



**Breakaway  
Research**

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### Company Information

ASX Code	MZN
Share Price	\$0.013
Ord Shares	877m
Options	299m
<b>Market Cap (undiluted)</b>	<b>\$11.40m</b>
Cash (as at 31 March 2016)	A\$1.27m
Total Debt	A\$0m
<b>Enterprise Value</b>	<b>\$10.13m</b>

### Board and Management

Non-Exec Chairman	Ross Ashton
Managing Director	Joe Treacy
Non-Exec. Director	Geoffrey Jones
Non-Exec. Director	John Hutton
Company Secretary	Jeremy Robinson

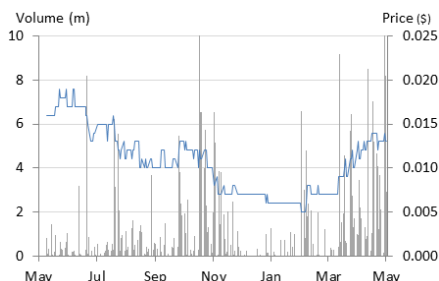
### Substantial Share Holders

Freshwater Resources P/L	5.99%
Board and Management	22%
Top 20	53%

### Company Details

Address	Level 3, 35 Havelock Street West Perth WA 6005 Australia
Phone	+618 9322 2338
Web	www.marindi.com.au

### 1 Year Price Chart



# Marindi Metals (MZN)

*High Quality Zinc in the Right Addresses*

*Recommendation: Speculative BUY*

## Key Points

- **Drilling commencing testing a number of compelling targets at the highly prospective Newman Zinc Project**
- **Previous work, including resource definition, has highlighted the prospectivity of the Project, which remains underexplored**
- **Significant potential for resource expansions and new discoveries**
- **Methodical and scientific approach to exploration**
- **McArthur River properties also highly prospective, but at an earlier stage of exploration**
- **Recently secured lithium project in Western Australia**
- **Highly experienced Board and Management with significant shareholdings**

*Marindi Metals is commencing a 3,000m drilling programme on its highly prospective Newman Zinc Project, located at the northern margin of the Capricorn Orogen in central Western Australia. The Company acquired the project in mid-2015, and the results of subsequent work have highlighted the prospectivity of the Project.*

*The previous operator concentrated activities on defining a resource at the Prairie Downs Deposit, and even with subsequent work by Marindi, some 21km of the 24km strike of the key Prairie Downs Fault Zone within the Project area remains largely unexplored – this includes two large soil geochemical anomalies with strike lengths of up to 5km.*

*Work by Teck and Marindi at the Yalco and Caranbirini Projects near Glencore's Macarthur River Mine has identified target areas, with planned work now to define drill targets for future testing.*

*Given the above, and the experience of the Board and Management, we rate Marindi as a SPECULATIVE BUY. Key price movers will be positive results from the current drilling programme, with assay results due within the next few months.*

## Company Overview

Marindi Metals is a Western Australian and Northern Territory zinc focussed Exploration Company. Its key project is the Newman Base Metal Project, located near Newman in Western Australia, where historical work has defined a shallow resource of 3Mt @ 5% Zn and 1.6% Pb.

The company also has two projects in the McArthur Basin of the Northern Territory – Yalco, where Teck is earning 70% through a farm-in, and Caranbirini, held 100% by Marindi. Both projects cover geology similar to that that hosts the nearby McArthur River Mine, operated by Glencore.

The application for lithium prospective tenements in the Forrestania Greenstone Belt has recently been announced.



## **Investment Thesis**

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### **Highly Prospective Flagship Project**

In the flagship Newman Zinc Project (“NZP”, or “the Project”) Marindi Metals (“Marindi” or “the Company”) has a highly prospective predominantly zinc project in a largely underexplored area.

*Highly prospective Newman Zinc Project has returned very encouraging results to date.*

### **Encouraging Results to Date**

Previous work was concentrated on the Prairie Downs prospect, which resulted in the definition of an Indicated and Inferred Mineral Resource of 3Mt grading at 5% Zn and 1.6% Pb, which is potentially open-pittable, and is open along strike and at depth. Work by Marindi, following their acquisition of the Project in mid-2015 has returned very encouraging results at other prospects, including Wolf and Prairie Pup, highlighting the potential to define additional resources.

*The Project is underexplored*

### **Only 3km out of 24km Strike Tested to Date**

Even with Marindi’s work, only around 3km of the 24km strike of the key Prairie Downs Fault Zone (“PDFZ”) has been comprehensively tested to date – underexplored areas include two large geochemical anomalies with strike lengths of up to 5km possibly reflecting additional and as yet untested mineralised systems.

### **SEDEX Signature**

One of the key findings of Marindi’s work is the recognition of a SEDEX trace element signature in mineralisation intersected to date, leading to the possibility of the discovery of a SEDEX system in the Project area – one interpretation is that the fault-hosted mineralisation has been remobilised from a nearby pre-existing major deposit into the PDFZ.

In addition zinc chlorite at the Wolf prospect may reflect a halo to a major zinc sulphide system.

### **Copper Also Present**

Soil sampling and drilling also indicates copper mineralisation, showing the potential for a zoned, polymetallic system.

### **Drilling Commencing**

A 3,000m drilling programme has just commenced, with this testing a number of targets. This includes deeper drilling below the Prairie Downs and Wolf prospects, to elucidate the behaviour of the mineralisation with depth, which may also include the potential for zonation to a hotter, copper rich assemblage.

*McArthur River in the NT is also highly prospective*

### **McArthur River Also Prospective**

The McArthur River Projects (Yalco and Caranbirini) are also considered highly prospective for SEDEX style base metal mineralisation, being located over stratigraphy and structure the same as that that hosts Glencore’s nearby 237Mt McArthur River Mine.

### **Targets Identified**

Work by Teck at Yalco and by Marindi at Caranbirini has identified target areas, with both companies now working towards refining drill targets for future testing.

*Newly acquired lithium project in WA*

### **Lithium as Well**

To round out the package Marindi has recently announced the 100% acquisition of a portfolio of tenements considered prospective for spodumene-hosted hard rock lithium, with gold and nickel drilling by previous explorers intersecting up to 9m @ 1.97% Li<sub>2</sub>O and 50.6m @ 0.95% Li<sub>2</sub>O, including 9m @ 2.58% Li<sub>2</sub>O within 1km of Marindi’s tenements.

## Experienced and Incentivised Board and Management

An important strength of Marindi is the combined experience of key personnel. This includes experience in all technical phases of the resources industry from exploration to operations, with a track record of success. In addition personnel have skin in the game, and thus will be motivated to achieve returns to shareholders

## Marindi Peer Group

Marindi is one of only a handful of companies listed on the ASX with zinc as a co-product or by-product. We have selected those with Zn equivalent grades greater than 5% using current metal prices, and listed them in descending order of fully diluted EV per company share of contained zinc equivalent.

We note the relatively high EV/T ZnEq for Marindi, however this is by virtue of the relatively small resource as defined to date – Marindi also has one of the smallest EV's in the peer group, showing the potential for growth with further positive exploration results. The in-ground value of \$175/tonne compares favourably with other companies.

EV/T comparisons are indicative only, and should be used with care – any number of factors can affect relative values.

### Marindi peer group – sorted on undiluted EV/T Zn equivalent

Company	Project	EV Undiluted (\$m)	Global Resource (Kt)	Equity Resource (Kt)	ZnEq Grade (%)	IGV/t resource	Contained ZnEq kt Equity basis	EV/T ZnEq (company share)	Key Project Stage	Metals (all resources)
Auralia Metals	Hera, Nymagee	\$141.8	2,506	2,506	17.31%	\$440	433.73	\$327	Hera - Production Nymagee - FS	Cu, Pb, Zn, Ag, Au
Peel Mining	Mallee Bull	\$18.4	3,900	1,950	7.67%	\$195	149.66	\$123	Drilling, Resource Expansion	Cu, Pb, Zn, Ag, Au
Terramin	Angas, Tala Hamza	\$271.3	77,580	53,570	5.88%	\$149	3,150.93	\$86	FS - Hamza C & M - Angas	Zn, Pb
Marindi Metals	Prairie	\$10.1	2,980	2,980	6.87%	\$175	204.83	\$49	Drilling	Zn, Pb, Ag
Red River Resources	Thalanga	\$25.4	3,800	3,800	15.33%	\$390	582.59	\$44	Restart	Cu, Pb, Zn, Ag, Au
KBL Mining	Mineral Hill	\$35.4	21,380	17,455	7.58%	\$193	1,323.90	\$27	Production	Cu, Pb, Zn, Ag, Au
Rox Resources	Reward	\$16.6	43,600	21,364	4.98%	\$127	1,064.13	\$16	Exploration	Zn, Pb
Phoenix Copper	Hayes Creek	\$7.2	3,890	3,890	14.56%	\$370	566.31	\$13	Scoping Study	Cu, Pb, Zn, Ag, Au
Heron Resources	Woodlawn	\$24.6	24,770	24,770	10.05%	\$255	2,489.34	\$9.89	Feasibility	Cu, Pb, Zn, Ag, Au
Venturex Resources	Sulphur Springs	\$9.8	18,370	18,370	6.92%	\$176	1,271.95	\$7.71	Feasibility	Cu, Pb, Zn, Ag, Au
Orion Gold	PCM	\$5.2	12,750	9,350	7.75%	\$197	724.79	\$7.12	Due Diligence	Cu, Zn
White Rock	Mt Carrington Red Mountain	\$6.0	24,850	24,850	4.66%	\$118	1,157.39	\$5.21	Pre-development Resource Defn	Cu, Pb, Zn, Ag, Au
Ironbark	Citronen	\$20.0	70,800	70,800	5.60%	\$142	3,967.09	\$5.05	Feasibility	Zn, Cu, Pb
Metalicity	Admiral Bay High Grade	\$21.5	111,300	111,300	5.57%	\$142	6,203.02	\$3.47	Scoping	Zn, Pb, Ag
Overland Resources	Yukon	\$1.6	12,560	12,560	6.09%	\$155	764.43	\$2.15	Feasibility	Zn, Pb

Source: IRESS, Company reports, values as of close of business, Monday October 12, 2105

1. Here the enterprise value is the enterprise value of the company as a whole and not of the zinc projects alone.

2. This does not take into account other significant projects, e.g. Mount Fisher (RXL), Kalgoorlie Nickel Project (HRR)

3. ZnEq values are calculated on current metals prices – metallurgical recoveries are not taken into account

## Risks

As with any resources stock there are a number of risks. Those pertinent to Marindi are given below.

- **Funding** – This is the key non-technical risk for the Company. Current cash reserves are sufficient to cover one to two quarters of exploration based on activities in 2015, and hence Marindi will need to top up the coffers in the near future. However, given the positive results from the fully-underwritten 2015 rights issue (there was a take up of approximately 70%, with the underwriters

*Funding and exploration are the key risks*



thus taking 30%) and positive exploration results since, there should be little difficulty in obtaining new equity financing.

- **Exploration** – Given that the projects are at the exploration stage, this is a key risk for Marindi, as it is for any junior exploration company. This is somewhat mitigated by the brownfields nature of both Newman and McArthur River projects, however they are still relatively high risk exploration plays.



## Project Review

### Introduction

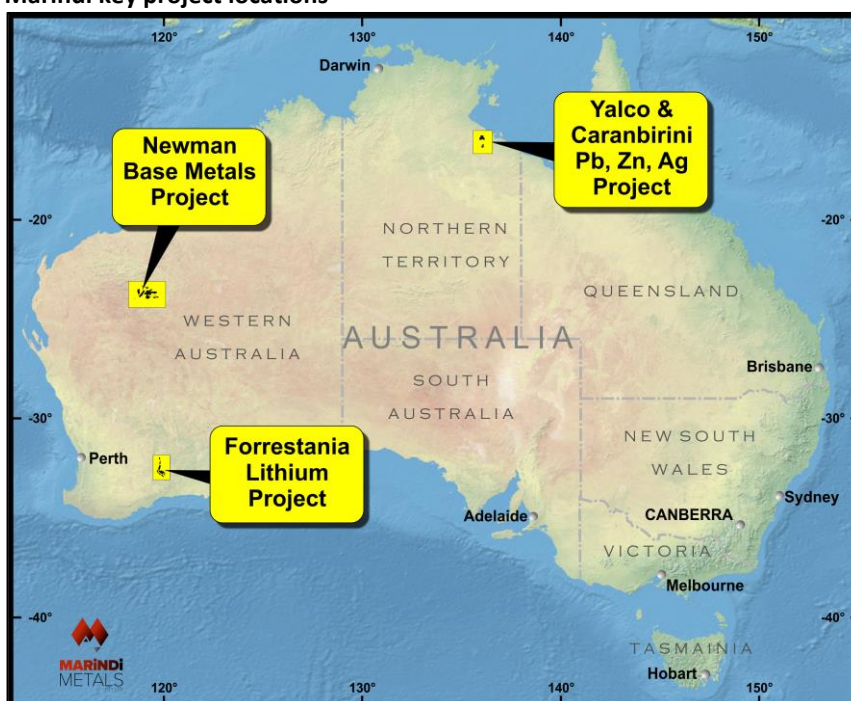
Marindi's focus is on zinc exploration, largely concentrated on the Newman Base Metals Project, located near Newman in Western Australia, in which Marindi is earning 100% from Prairie Downs Metals ("PDZ", ASX: PDZ).

*Zinc focussed exploration in WA and the NT*

The second zinc interest is in the McArthur River area of the Northern Territory, where it has two projects – Yalco and Caranbirini, both located over the same stratigraphy and structural setting that hosts Glencore's 237Mt McArthur River Mine. Caranbirini is held 100% by Marindi, with Teck earning 70% in a JV at Yalco.

Other projects include the 100% held Forrestania Lithium Project, located within 100km of the operating Mt Cattlin Mine in the Forrestania district of WA, and the 100% held Oakover Manganese Project located near Newman in WA. Oakover is 100km south of the Ant Hill manganese deposit owned by Mineral Resources. The Company is currently reviewing a scoping study report, and this project will not be discussed further.

### Marindi key project locations



Source: Marindi Metals

### Newman Base Metals Project (MZN earning 100%)

#### Introduction and Tenure

*The NZP is being acquired from Prairie Downs Metals*

The NZP comprises two granted Exploration Licences for 350km<sup>2</sup> and 14 applications for 2080km<sup>2</sup>, located over and near the Capricorn Orogen in central Western Australia.

The two granted tenements are being acquired from PDZ for a total of \$1.5 million, with the vendors retaining a 2.5% net smelter return ("NSR") upon completion of the acquisition. The first \$0.5 million of the farm-in was paid in May 2015, with \$1 million, in cash or shares on Marindi's election, due in September 2016.

The acquisition agreement was initially made when Marindi was a private company – it subsequently merged with the then Brumby Resources (ASX: BMY) through the issue of 250 million Brumby shares at a deemed price of \$0.01/share and 25 million options to Marindi shareholders.

The merger also included the change of name of Brumby Resources to Marindi Metals, and the appointment of Marindi directors to the board.



## Regional Geology

*The NZP is located over the Proterozoic Capricorn Orogen*

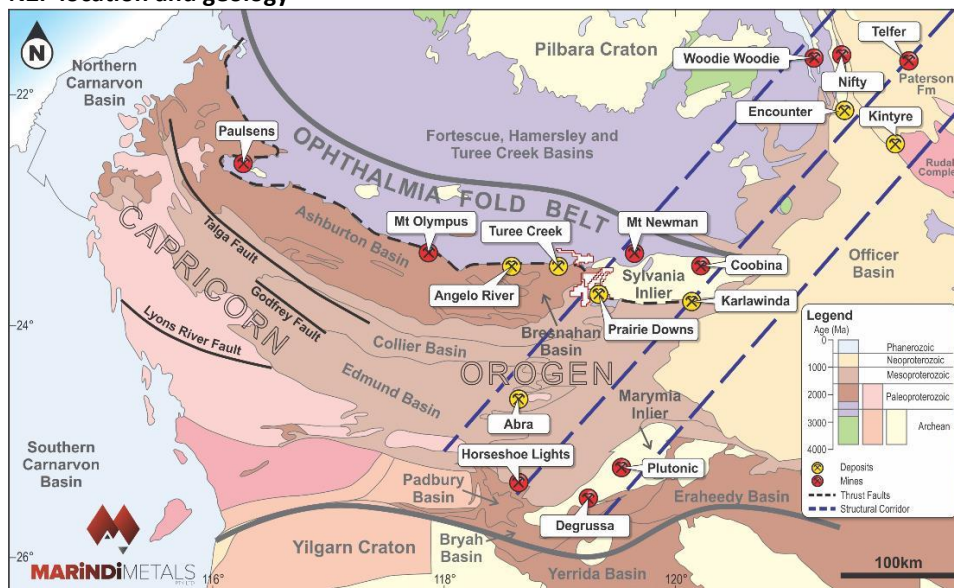
The Project is located over the northern margin of the Paleo- to Mesoproterozoic Capricorn Orogen, a complex mobile belt between the Archaean Yilgarn and Pilbara Cratons. A key feature of the property is the Prairie Downs Fault Zone (“PDFZ”), a crustal scale structure which marks the northern edge of the Proterozoic units where they abut the Archaean Basin units (Fortescue, Hamersley and Turee Creek), which unconformably overlie the Pilbara Craton. More recent work has included the Turee Basin as part of the Hamersley Basin.

*A key feature is the Prairie Downs Fault Zone (PDFZ)*

Although steeply dipping at surface, the PDFZ is possibly a listric thrust fault (or a splay off one), shallowing to a southerly dip at depth – it is one of a number of such structures in the Capricorn Orogen. The Orogen has seen a number of tectonic events, ranging from the Ophthalmian Orogeny at ~2,200Ma, to the youngest, the small scale Mulka Tectonic Event at ~470MA, which affected the western part of the Capricorn Orogen.

There are significant areas of younger cover, which hampers geochemical exploration.

### NZP location and geology



Source: Marindi Metals

### Work Completed and Mineralisation

*Work to date has identified three extensive soil anomalies over the PDFZ*

Work by Marindi and previous operators has discovered widespread Zn-Pb-Ag+-Cu mineralisation along areas tested of the 24km strike of the PDFZ within the Project area. This is thus far reflected in three extensive soil anomalies (up to 5km in strike length), namely Husky, Wolf-Prairie and African Hunting Dog. Soil anomalism includes copper, lead, zinc and antimony, with the three anomalies interpreted to represent separate hydrothermal cells.

*Of these only Prairie-Wolf has had appreciable follow up work*

Of the soil anomalies only Prairie-Wolf has been significantly tested by drilling, with a JORC-2012 compliant resource of 3Mt @ 5% Zn, 1.6% Pb and 15g/t Ag being defined for Prairie by PDZ, and promising intersections being achieved at Wolf. PDZ drilled 422 reverse circulation (“RC”) and 49 diamond holes into the Project. Marindi has drilled a further 12 RC and nine diamond (with RC precollars) into various prospects for 4065.1m, including nine holes at Wolf, eight at Prairie Pup, three at Prairie and one at Titan.

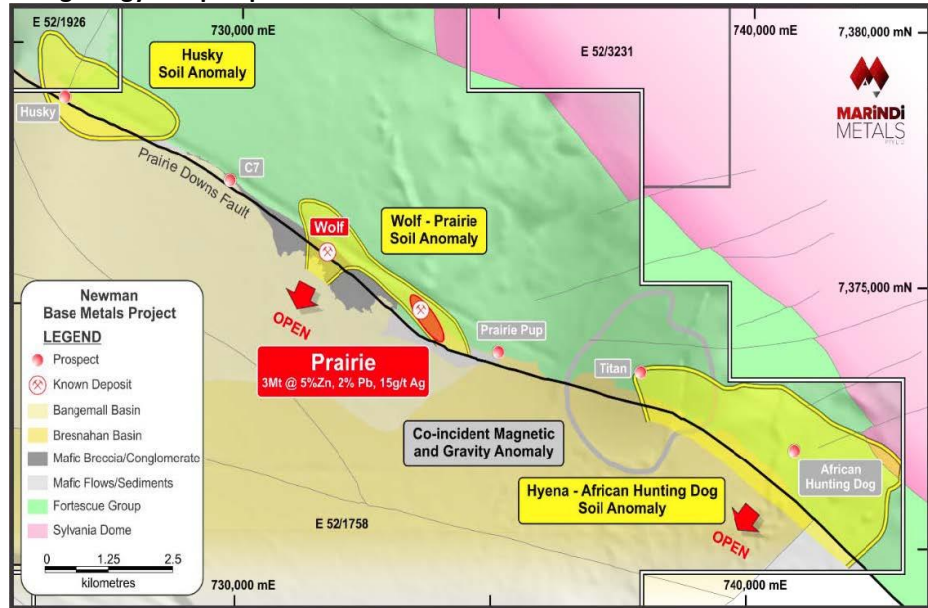
*The PDFZ is the control to mineralisation*

The PDFZ is the control to the mineralisation (as well as being the host to other mineralisation regionally), with mineralisation occurring in both the Archaean greenstones of the Fortescue Group (within the Fortescue Basin) and sediments of the Paleo- to Mesoproterozoic Bresnahan and Bangemall Basin units on either side of the fault.

The Fortescue Group is comprised largely of mafic volcanics with some sediment, with the Bresnahan and Bangemall units including sandstones and conglomerates, as well as minor mafic volcanic sediments and breccias.



### NZP geology and prospects



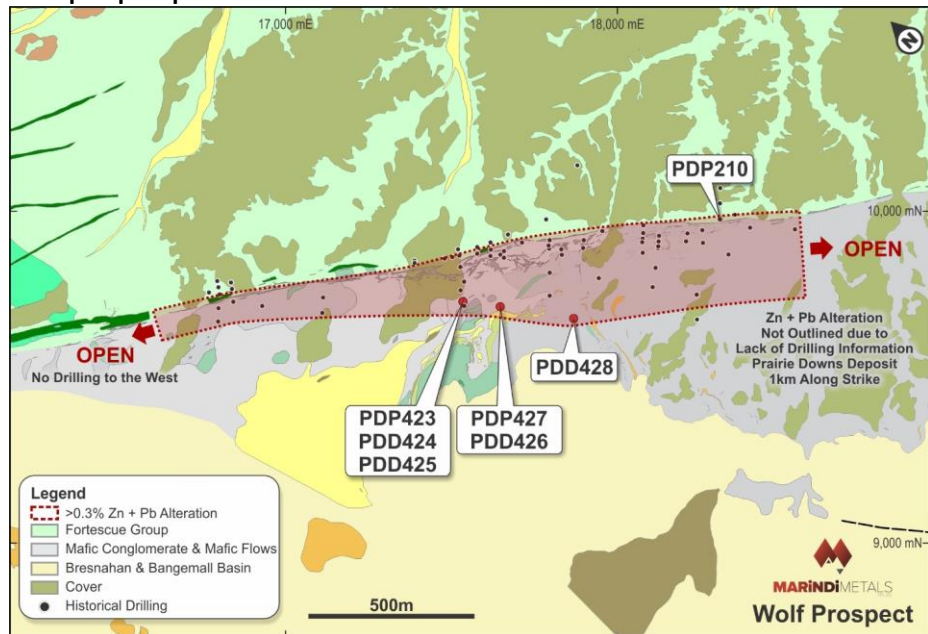
Source: Marindi Metals

The Company's tenements cover a strike length of 24km of the PDFZ

### Wolf

Marindi has concentrated activities on the Wolf prospect, with this including the drilling of 9 of the 21 holes they have drilled to date, following up on previous drilling by PDZ, which intersected high grade sulphide veins in broader zones of chloritic lower grade material.

### Wolf prospect plan



Source: Marindi Metals

Marindi is concentrating activities on the Wolf prospect

Results of drilling by Marindi include the following:

- **PDD 426 - 58m at 2.3% Zn, 0.1% Pb, 13.0g/t Ag from 155m, including:**
  - 8.45m at 5.5% Zn, 0.2% Pb, 32g/t Ag from 195.05m, and
  - 1.51m at 9.4% Zn, 0.7% Pb, 141g/t Ag from 200m.
- **PDD 424 - 66.3m at 2.1% Zn, 0.1% Pb, 7g/t Ag from 71.7m, including:**
  - 3.9m at 4.9% Zn, 0.1% Pb, 3g/t Ag from 128m.

Drilling has intersected broad intervals of zinc mineralisation

A notable feature of Wolf is the domination of the zinc chlorite, baileychlorite, however

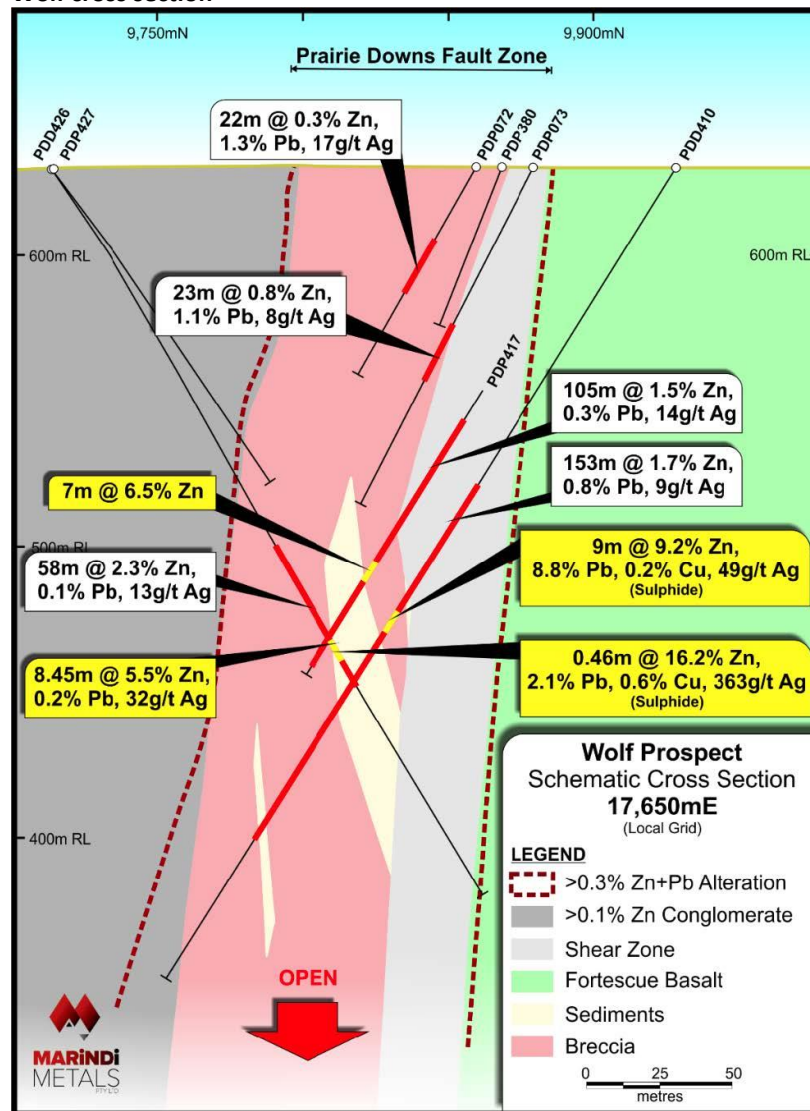
*This is associated with zinc chlorite, potentially representing a halo to higher grade sulphide mineralisation*

with zinc sulphides also present. This is significant, given that, where baileychlorite has been reported elsewhere it is associated with significant zinc sulphide mineralisation. This also indicates that Wolf represents distal, low temperature mineralisation.

The zinc chlorite forms a zone approximately 1.5km long by 400m wide, indicating the presence of a large hydrothermal cell, and the potential for a large sulphide system nearby.

The Company has carried out preliminary atmospheric acid leach tests of the chlorite mineralisation, with this returning very positive results; 12 hour residence times returned up to 81.5% zinc recovery, and 24 hour tests returned up to 93.1% recoveries.

**Wolf cross section**



**Prairie**

PDZ concentrated most activities on the Prairie Deposit, with this work resulting in the initial resource as detailed in the table below and a preliminary mining study.

The mineralisation comprises a number of steeply north dipping lenses outcropping at surface, with a strike length of some 1,000m, controlled by the main PDFZ and splays. Mineralisation occurs as massive sphalerite veins hosted in a silicified and baritic breccia within the basaltic wall rocks. It is open at depth and for at least 200m along strike both east and west, and is also strongly anomalous in arsenic.

Marindi completed three holes in its most recent drilling campaign, testing for down dip and strike extensions of the current resource. Results included 3.71m @ 22.4% Zn, 1.8% Pb and 25g/t Ag in hole PDD429, as shown in the figure below.

*Earlier work was concentrated at the Prairie Downs deposit, with a resource of 3Mt @ 5% Zn and 1.6% Pb being defined*





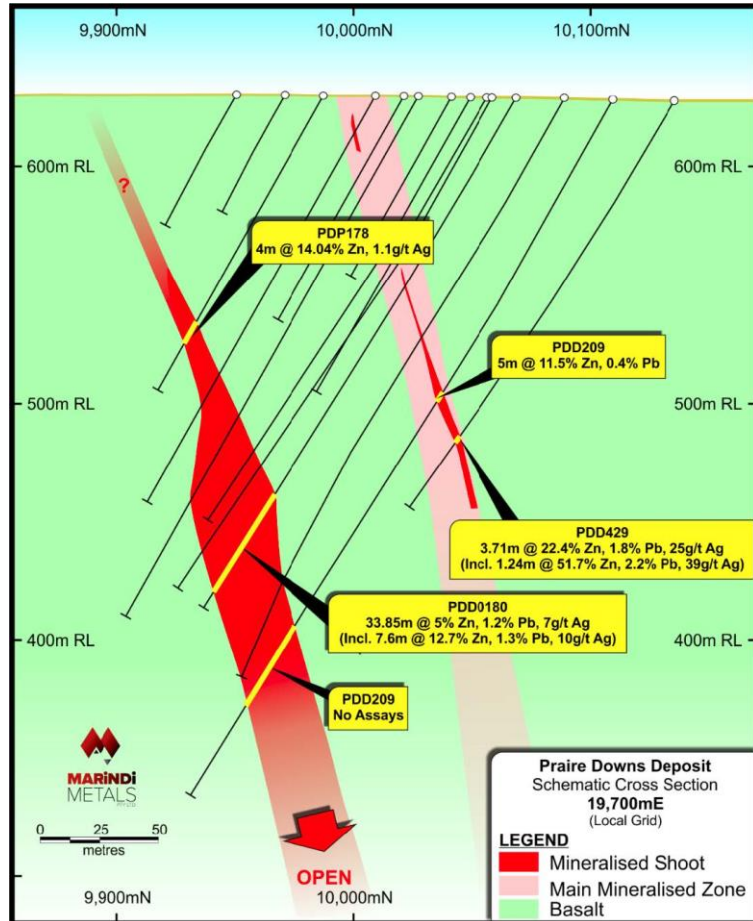
**Prairie Mineral Resource, 1% Zn cutoff**

Zone	Resource class	Tonnes	Zinc (%)	Lead (%)	Silver (g/t)
Central	Indicated	310,000	5.55	1.69	15.8
East	Indicated	930,000	6.68	1.73	22.2
Main Splay	Indicated	670,000	3.75	1.01	6.3
West	Indicated	360,000	3.88	2.24	11.8
<b>Total Indicated</b>		<b>2,280,000</b>	<b>5.22</b>	<b>1.59</b>	<b>15.0</b>
Central	Inferred	220,000	3.62	1.88	18.4
East	Inferred	140,000	5.81	1.73	21.1
Intermediate Splay	Inferred	90,000	4.62	1.69	22.4
Main Splay	Inferred	190,000	3.13	1.24	5.9
West	Inferred	70,000	3.51	1.17	6.8
<b>Total Inferred</b>		<b>700,000</b>	<b>4.03</b>	<b>1.58</b>	<b>14.9</b>
<b>Total</b>		<b>2,980,000</b>	<b>4.94</b>	<b>1.59</b>	<b>15.0</b>

75% of the resource is in the Indicated category

Source: Marindi Metals

**Prairie cross-section**



Mineralisation at Prairie Downs is steeply dipping

Source: Marindi Metals

**Prairie Pup**

Drilling has intersected shallow alteration and anomalous zinc at Prairie Pup

Prairie Pup, marked by outcropping mineralisation with XRF lead and zinc values of up to 10% and 4% respectively, located some 600m to the SE of Prairie Downs was tested by eight RC holes for 836m. Two of the holes intersected alteration and highly anomalous zinc in the top 30m; however the Company is of the view that the drilling did not test the PDFZ.



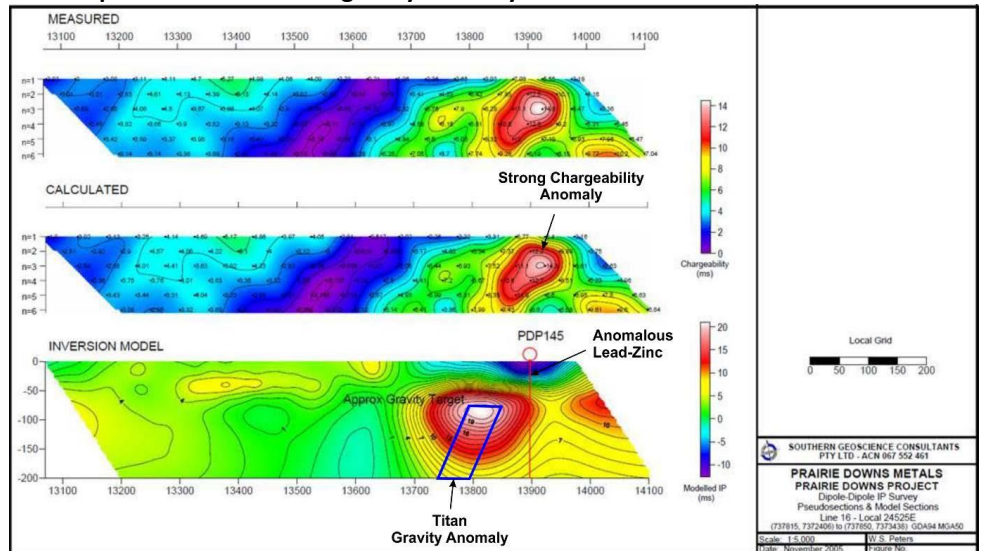
### Titan

Newly uncovered IP data indicates compelling drill target at Titan

Titan is marked by a coincident gravity and magnetic anomaly at the northern end of the Hyena-African Hunting Dog soil anomaly. This has been tested by one 700m diamond drill hole, with elevated zinc and lead geochemistry being noted in sulphidic sediments. Subsequent to the drilling, the Company has become aware of a re-interpreted 1990's dipole-dipole induced polarisation ("IP") survey, which has a strike length of 800m and is coincident with an unexplained gravity anomaly in close proximity to the PDFZ – such anomalies are commonly associated with sulphides.

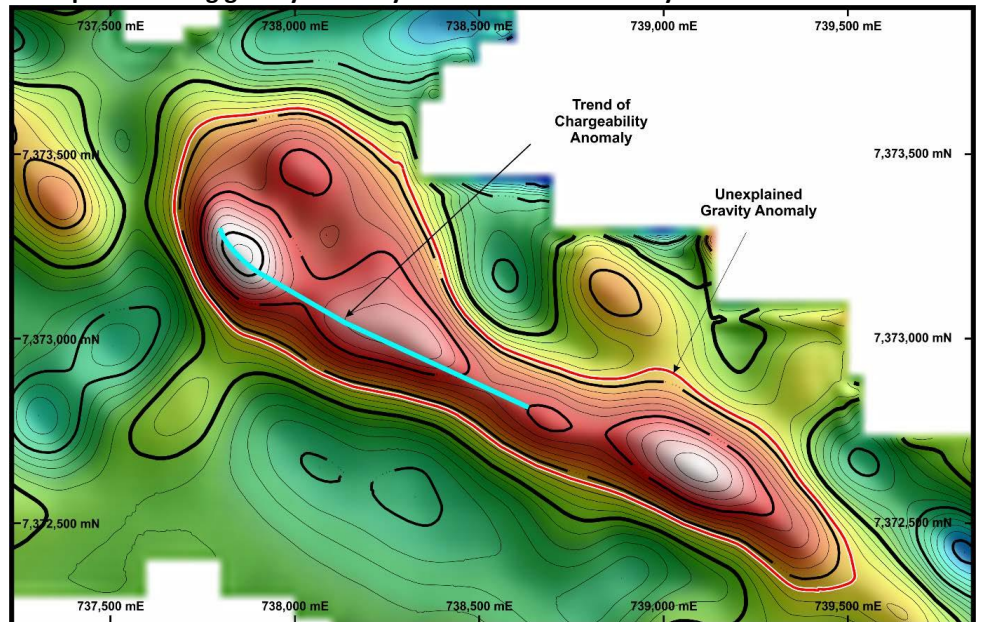
Previous drilling, including the Marindi drillhole, has not tested the IP anomaly. Pseudo-sections and a plan are shown below.

### Titan IP pseudo-sections with gravity anomaly and hole PDP145 trace



Source: Marindi Metals

### Titan plan showing gravity anomaly and trend of IP anomaly



Source: Marindi Metals

### Geological Interpretation

As part of their work programmes, Marindi is participating in the "Distal Footprints Research Programme", a collaborative programme between the CSIRO and numerous other organisations to study the Capricorn Orogen. The programme, with a planned budget of some \$20 million has been running for 12 months, with another four years to go.

The trace element signature at the NZP is indicative of SEDEX mineralisation

One interpretation is that mineralisation represents remobilisation of pre-existing sulphide mineralisation into the PDFZ

Work to date at the NZP indicates that the trace elements signature at Wolf is highly characteristic of that associated with SEDEX deposits, and particularly those in the Brooks Range of Alaska, including Red Dog, the world's largest operating zinc mine.

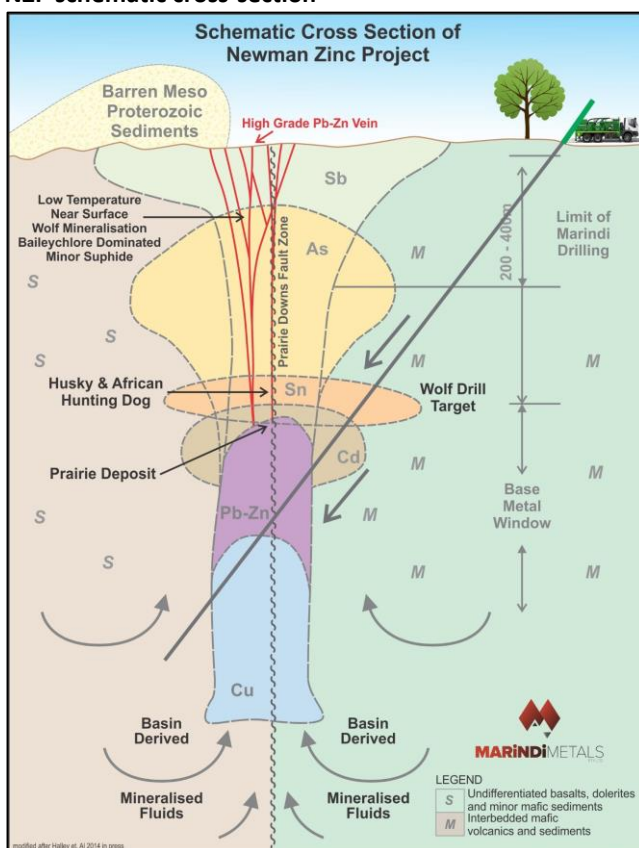
A potential interpretation is that the mineralisation has been remobilised into the PDFZ from a larger sulphide source deeper and/or to the south, which is masked by the younger Bresnahan and Bangemall Formations (which also cut off the Hyena-African Hunting Dog soil anomaly).

It has also been noted that geochemical and alteration signatures at Prairie Downs are similar to those at the CSA Mine near Cobar, NSW.

Interpretative work is ongoing, and will be used to plan upcoming activities. This includes work by Scott Halley and others, with an interpretive section shown below, indicating a zoned mineral system.

### NZP schematic cross-section

Interpretive work is ongoing



Source: Marindi Metals

### Planned Activities

The Company has recently commenced a 3,000m RC and diamond drill programme, as part of ongoing exploration activities. Upcoming work will include:

- Extending detailed ground gravity surveys along and to the south of the PDFZ,
- Further drilling at Wolf
- Testing a number of IP targets south-east along strike along the PDFZ from Wolf
- Three deep holes at Wolf and Prairie, partly funded by the WA Government's Exploration Incentive Scheme ("EIS")
- Drill testing an IP anomaly at Prairie Pup that was not tested in 2015 due to rig access issues
- Drill testing the co-incident gravity/IP anomaly at Titan.

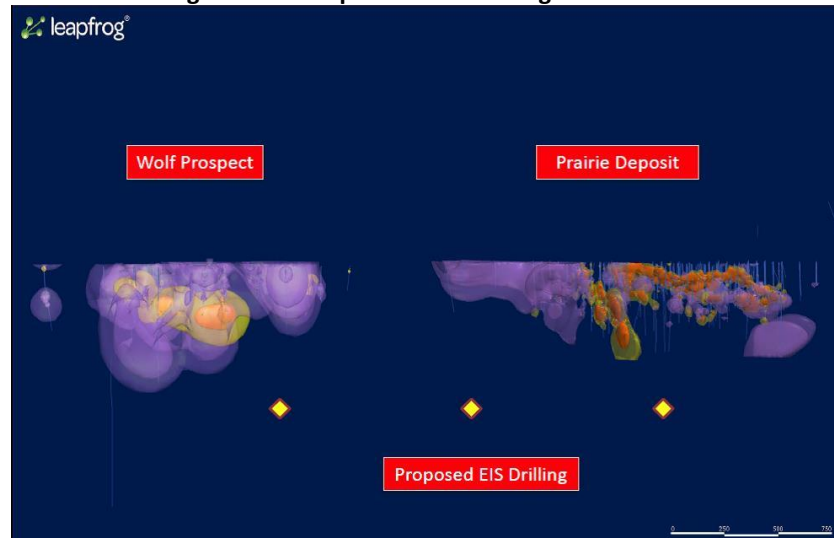
Planned activities include further drilling

The EIS funded drilling will target the PDFZ at around 300m below surface, or some 100m below the limit of mineralisation as intersected to date. Planned intercept points are shown in the following long section



### Wolf-Prairie long section and planned EIS drilling

Drilling will include three deep holes below the Wolf and Prairie prospects, with this partly funded through the WA Government



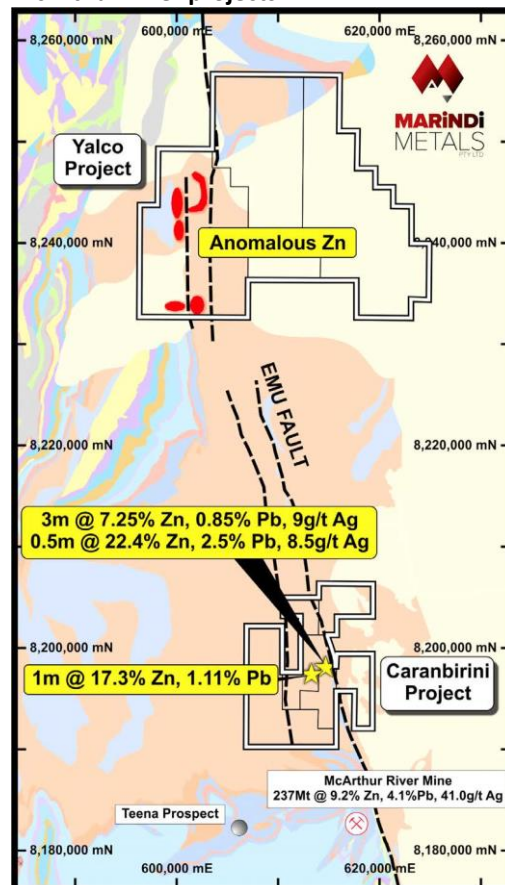
Source: Marindi Metals

### McArthur River Projects (MZN 100%, Teck earning 70%)

#### Introduction and Tenure

Marindi’s McArthur River tenements include two projects; Yalco, in which Teck is earning 70%, and Caranbirini, which is 100% held by Marindi.

#### McArthur River projects



Source: Marindi Metals

The option agreement with Teck over Yalco was signed in May 2014 by Brumby Resources, and requires Teck to spend a minimum of \$3.5 million on exploration expenditure by June 30, 2018 to earn 70%, after which the parties have the option to form a JV and contribute pro-rata. Should Marindi elect not to contribute once Teck has earned 70%, it will dilute and retain a 1.5% NSR.



Conditions already met include a \$500,000 placement and a minimum of \$500,000 expenditure by 30 June, 2015.

### Regional Geology

Both projects are located over geology which is identical to that hosting Glencore’s 237Mt McArthur River Mine, including favourable stratigraphy (the Barney Creek Formation) and structure (the Emu Fault) within the Batten Trough of the Lower Proterozoic McArthur Basin. The Emu Fault is interpreted as a basin growth fault at the time of deposition, and an important control of mineralisation.

In addition to McArthur River, other mineralisation identified in the immediate area includes Rox Resources’ (ASX: RXL, “Rox”) Reward Project, which includes the Myrtle resource (43.6Mt @ 4.1% Zn, 0.9% Pb), and the Teena prospect which has returned intersections of up to 26.4m @ 13.3% Pb+Zn. Teck is earning 70% of Reward, having earned 51% to date.

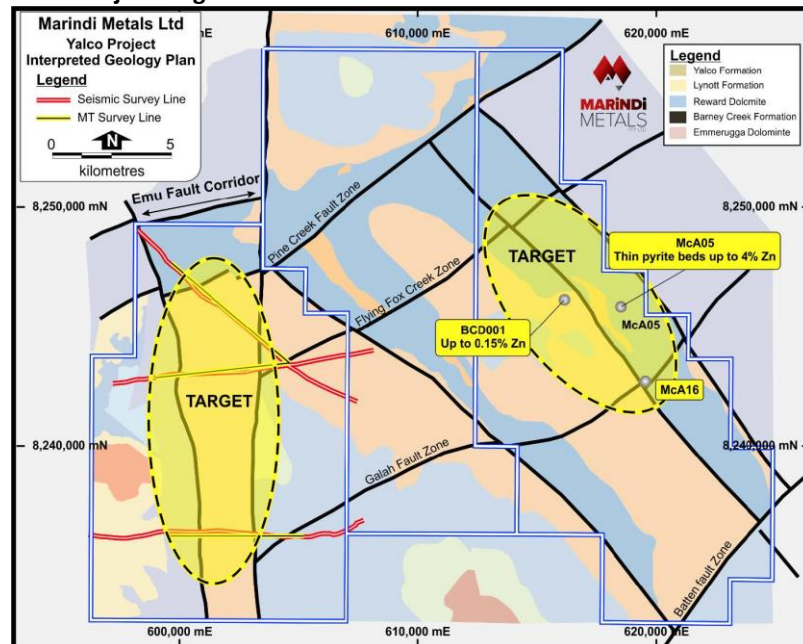
### Yalco Project

Initial work by Teck included re-logging and re-interpretation of historic work, which included two holes drilled at the southern end of the Emu Fault corridor, the only holes testing the Emu Fault in the tenements.

The re-logging of these indicated that they were terminated in the Lynott Formation and Reward Dolomite respectively, with both of these formations being above the host Barney Creek Formation.

More recent work has included ground geochemical and geophysical surveys, and most lately a three line 2D seismic survey. Data interpretation indicates that strong targets have been defined at Yalco East and in the Emu Fault corridor.

### Yalco Project targets



Source: Marindi Metals

### Caranbirini Project

Caranbirini covers some 10km strike of the Batten Trough, with previous work being concentrated around the Emu Fault, which played, along with cross-cutting structures, an important part in the deposition of the McArthur River Mine.

Only three holes have been drilled at any distance west of the fault, with one, CPH002, intersecting 1m @ 17.3% Zn and 1.3% Pb in what may be the Barney Creek Formation. Previous thoughts have been that the Barney Creek Formation is at too great a depth to justify further exploration west of the fault, and thus the area is considered underexplored.

*The McArthur River Projects cover geology, including structure and lithology, similar to that hosting Glencore’s nearby McArthur River Mine*

*Two key targets have been defined at Yalco, in which Teck is earning a 70% interest*

*Interpretations of available data have opened up the prospectivity of Caranbirini*



Results of work completed by Teck at Yalco suggest that the western edge of the Emu Fault corridor may in fact be as equally prospective as the eastern edge, and that, at Caranbirini the depth to the Barney Creek Formation has not been properly constrained – it may well be shallower than thought.

### Planned Activities

At Yalco, Teck’s plans are to further refine drill targets; however it is unlikely that they will drill during 2016. Marindi’s plans at Caranbirini include undertaking a ground gravity survey that will be used to develop a 3D geological model. This will then be used in conjunction with existing geochemical, geological and geophysical data to develop drill targets.

## Forrestania Lithium Project

### Introduction and Tenure

Marindi has recently applied for six Exploration Licences covering some 850km<sup>2</sup>, centred some 75km west of the wheat belt town of Hyden in southern WA. These applications have followed up a review of the lithium potential of the Yilgarn and Pilbara cratons by Marindi.

*850km<sup>2</sup> of tenements prospective for spodumene-hosted lithium recently applied for*

### Forrestania Lithium Project location showing lithium operations



Source: Marindi Metals

### Geology and Exploration History

The tenements cover some 90km strike length of the eastern and southern flanks of the Archaean Forrestania Greenstone Belt in the Yilgarn Craton. The belt is host to a number of nickel and gold mines and occurrences, including Western Area’s (ASX: WSA) Flying Fox and Spotted Quoll operations, and the historic Bounty Gold Mine, previously operated by Aztec, and which produced some 1.3Moz of gold during a 12 year mine life.

The Mt Holland goldfield in which Bounty is located is now owned by Kidman Resources (ASX: KDM).

The project area is also centred some 100km north of the Mt. Cattlin spodumene mine, which is owned by General Mining (ASX: GMM) and Galaxy Mining (ASX: GXY) and one of two spodumene operations in Australia.

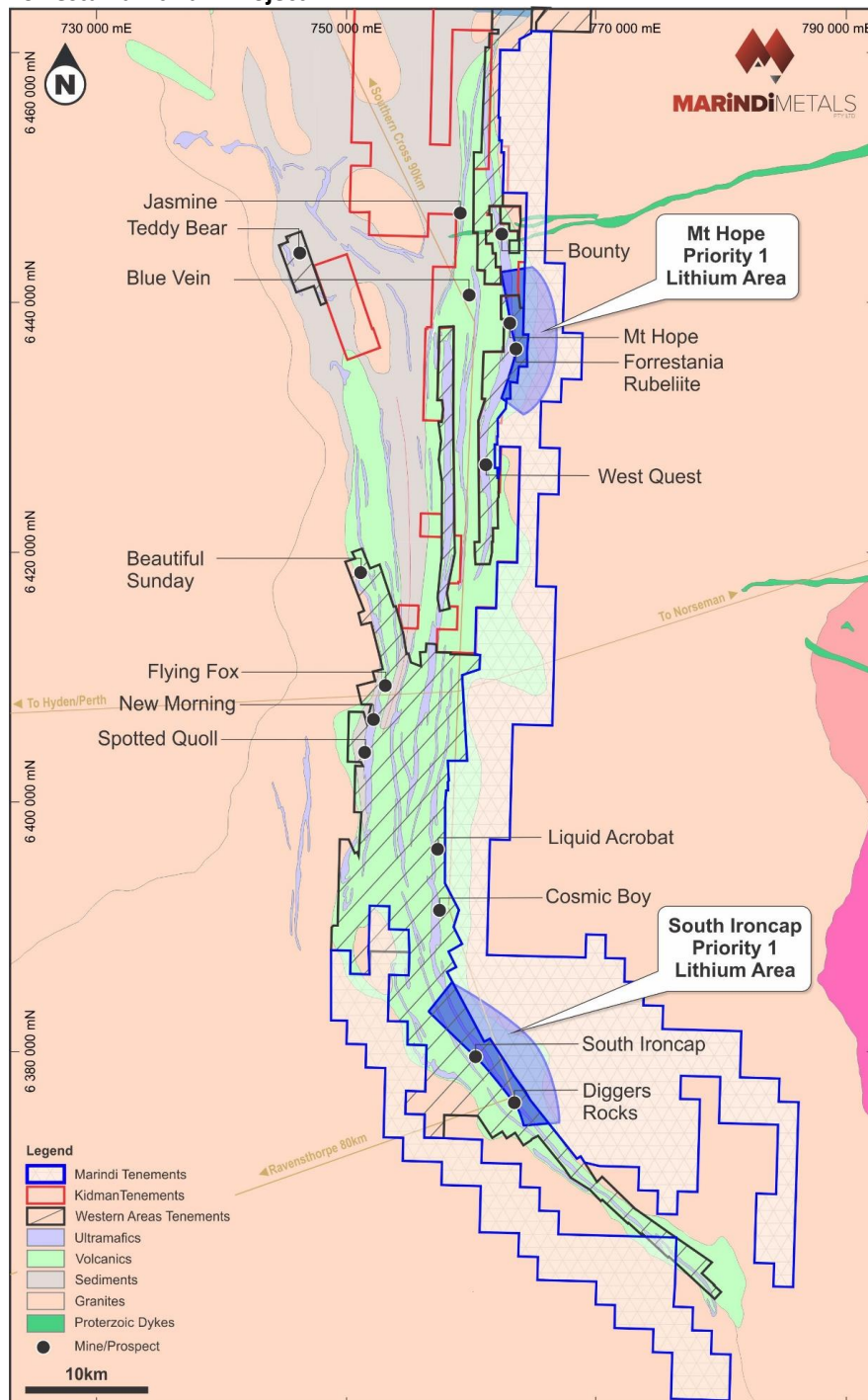
Although historically recognised as a being prospective for strategic metals including lithium, the belt has had little exploration work since the 1970’s. However a number of pegmatites have been recognised in the belt (including by Marindi in the Diggers Rocks South Prospect), and Joe Treacy (Marindi’s MD) also has extensive expertise in the area since the 1970’s including with Kagara Ltd.

Appreciable lithium intersected in historic drilling

In addition gold and nickel drilling on nearby tenements has intersected significant spodumene bearing pegmatites, with intersections of 9m @ 1.97% Li<sub>2</sub>O and 50.6m @ 0.95% Li<sub>2</sub>O, (including 9m @ 2.58% Li<sub>2</sub>O).

A 1985 report by consulting geologist/geochemist Dr Leigh Bettenay (now consulting to Marindi) recognised the presence of highly fractionated lithium-caesium-tantalum ("LCT") pegmatites in the belt, which globally are major sources of Li, Ta-Nb amongst other.

### Forrestania Lithium Project



Source: Marindi Metals

The Forrestania Lithium Project covers some 90km strike length of the Forrestania Greenstone Belt

### Planned Activities

Planned work to include mapping and geochemical sampling

The Company now plans to evaluate the tenement package with ground-based exploration, including mapping and geochemical sampling in the near future. These programmes will run in parallel to those at the NZP, which remains the main focus.



## *Breakaway's View*

At both the Newman and McArthur River Projects, Marindi has quality zinc exploration projects that have delivered very positive results to date.

Results at the NZP have highlighted the size of the mineralising systems, and the potential for further potentially economic mineralisation to be discovered. With only ~3km of the 24km of strike length of the PDFZ, and only one of the three main hydrothermal cells being investigated in detail to date, indicates that the Project is underexplored.

Marindi is taking a methodical and scientific approach to exploration (achieving good “bang for the buck”), with a key in interpreting the style of mineralisation, and the source of the fluids and metals. To that end work to date has indicated that the mineralisation exhibits a SEDEX style geochemical signature, which we consider significant. SEDEX style mineralisation includes some of the world’s largest zinc deposits, including McArthur River, Mount Isa, Red Dog and Broken Hill.

Does the mineralisation at the NZP represent mineralisation remobilised from a hidden major SEDEX deposit during reactivation of the PDFZ? If so there is the potential for a world class discovery in addition to the fault hosted mineralisation.

Work to date at McArthur River has also highlighted the prospectivity of the two projects, although work programmes are not as active as those at the NZP.

The Forresteria Lithium Project provides an inexpensive, early stage entry into a region that is a proven hard rock lithium producer, and, dependent upon exploration results, should allow the Company to leverage on the current interest in lithium. However work at Forresteria will not be carried out at the expense of the NZP which remains the priority for the Company.

A key to the Company is the personnel – the Board includes experienced mining executives with a history of delivering value to shareholders. They also have holdings in the Company, which in our view is a key strength.

Given the above we rate Marindi as a SPECULATIVE BUY. The main price mover will be positive results from the upcoming drill programme at Newman.

*We rate Marindi as a  
SPECULATIVE BUY*





## Commodity Background – Zinc and Lead

### Zinc

#### Supply and Usage

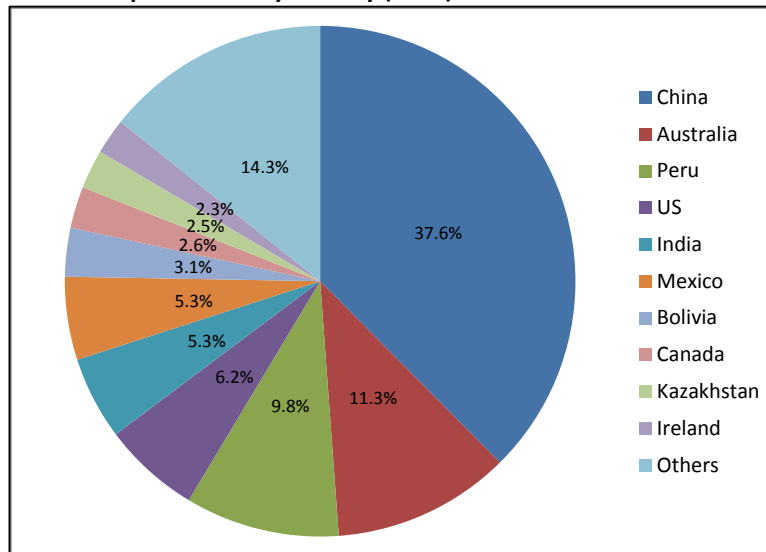
*Zinc is the fourth most consumed metal on the planet*

After iron, aluminium and copper, zinc is the fourth most consumed metal on the planet, with estimated 2014 mine production of around 13.4Mt. Production is dominated by China, which contributed over 38% of supply, followed by Australia, which produced 1.5Mt or 11.3% of global supply. China is also the world’s major user, consuming around 46%, and hence is a net importer. Wood Mackenzie forecast that Chinese consumption will increase to 52% of total global consumption by 2020.

The primary zinc mineral is sphalerite, an iron-zinc sulphide, with the bulk of global production coming from SEDEX, VMS and MVT styles of mineralisation.

#### World zinc production by country (2014)

*China is the world’s largest consumer and producer, and a net importer*



Source: USGS

Zinc has very good alloying and anti-corrosive properties, and the main use is in galvanising, with this accounting for over 50% of demand. Other major uses include die-casting and alloying with copper to produce brass.

#### Pricing

We have included a long term price history chart for the USD denominated zinc price to exhibit the long term behaviour of the metal. As can be seen prices were “relatively stable” until the start of the Chinese driven demand increase in 2005, spiked at \$4,500/tonne at the height of the boom, and then dropped during the GFC. Following recovery after the GFC zinc traded generally around US\$2,000/tonne.

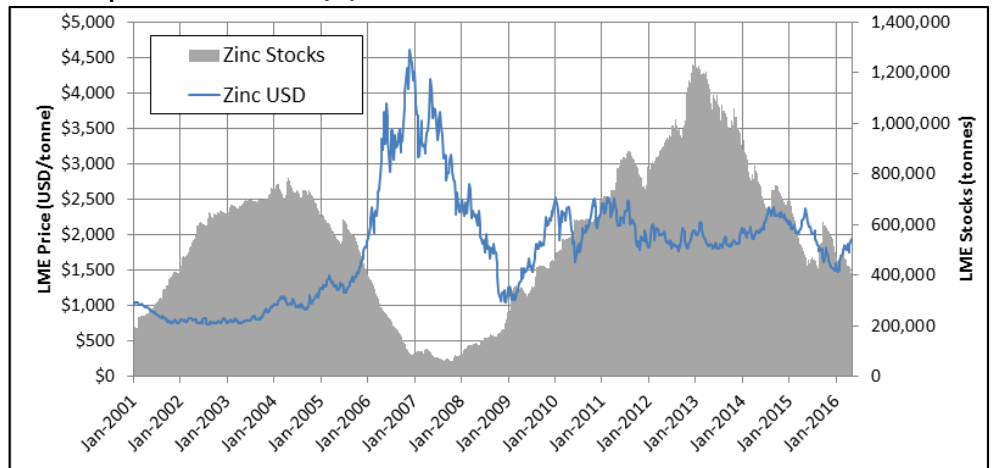
We saw a steady overall increase in the USD zinc price from mid-2013 from below US\$2,000/tonne to US\$2,400/tonne until about a year ago, with dramatic subsequent falls. Some forecasters, including Wood Mackenzie, however see increasing demand coupled with supply side issues driving prices up over the short to medium term. The supply side issues include the closures of Century and Lisheen which will respectively remove 500,000t and 150,000t of supply – running down of stocks and the associated price increases has been largely in response to this. We also saw, last year, Glencore’s cutting back zinc production by 500,000tpa, again potentially adding to supply side issues – this caused an immediate 10% jump in price.

Wood Mackenzie also see the need for up to 3.8Mtpa of new mine capacity by 2020, with this driven by forecast increasing demand, closures and ramp ups failing to meet expectation. Other forecasters also see the metal going into deficit from 2016, with prices forecast to stay around US\$2,300 to \$2,400/tonne from this time.



The graph below also highlights the halving in the LME stocks from early 2013 to now – this does not however include Shanghai stocks.

### LME zinc price and stocks – 1/1/2000 to now



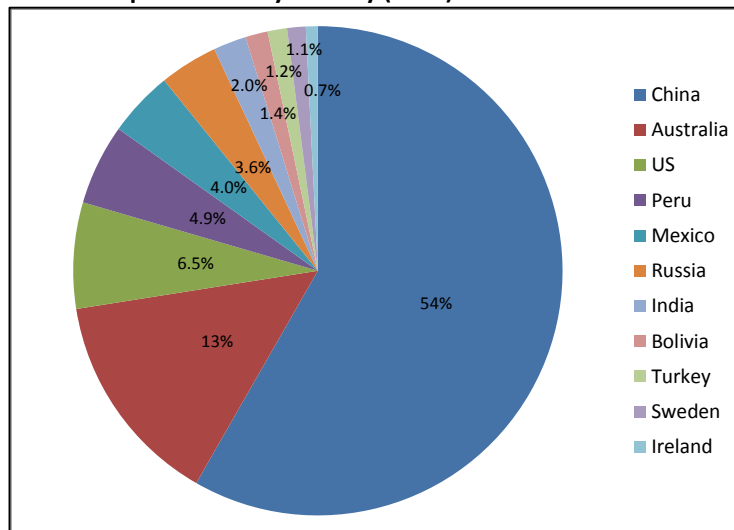
Source: IRESS

## Lead

### Supply and Usage

Worldwide consumption of refined lead is around 10.4Mtpa, however unlike zinc, a large proportion comes from recycling – world mine production in 2014 was estimated at 5.4MT, again dominated by China, which produced over 50% of the world’s primary lead. Australia, again like zinc was the second largest producer. China is also the largest consumer, using 4.6Mt from all sources in 2014.

### World zinc production by country (2014)



Source: USGS

*Lead mine production is dominated by China, with China also being the largest consumer*

*Lead is commonly produced as a co- or by-product of zinc*

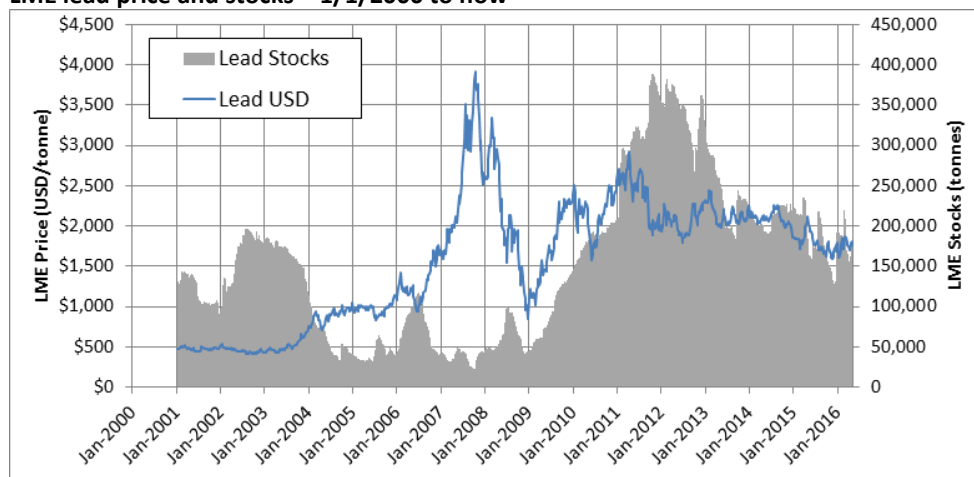
As lead is commonly produced as a co-product or by-product of zinc, the bulk of global production again comes from SEDEX, MVT and VMS mineralisation. The primary ore mineral is the lead sulphide galena, with silver often closely associated with lead mineralisation. The main use for lead is batteries; which consume approximately 80% of supply.

### Pricing

The chart below again shows a longer term price history for lead. This shows a general overall behaviour similar to that for zinc, albeit at generally lower price levels.



### LME lead price and stocks – 1/1/2000 to now



Source: IRESS

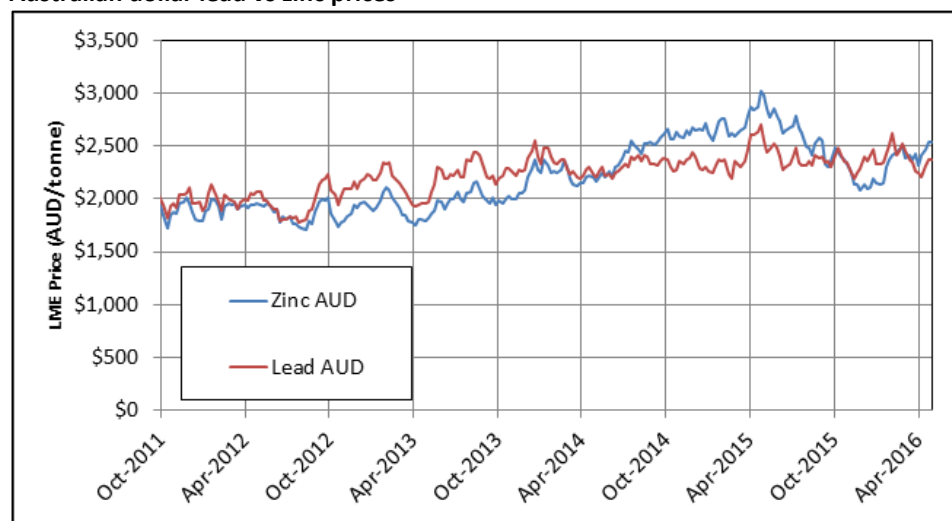
The supply side will see some of the same factors affecting zinc, given the close association of zinc and lead in major mining operations. However demand forecasts are generally a bit more subdued, although price forecasts range between around US\$2,000 to US\$2,250/tonne from 2016.

*We have provided a comparison of AUD denominated lead and zinc prices, showing the effect of the devaluation of the AUD.*

We have also included a comparison of the shorter term lead and zinc prices in Australian Dollars as presented below. As can be seen, again the behaviour of prices is broadly similar, however with lead generally underperforming zinc over the past two years – this has possibly been due partly to slowdown for demand in the Asian e-bike sector following previous strong demand, with a relatively balanced market.

This also shows the severe fall in zinc prices in 2015, after a run-up from mid-2014. Prices have now somewhat recovered, recovering half of the losses.

### Australian dollar lead vs zinc prices



Source: IRESS



## **Board and Management**

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*Non-Executive Chairman*  
**Ross Ashton**

**Mr Ashton** has over 40 years' experience as a geologist specialising in gold, base metals and industrial minerals exploration and development in Australia and overseas. He was the founder of Red Back Mining Limited before its takeover by Kinross for \$7Bn in 2010. He was also a director of TSX/ASX listed PMI Gold Limited and ASX listed Brockman Resources Ltd. Both companies were involved in significant corporate transactions. Mr Ashton brings broad geological and commercial experience to the Board.

*Managing Director*  
**Joe Treacy**

**Mr Treacy** has more than 30 years' experience as a geologist specialising in gold and base metals exploration and development in Australia and overseas. He was a founding director of Kagara Limited and Mungana Goldmines Ltd and has been involved in the exploration, development and mining of both open cut and underground base metal deposits. He is a member of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists.

*Non-Executive Director*  
**Geoffrey Jones**

**Mr Jones** is a Fellow of the Institution of Engineers, Australia, with a Bachelor of Engineering (Civil) degree. He has over 28 years' experience covering the areas of construction, engineering, mineral processing and project development.

Mr Jones has completed works on gold and base metal projects for Australian and overseas based mining groups.

Mr Jones is currently a Managing Director of GR Engineering Services Limited, and a Non-Executive Director of Energy Metals Limited and Azumah Resources Limited.

*Non-Executive Director*  
**John Hutton**

**Mr Hutton** has a background in accounting and finance and is a Member of the Australian Institute of Company Directors. Mr Hutton has over 26 years' experience in the direction and management of a diverse range of commercial activities, including over the last 16 years as a director of several ASX listed companies. He was a non-executive Director of Sandfire Resources NL (SFR) during the Copper/Gold discovery at DeGrussa, tenement holdings vended into SFR by the late Graeme Hutton. Mr Hutton has spent many years successfully prospecting in Western Australia and is a director of a number of private entities involved in the resources, pearling and fish farming industries. He is currently a director of the peak representative body, the WA Fishing Industry Council.

*Company Secretary*  
**Jeremy Robinson**

**Mr Robinson** started in stockbroking working as a mining and resources analyst before spending the last 10 years directly in the resources industry, working in areas such as business development, project development, investor relations and company secretary. He has served as company secretary of both Mungana Goldmines Ltd and Apex Minerals Ltd.



### **Analyst Verification**

We, Grant Craighead and Mark Gordon, as the Research Analysts, hereby certify that the views expressed in this research accurately reflect our personal views about the subject securities or issuers and no part of analyst compensation is directly or indirectly related to the inclusion of specific recommendations or views in this research.

### **Disclosure**

Breakaway Investment Group (AFSL 290093) may receive corporate advisory fees, consultancy fees and commissions on sale and purchase of the shares of Marindi Metals and may hold direct and indirect shares in the company. It has also received a commission on the preparation of this research note.

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