



**Investor Presentation**  
**Mines & Money, London**  
**1 December 2014**  
**Russell Clark, Managing Director**



**Wolf Minerals**  
ASX:WLF|AIM:WLFE  
Level 3, 22 Railway Road,  
Subiaco,  
Western Australia 6008  
P: +61 8 6364 3776  
[www.wolfminerals.com.au](http://www.wolfminerals.com.au)

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# Wolf Minerals Limited

Focused on delivering returns to shareholders



- Wolf will specialize in **Tungsten** and other strategic metals
- Wolf exists to deliver **superior returns to shareholders**
- Wolf is currently developing a **world class tungsten mine** in the UK
- Wolf is actively reviewing organic and step out **growth opportunities**





# Hemerdon Project

A world-class, UK tungsten and tin mine under construction



- **On schedule, on budget** – 1<sup>st</sup> production 2015
- **Fully permitted**
- **Fully financed** through to positive cash flow
- UK operations **team established**
- Operational and reserve extension **upside**



# Tungsten Metal

Critical to industrial, mining and agriculture – no substitutes



- Uses** Chemical symbol (W) - used to make hard metals (cemented carbides), steel alloys & mill products
- Unique** Properties (melting point/hardness/tensile strength) make it critical to industry, mining & agriculture and limits substitutability
- Strategic** Resource concentration in China & importance to global growth has led to strategic metal classification in US, EU & China
- Price** Quoted in metric tonne units “mtu” (1 mtu = 10kg)
- Market** Ammonium Para Tungstate (APT) most traded form
- Current price US\$330/mtu = US\$33,000/t
  - Concentrates priced at discount to APT



<sup>1</sup> Source: Metal Pages spot EU APT price as at 27 November 2014

# The Tungsten Market

## Structural supply deficit – higher prices



### Supply

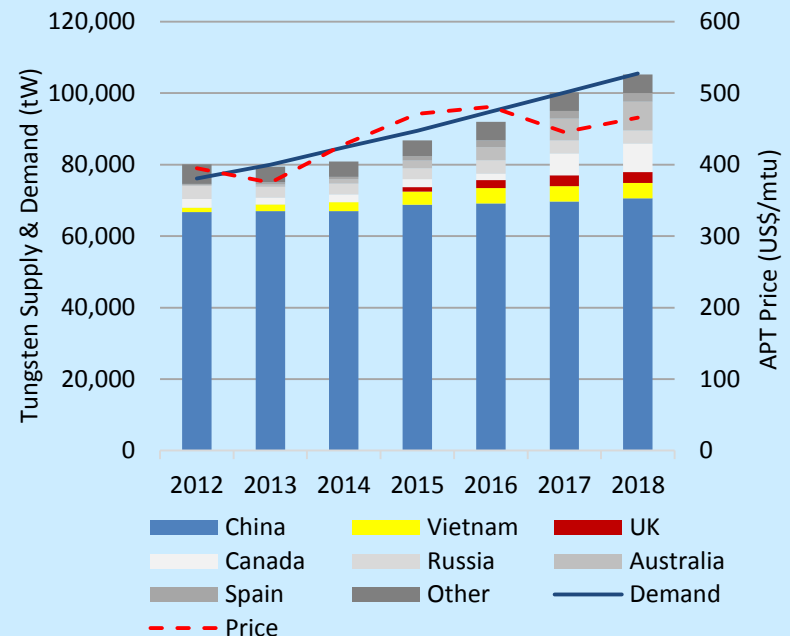
- Tungsten production dominated by China
  - Chinese restrictions on production and export of concentrates
  - Declining grades from existing Chinese producers
  - China holds 60% of known tungsten reserves (USGS) and accounts for +60% of demand and +80% of supply
  - China net importer of concentrates in 2013, and continues to import
- Existing stockpiles close to depletion and producers don't have capacity to increase production
- Most significant tungsten projects are at least 18 months to 2 years away from commercial production

### Demand

- Forecast demand growth of 4.0 – 5.5% pa to 2018
- New capacity required to meet global demand
- Hemerdon Project will produce about 3.5% of forecast world demand in 2016

### Supply Risk

- In the **past 5 years only one** major tungsten project has been developed (Nui Phao in Vietnam).
- The supply **forecast** below **includes** the successful development and commissioning of **14 tungsten projects by 2018** of which 9 are located in Australia and Canada.
- **Hemerdon (UK)** is the **only project in development**, the rest don't have development funding solutions in place and many have incomplete feasibility studies – **significant supply risk**
- Limited supply to push **tungsten prices above US\$450/mtu**



Data Source: Tungsten Market Research Ltd (January 2014)

APT Price: Probability weighted average of low, base and high forecasts; in \$Real 2012

# Executive Management Team



**Russell Clark**  
Executive Managing Director\*

Mining Engineer (RSM), 35 years of operating and development experience with Renison Goldfields, Normandy, Newmont, Grange Resources and Azimuth Resources. Previously MD and CEO of Grange Resources and Azimuth Resources. FAICD



**Richard Lucas**  
Chief Financial Officer and Company Secretary  
(Australia based)

Chartered Accountant. Previously a Director at PWC. Commercial Manager at Lihir Gold and CFO of the Geotech Group.



**Rupert McCracken**  
Project Manager  
(UK based)

Mechanical Engineer with over 25 years of global experience in the development, construction and commissioning of mineral processing projects. Previously an engineer with Bechtel, Transfield & Minproc Engineers, and a project manager for Comet Resources, Ticor South Africa, BHP Billiton and Resolute Mining.



**Jeff Harrison**  
Operations Manager  
(UK based)

Mining Engineer (Nottingham, RSM) with over 35 years of global mining and mineral processing experience. Has been a senior manager for Imerys, the china clay operator in Devon and Cornwall and is well known to the local Plymouth community. He is a Chartered Engineer, a Fellow of the AusIMM and a member of the Institute of Quarrying.



**Andy Bond**  
Mine Manager  
(UK based)

Geologist/Mining Engineer (Camborne) with over 29 years of mining industry experience in Devon and Cornwall.



**Charlie Northfield**  
Process Manager  
(UK based)

Metallurgist (Camborne) with over 30 years of experience including managing process plants recovering tungsten and tin in Thailand and Zimbabwe.

\* Denotes Board member, full list of Board in Appendix



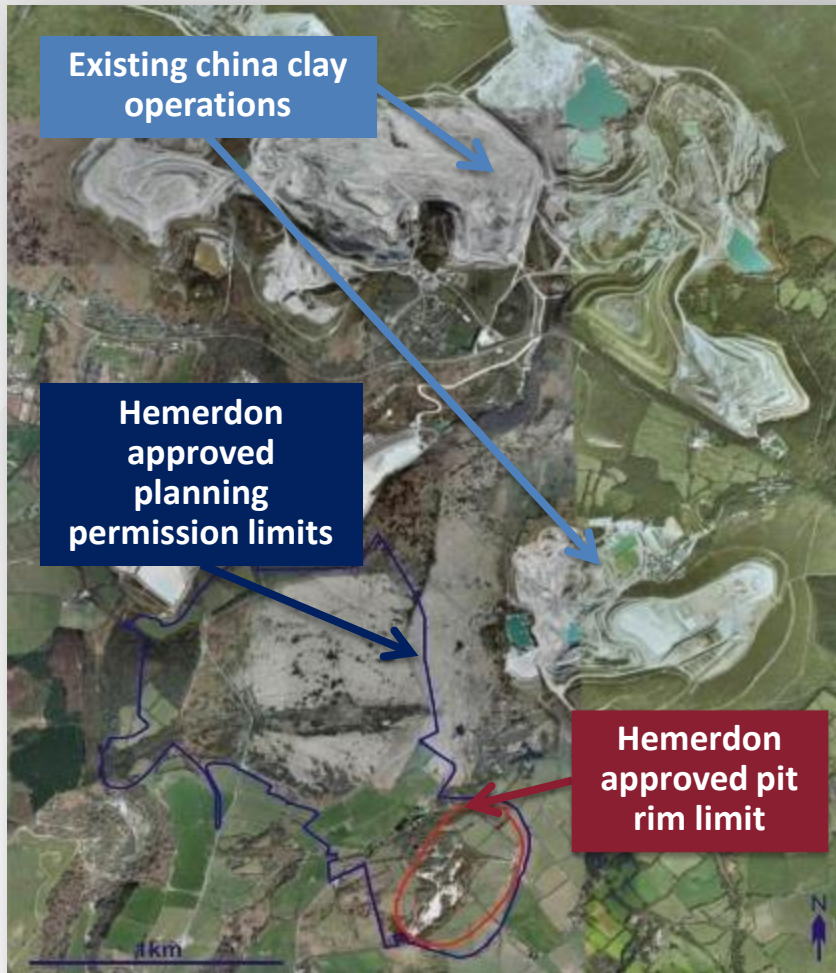
# The Project





# Hemerdon Project

Access to world-class infrastructure in a mining friendly area



- 40 year lease term
  - 2% NSR royalty to landowners who own all metal mineral rights
- Plymouth 10 kilometres away
  - Excellent transport links
  - 250,000 population
  - Power & water infrastructure
- China clay mines adjacent
- Project will generate approximately 300 direct and indirect jobs during the operational phase
- £10 – 13 million per annum in salaries and wages during the operational phase

# Hemerdon Mineral Resources and Ore Reserves<sup>4</sup>



**27Mt reserves depleted during mine life,  
117Mt in M&I resources offers significant upside potential**

MINERAL RESOURCES <sup>1,2,3</sup>	TONNAGE (Mt)	WO <sub>3</sub> GRADE (%)	Sn GRADE (%)
Measured	76.8	0.15	0.02
Indicated	40.3	0.13	0.02
Subtotal: Measured and Indicated	117.1	0.14	0.02
Inferred	284.2	0.13	0.02
<b>Total: Measured, Indicated &amp; Inferred</b>	<b>401.4</b>	<b>0.13</b>	<b>0.02</b>

ORE RESERVES	TONNAGE (Mt)	WO <sub>3</sub> GRADE (%)	Sn GRADE (%)
Proven	23.5	0.19	0.03
Probable	3.2	0.19	0.03
<b>Total: Proven &amp; Probable</b>	<b>26.7</b>	<b>0.19</b>	<b>0.03</b>

**Notes:**

1. Mineral Resources are inclusive of Ore Reserves.

2. Mineral Resources reported at a cut-off grade of 0.063% WO<sub>3</sub>.

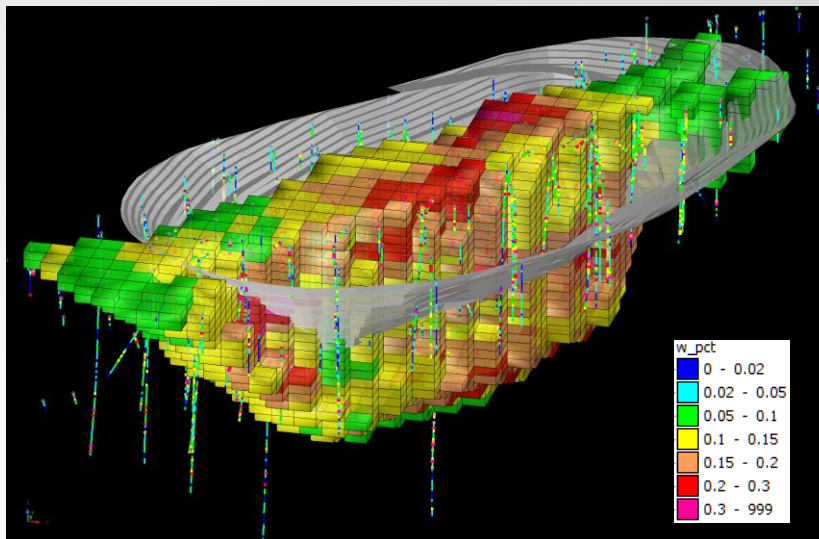
3. Refer to the Competent Person's Statement at the end of this presentation.

4. Mineral Resources and Ore Reserves per DFS announcement 23 May 2011

# Mine Design

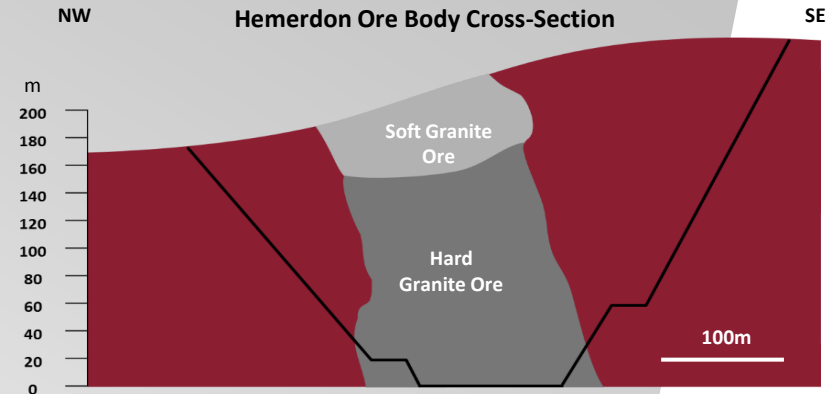
Open pit mine, low strip ratio, extension potential

- Open pit mining, 10 year mine life<sup>1</sup>
- Pit 800m long x 400m wide x 200m deep
- Low life of mine strip ratio 1.5:1
- 3Mt of ore mined per annum
- Open at depth and along strike



\* In pit reserve and additional resources within 100m of design pit

<sup>1</sup> Assumes extension of current planning permissions beyond 2021

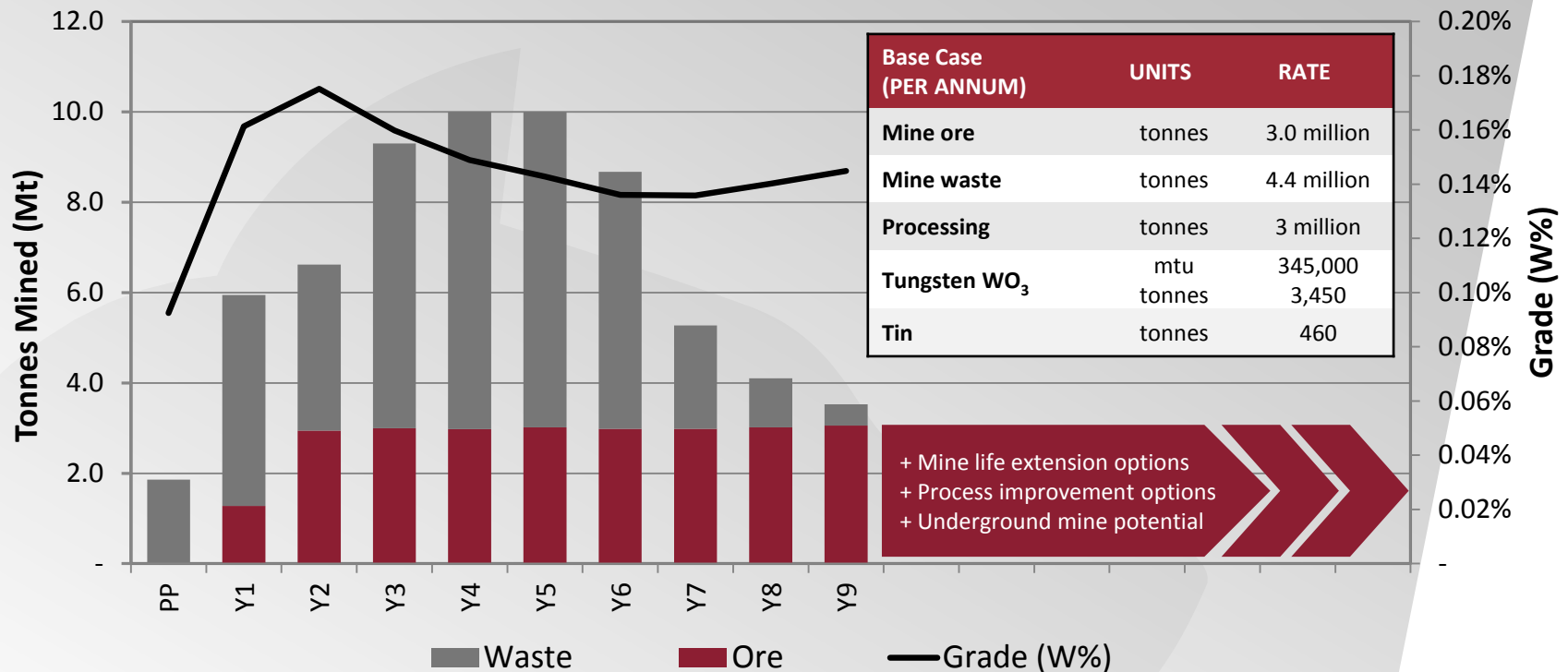


- Drilling indicates mineralisation is open at depth to +400m below surface, ~200m below final pit bottom
- New drill holes planned to test depth extension



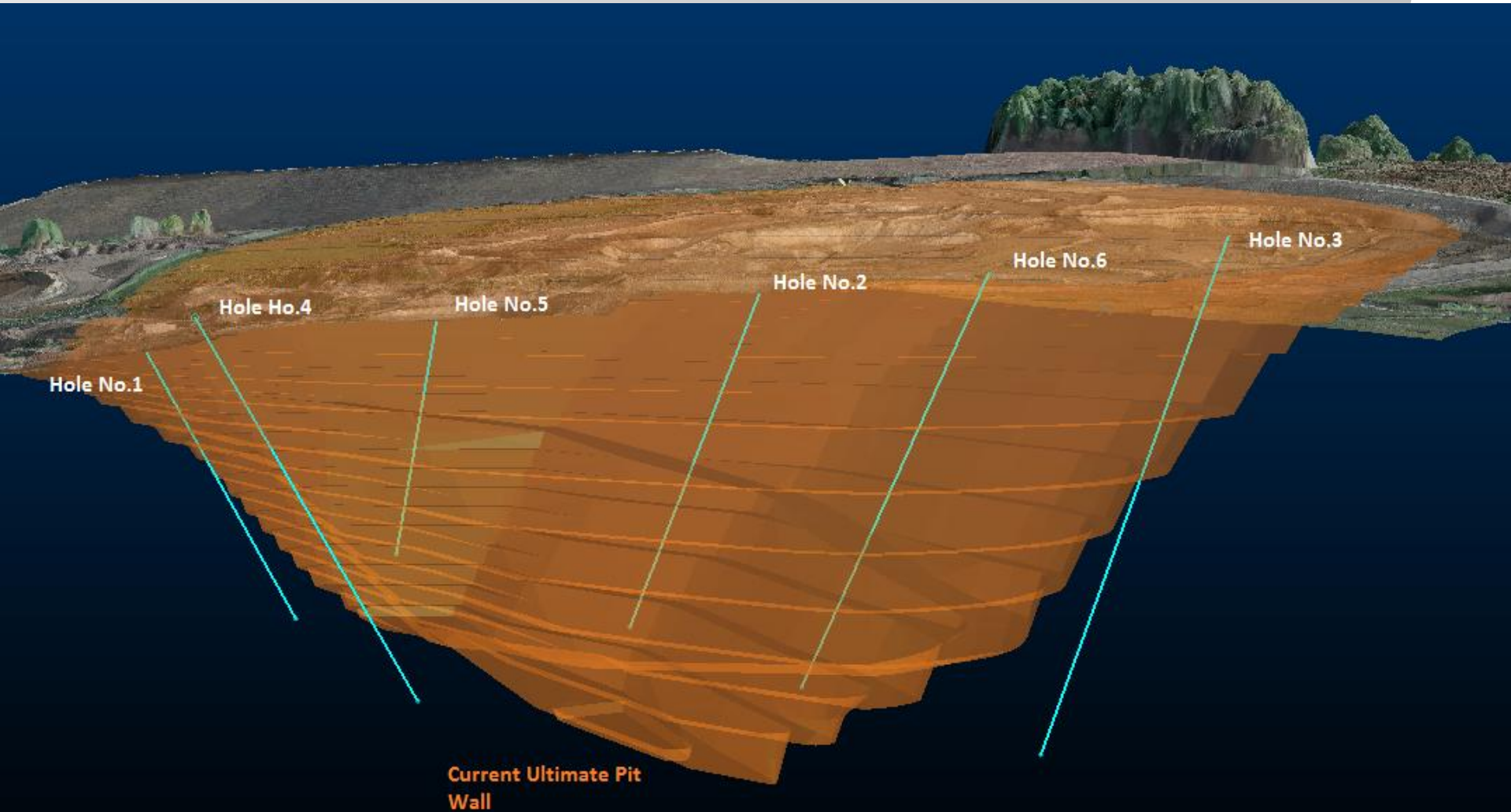
# Production

Base case mine plan with multiple expansion opportunities



- Annual production 345,000mtu WO<sub>3</sub> and 460t Sn (life of mine averages)
- Assumes extension of planning permissions beyond 2021
- Opportunities to materially extend the mine life & increase production being assessed

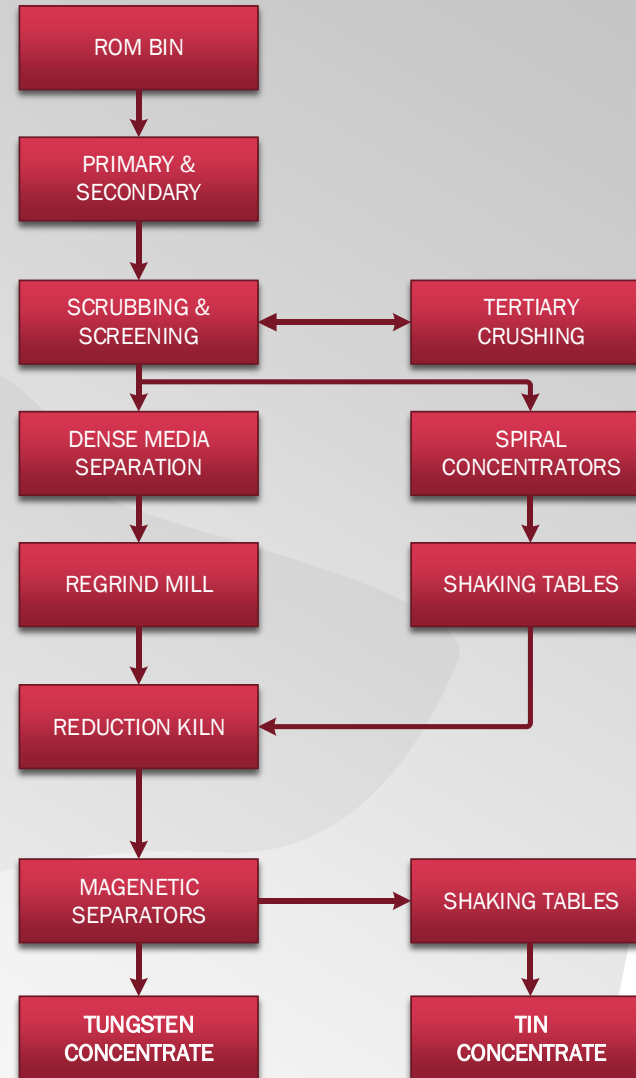
# Geotechnical program nearing completion



# Processing

## Simple gravity circuit using proven technology

- Proven technology
- Gravity circuit using DMS, tables, spirals
- Initial fines removal and DMS upgrades headgrade from 0.19%  $\text{WO}_3$  to ~1%  $\text{WO}_3$
- Throughput of 3 Mtpa
  - Tungsten recovery ~66%
- Production:
  - ~3,450 tpa  $\text{WO}_3$  in concentrate
  - ~460 tpa tin in concentrate
- Product shipped by container ~100 tonnes per week





# Production Profile (Steady State)

First production forecast for third quarter 2015



	UNITS	RATE (PER ANNUM)
Mine production ore	tonnes	3 million
Mine production waste	tonnes	4.4 million
Processing	tonnes	3 million
Tungsten WO <sub>3</sub> Production	mtu	345,000
	tonnes	3,450
Tin Production	tonnes	460

# Opportunities

Feasibility study provides practical base case with significant potential to improve



## Mine Life

- Additional mine life potential through:
  - Steepening walls, mining deeper
  - Known extensions to the south } *Potential for 3-4 years additional mine life*
  - Ore body is open at depth - underground potential
  - Wolf has commenced application for the necessary permits to expand

## Processing

- Increased production through:
  - Improved  $\text{WO}_3$  recoveries – currently 66%
  - Greater plant availability – currently at ~70% of non-stop operation
  - Sale of aggregate

## Financial

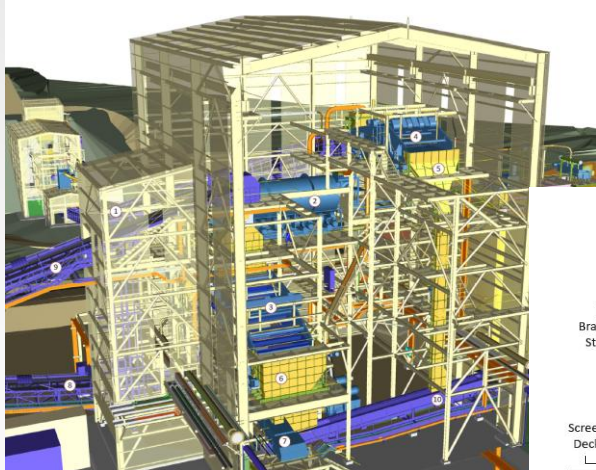
- Significant leverage if APT prices higher than forecast
- Processing upside opportunities may result in increased production with no additional Capex

# EPC contract to GR Engineering

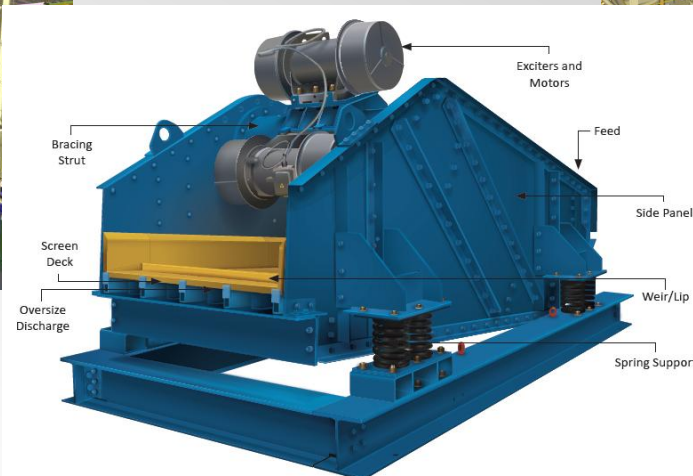
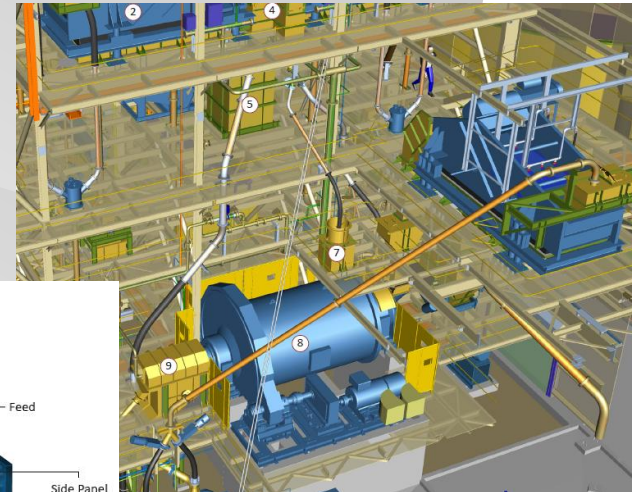
Fixed term, fixed price EPC with globally experienced firm



- £75 million Engineering Procurement & Construction (EPC) contract
- Globally experienced firm in EPC project execution
- Solid reputation for on time, on budget delivery
- Commissioning and performance guarantees included
- Completion scheduled for 3<sup>rd</sup> quarter 2015



**Hemerdon processing facility  
GR Engineering  
Interactive 3D Design Model**





# Community & Social Responsibility



# Strategic Off-taker Support

Fixed term, fixed volume, floating price



- 80% of tungsten concentrate off-take with GTP & Wolfram Bergbau und Hutten
- Five year delivery schedule
- Partial guarantee for senior debt, along with German Government under UFK scheme
- Tin marketing agreement with Traxys



Global Tungsten & Powders (Plansee)



Wolfram Bergbau und Hutten (Sandvik)

# Production forecast for Q3 2015



## FULLY FUNDED, FULLY PERMITTED, ADVANCED CONSTRUCTION\*

- ✓ Demolition of pre-existing plant complete
- ✓ Haulroad complete
- ✓ Topsoil removal complete
- ✓ Concrete complete
- ✓ Equipment delivery 98% complete
- ✓ Structural steel erection 25% complete
- ✓ Mine Waste Facility 44% complete
- ✓ 70% of HV power installed

\* As at end of November 2014 (from internal reporting)

### Hemerdon Project Timeline

	Q1 2014	Q2 2014	Q3 2014	Q4 2014	H1 2015	H2 2015
Design	■	■				
Earthworks	■	■	■			
Construction		■	■	■	■	
Pre-strip			■	■		
Commissioning					■	■
Commercial production						■
Offtake						■

# Low cost producer, excellent margins

Funded through construction and into positive cash flow



<b>COST (AISC)</b>	<b>US\$/mtu</b>
<b>Mining cost</b>	64
<b>Processing cost</b>	53
<b>Site administration cost</b>	12
<b>Tin Credits <sup>1</sup></b>	(20)
<b>Royalties</b>	15
<b>Rehabilitation</b>	4
<b>All In Sustaining Costs ("AISC") <sup>3</sup></b>	<b>128</b>
<b>Add: Debt service costs</b>	42
<b>AISC + Debt Service</b>	<b>170</b>

- Project fully funded through to earnings
- Capital cost £123M <sup>2</sup>
- £75 million of senior debt including £5 million project bond facility, 5.5 year repayment term
- Drawdown commenced in September 2014
- Fixed price/term EPC contract
- 60% complete, 1<sup>st</sup> production 3<sup>rd</sup> quarter 2015
- Strong earnings potential at current spot price
- Forecast APT price higher than spot points to enhanced earnings potential in production

1. Based on spot tin price US\$20,000/t

2. See ASX Release 19 March 2014 for detailed breakdown

3. AISC: On site mining, waste stripping & processing costs + site general and administration costs + royalties + community and permitting costs + 3<sup>rd</sup> party refining and transport costs + by-product credits + corporate costs + rehabilitation costs + exploration costs and sustaining capital costs



# Live photos and streaming video @

<http://www.wolfminerals.com.au/hemerdon-tungsten-and-tin-project/live-stream>



18th November 2014 14:15:00



1

2

View All

Latest

Timeline of live photos:

- 14:00:00
- 14:00:00
- 14:15:00
- 14:30:00
- 14:45:00
- 15:00:00
- 15:15:00

Nov 18 2014

MON	TUE	WED	THU	FRI	SAT	SUN
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

0% 50% 100%

Reset Zoom

Time Lapse video



# Summary

## Hemerdon Project



- First new metal mine in England for over 40 years
- Experienced management team
- Globally significant deposit of a strategic metal
- Fully permitted and funded to positive cash flows
  - Strong local and regional support for project
  - Strong strategic and institutional shareholder base
- Construction well underway – production forecast for Q3 2015
- Tungsten offtake agreements with two of world's largest end-users
- Significant potential to increase production and mine life
- Tungsten price forecast to rise



# Appendix





# Experienced Board



**John Hopkins**  
Non Executive  
Chairman  
(Australia based)

Experienced professional company director and chairman, legal background.



**Russell Clark**  
Executive Managing  
Director

Mining Engineer (RSM), 35 years of operating and development experience with Renison Goldfields, Normandy, Newmont, Grange Resources and Azimuth Resources.



**Ronnie Beevor**  
Non Executive  
Director  
(Australia based)

Chartered accountant with 30 years experience in investment banking. Experienced company director and chairman.



**Nick Clarke**  
Non Executive  
Director  
(UK based)

Mining Engineer (CSM) with over 40 years of mining experience in production, consulting and corporate activity. Currently CEO of Central Asia Metals Plc (AIM)



**Chris Corbett**  
Non Executive  
Director  
(Australia based)

Engineer (Mechanical & Mining) with extensive experience in mining, corporate business development and investment management. Currently a Principal with Resource Capital Funds.



**Don Newport**  
Non Executive  
Director  
(UK based)

Banker with over 35 years experience, 25 years spent in the mining and resource sector. Previously head of Standard Bank's Global Mining Finance Business and previously led the Barclays Capital Mining Sector Team.



**Michael Wolley**  
Non Executive  
Director  
(Australia based)

Engineer (Chemical), Vice President, Minerals and Coal for Todd Corporation. Extensive engineering and operating experience with Mobil Oil.

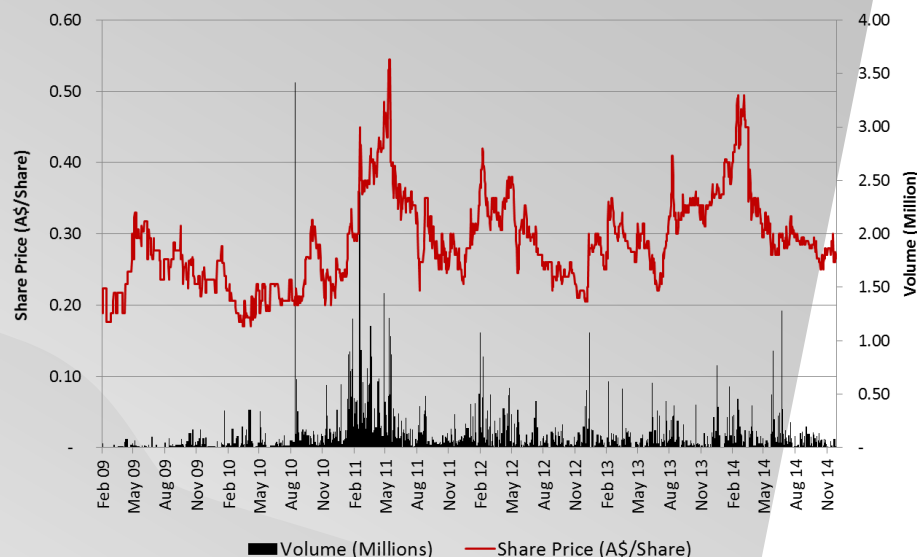


# Corporate Snapshot



## WOLF MINERALS<sup>1</sup>

<b>Stock Codes</b>	ASX:WLF	AIM:WLFE
<b>Share Price</b>	ASX: A\$0.265 <sup>1</sup>	AIM: £0.1475 <sup>1</sup>
<b>Issued shares</b>	807.8 Million	
<b>Options</b>	7.1 Million	
<b>Market Cap</b>	~A\$214.1M	~£119.2M
<b>Key Personnel</b>	Managing Director – Russell Clark Chairman – John Hopkins CFO – Richard Lucas	



## SUBSTANTIAL SHAREHOLDERS

	Holding	Background
Resource Capital Fund V	41.6%	Mining focused private equity firm.
TTI (NZ) Limited	32.2%	Wholly owned subsidiary of Todd Corporation Limited, a major private NZ based company with a diversified portfolio of business interests.
Traxys Projects LP	6.9%	Global leader in financing, marketing, distribution and financial services for the mining, metals and minerals industries.

Notes:

<sup>1</sup> As at 27<sup>th</sup> November 2014.

# Peer Comparison

Wolf is the only major tungsten listed company with a funding solution in place and construction underway



Company	Current Market Cap (A\$m) <sup>1</sup>	JORC Reserves	Planned Processing Capacity	Target Production (WO <sub>3</sub> tpa)	Indicative C1 cost (A\$/mtu) <sup>2</sup>	Estimated Capex (A\$m) <sup>2</sup>	Funding Solution
<b>Wolf Minerals</b>	<b>226.2</b>	<b>26.7Mt @ 0.19% WO<sub>3</sub> for 50,730t</b>	<b>3.0Mtpa</b>	<b>3,450</b>	<b>121</b>	<b>228</b>	<b>Yes</b>
King Island Scheelite	23.6	5.2Mt @ 0.70% WO <sub>3</sub> for 36,310t	0.35Mtpa	3,500	188	133	No
Ormonde Mining	36.0	8.7Mt @ 0.30% WO <sub>3</sub> for 26,070t	1.1Mtpa	2,270	147	72	No (advanced negotiations)
Woulfe Mining	14.2	13.3Mt @ 0.425% WO <sub>3</sub> for 56,520t	1.2Mtpa	4,350	189	168	No (agreed terms, not finalised)
Vital Metals	8.1	21.3Mt @ 0.15% WO <sub>3</sub> for 31,413t	3.0Mtpa	3,000	n.a.	n.a.	No
Carbine Tungsten	34.9	59.3Mt @ 0.116% WO <sub>3</sub> for 68,760t	3.0Mtpa	2,740	144	54	No
Tungsten Mining	23.4	n.a.	0.75Mtpa	1,480	186	47	No
Hazelwood Resources	29.2	24.4Mt @ 0.174% WO <sub>3</sub> for 42,479t	2.3Mtpa	2,000	n.a.	117	No
Venture Minerals	11.5	14Mt @ 0.10% WO <sub>3</sub> for 16,000t (+30,000t tin)	1.75Mtpa	1,450 (+2,500tpa tin)	NA (due to tin/fe credits)	198	No

Notes:

<sup>1</sup> As at 18-November-14.

<sup>2</sup> Assumed exchange rates of AUD/USD 0.87, AUD/GBP 0.56, AUD/EUR 0.69, AUD/CAD 0.98  
Below the line indicates a DFS on the main tungsten project has not yet been completed.

Source: Company filings, Bloomberg.

## Clarification of production and capital cost forecast assumptions stated in this presentation

Wolf Minerals Limited (ASX: WLF, AIM: WLFE) (“Wolf” or “the Company”) wishes to clarify where production forecasts for its Hemerdon Tungsten and Tin project released in its presentations are sourced.

On 16th May 2011, Wolf Minerals issued an ASX announcement “Hemerdon Tungsten and Tin Project Definitive Feasibility Study Results” in which the Minerals Resources and Reserves were stated. In addition the mining method and associated assumptions, and the concentrator flow sheet, tin and tungsten recoveries and resultant annual production figures for tin and tungsten were also stated. These continue to form the basis of the production forecasts included in the company’s presentations.

Following the 16th May 2011 announcement, capital and operating costs and the project time line were re-assessed.

On 20th January 2014, Wolf Minerals issued an ASX announcement “Hemerdon Tungsten Project Pre-Construction Update” in which it updated DFS estimates of the project timetable, the capital costs of the project and the operating costs associated with the project. These continue to form the basis of the project capital expenditure forecasts and the project timeline that are included in the company’s presentations.

# Competent Persons Statement



The information in the report to which this statement is attached that relates to Exploration Results and Mineral Resources is based on information compiled by Phil Jankowski, who is a Member of the Australasian Institute of Mining and Metallurgy. Phil Jankowski is a full-time employee of SRK Consulting (Australasia) Pty Ltd ("SRK"), and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Phil Jankowski consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

The Ore Reserve estimate is based on work completed by Mr Quinton de Klerk, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr de Klerk is a full time employee of Cube Consulting and has sufficient experience which is relevant to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr de Klerk consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.





**Russell Clark - Managing Director**

[managingdirector@wolfminerals.com.au](mailto:managingdirector@wolfminerals.com.au)

Or

Tim Thompson / Adam Lloyd

+44 (0) 207 653 9850 / [Wolfminerals@newgatethreadneedle.com](mailto:Wolfminerals@newgatethreadneedle.com)

James Moses

+61 (0) 420 991 574 / [james@mandatecorporate.com.au](mailto:james@mandatecorporate.com.au)



**Wolf Minerals**

ASX:WLF|AIM:WLFE

Level 3, 22 Railway Road,

Subiaco,

Western Australia 6008

P: +61 8 6364 3776

[www.wolfminerals.com.au](http://www.wolfminerals.com.au)