



# Zenith Minerals Limited

ABN 96 119 397 938

Company Presentation  
August 2014  
‘Opportunity is knocking’



## Zenith Minerals Limited - Corporate

**ASX code: ZNC**

**Issued shares: 113.1 million**

**Market Cap: ~A\$12 million**

**Options: 1.1 million (unlisted)**

**Cash : ~A\$ 1.1 million**

### **Major shareholders:** **Aug '14**

**HSBC CUSTODY NOM AUST LTD 9.28%**

**GIRALIA (ATLAS IRON LTD) 9.07%**

**MIQUILINI S 5.69%**

**TILBROOK/GREY WILLOW 5.23%**

**MIKE JOYCE 4.78%**

**STAN MACDONALD 3.53%**

**YANDAL INV PL 2.88%**

### **Experienced Board (strong ex-Giralia group presence):**

**Mike Joyce (Chairman)** – geologist, substantial prior experience at Aberfoyle Resources Ltd (1980-98) then MD at Giralia Resources NL (1998-2011). Chairman of Gascoyne Resources Ltd.

**Mick Clifford (Managing Director)** – geologist, >25 years experience, Billiton Australia, Acacia Resources & AngloGold Ashanti. MD of PacMag Metals Ltd (2005 – 2010 takeover). After takeover co-founded private explorer S2M2 Coal Pty Ltd.

**Stan Macdonald (Non-Executive Director)** - industry veteran, founded numerous ASX listed companies including Giralia Resources NL, Director of Gascoyne Resources Ltd.

**Julian Goldsworthy (Non-Executive Director)** – geologist, currently GM Business Development at Gascoyne Resources Ltd. Substantial experience with Newcrest Mining and its predecessor Newmont Australia (1986-2007), then Exploration Manager at Giralia Resources NL (2007- 2011).



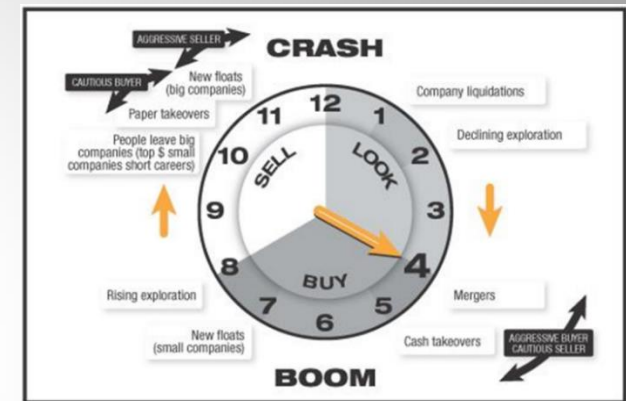
## Forward Strategy guided by experience

**Board has strong track record with Giralia Resources, which was the 5<sup>th</sup> best performed stock on ASX for the decade to 2010 (3476% total shareholder returns\*). Giralia acquired good projects at the bottom of the cycle (Dotcom period) and built shareholder value through good geology, deal making and corporate skills.**

*\*Source Bloomberg - before eventual 2011 takeover premium, also \$35M of in-specie distributions from spin offs*

**The time to acquire projects is when values are low and competition is scarce.**

**To run counter-cyclic requires tight, supportive register with realistic investment timeframe, and fiscal discipline – “run lean, move fast”.**



**Zenith has made a series of acquisitions since late 2013, bolt-ons and new projects;**

*23 July 2014 – New Acquisition - Earraheedy Manganese (RIO tenements)*

*7 July 2014 – Acquisition of advanced Qld Cu Zn Au Ag deposits (Develin Creek)*

*25 March 2014 – Completion of S2M2 Coal Pty Ltd Transaction*

*23 Dec 2013 – Acquisition by Zenith of high potential Turkish gold project (Kavaklitepe)*

*29 October 2013 – Zenith acquires key ground at Mount Alexander*

**Intention now is to drill high impact (discovery) holes into high quality new targets;**

- Initial trenching and drilling at Kavaklitepe in Turkey
- Drilling and target definition at Develin Creek in Queensland

**While using opportunity recognition skills to build land bank further....**



# Growing Quality Project Portfolio- transformation

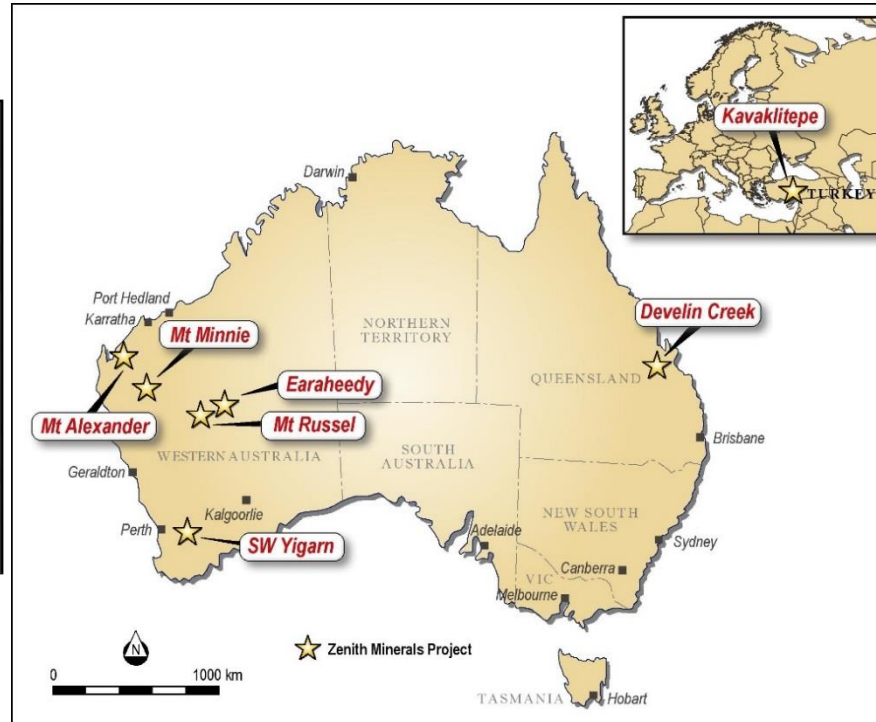
## Zenith 2013

### Mt Alexander – Iron

- 535 Mt @ 30.0% Fe (magnetite)
- Close to Coast
- Scoping Study Complete
- Conc grades av. 69.9%Fe

### Earaheedy – Manganese

- 130 km of target horizon
- Up to 3m @ 40%Mn in drilling
- New Mn field discovered
- ZNC consolidating whole belt



## Zenith 2014

### Kavaklitepe - Turkey

- 54m @ 3.33g/t Au (surface)
- >800m long soil anomaly, to 1 g/t
- Surface samples to 28.2g/t Au
- New discovery (never drilled)

### Develin Creek – QLD

- 3 massive sulphide deposits with JORC resources. 50km strike.
- Drilling outside resource; 13.2m @ 3.3% Cu, 4% Zn, 30g/t Ag

### Mt Minnie - WA

- 7 prospects, 50km strike
- Up to 64.2g/t Au & 21.5g/t Au
- No drilling to date

### Sungai Roi - Indonesia

- Coal asset - divesting

Mt Alexander Iron



Earaheedy Mn



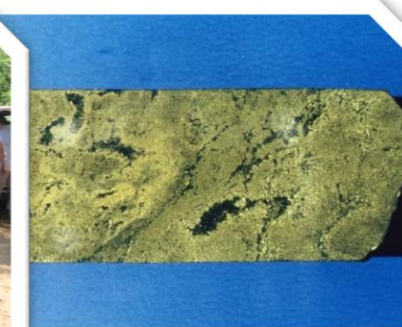
Sungai Roi Coal



Kavaklitepe Gold



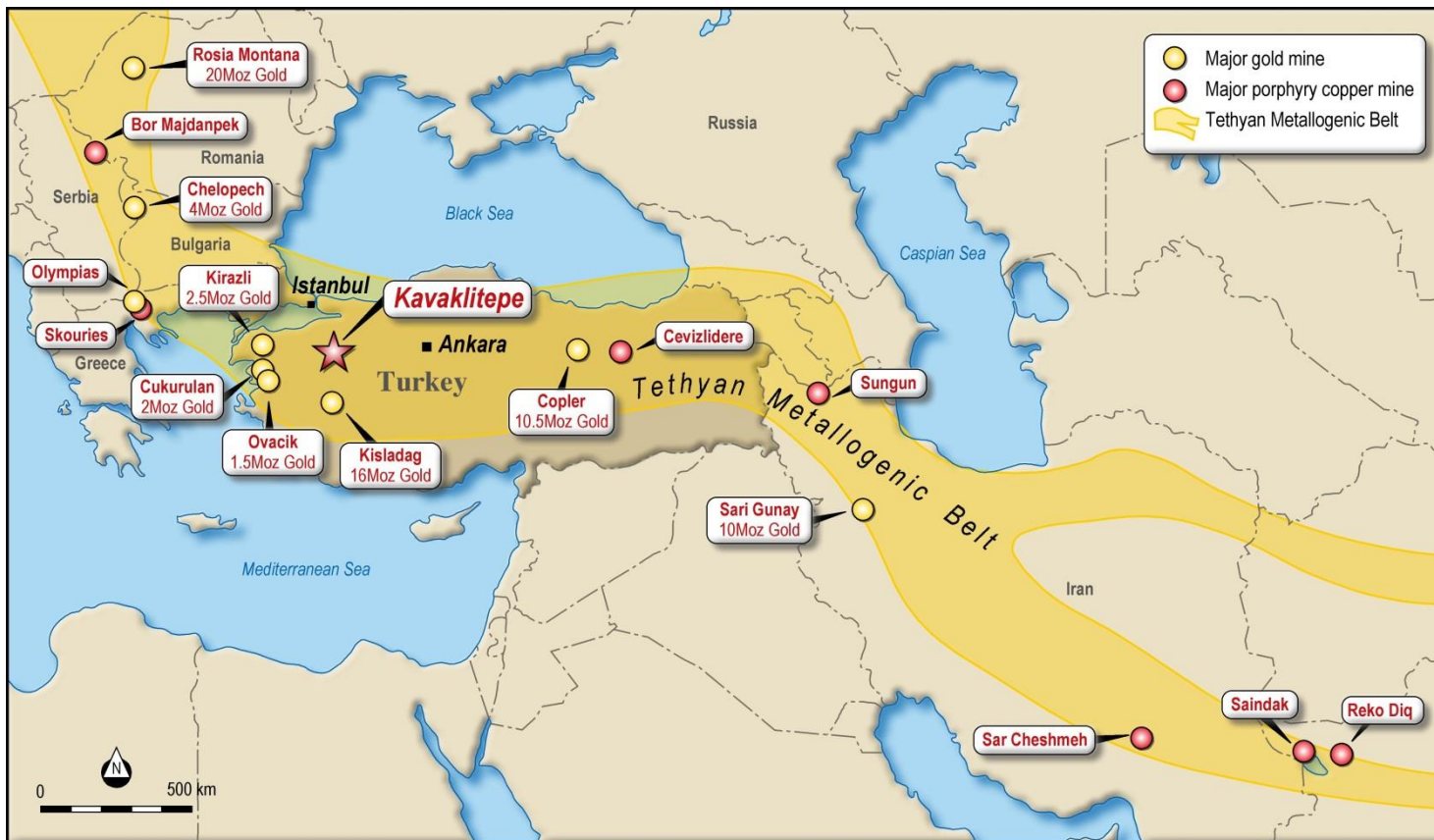
Develin Creek Copper-Zinc







# Kavaklitepe Gold - Turkey



## Kavaklitepe

**New gold discovery (2013) in Turkey.**

**Well defined high order gold anomaly outlined by soil, rock sampling.**

**New coincident IP geophysical anomaly.**

**Option-JV terms allow Zenith to earn up to 70% interest.**

**No previous drilling.**

**ZNC plans first ever sub surface test.**

**Tethyan Metallogenic Belt - highly endowed but under-explored**

**Turkey rated 8<sup>th</sup> out of 96 for Policy, Mineral Potential by Frazer Institute Mining Survey**

**Turkey is Europe's largest gold producer**



# Kavaklitepe Gold - Turkey

## Kavaklitepe – A Grassroots Discovery in 2013



Continuous rock sample  
(Kuzey zone)

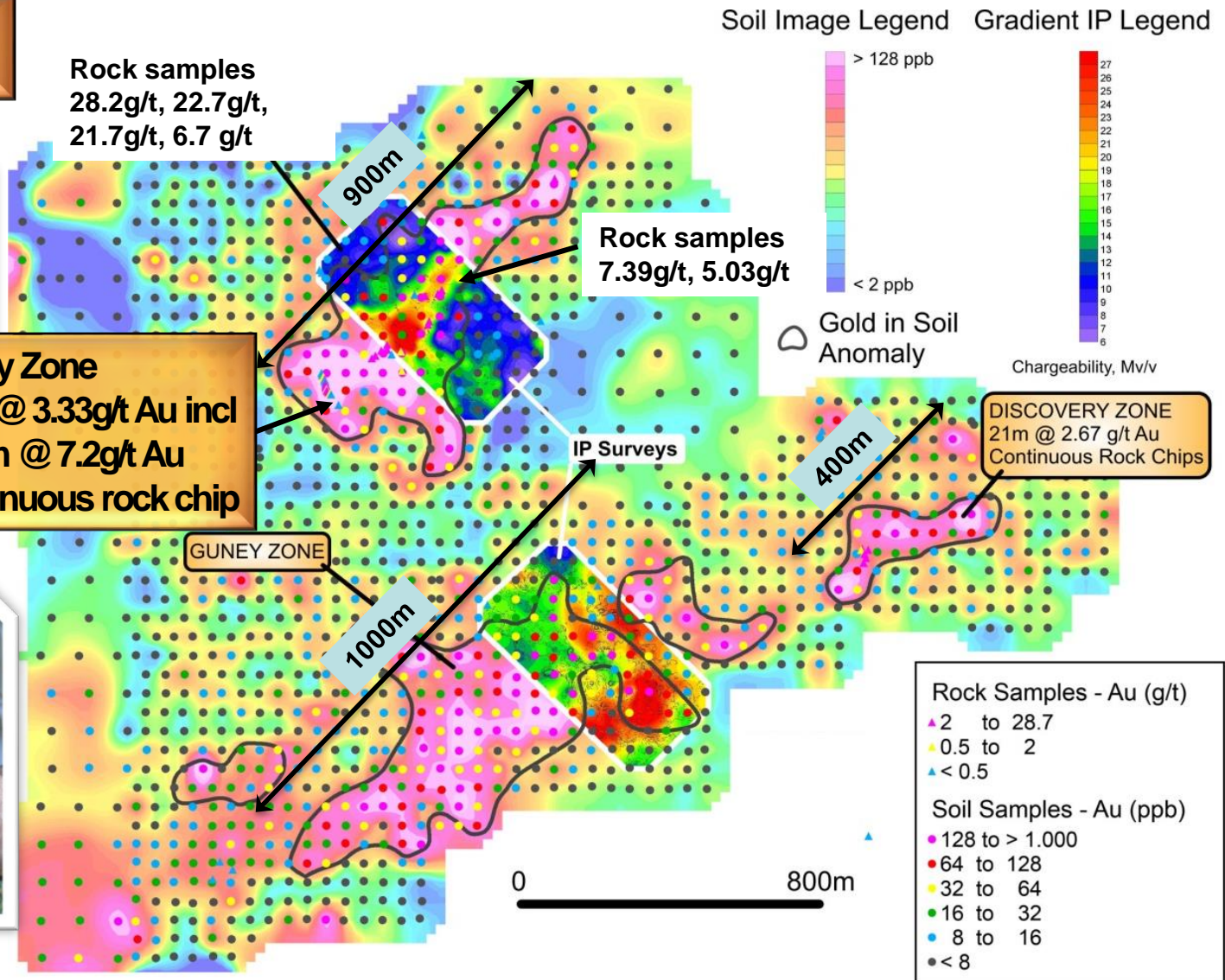


Silica clay mica alteration  
(Kuzey Zone)

**Kuzey Zone**  
54m @ 3.33g/t Au incl  
21.5m @ 7.2g/t Au  
Continuous rock chip

Rock samples  
28.2g/t, 22.7g/t,  
21.7g/t, 6.7 g/t

Rock samples  
7.39g/t, 5.03g/t

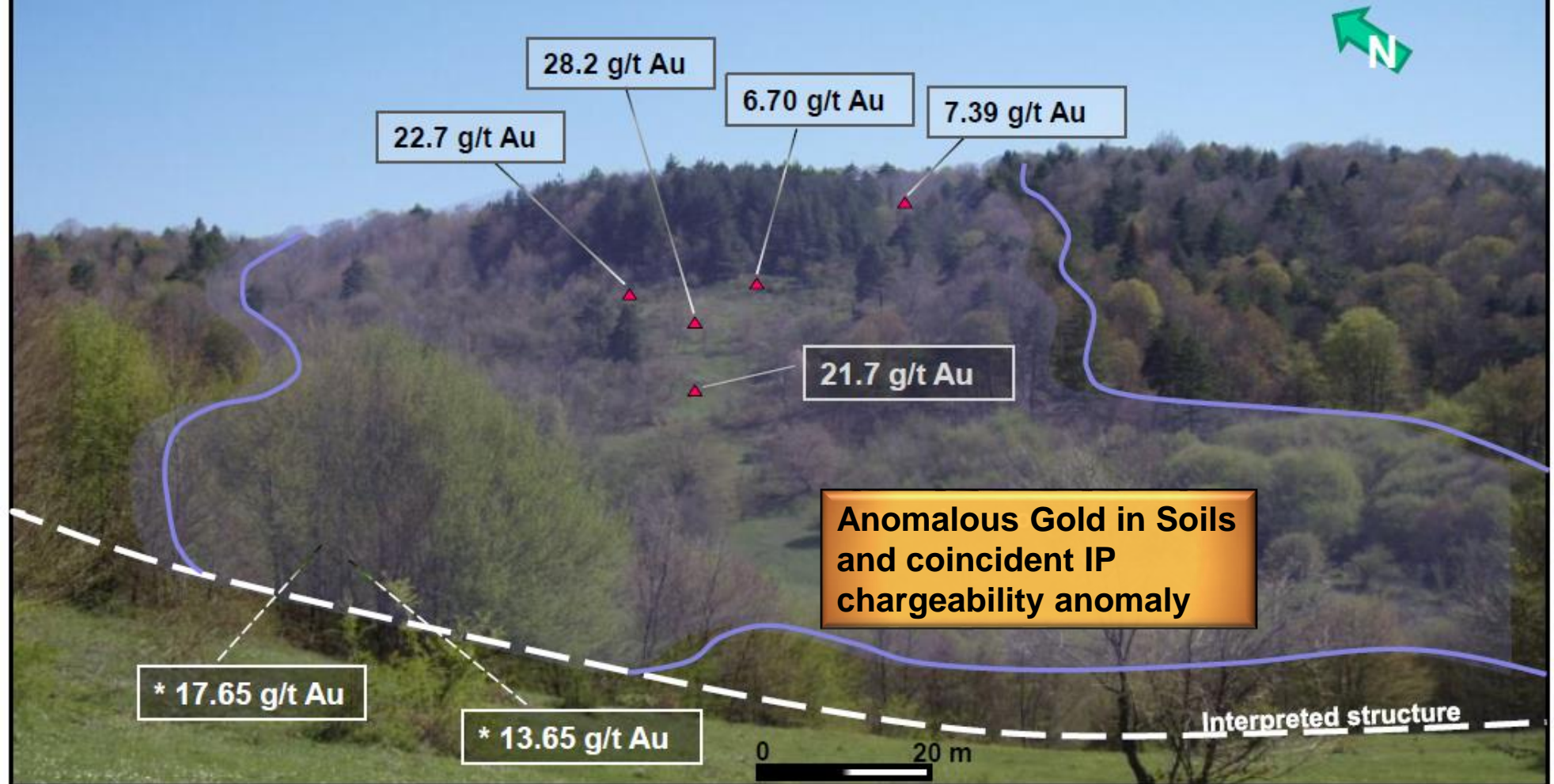






## Kavaklitepe Gold - Turkey

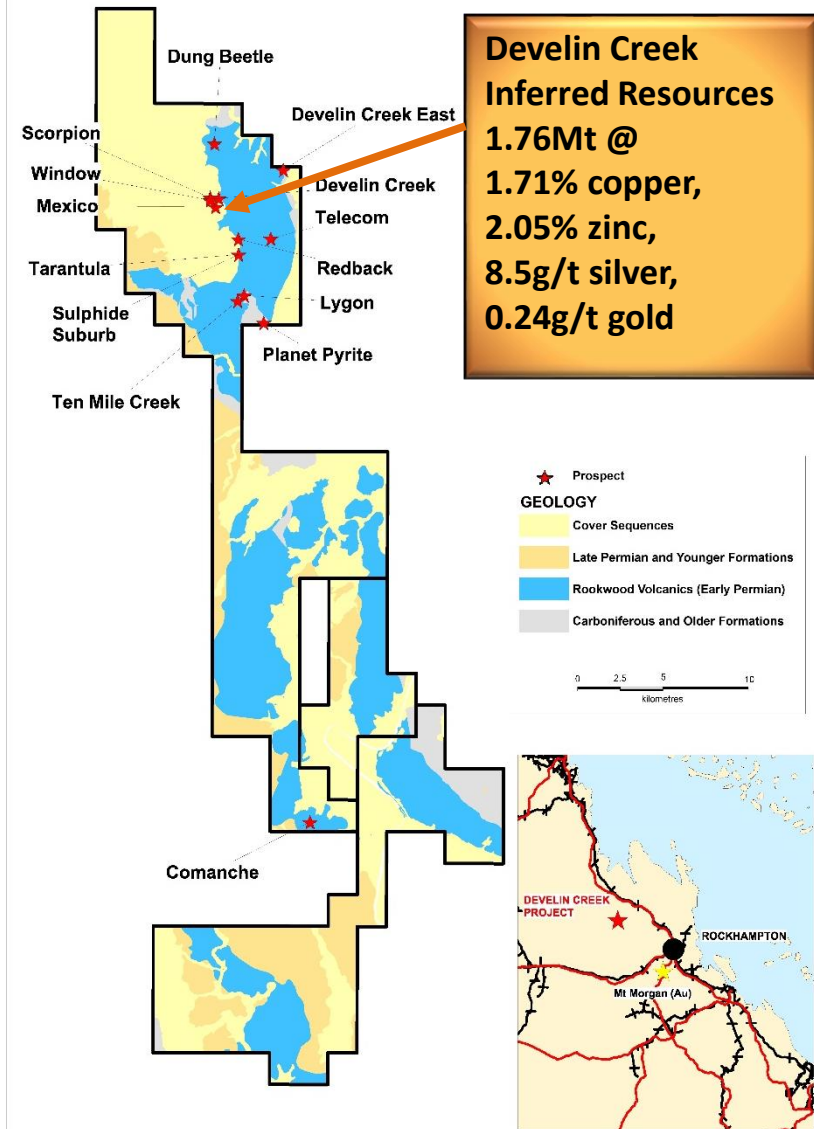
Location of rock samples – Kuzey Zone (SW) View Looking NE



\* Samples behind trees



# Develin Creek Copper-Zinc-Silver-Gold - Qld



## Develin Creek (Zenith 51%\* with right to acquire 100%)

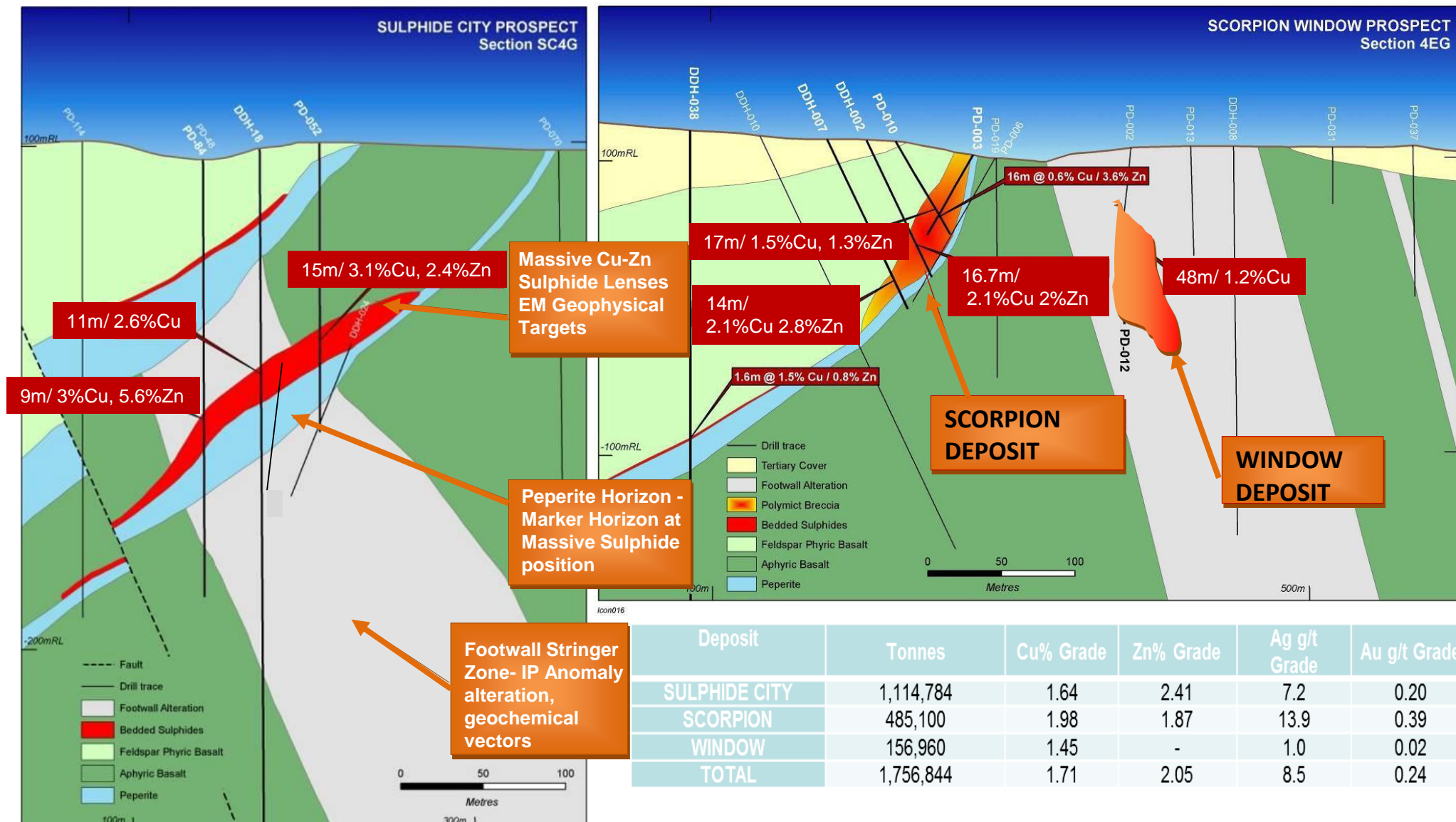
- VHMS style copper-zinc-silver-gold in Queensland
- 3 known Massive Sulphide Deposits with JORC Resources discovered in 1990's
- Recent (2011) drilling outside existing resource intersected up to;
  - 13.2m @ 3.3% Cu, 4.0% Zn, 30g/t Ag, 0.4g/t Au extending mineralisation up to a further 200m south
- Previous electrical geophysical surveys detect both the massive sulphides and underlying stringer zones
- Numerous geophysical and geochemical targets along 50km of host volcanic rocks. Recent HeliTEM survey flown over entire host volcanic sequence with limited ground follow-up to date.
- VHMS fields are characterized by clusters of deposits
- Planning and permitting underway for drill testing

\* Subject to QLD government approval of transfer





# Develin Creek Copper-Zinc-Silver-Gold - Qld





Develin Creek Resources – Plan View of Sulphide City, Scorpion and Window Deposits  
Overlying Image of IP Chargeability Anomaly (Red zones are high chargeability)

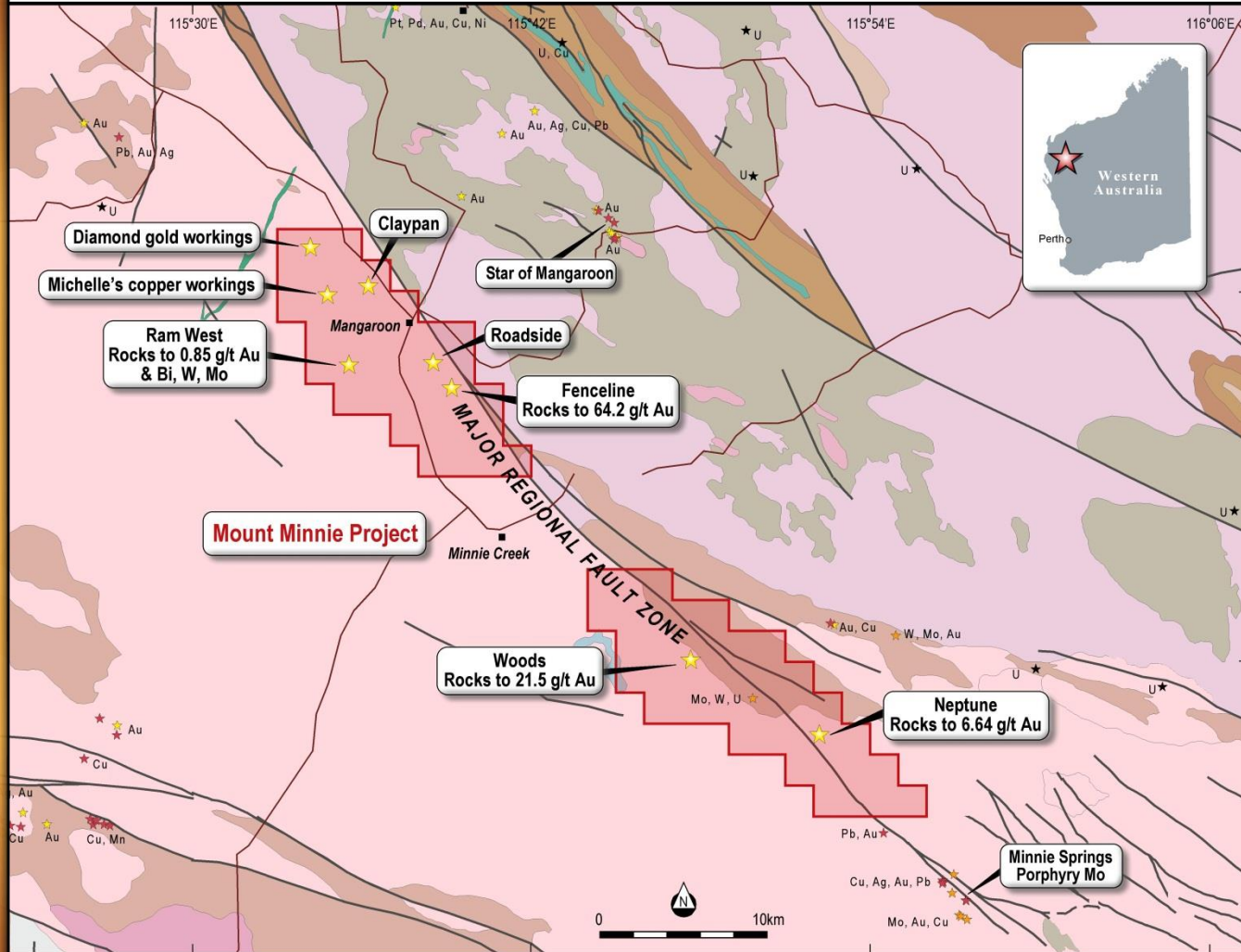
**ZNC plans to use geophysics and geochemical tools to define further drill targets.**





# Mt Minnie Gold - WA

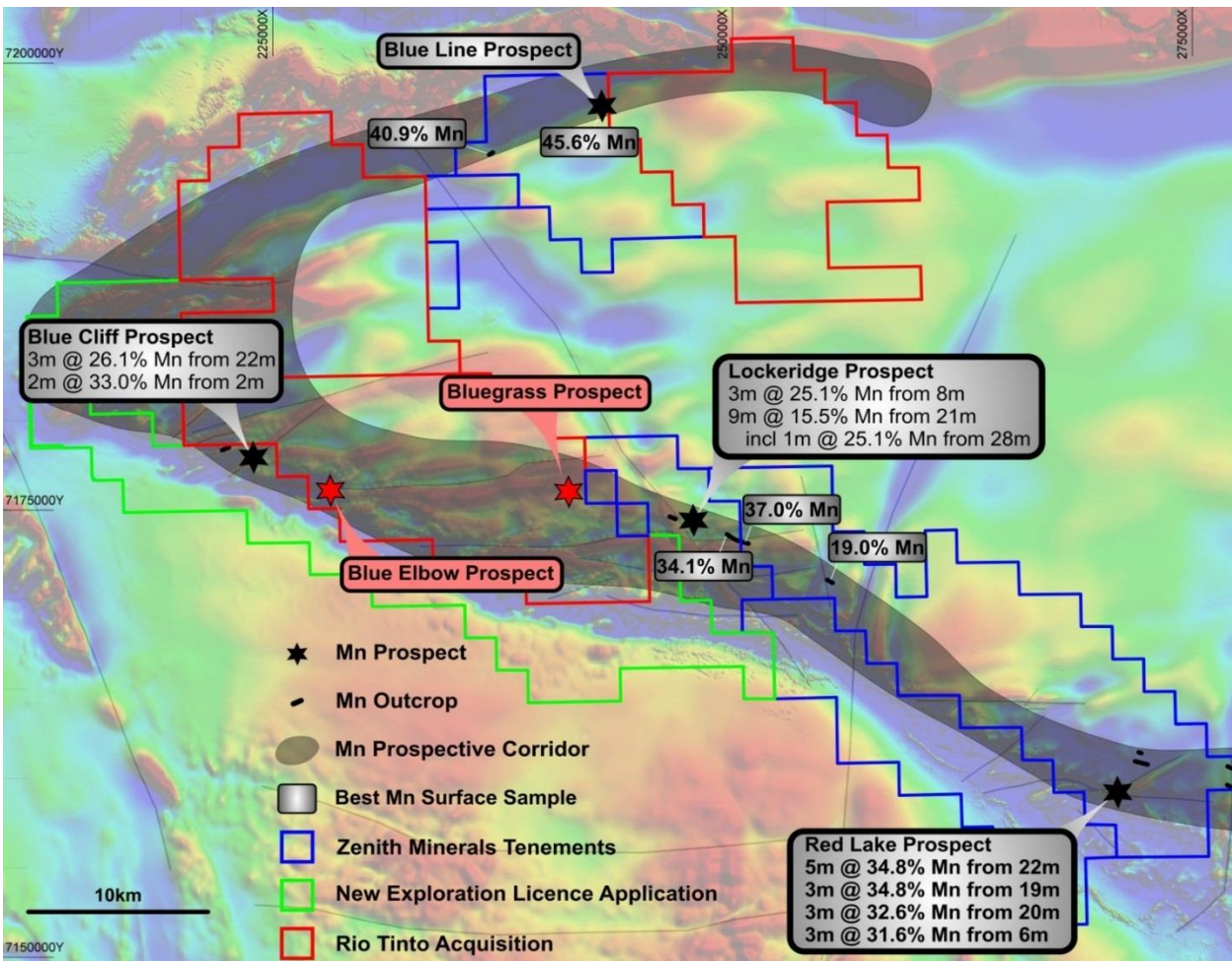
- 7 existing gold prospects over 50km strike
- High grade rock samples include;  
64.2g/t gold, 21.5g/t gold
- Mid-Proterozoic granite host
- New geological model prospective for reduced intrusion related gold deposits
- Trace element metal association including:
  - bismuth, molybdenum and tungsten.
- Only reconnaissance exploration activity to date







## Earaheedy Manganese (Zenith 100%)



- Zenith first mover, recognised potential new manganese province in Earaheedy Basin in 2010.
- Strong tenement position; after new RIO acquisition - 130 strike km of target horizon.
- Zenith completed first ever drilling for manganese in Earaheedy, hit shallow dipping oxide and carbonate (Kalahari Basin style) mineralisation
- Manganese looks both structurally controlled and stratiform.
- Initial Red Lake resource estimate 2013; 1.2Mt @ 19% Mn
- 2 new prospects discovered on recently acquired RIO ground

**Zenith's priority target is high grade near surface supergene oxide grading >40% Mn**



# Earaheedy Manganese (Zenith 100%)

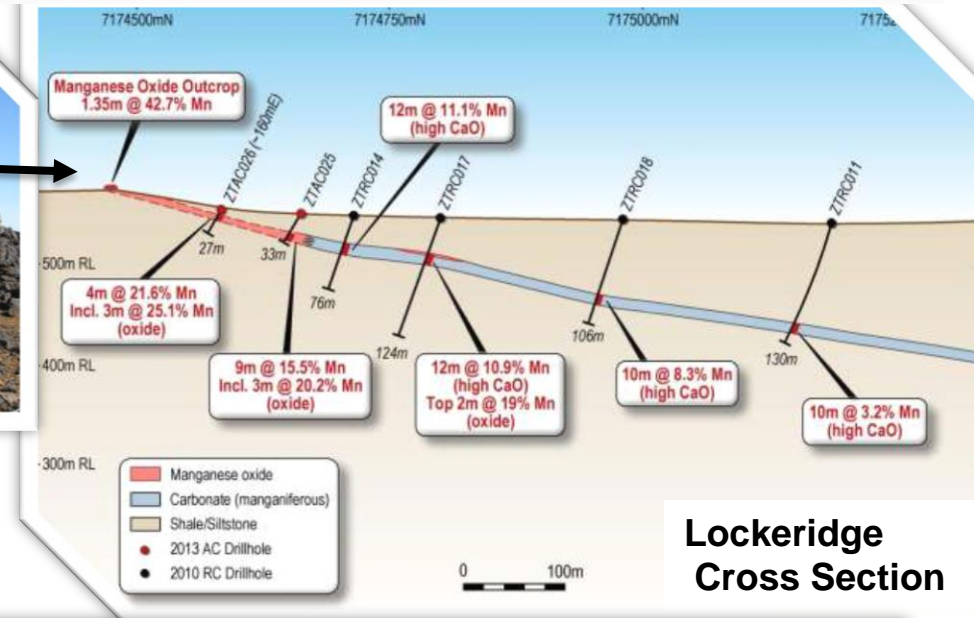
## Drilling Intersections:

### Lockeridge 2010;

- 12m @ 11.1% Mn from 28m
- 3m @ 18.0% Mn from 37m

### Lockeridge 2013;

- 3m @ 25.1% Mn from 8m
- 3m @ 20.2% Mn from 27m

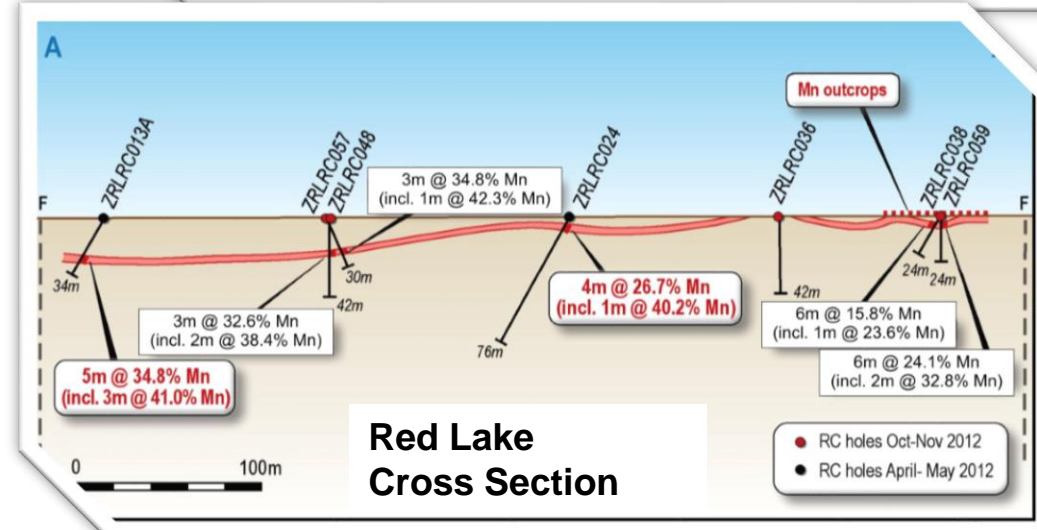


### Red Lake 2012 – 1<sup>st</sup> DSO grade Mn in Earaheedy;

- 3m @ 41.0% Mn within 5m @ 34.8% Mn from 22m
- 1m @ 40.2% Mn within 3m @ 30.7% Mn from 3m

### Red Lake 2013 - follow up resource drilling;

- 2m @ 32.8% Mn within 6m @ 24.1% Mn from 0m
- 2m @ 38.4% Mn within 3m @ 32.6% Mn from 20m
- 1m @ 42.3% Mn within 3m @ 34.8% Mn from 19m

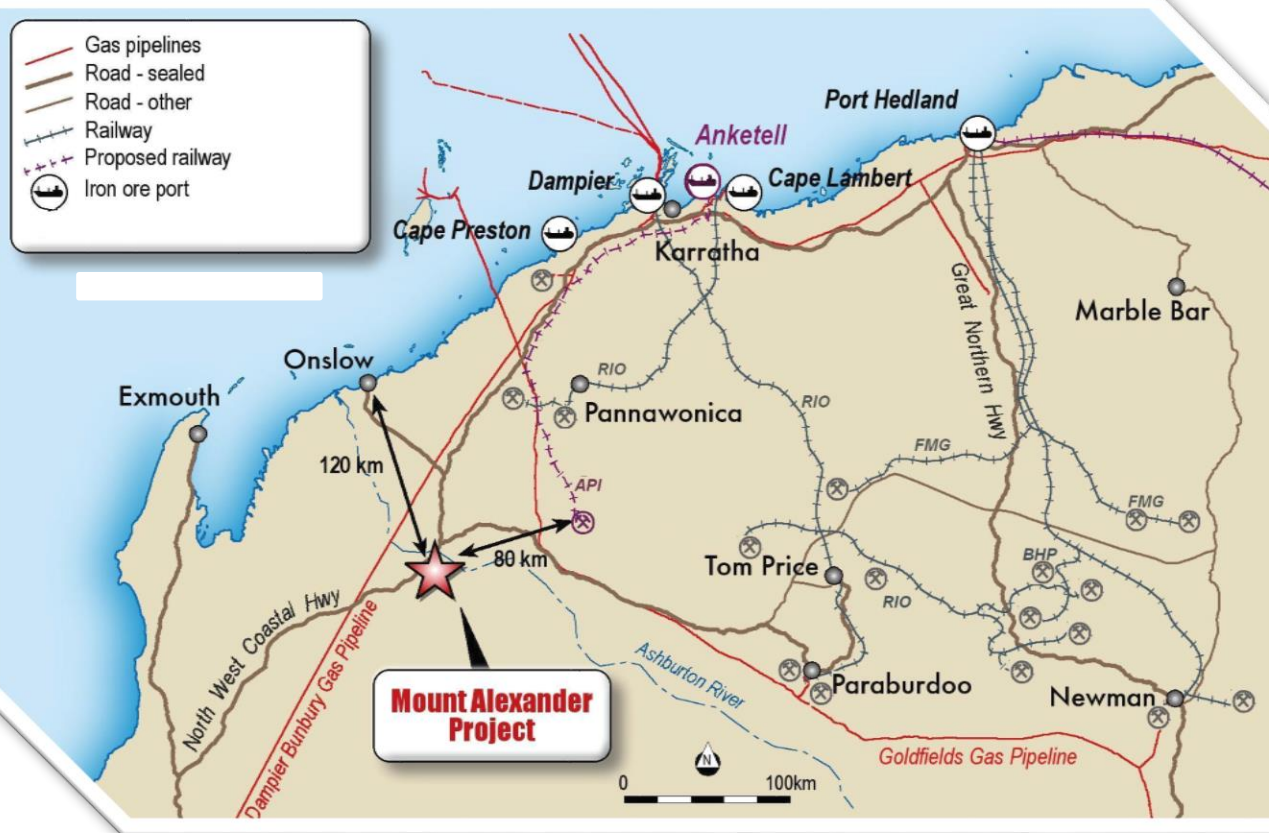






# Mount Alexander magnetite iron ore project

## Location Plan- local infrastructure options



### 100% Zenith

- Well located close to – sealed roads, gas pipelines
- Only 120km from coast near Onslow (Mitsui, Chevron ports)
- Base case in 2011 Scoping study - slurry pipeline, tranship by barge to vessel offshore
- Only 80km to API JV (Aquila-AMCI) West Pilbara proposed railway to Anketell Port – third party access.
- Baosteel takeover of Aquila may fast track development of regional infrastructure.

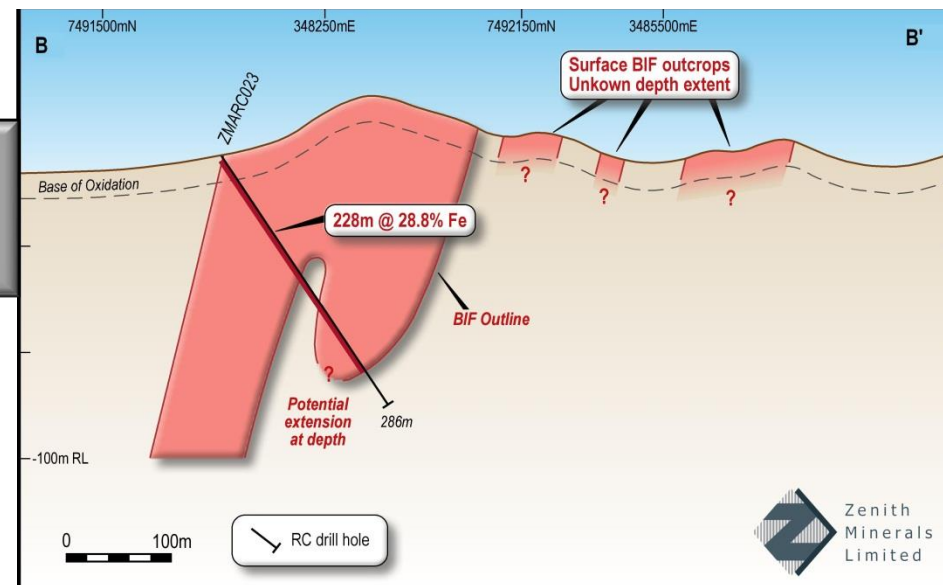
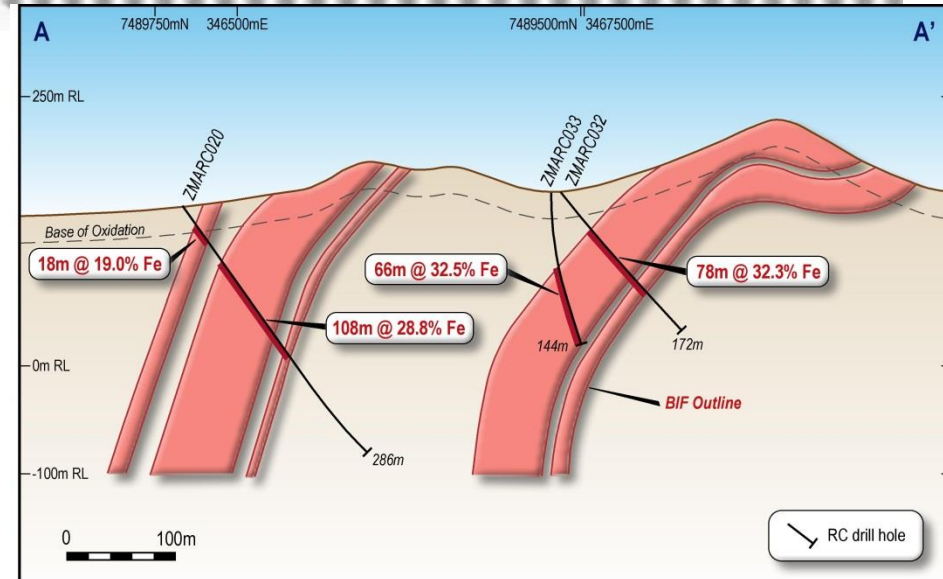
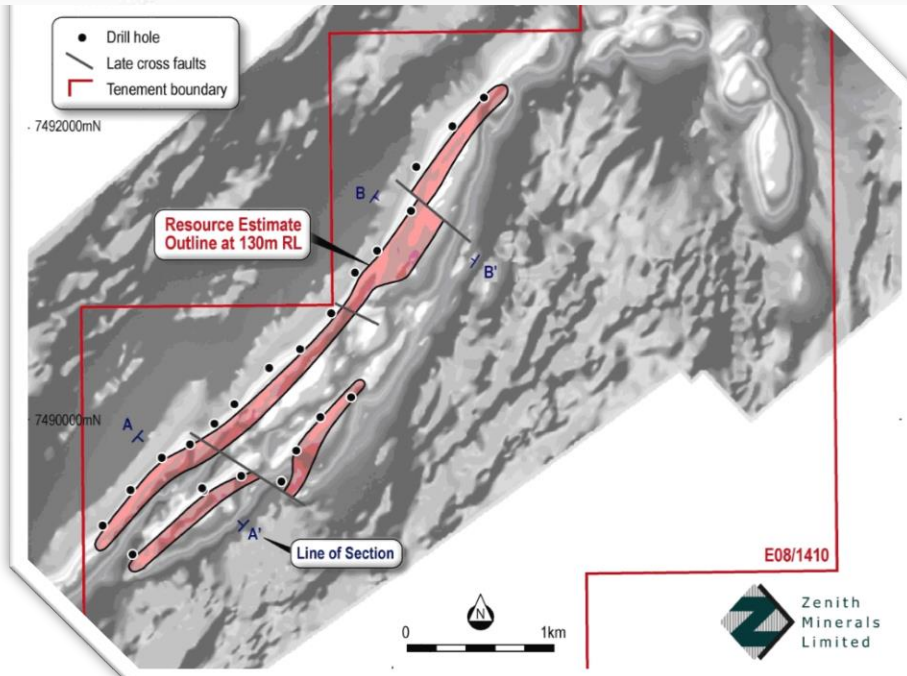
### Advantages over other WA magnetite deposits;

- location close to coast and infrastructure
- coarser grained = better beneficiation +40 micron grind size





# Mount Alexander magnetite iron ore project



**535Mt JORC Resource only ~ 50% of target BIF area.  
Up to 200m thick, low waste:ore ratio ~ 1:1  
Scoping Study (10 May 2011). Pre-Feasibility ongoing.**

Mount Alexander BIF Mineral Resource estimate as at May 2013							
		Head Grade					
Classification	Tonnes (Mt)	Fe %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	LOI %	P %	S %
Inferred	535.1	30.0	48.0	2.2	-0.4	0.1	0.46
	DTR	DTR Concentrate Grade					
	Mass Recovery %	Fe %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	LOI %	P %	S %
	24.6	69.9	2.4	0.1	-2.7	0.01	1.1



## Conclusions & Forward Program

### **Kavaklitepe Gold Project, Turkey (ZNC earning 70%)**

- Recent (2013) grass roots gold discovery in Tethyan Belt – (“elephant” terrain)
- Large, virtually drill-ready, high order gold soil / IP anomaly >1km strike
  - Trenching and drilling (permitting in progress)

### **Develin Creek Copper-Zinc-Silver-Gold, QLD (ZNC initial 51%, option for 100%)**

- 3 known VHMS massive sulphide deposits with JORC resources, 50km of strike of host volcanics
- 2011 drilling outside resource; 13.2 metres @ 3.3% copper, 4.0% zinc, 30g/t silver and 0.4g/t gold
  - Drilling to extend known deposits, geophysics, geochemistry to detect new targets

### **Mt Minnie Gold Project, WA (ZNC 100%)**

- 75km strike of major regional fault. Alteration, geochemistry, rock samples 64.2 and 21.5 g/t Au
  - Initial field assessment to follow-up and extend known prospects

### **Earaheedy Manganese (and Pb,Zn) Project, WA (ZNC 100%)**

- New manganese province discovered by ZNC, potential DSO drill intersections (+40%Mn)
- Target area doubled with new acquisitions (RIO tenements, Blue Cliffs).
  - Mapping, sampling, drilling new ground, beneficiation tests, assess geophysical techniques

### **Mt Alexander Iron Ore, WA (ZNC 100%)**

- JORC magnetite Resource 535 Mt @ 30.0% Fe close to West Pilbara coast, 50% of target untested.
  - Seeking development partner/ buyer for project

### **Other**

- Divesting Indonesian coal project – Conditional offer received, US\$500K +royalty US\$1/t
- Evaluating new project opportunities (acquire at bottom of the cycle)



# Disclaimer

## Forward looking statements

Some statements in this presentation regarding estimates or future events are forward looking statements. They involve risk and uncertainties that could cause actual results to differ from estimated results. Forward-looking statements include estimates of future production, reserve and mineralised material estimates, capital costs, and other estimates or prediction of future activities. They include statements preceded by words such as "believe", "estimate", "expect", "intend", "will" and similar expressions. Actual results could differ materially depending on such things as political events, labour relations, currency fluctuations and other general economic conditions, market prices for Zenith Minerals Limited products, timing of permits and other government approvals and requirements, change in operating conditions, lower than expected ore grades, unexpected ground and mining conditions, availability and cost of materials and equipment, and risks generally inherent in the ownership and operation of mining properties and investment in foreign countries.

## Information presented is a summary

This presentation aims to provide a high level summary of various technical aspects of the Company's projects. For more details on the underlying technical parameters the reader is referred to the ASX Reports on the Zenith Minerals Limited's website: [www.zenithminerals.com.au](http://www.zenithminerals.com.au)

## JORC competent persons statements

*The information in this Report that relates to in-situ Mineral Resources at the Develin Creek project is based on information compiled by Ms Fleur Muller an employee of Geostat Services Pty Ltd. Ms Muller takes overall responsibility for the Report. She is a Member of the AusIMM and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity she is undertaking, to qualify as a Competent Person in terms of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 Edition). Ms Muller consents to the inclusion in the report of the matters based on her information in the form and context in which it appears.*

*The information this Report that relates to in-situ Mineral Resources at Zenith's Mount Alexander project is extracted from the 24 May 2013 ASX release entitled 'Mount Alexander Resource Upgrade' which is available to view on the Company's website ([www.zenithminerals.com.au](http://www.zenithminerals.com.au)). The Company confirms that it is not aware of any new information or data that materially affects the information included in the 24 May 2013 market announcement, and that all material assumptions and technical parameters underpinning the Mineral Resource estimate in the 24 May 2013 market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.*

*The information in this Report that relates to in-situ Mineral Resources at Zenith's Red Lake project is based on information compiled by Grant Louw an employee of CSA Global. Grant Louw takes overall responsibility for the Report. He is a Member of the Australian Institute of Geoscientists and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as a Competent Person in terms of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2004 Edition). This information was prepared and first disclosed to ASX on 9 April 2012 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 information in this report that relates to Zenith Exploration Results is based on information compiled by Mr Michael Clifford, who is a Member of the Australian Institute of Geoscientists and an employee of Zenith. Mr Clifford 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 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Clifford consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*





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**Australian Securities**  
**Exchange Code:**

**ASX: ZNC**

**Further information:**  
**Michael Clifford or**  
**Mike Joyce**  
**Directors**

**Photo: Develin Creek massive sulphide**