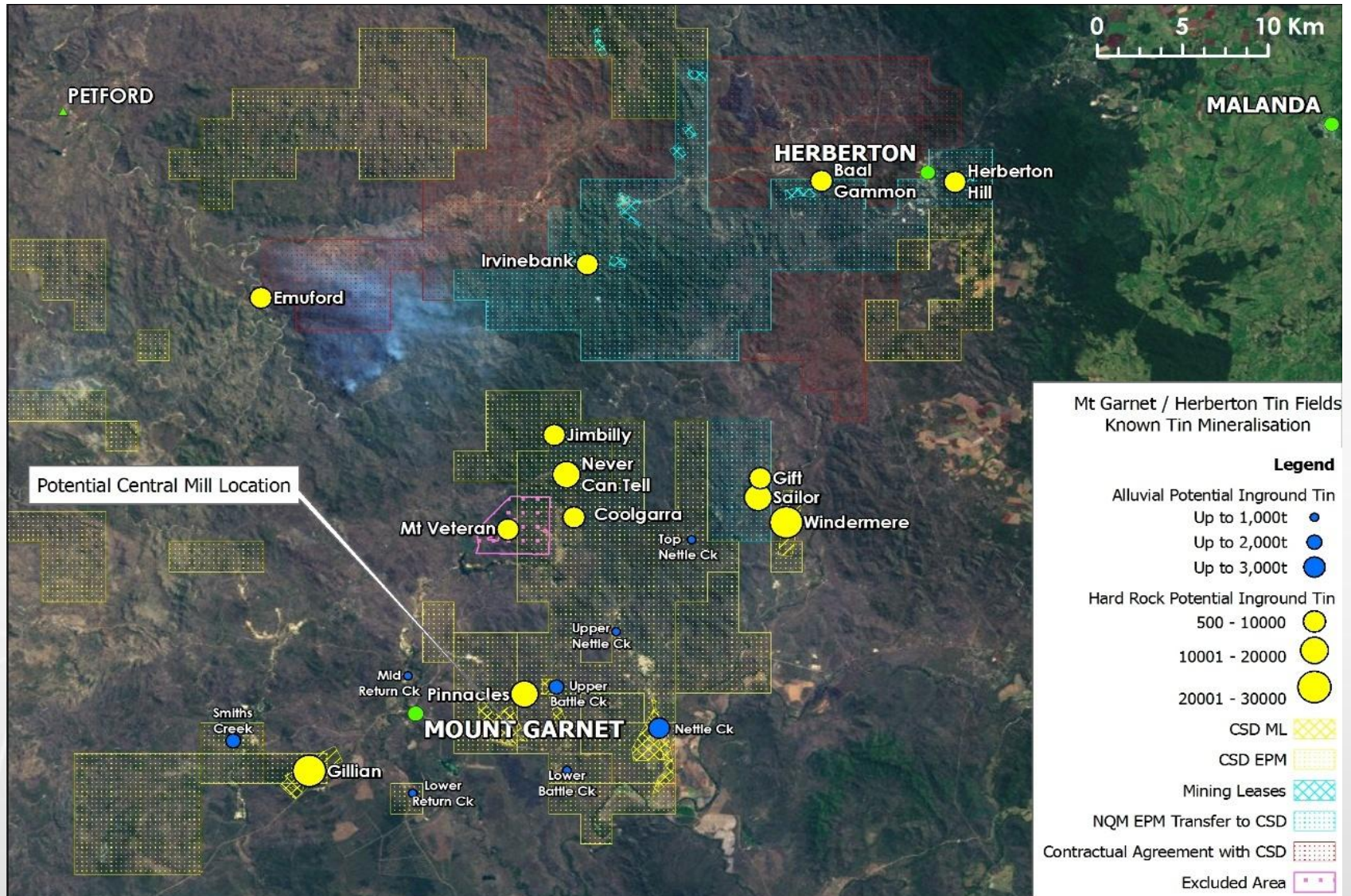
# Known Tin Potential

- Millions of dollars have been spent exploring & drilling the tin field
- Drilling before the tin price collapse was mostly for 'in house' use & does not comply with 2004 JORC Resource reporting Code
- Not meeting modern reporting standard does not mean the tin does not exist
- CSD model is to establish only sufficient ore to modern reporting standard for first 8 to 10 years mine life
- The key to the success of the 'second generation' of the Herberton Tin Field is a mill with the economy of scale to profitably treat medium grade ore (< 0.5% Sn)



# Herberton Tin Known Tin

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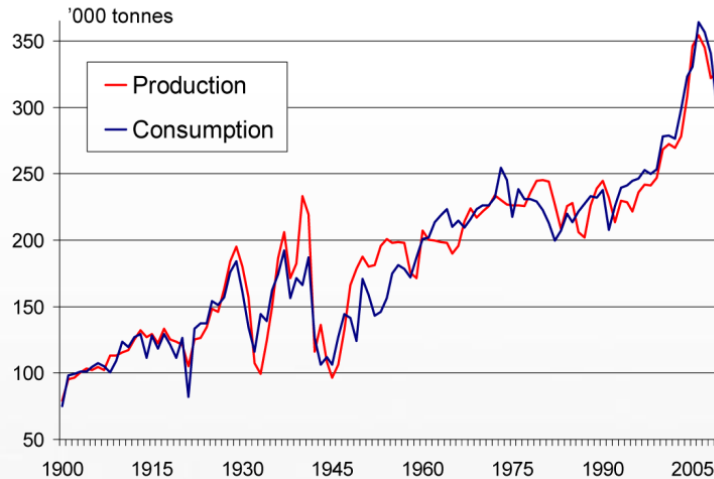
# **CURRENT FACTORS CONTROLLING TIN PRICES**



# Historic Tin price & Uses

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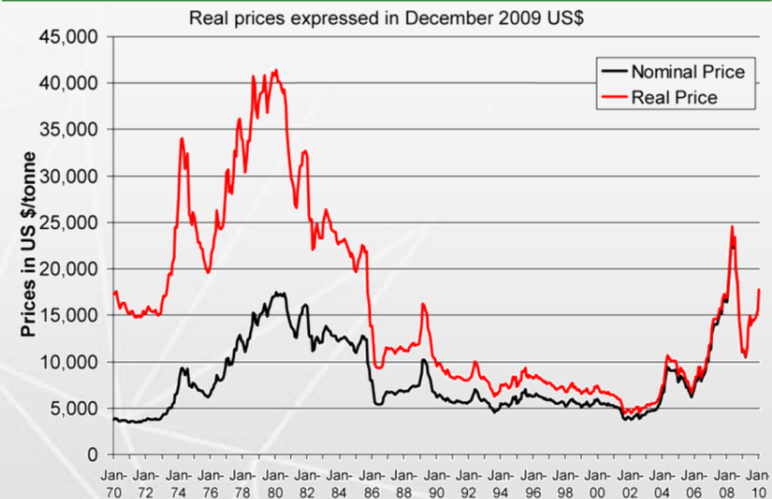
## Production and consumption from 1900



- Long term consumption trend met by production
- Mid 1980s – Tin price crash blamed on International Tin Council stockpile management -but also tin use change
- Late 1970s – ½ tin went to tinplate, then plastics/aluminum replaced tinplate
- 2000's – Solder is principal use

- Nominal/real price – inflation adjusted

## Tin prices from 1970



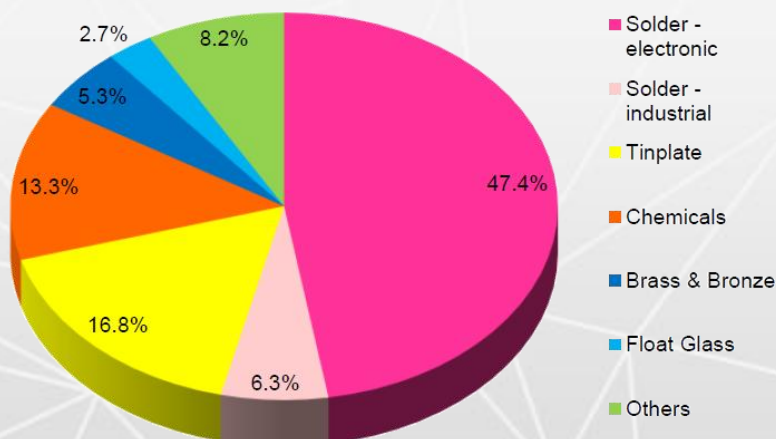
# Current Uses

## Refined Tin Consumption by Use, 2004-2010

tonnes	2004	2005	2006	2007	2008	2009	2010e
<b>Usage by application</b>							
Solder	157,300	168,500	197,200	203,400	182,300	172,000	194,300
Tinplate	60,500	59,700	59,600	58,100	57,200	53,800	58,800
Chemicals	49,700	48,700	50,000	52,500	47,800	42,500	51,000
Brass & Bronze	20,200	20,000	21,500	21,100	20,100	18,200	19,500
Float Glass	6,600	6,800	6,700	7,700	6,500	7,500	7,000
Others	33,500	31,900	32,700	30,000	34,500	26,200	29,700
<b>Total</b>	<b>327,700</b>	<b>335,500</b>	<b>367,700</b>	<b>372,700</b>	<b>348,400</b>	<b>320,200</b>	<b>360,300</b>



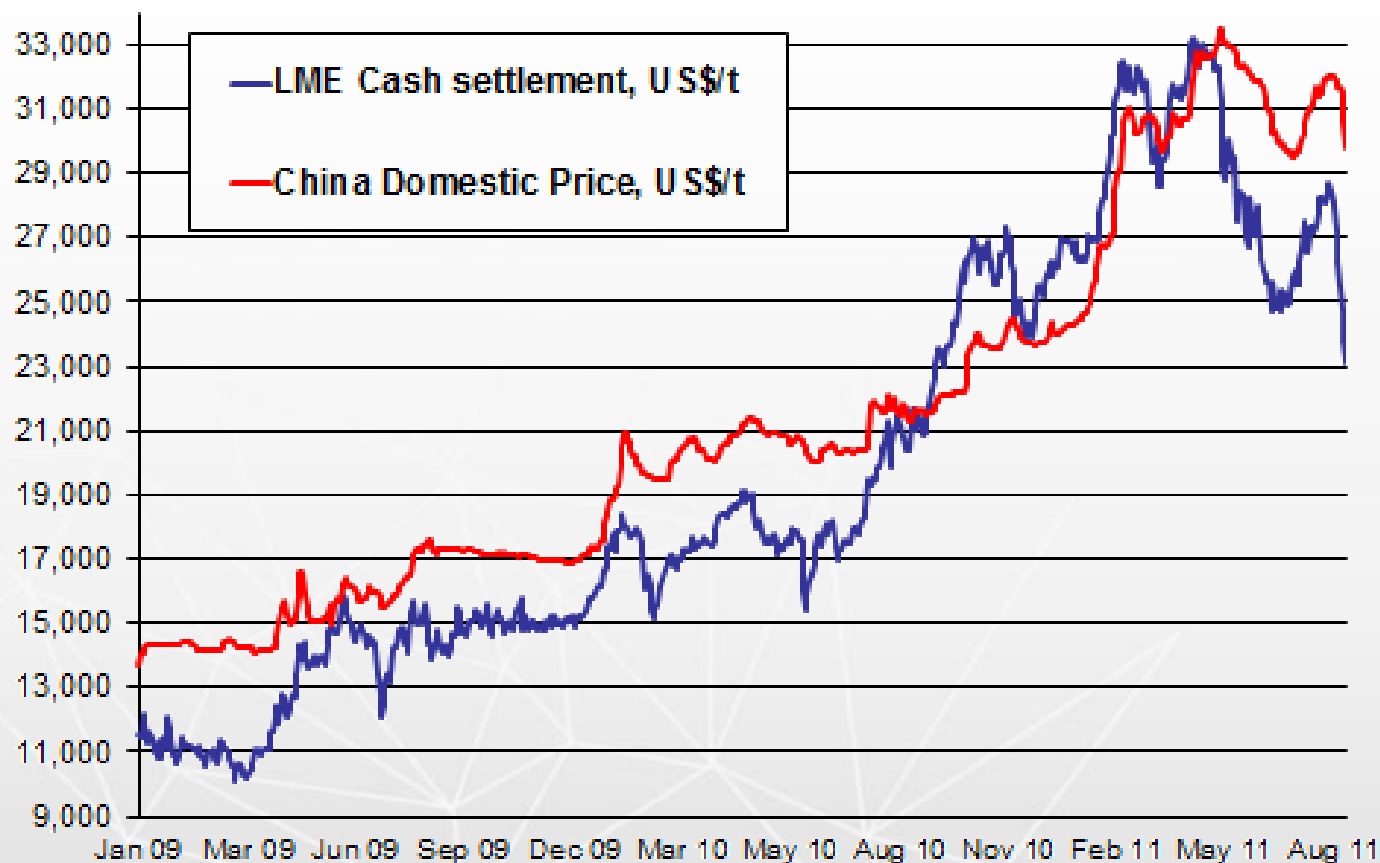
World refined tin use by application, 2009



# Tin Market

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## China premium widens as LME dives



# Tin Production & Consumption

<b>World Production and Consumption Of Refined Tin</b>											
('000 tonnes)	<b>2009</b>			<b>2010</b>				<b>2011e</b>			
	<b>Q3</b>	<b>Q4</b>	<b>Year</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Year</b>	<b>Q1</b>	<b>Q2</b>	<b>Year</b>
<b>Production</b>											
China	38.0	41.3	<b>140.6</b>	35.0	39.4	40.1	40.5	<b>155.0</b>	39.0	41.0	<b>160.5</b>
Indonesia*	19.3	16.4	<b>64.5</b>	13.6	14.4	14.2	14.9	<b>57.1</b>	13.3	15.2	<b>57.7</b>
Malaysia	10.5	7.5	<b>36.4</b>	9.4	9.6	10.4	9.3	<b>38.7</b>	9.5	10.0	<b>38.0</b>
Thailand	5.0	4.0	<b>19.3</b>	5.0	5.6	6.3	6.6	<b>23.5</b>	6.4	6.4	<b>23.0</b>
Bolivia	3.9	4.0	<b>15.0</b>	3.8	3.8	3.7	3.7	<b>15.0</b>	3.5	3.5	<b>15.0</b>
Brazil	2.7	2.4	<b>10.4</b>	1.8	1.6	1.6	1.7	<b>6.7</b>	1.8	2.0	<b>8.5</b>
Peru	8.2	7.6	<b>33.9</b>	9.0	9.1	8.8	9.2	<b>36.1</b>	8.8	7.0	<b>28.5</b>
Belgium	2.3	2.2	<b>8.7</b>	2.4	2.6	2.5	2.4	<b>9.9</b>	2.1	2.5	<b>11.0</b>
Russia	0.3	0.2	<b>1.0</b>	0.3	0.2	0.2	0.3	<b>1.0</b>	0.2	0.2	<b>1.0</b>
Other	1.5	1.5	<b>6.0</b>	1.7	1.7	1.8	1.8	<b>7.0</b>	1.8	1.8	<b>7.5</b>
<b>Total World</b>	<b>91.8</b>	<b>87.1</b>	<b>335.8</b>	<b>82.0</b>	<b>87.9</b>	<b>89.7</b>	<b>90.4</b>	<b>350.0</b>	<b>86.4</b>	<b>89.6</b>	<b>350.7</b>
<b>Consumption</b>											
China	35.1	38.0	<b>132.4</b>	33.3	40.4	37.4	38.1	<b>149.2</b>	37.0	40.5	<b>157.5</b>
Japan	7.0	7.5	<b>27.1</b>	8.1	8.2	8.0	8.2	<b>32.5</b>	8.3	7.2	<b>26.5</b>
Other Asia	14.4	15.4	<b>58.8</b>	16.5	16.4	16.5	17.5	<b>66.9</b>	16.0	16.0	<b>68.0</b>
USA	6.0	6.0	<b>26.4</b>	7.5	7.5	7.5	7.5	<b>30.0</b>	7.5	7.5	<b>29.0</b>
Other Americas	4.2	4.2	<b>16.6</b>	4.5	5.0	5.5	5.4	<b>20.4</b>	4.8	5.0	<b>20.0</b>
Europe	14.0	14.3	<b>55.8</b>	15.0	15.0	15.0	14.9	<b>59.9</b>	15.0	15.0	<b>56.0</b>
Other	0.8	0.8	<b>3.0</b>	0.8	0.8	0.7	0.8	<b>3.1</b>	0.9	0.9	<b>3.2</b>
<b>Total World</b>	<b>81.5</b>	<b>86.2</b>	<b>320.1</b>	<b>85.7</b>	<b>93.3</b>	<b>90.6</b>	<b>92.4</b>	<b>362.0</b>	<b>89.5</b>	<b>92.1</b>	<b>360.2</b>

\* Note: Indonesian production excludes metal re-refined in other countries

Data: production - CNI-A, Malaysia Chamber of Mines, MSC, PT Timah, Thaisarco, Minsur, SNIEE, WBMS

consumption - USGS, WBMS, ITRI



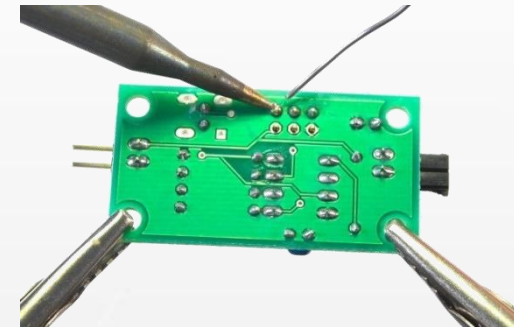
# Tin Uses



An ancient metal with many modern uses

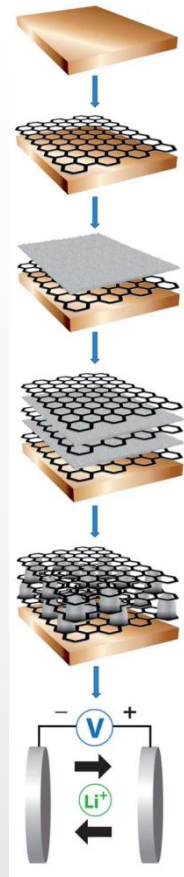
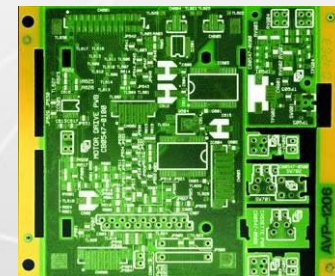
- Traditional uses: bronze & tin plate
- Lead free solder in the electronics age
- Apart from these major uses tin has many everyday uses in the modern world:

- Toothpaste
- Paint
- Glass
- Panel lighting
- Frost-free windshields
- Shaving foam



- New uses are being developed constantly:

- Fuel catalysts
- Glass coating
- Electroplating
- Cement additives
- Brake pads
- Lithium ion batteries



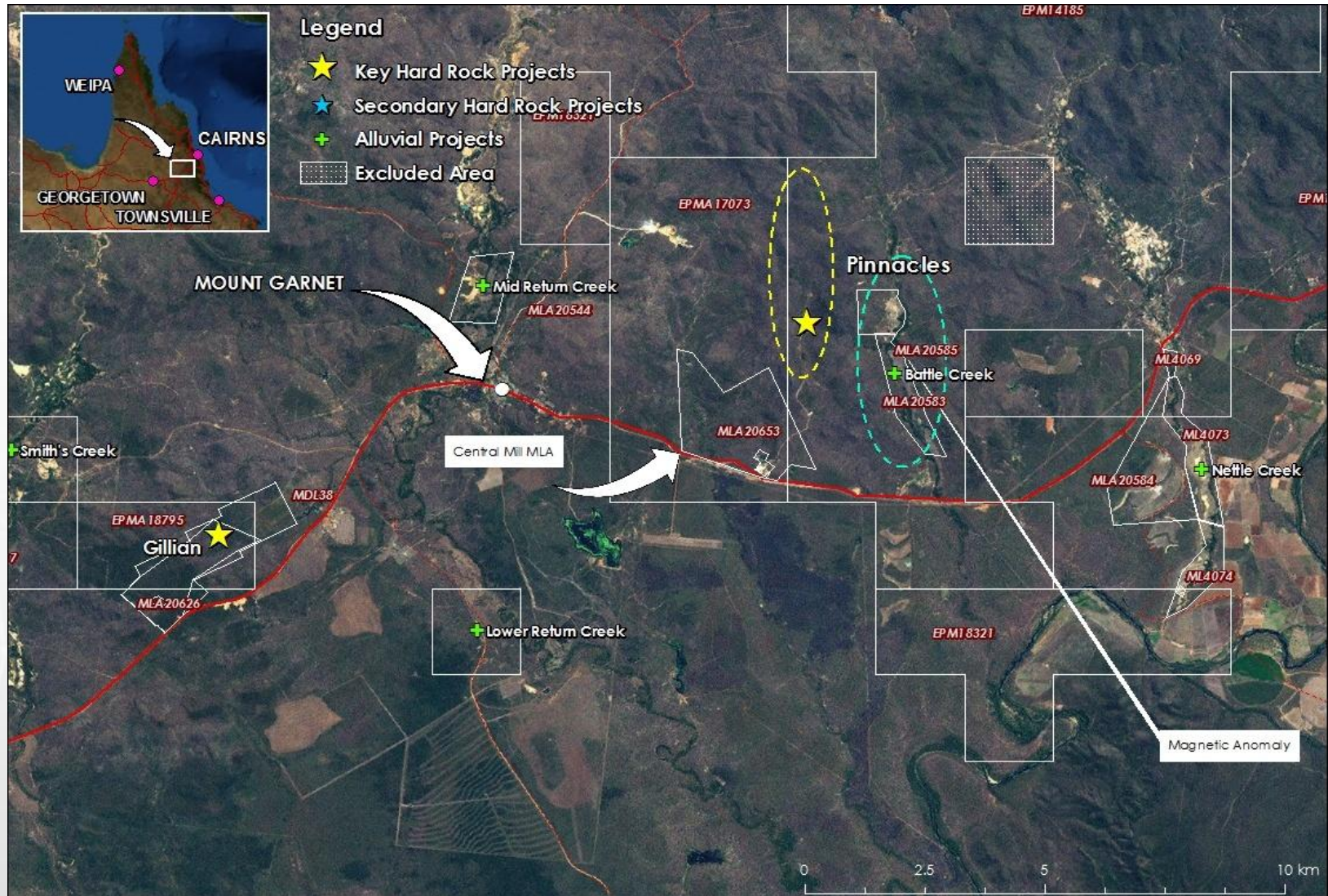
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# Project Location

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Mt Garnet proposed Central Mill location:



# Company Highlights



- Major Herberton Tin Field presence, holding large historic mineralisation areas
- Plan to develop several open pit mining operations producing around 5,000t tin metal in concentrate per annum
- Initial mine life 8-10 years at 1mtpa mill throughput
- Project well positioned relative to major road, rail & port infrastructure



# JORC Resource Table

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<b>TIN (Sn)</b>	Measured tonnes	Grade %	Indicated tonnes	Grade %	Inferred tonnes	Grade %	Total tonnes	Grade %
Gillian	1,203,000	0.82	824,100	0.73	974,100	0.77	<b>3,001,200</b>	<b>0.78</b>
Pinnacles - Wafer	-	-	218,200	0.49	1,133,100	0.39	<b>1,351,300</b>	<b>0.41</b>
Pinnacles - Sniska	-	-	-	-	306,900	0.32	<b>306,900</b>	<b>0.32</b>
Pinnacles - Hartog	-	-	-	-	212,700	0.51	<b>212,700</b>	<b>0.51</b>
Deadmans Gully	-	-	401,500	0.49	-	-	<b>401,500</b>	<b>0.49</b>
Windermere	-	-	-	-	2,103,000	0.55	<b>2,103,000</b>	<b>0.55</b>
<b>TOTAL</b>	<b>1,203,000</b>	<b>0.82</b>	<b>1,443,800</b>	<b>0.63</b>	<b>4,729,800</b>	<b>0.54</b>	<b>7,376,600</b>	<b>0.60</b>

<b>IRON (Fe)</b>	Measured tonnes	Grade %	Indicated tonnes	Grade %	Inferred tonnes	Grade %	Total tonnes	Grade %
Gillian	1,203,000	31.35	824,100	29.75	974,100	27.67	<b>3,001,200</b>	<b>29.72</b>
Pinnacles - Wafer	-	-	218,200	20.21	1,133,100	27.88	<b>1,351,300</b>	<b>16.87</b>
Pinnacles - Sniska	-	-	-	-	306,900	22.90	<b>306,900</b>	<b>22.90</b>
Pinnacles - Hartog	-	-	-	-	212,700	13.75	<b>212,700</b>	<b>13.75</b>
Deadmans Gully	-	-	401,500	34.89	-	-	<b>401,500</b>	<b>34.89</b>
<b>TOTAL</b>	<b>1,203,000</b>	<b>31.35</b>	<b>1,443,800</b>	<b>29.73</b>	<b>2,626,800</b>	<b>26.08</b>	<b>5,273,600</b>	<b>25.78</b>

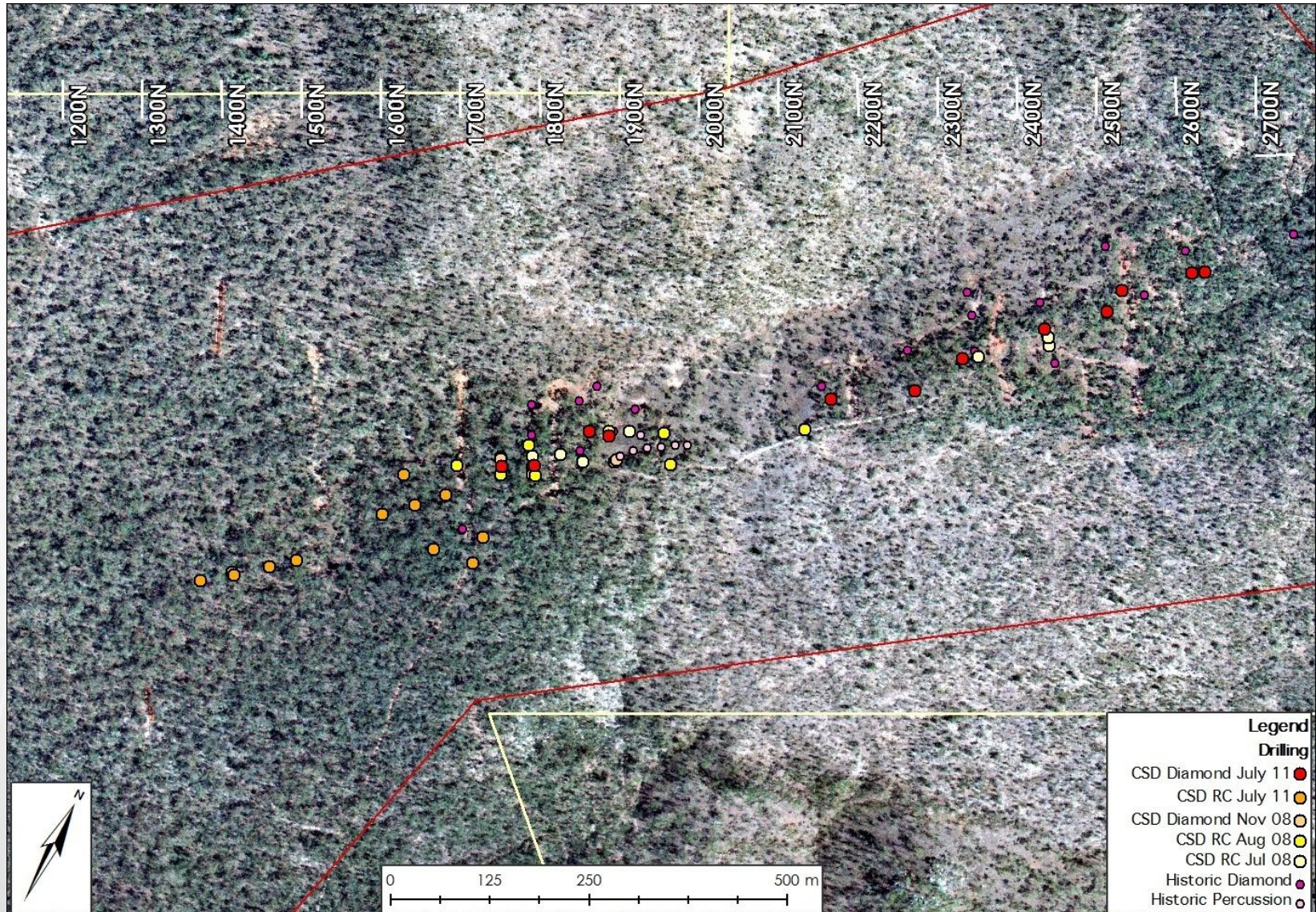
<b>FLUORINE (F)</b>	Measured tonnes	Grade%	Indicated tonnes	Grade %	Inferred tonnes	Grade %	Total tonnes	Grade %
Pinnacles - Wafer	-	-	-	-	348,300	18.54	<b>348,300</b>	<b>18.54</b>
Pinnacles - Sniska	-	-	-	-	306,900	12.00	<b>306,900</b>	<b>12.00</b>
Pinnacles - Hartog	-	-	-	-	212,700	15.50	<b>212,700</b>	<b>15.50</b>
Pinnacles - Llahsram	-	-	-	-	91,700	13.00	<b>91,700</b>	<b>13.00</b>
<b>TOTAL</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>959,600</b>	<b>15.25</b>	<b>959,600</b>	<b>15.25</b>



# Gillian Project

Current Measured JORC Resource 3mt @ 0.78% Sn

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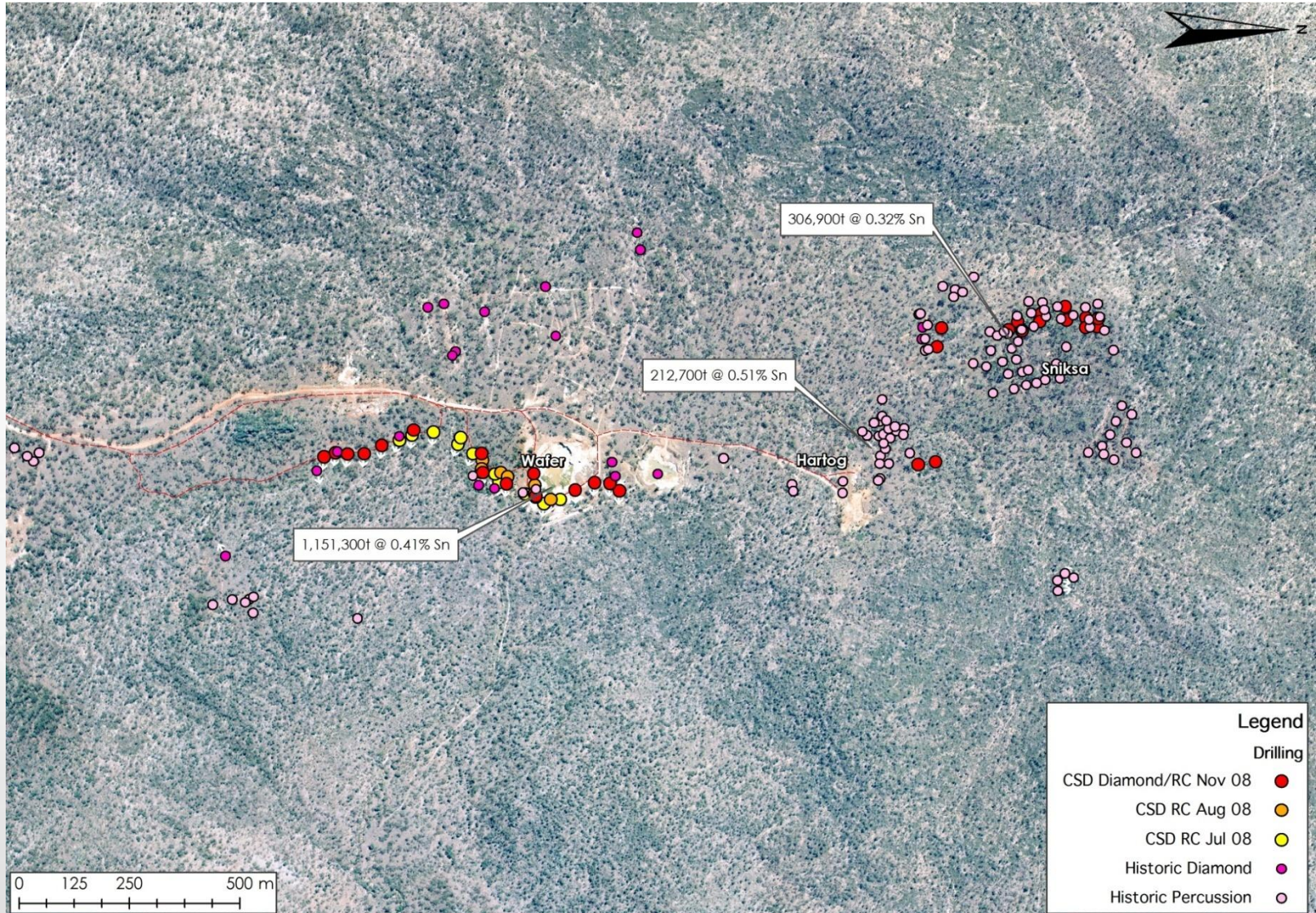




# Pinnacles Project

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Current JORC Resource 1.87MT @ .41% Sn

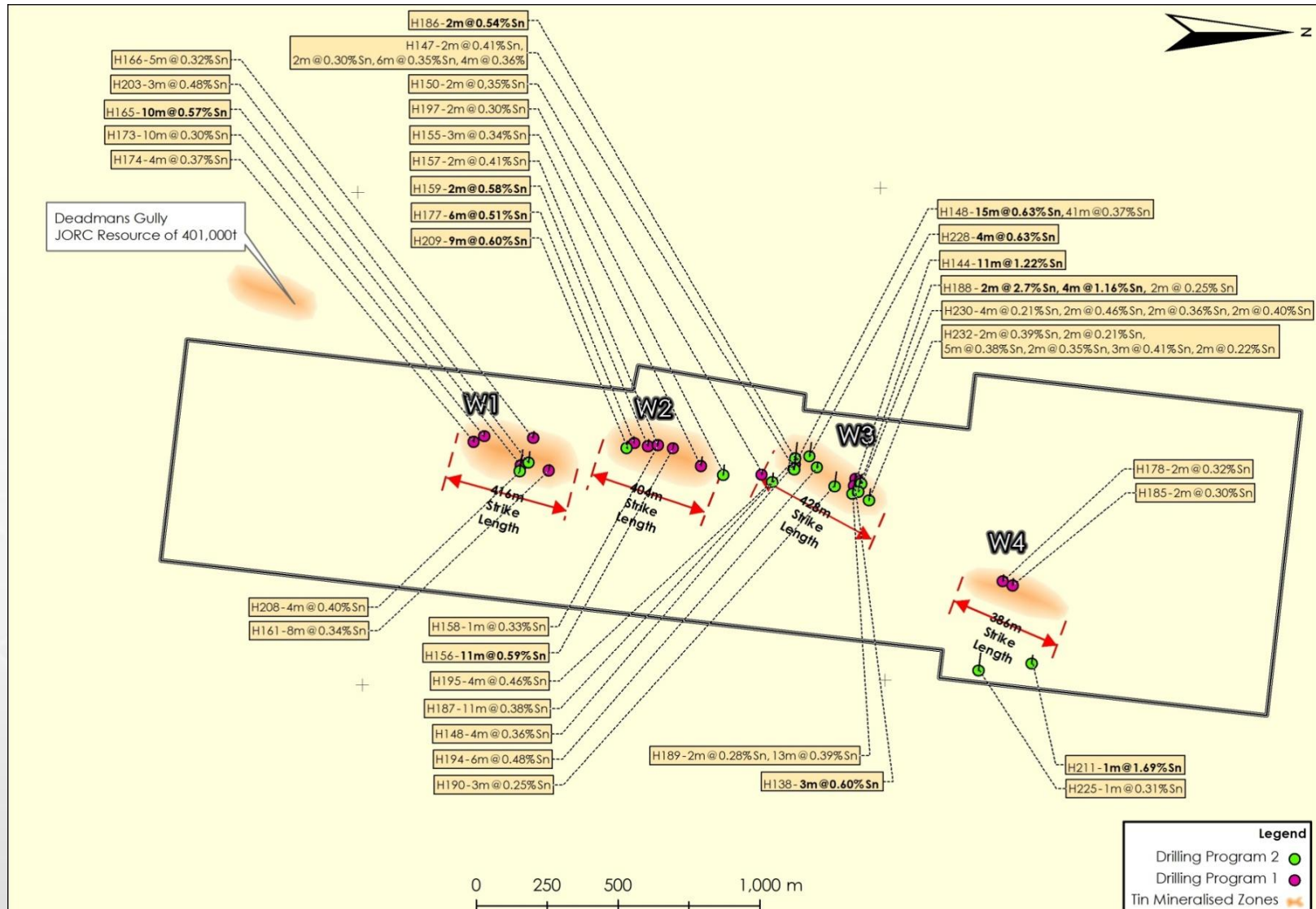




# Windermere Project

Current JORC Resource 2.5MT @ .5% SN

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# Preliminary Scoping Study

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Scoping Study snapshot (refer to ASX release 6<sup>th</sup> July 2010):

## **BASIS:**

- 700,000 tpa of tin ore @ 0.6 % Sn with tin recovery of 68%
- 7.5 yr mine life producing 3,049tpa tin metal in concentrate
- Credit of 236,600tpa of magnetite concentrate grading >65% iron
- Based on conservative tin price \$18,000/t
- Gross revenue of \$500m over initial 7.5yr mine life

## **RESULTS:**

- Tin Production Cost \$11,250/t
- NET CASH FLOW \$245m (at tin price \$18,000/t )\*

## **UPSIDE:**

- Current tin price ~ \$22,000 (LME US\$21,245 @ 06/10/11)
- Resource now 7.4mt
- Further Resource & mine life increase from drilling

\*Net cash flows are pre tax & do not include capital costs for construction of treatment plant & mine site infrastructure

# Summary



- Construction cost estimated \$150 million
- Annual gross income about \$130 million to \$150 million depending on tin price
- Annual production 4,000-5,000t tin & approx 300,000t iron ore
- Tin containerised: approx 400t monthly
- Magnetite 50,000t shipped approx 6 times pa
- Production commencement late 2013

# Mt Garnet Road Transport Routes

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# Contact Details

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*The information contained in this report that relates to assay results of rock samples & drill chips, to mineral resource estimates & to ore reserve estimates of mineralisation has been compiled by John Sainsbury (BSc, AusIMM). John Sainsbury is a geologist of 30 years experience & has sufficient experience in the type of mineralisation under consideration to qualify as a Competent Person as defined by the Australasian Code for Reporting of Exploration Results, Mineral Resources & Ore Reserves - JORC Code, 2004 Edition. John Sainsbury is an executive director of Consolidated Tin Mines Limited. John Sainsbury has consented to the inclusion of this information in the form & context in which it appears.*