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#### **Company Information**

ASX Code	МСТ
Share Price (12 Oct 2015)	A\$0.022
Ord Shares	367m
Options	63.5m
Market Cap (Undiluted)	A\$8.07m
Cash (12 October 2015)	A\$6.00m
Total Debt	A\$0m
Enterprise Value	A\$2.07m

#### **Directors & Management**

Non-Exec Chairman	Andrew Daley
Managing Director	Matthew Gauci
Non-Exec Director	Chris Bain
Non-Exec Director	Mat Longworth
Project Management Consultant	Peter Lester
Exploration Manager	Mike Hannington

### **Company Details**

Address	6 Outram Street West Perth WA 6005
Phone	+613 9600 0782
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#### Top Five Shareholders

22.50%
9.90%
9.00%
3.50%
55%
45%

#### **1 Year Price Chart**



**Metalicity Limited (MCT)** 

# Admiral Bay Scoping Study Commences

Recommendation: Speculative BUY

### **Key Points**

- Admiral Bay Zinc Project Scoping Study commences
- With a published resource of 72Mt @ 6.7% ZnEq, this is one the largest undeveloped zinc projects globally
- Includes a published high grade zone of 20Mt @ 10% ZnEq
- Excellent resource upgrade and expansion potential
- Medium to long term forecast increase in zinc price
- Non-debt financing of A\$5.0m from leading global mining financier to take project through to completion of a Scoping Study
- Exploration work has confirmed the prospectivity of the Rocky Gully Nickel-Copper Project in the Albany-Fraser Province

Metalicity Limited (previously PLD Corporation) is now commencing the Scoping Study following completion of the acquisition of the Admiral Bay Zinc deposit, located in the Canning Basin of Western Australia. This is one of the world's largest undeveloped zinc projects, and there is significant scope for a resource upgrade and expansion given that mineralisation has been intersected along a mineralised trend with a strike length of 18km.

The acquisition and proposed initial 6 month work programme through to the completion of a Scoping Study ('the Study") are fully funded, with agreements in place to the tune of US\$5.0 million with Resource Capital Funds ("RCF"). The RCF funding includes a completed \$0.68m share subscription and a US\$5m royalty purchase.

The acquisition of the Rocky Gully Nickel-Copper Project has also been finalised, which was previously held under option agreements. Exploration work to date on this project, located near Albany in southern WA has returned encouraging results for sulphide nickel-copper and VMS style mineralisation.

We rate MCT as a SPECULATIVE BUY, with price movers including positive results from the Scoping Study at Admiral Bay and exploration at Rocky Gully.

#### **Company Overview**

Metalicity is an ASX-listed company which has recently changed its business from Health Care to Mineral Exploration. The Company's initial project was Rocky Gully, considered prospective for Nova-style nickel-copper mineralisation, which the Company has been actively exploring to date.

The acquisition of the flagship Admiral Bay Zinc Project was announced in late 2014, with completion and re-compliance with Chapters 1 and 2 of the ASX Listing Rules now finalised. The Company is now commenced a Scoping Study on Admiral Bay.



# Investment Thesis

# **Potentially a World Class Asset**

Acquisition of the 72Mt Admiral Bay MVT project in the Canning Basin of WA Metalicity Limited (ASX: MCT, "Metalicity" or "the Company") has finalised the acquisition and funding of the Admiral Bay Zinc Project ("Admiral Bay"), located in the Canning Basin of Western Australia, and has now commenced the Scoping Study. Admiral Bay is a Mississippi Valley Type ("MVT") system, and with published JORC 2012 compliant resources of **72Mt @ 3.1% Zn, 2.9% Pb and 18g/t Ag (6.7% ZnEq)** is one of the largest of this type of deposit in the world, and one of the largest undeveloped zinc projects globally.

# **High Quality Resource, Simple Mineralisation**

MVT mineralisation is a well-understood style of mineralisation, and work to date at Admiral Bay has intersected thick, flat-lying zinc and lead mineralisation in most holes over an 18km mineralised trend, including a coherent resource thus far defined over 2.1km. Although deep (at around 1,200m below surface) any future mining should be reasonably simple, with simple metallurgy also being a feature of MVT systems – results from earlier work indicated recoveries of up to 96% for zinc and 98% for lead; both to high quality concentrates with very low impurities.

# Acquisition and Work Programmes Fully Funded

The acquisition and proposed Scoping Study work programmes are fully funded, with funding arrangements resulting in only minimal dilution to shareholders. Metalicity initially completed a \$0.68m share subscription with RCF, a leading global mining finance house with ~US\$2.5Bn under management, which was used for the acquisition and ASX re-compliance process. A US\$5 million net smelter royalty ("NSR") sale has also been finalised with RCF, with monies now advanced to fund the Scoping Study.

# Scoping Delivery by Early to Mid-2016

Metalicity has commenced the Scoping Study for Admiral Bay. The expected cost is in the order of \$5.0 million, with delivery of the study in early to mid-2016. This work will include a re-interpretation of the current resource, which the Company expects will result in a resource expansion. No drilling is planned for this study.

# Looking at New Resource Definition and Mining Technology

As part of the Study, Metalicity will be looking at innovative exploration and mining technologies. On the exploration side this will include directional drilling, and the use of predictive orebody modelling. On the mining side the use of tunnel boring machinery ("TBM") for sinking a decline is also to be investigated in addition to more conventional decline and shaft development methods.

# **Excellent Resource Expansion Potential**

The current JORC-2012 compliant resource covers only 2.1km of the 18km mineralised corridor, with 90% of the wide spaced scout holes outside of the resource returning significant mineralisation, indicating the potential for significant additional mineralisation to be found – there is an exploration target of 170-250Mt for Admiral Bay.

# **Potential for Further High Grade Zones**

The modelled resource includes a coherent higher grade zone of **20Mt @ 3.2% Zn, 5.8% Pb and 25g/t Au (10.1% ZnEq as released to the market)** indicating the potential for

MVT mineralisation is well understood, and previous work has identified a thick coherent resource

The acquisition and Scoping Study are fully funded

It is planned to deliver a Scoping Study by early to mid-2016

There is excellent scope for significant resource expansions

Added to this is the potential to delineate



# additional higher grade mineralisation

A number of

outlook for zinc

commentators have forecast a positive

other higher grade zones to be discovered along the mineralised trend, which will have the potential to significantly improve the economics of any future operation.

# **Positive Outlook for Zinc**

Current predictions by a number of commentators indicate a strong future for zinc (despite recent turmoil), which could provide approximately 50% of the revenue from Admiral Bay. Increase in demand coupled with supply side constraints have the potential to lead to significant price increases. Supply side contractions include the imminent closure of Century, which will remove around 500,000tpa out of the market, and delays in the implementation of a number of other projects. Again on the supply side, the recent announcement by Glencore that it will be cutting around 500,000tpa of its global zinc production has resulted in a sharp 10% rise in price in both zinc and lead, following sustained falls over the last few months.

# Australian Denominated Prices Help.....

Potential project economics are also helped by the recent falls in the Australian dollar pushing up Australian denominated metals prices, coupled with the potential for lower capital and operating costs post the recent resources boom.

## ...as do Lower Costs

The current downturn in the industry has significantly lowered contractor costs in Western Australia, with these anecdotally down 25% from the peak of the boom. This will further help potential project economics.

# **Don't Forget Rocky Gully**

The Company is continuing exploration activities on its Rocky Gully Project, where more than 8 EM Conductors have been identified. A number of these are associated with anomalous Ni-Cu and Zn-Cu geochemistry and are planned to be systematically explored.

# **Experienced Personnel**

Metalicity has a board with extensive resources industry experience, both technical and commercial. As part of the Admiral Bay acquisition the Company has engaged a team of consultants with (1) extensive MVT exploration and development experience and (2) extensive large scale underground development and mining experience to deliver the Scoping Study.

# **Metalicity Peer Group**

Metalicity is one of only a few 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 have two cases for Metalicity – one based on the 72Mt resource, and another on the 20Mt higher grade subset, with parameters calculated on the current share structure and assuming cash of \$6 million. This shows the potential for value increase for Metalicity, and the relatively high in-ground value per tonne for the higher grade resource.

We note however that such comparisons are indicative only, and should be used with care.

Falls in the Australian dollar help prices

Cost structure decreasing for mining projects

Exploration will continue at the Rocky Gully Project

Personnel associated with Metalicity have extensive experience applicable to the projects

Metalicity is one of only a few developers and producers with significant zinc exposure

A peer comparison shows potential for increase in value for Metalicity



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

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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	<b>\$</b> 107.5	2,506	2,506	17.62%	\$409	441.55	\$244	Hera - Production Nymagee - FS	Cu, Pb, Zn, Ag, Au
Terramin	Angas, Tala Hamza	\$306.5	77,580	53,570	5.98%	\$139	3,203.03	\$96	FS - Hamza C & M - Angas	Zn, Pb
Peel Mining	Mallee Bull	\$15.6	3,900	1,950	9.01%	\$209	175.72	\$89	Drilling, Resource Expansion	Cu, Pb, Zn, Ag, Au
Red River Resources	Thalanga	\$22.3	3,800	3,800	16.00%	\$372	608.04	\$37	Restart	Cu, Pb, Zn, Ag, Au
KBL Mining	Mineral Hill	\$35.7	21,380	17,455	8.04%	\$187	1,404.25	\$25	Production	Cu, Pb, Zn, Ag, Au
Rox Resources	Reward	\$20.4	43,600	21,364	5.05%	\$117	1,077.84	\$19	Exploration	Zn, Pb
Phoenix Copper	Hayes Creek	\$5.0	2,605	2,605	15.56%	\$361	405.24	\$12	Scoping Study	Cu, Pb, Zn, Ag, Au
Ironbark	Citronen	\$28.9	70,800	70,800	5.64%	\$131	3,989.70	\$7.24	Feasibility	Zn, Cu, Pb
Heron Resources	Woodlawn	\$17.5	24,770	24,770	10.60%	\$246	2,626.84	\$6.66	Feasibility	Cu, Pb, Zn, Ag, Au
Venturex Resources	Sulphur Springs	\$3.6	18,370	18,370	7.58%	\$176	1,393.23	\$2.57	Feasibility	Cu, Pb, Zn, Ag, Au
Overland Resources	Yukon	\$1.4	12,560	12,560	6.14%	\$143	771.47	\$1.76	Feasibility	Zn, Pb
Metalicity	Admiral Bay High Grade	\$2.1	20,000	20,000	9.76%	\$227	1,95 <mark>1.81</mark>	\$1.06	Scoping	Zn, Pb, Ag
Metalicity	Admiral Bay All	\$2.1	72,000	72,000	6.54%	\$152	4,708.56	\$0.44	Scoping	Zn, Pb, Ag

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 in any resources stock there are a number of risks – ones pertinent to Metalicity's current activities and delivering a positive Scoping Study are discussed below.

- Resources Given the relatively high capital costs of deep underground mining, the resource grade and tonnage will have to be sufficient to support a long term, high throughput operation to firstly cover the expected significant capital and secondly return an adequate cash operating surplus. Our view is that the riskier aspect here is the grade – the in-ground value of the overall current resource is moderate when compared to other deep underground operations, however this should be mitigated should further higher grade mineralisation be delineated.
- Metallurgy MVT mineralisation is known for generally simple metallurgy, and previous testwork at Admiral Bay has returned excellent recoveries to high quality concentrates, mitigating this risk.
- Prices, Exchange Rates and Markets This is a key risk for any resources project, and one which companies have little or no control over. Recent falls in the Australian dollar work in the project's favour, and forecast rising demand and resultant price increase for zinc are also positive (despite the recent sharp falls) the project will require at least medium Australian denominated metals prices to have a chance of being viable. The forecasts for lead are softer, however we note that over the long term the two metals largely move in parallel. The 10% increases in both lead and zinc prices in reaction to Glencore's announcement that it would be curtailing production are welcome, and offset some of the falls over the last five months.

A key risk is in the resource grade and tonnage

Metallurgy is largely derisked

As in all projects, metal prices and exchange rates are a risk that the Company has no control over



Notwithstanding unforeseen circumstances, funding risk for the current study is largely mitigated

- Funding This risk has largely been mitigated by the completion of financing agreements to cover funding of the Scoping Study. Should there be unanticipated costs in this study, the Company may need to go back to the market to make up any shortfall, however management have already demonstrated capability to deliver financing without dilution to shareholders. Significant funding will be required should a decision be made to proceed to feasibility once the Scoping Study is complete. The Company state that they have had positive discussions with a wide range of international mining houses, trading houses, smelters and private equity firms.
- **Exploration** This risk is most applicable to Rocky Gully, which being early stage has an inherently high exploration risk. At Admiral Bay this will mainly apply to the resource expansion activities.

# Introduction

# **Project Acquisition, Funding and Company Re-Compliance**

Metalicity has completed the acquisition of two projects:

- The Admiral Bay Zinc Project Kagara Zinc Ltd (in liquidation, "Kagara")
- The Rocky Gully Nickel-Copper Project Heron Resources Limited (ASX: HRR, "Heron"), Third Reef Pty. Ltd. ("Third Reef")

Both of these are located in Western Australia, with the Company currently carrying out exploration work over the Rocky Gully area, which commenced in 2014.

As part of the acquisitions, Metalicity has obtained financing to the order of A\$5.7 million with RCF to fund the acquisitions and then progress work programmes. Planned programmes include:

- Compliance, project acquisition \$600,000, now complete
- Complete a Scoping Study at Admiral Bay by mid 2016 \$4,000,000
- Ongoing exploration at Rocky Gully \$575,000 to December 2016

Key financing terms include:

- Sale of a 1% NSR over Admiral Bay for US\$5,000,000 to RCF Fund V1 L.P. this includes the potential for Metalicity to buy the royalty back at some future date.
- Completed share subscription for 68,957,416 shares at \$0.10 in Metalicity.

Due to the change in the nature and scale of the Company's business (having previously been listed as a "Health Care" entity), re-compliance with Chapters 1 and 2 of the ASX Listing Rules was also required. The re-listing was also accompanied by a 2 for 1 share consolidation.

Key terms of the Admiral Bay acquisition from Kagara are:

- Granting a 1.5% Net Smelter Return Royalty ("NSR") on production
- Right to buy back the NSR in two tranches 0.5% for \$1 million in shares or cash at the completion of a Scoping Study, and 1% for \$2.5 million in shares of scrip upon successful commencement of production.
- Payment of \$500,000 cash on completion
- Issue of a \$500,000 convertible note, convertible on the holder's election at the maturity date 2 years after issue.
- Milestone payment of \$2,500,000 in cash or shares (at Metalicity's election) upon the third anniversary of commencement of production

Key terms of the acquisition of 90% of Rocky Gully from Heron are:

- The issue of 28,750,000 fully paid ordinary shares at \$0.008/share, or pay \$230,000 cash at Metalicity's election
- Heron retains a 1.5% NSR on any future production

Key terms of the acquisition of 100% of Rocky Gully East from Third Reef are:

- The issue of 5,000,000 fully paid ordinary shares at \$0.01/share, or pay \$50,000 cash at Metalicity's election
- Third Reef retains a 1.5% NSR on any future production

# **Technical Team**

Metalicity has assembled a team of staff and consultants with extensive experience in project development and MVT mineralisation to progress Admiral Bay.

programmes through to the middle of 2016

Funding of around \$5.7

million has been secured

Metalicity has finalised

the acquisition and funding of the Admiral

Bay and Rocky Gully

projects in WA

to cover work

A re-compliance with Chapters 1 and 2 of the ASX List Rules was required

A 2 for 1 share consolidation has been completed

Project acquisition involves only limited upfront costs





# **Proposed Work Programme**

The table below presents the planned work programme for the Admiral Bay Scoping Study. One key outcome of this will be the decision on whether to proceed to feasibility or not. Given the depth to mineralisation, a major consideration will be the cost of resource/reserve definition and upgrade drilling; a major component of the cost of any future study.





Source: Metalicity

As part of the Scoping Study the Company will be reviewing, re-modelling and integrating all historic exploration data (including oil and gas exploration data), with a view to upgrading the current 3D resource model and JORC-compliant Inferred Resources. This will include:

- Re-processing of historic 2D seismic data to determine potential continuity of mineralisation (the original drilling was targeted using seismic data)
- Re-logging of all available drillholes
- Considering the potential to use 3D seismic surveying to image structures and mineralisation to provide drill targets.

Mining and development studies will look at a number of orebody access alternatives. These will include shaft and decline access, with the potential for using a tunnel boring machine ("TBM") for decline development being an option.

The use of TBM's for decline development is not unknown, with examples being the Stillwater and Magma Mines in the USA. Cost wise, they are comparable to drill and blast tunnelling, however are significantly more productive.

Orebody access is also pertinent to the decision to proceed to feasibility – it could be financially viable to provide an exploration shaft or decline and drill from underground, rather than carry out the bulk of the resource definition drilling from the surface. If this is the case development can be used (and upgraded if necessary) should a decision to mine be made.

Different mining methods will also be investigated, including fully automated room and pillar mining amongst others.

The Company will be reviewing all historic data

Alternative access and mining methods will be considered



# Admiral Bay Zinc Project – MCT 100%

# **Introduction and Tenure**

Admiral Bay is one of the world's largest undeveloped zinc plays, and is located approximately 140km south of Broome Admiral Bay, one of the world's largest undeveloped zinc projects, is located in the Kimberley region of northern Western Australia, some 140km south of Broome, on the coastal fringes of the Great Sandy Desert.

#### **Admiral Bay location**



Tenure includes two granted ML's and one granted EL

Source: Metalicity

The project is covered by two granted mining licences, M04/244 and M04/249, and one exploration licence, E4/1610. These cover 25km strike length of potential mineralisation.

The Project is within 50km of the main Great Northern Highway. Potential ports include Port Hedland and Derby, both around 400-450km by road from Admiral Bay.

## **Geology and Mineralisation**

Mineralisation is MVT in style, and has been traced along an 18km long trend

Admiral Bay is an MVT style deposit, hosted in Ordovician carbonate rocks of the Willara Sub-basin, an element of the broader Ordovician to Cretaceous Canning Basin. The mineralisation, which is at between 1,160 and 1,500m below surface and flat-lying, has largely formed for 18km along strike along what is interpreted as an "algal bioherm", an ancient shallow water algal reef forming a linear depositional feature. This feature, controlled by the Admiral Bay Fault Zone ("ABFZ") has formed on the northern edge of the sub-basin, with the Broome Arch to the north.







Source: Metalicity

Mineralisation is replacement in style, and includes zinc, lead, silver and barite, with silver closely associated with galena, a lead sulphide, and zinc in the form of sphalerite.

Admiral Bay is unusual, in that mineralisation and alteration forms four distinct zones, with zones (2) and (4) being the major mineralised bodies:

- 1. Sulphides, including sphalerite, galena and chalcopyrite in highly altered and veined footwall algal bioherm
- 2. A lower lead rich lens (up to 15m thick) near the top of the algal bioherm of the Goldwyer Formation
- 3. Strong dolomitisation extensively replacing large areas of the Leo Member of the Ordovician Nita Formation
- 4. An upper strata-bound zinc-rich lens (up to 20m thick), hosted in the Cudalgarra Member of the Nita Formation and the Ordovician Bongabinni Formation of the Caribuddy Group.

This lower lead zone has been compared to mineralisation in southeast Missouri, with this style of lead-rich MVT mineralisation being relatively uncommon. The zinc-rich material is more typical of most MVT deposits, similar to those of the Lennard Shelf and Pine Point (NWT, Canada), albeit with Admiral Bay being unusual in that it is significantly larger, and from the work done to date, more continuous than most, with 90% of holes intersecting mineralisation.

Drilling has intersected the upper zinc zone, which, in the resource area, is between 150m and 670m wide across strike, in most holes along the 18km strike of the mineralised trend demonstrating the potential continuity. The lower lead zone is more restricted, being intersected only at the eastern end of the trend. Total mineralised intervals of between 20-75m have been intersected in the drilling, with individual zones up to 50m thick.

The age of mineralisation, which is epigenetic (post-dates the age of the host rocks) has been interpreted as Late Silurian, coincident with burial and thermal subsidence of the Willara Sub-basin. Although mineralisation is similar to that of the Lennard Shelf deposits (including Cadjebut), these have been interpreted as being younger, at late Devonian to Early Carboniferous, coincident with the thermal subsidence of the Fitzroy Trough.

The system contains four alteration and mineralised zones, unusual for an MVT deposit

The lower lead zone is analogous to deposits in SE Missouri, the zinc to Lennard Shelf deposits and Pine Point

Drilling has intersected thick, wide zones of mineralisation



#### Admiral Bay cross section



Source: McCracken et al 1996



#### Admiral Bay schematic long section - Mineral Resource area

Source: Metalicity/Kagara

# **Exploration History**

Admiral Bay was originally discovered in 1981 during petroleum exploration by Meridian Oil NL ("Meridian"), with a later oil well drilled by Sydney Oil Pty Ltd ("Sydney Oil") in 1986 intercepting base metal mineralisation above and within a suspected algal mound.

Based on these results, CRA Exploration ("CRAE") took out exploration licences along the ABFZ, and using seismic data for targeting, drilled 24 holes for 37,472m between 1986 and 1991. This drilling was along the 18km strike length, with most holes intersecting mineralisation.

CRA held the project until 2004, at which time it was acquired by Kagara. Work by Kagara between 2004 and 2009 included the drilling of 11 rotary mud/diamond holes over the eastern part of the mineralisation, and included 13,137m of rotary pre-collars and 3,608m of diamond tails.

Admiral Bay was discovered during oil exploration – subsequent work has been completed by CRAE and Kagara Kagara completed a JORC-2004 compliant resource estimation as part of a PFS completed in 2010, during the height of the recent boom. This PFS, which envisaged a \$1 billion capital cost, used AUD denominated zinc and lead prices of \$2,600/tonne, which are broadly similar to current levels. We would expect that operating costs (which were not released by Kagara) and the capital cost have the potential to be significantly lower than those used in the Kagara PFS.

#### Resources

The total resource of

72Mt includes a coherent higher grade

zone of 20Mt

Resources have been calculated from 21 drill holes, including 11 drilled by Kagara. The inferred resource covers 2.1km at the eastern end of the 18km mineralised trend.

The current resource was originally completed in 2009 - as part of the due diligence process, Metalicity has re-stated the resources to JORC-2012 standard, with the results of this given below.

Admiral Bay Inferred Resources – 2% ZnEC
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Zone	Million	Zn (%)	Pb (%)	Ba (%)	Ag (g/t)
2016	Tonnes	211 (70)			
Zone 1 – Cudalgarra/Nita Contact	21.9	3.8	0.9	7	14
Zone 2 – Nita High Zinc	35.1	4.0	2.1	13	20
Zone 3 – Nita Low Zinc	24.6	0.1	2.7	28	8
Zone 6 – Nita/Goldwyer Lead	15.1	0.1	7.5	15	21
TOTAL	96.7	2.4	2.9	16	15
TOTAL – Zone 1, 2, 6	72.1	3.1	2.9	11	18

Source: Metalicity Corporation

Using a 7.7% ZnEq cut-off, a coherent higher grade zone of 20Mt grading at 3.2% Zn, 5.8% Pb and 25g/t Ag has been identified within the overall resource.



# Admiral Bay Mineral Resource area and drilling

Source: Metalicity

# **Exploration Potential**

Results of previous work indicate significant potential for resource expansions – there is an exploration target of 170-250Mt Given the results of drilling, an Exploration Target of 170-250Mt grading at 2.2-3.1% Zn, 2.5-3.6% Pb and 20g/t Ag has been published over the 18km strike length. As mentioned, around 90% of holes drilled along the ABFZ returned mineralised intercepts, highlighting the potential to find additional resources. Given the results from the JORC resource estimation there is also the scope for higher grade zones to be defined.

The figures below show the drilling along the ABFZ, clearly indicating the upside potential – scout holes are sited more than 2km apart.



### Admiral Bay Fault Zone drilling



Results of drilling along the 18km mineralised trend clearly show the expansion potential

Source: Metalicity Corporation

#### Metallurgy

As is typical of MVT mineralisation, metallurgy is simple and returns high recoveries As part of the due diligence process Metalicity has undertaken a review of the preliminary metallurgy carried out by CRAE and Kagara. The results of this work have been very positive, with the review confirming the results of the historic testwork. This work indicated zinc recoveries of 96% to a 55% concentrate, lead recoveries of 98% to a 70% concentrate and silver recoveries of 96% using standard flotation.

Deleterious elements are also low in both concentrates, with concentrate quality being similar to current tier one producers, indicating that marketable concentrates will be produced that will attract only very minor or nil penalties.

## Mining

It is expected any future mining would be by room and pillar The Kagara PFS envisaged shaft access and haulage, and room and pillar mining, with extraction of ~60% of the mineralisation, and scope to extract pillars at a later stage. As part of their current study, Metalicity will be looking at other options, including decline access (possibly using a TBM), and fully automated underground mining.



# Rocky Gully Nickel-Copper Project

# **Introduction and Tenure**

Rocky Gully, which includes five contiguous granted exploration licences totalling  $\sim$ 1,500km<sup>2</sup>, is located in SW Western Australia, approximately 85km NW of Albany.





As discussed earlier the project is subject to two option agreements; the one with Heron covers E70/2801 (Rocky Gully Central), E70/4543 (Rocky Gully West) and E70/4437 (Rocky Gully North), whereas the Third Reef agreement covers EL70/4436 (Rocky Gully East). Metalicity holds E70/4622 in its own right.

# **Geology and Mineralisation**

The tenements are located over units of the Paleoproterozoic to Mesoproterozoic Albany-Fraser Orogen, a mobile zone extending for over 1,000km from Albany in the west to Tropicana in the north-east. This belt, which forms the south-eastern margin of the Archaean Yilgarn Craton, is one of a number of similarly aged belts globally, which include the 2,500 long Circum-Superior Belt in Canada, the host to a number of world class nickel camps.

The Albany Fraser Zone is host to Sirius' Nova Nickel-Copper discovery (14.6Mt grading at 2.2% Ni and 0.9% Cu), and the Tropicana gold deposit of Anglogold Ashanti/Independence Group, which has a resource of 118Mt grading at 2.1g/t Au.

Units within Metalicity's tenements include Paleoproterozoic metamorphics of the Biranup Zone, which is interpreted as originally being an active subduction margin to the Yilgarn Craton, with associated back-arc basin development. Published mapping and work by the Company has noted a number of different units including granitic and gabbroic intrusives, banded iron formation ("BIF"), volcanics and metasediments, possibly including reworked units of the older Yilgarn Craton.

The geology is generally poorly understood, due to the limited outcrop, significant Tertiary cover in places and limited exploration.

The tenements were originally targeted for ultra-mafic massive nickel-copper mineralisation similar to that at Nova, given the presence of ultramafic intrusives; however work has also indicated the potential for volcanogenic massive sulphide

Rocky Gully is located over the Fraser-Albany Orogeny of SW Western Australia, the same belt which hosts Sirius' Nova Ni-Cu discovery and the Tropicana gold deposit

Units within Metalicity's tenements include metamorphics of the Biranup Zone

Source: Metalicity



("VMS") base metal mineralisation, and graphite occurrences are known in the area.

# **Previous Exploration**

Previous shallow drilling has intersected strongly anomalous nickel

As covered in our March 2014 report, previous exploration was carried out by Heron in 2009. This included soil sampling and shallow RAB drilling, which intersected strongly anomalous nickel (up 0.71%) within lateritic horizons. This drilling primarily targeted the M19 and M20 prospects located on E70/2801, which have been renamed as the Octagonal Nickel Prospect ("Octagonal") by Metalicity. Targeting criteria included coincident magnetics and EM anomalism, with gabbroic intrusives showing up as bullseye magnetic highs.

## **Exploration by Metalicity**

Work to date by Metalicity has included data reviews to generate targets, geological mapping, soil sampling, ground EM surveying and reverse circulation ("RC") drilling.

Earliest work included soil sampling over seven targets, including infill and extensional soil sampling over the Octagonal prospect. This work confirmed and extended the Ni-Cu anomalism at Octagonal, and also outlined anomalous results at a number of the other prospects including M34, which, like Octagonal, is associated with a discrete magnetic high.

#### Octagonal Drilling and EM

Octagonal was selected for the initial drilling programme, given the results from RAB work carried out by Heron and interpretations of the soil geochemistry, which supported the interpretation of a sulphide source for the anomalism. The prospect is located over two magnetic intrusive bodies.

Five RC holes for 362m were completed, with all intersecting nickel (with a maximum value of 1m grading at 2.05% Ni, refer to diagram below) in the weathering profile, and all intersecting ultramafic units. Two of the holes drilled through ultramafics into granitic gneisses, indicating a potential sill-like geometry for at least part of the ultramafics.

# 6.177,000 mN Zalsiscon/2 @ 0.26% Ni, 0.069% Cu, 93ppt PH+Pd (0-2m) and @ 0.28% Ni and 0.101% Cu (8-9m) and @ 0.24% Ni and 0.063% Cu (22-24m) 6,176,500 mN 7m @ 0.26% Ni & 0.064% Cu (4-11m) : 1m @ 0.54% Ni & 0.029% Cu (13-14m) 6,176,000 mN M20RC003 3m gl 0.59% hi (2-12m) 6,175,500 mN Ni and 0.090% Cu (32-3 Ni (59-60) 64.68 6,175,000 mN NORTH w PLD RC Hole h name and intercept isterical Hola (Haron 2008) 4 6,174,500 mNsm @ 0.525 N (8-17m) Historical Hole (Anglo American) E70/2801 Boundary ALL COLLAR ANT

**Octagonal drilling results** 

Source: Metalicity

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Earlier work by Metalicity included a data review and soil sampling over selected targets

Drilling at Octagonal

nickel and copper

intersected anomalous



Recent work has defined

a number of targets

publically available

magnetics and EM datasets – further work,

including drilling is

planned on these

targets

generated from

A number of holes exhibited an association between nickel and copper, potentially indicating a sulphide source for the mineralisation, and some disseminated sulphides were also noted.

The drilling was followed by a moving loop electromagnetic ("MLEM") survey, which although confirming an EM anomaly, did not detect a significant anomaly that may reflect a massive sulphide conductor. The Company is currently reviewing data to assess the potential for economic disseminated mineralisation.

#### **Regional Targets**

More recent work been carried out over a targets generated from a review of publically available magnetic and EM data throughout the Rocky North area, which includes the 100% Metalicity held E70/4622. These are considered prospective for a number of mineralisation types, including magmatic nickel-sulphide, VMS and graphite – the Company has identified 20 Ni-Cu and two Zn-Cu targets for follow up in 2015.

Work over a number of the Ni-Cu targets (prefixed with "N" in the figure below) has returned hand-held XRF anomalous Ni and Cu soil geochemistry, with targets N9 and N10 being considered high priority, with associated strong magnetic and EM responses – further priority exploration, including ground EM surveying and drilling is planned for these targets.

The review has also highlighted the C1 Zinc-Copper target – a potential VMS feeder This work has also highlighted the C1 Zn-Cu target, which is interpreted by the Company as a possible VMS feeder zone. This is marked by a 3.5km long lag sampling copper anomaly with values up to 900ppm, associated with a magnetic signature interpreted as being a mafic unit. There is also a short strike EM feature.

Historic shallow RAB drilling (<50m) has intersected up to 550ppm Cu and 1,650ppm at the end of holes, that is yet to be followed up.



**Rocky Gully North targets** 

Source: Metalicity

#### Graphite

Rocky Gully is also prospective for graphite mineralisation As reported to the market on August 1, 2014, the tenements are also considered prospective for graphite. This is demonstrated by the F1 graphite occurrence, which is located within, but excluded from E70/4543. This was apparently mined in the early 1900's, with narrow veins being extracted from shallow underground workings.





# Breakaway's View

Our view is that Metalicity has done a clever deal in the proposed acquisition and financing of Admiral Bay

Admiral Bay has the potential to be a company maker, however success is heavily dependent upon the results of the upcoming drilling

Work to date indicates the potential for a larger, higher grade resource to be delineated

Although marketed as a zinc project, Admiral Bay is also highly leveraged to lead prices

Rocky Gully is an interesting early stage exploration play

We rate Metalicity as a SPECULATIVE BUY

Metalicity appears to have done a clever deal in the proposed acquisition and financing of Admiral Bay. Funding of the work programme gives only minimal dilution to shareholders, and the acquisition terms are also heavily "back-ended". However any cost over-runs in the Scoping Study would need to be covered by extra funding. Also any decision to progress to feasibility will require significant funds.

Admiral Bay is a challenging and a relatively remote project; however we do see potential, with the chance for a positive Scoping Study to be returned and for it to develop into a world-class project. The Company has engaged an experienced group of key personnel to deliver the Study – this is a vital ingredient of any resources project – even the best project can be ruined by the wrong people.

The staged approach taken is prudent – the current study will require minimal expenditure, and will, in addition to looking at potential project economics, investigate the best strategy for delivering a resource that can provide the economies of scale to give a viable outcome in any future feasibility study. It is also expected that the integration and re-interpretation of existing data will expand the existing resource (although possibly only incrementally) and provide additional high grade drill targets.

Given the depth of mineralisation resource drilling will be a major component of any future studies, and will require significant expenditure, likely to be in the 10's of millions if drilled from surface. Any decision to develop underground would cost significantly more, however the payoff is that this development would be used in any future mining activities. We note that the results of Kagara's PFS indicated that a BFS would cost in the order of \$182 million, however are not in a position to comment further given that no further details were made public.

The work completed to date does indicate the potential for a larger, higher grade resource to be delineated that would potentially be economically feasible. Also times have changed since Kagara's PFS – this was completed during the mining boom with concomitant high costs (however Kagara's operating cost assumptions were not publically disclosed), and we could now expect to see a return to a more "normal" operating and capital cost environment – anecdotal evidence puts contractor costs some 25% lower than those of the peak of the boom. Kagara used Australian denominated metals prices broadly similar to those at present – the project will need reasonable prices to make it viable.

One thing needs to be stressed – although being touted as a zinc project, economics will be strongly leveraged to the lead price. We note that in the overall resource in ground values are in the order of (ignoring silver) 54/46 zinc/lead, however this ratio changes to 38/62 for the published high grade component using current metal prices.

Finally, in Rocky Gully Metalicity has an interesting early stage exploration play. Results of work to date have been encouraging, with the potential for both ultra-mafic related nickel-copper and VMS Zn-Cu mineralisation. Whether there is the potential for large scale Nova-style Ni-Cu massive sulphide mineralisation is up for question – the area does not exhibit the gravity signature associated with large gabbroic intrusive bodies as seen in the Fraser Range area, however the presence of smaller bodies is encouraging, supporting the exploration potential.

Given the above, and the low valuation relative to peers, we rate Metalicity as a SPECULATIVE BUY with good leverage to positive results. We see the key price mover as positive results from the Scoping Study. On the Rocky Gully front, positive exploration results could also be positive price movers.

# Commodity Background

# Zinc

# Supply and Usage

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

China is the world's largest consumer and

producer, and a net

importer

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)

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 diecasting 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 upcoming 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 have also seen, in recent days, Glencore's announcement that it would be 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.





Source: IRESS

#### Lead

# Supply and Usage

Lead mine production is dominated by China, with China also being the largest consumer 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 is commonly produced as a co- or byproduct 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 – 1/9/2000 to now



Source: IRESS

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 year – this has been due partly to slowdown for demand in the Asian e-bike sector following previous strong demand, with a relatively balanced market. This graph also shows the effects of the devaluation of the Australian Dollar – despite dramatic falls over the last six months the AUD denominated prices are up around 20% on their levels three years ago. Lead also rose around 10% on the Glencore news.

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.





Source: IRESS



# **Directors and Management**

Non-Executive Chairman Mr Andrew Daley (BSc Hons FAusIMM) is a Mining Engineer and Investment Banker. He has over 30 years experience in resources having worked with Anglo American, Rio Tinto and Conoco Minerals and Fluor Australia in project evaluation and mining development. Mr Daley then moved into resource project finance with National Australia Bank, Chase Manhattan and from 1999 as a Director of the Mining Team at Barclays Capital in London. Mr Daley was also a Director of Investor Resources Finance Pty Limited ("IRF"), a company based in Melbourne which provided financial advisory services to the resources industry globally. Mr Daley is currently Non-Executive Chairman of KGL Resources Limited (ASX:KGL).

> **Mr Gauci** has 15+ years experience in the mining industry and has successfully financed and managed private and public mining exploration companies in Australia, Africa and South America. Mr Gauci has managed the exploration, development and feasibility of a number of mining exploration projects in commodities such as gold, uranium, coal, iron ore and industrial minerals. He has also consulted to companies operating in the technology and life sciences industries. Mr Gauci is a Member of the Australian Institute of Mining and Metallurgy (AusIMM) and the Australian Institute of Company Directors (AICD). Mr Gauci has a BSc. and an MBA from the University of Western Australia.

> **Mr Chris Bain (B App Sc and Dip GeoSc MAusIMM)** is a geologist and mineral economist. He has over 30 years experience in resources having worked in underground mine geology in Mt Isa and Tasmania and exploration around Broken Hill. Mr Bain has been instrumental in mining project divestitures and acquisitions, evaluations and valuations, capital raisings including several initial public offerings and ASX listings. Mr Bain was also a Director of Investor Resources Finance Pty Limited ("IRF"), a company based in Melbourne which provided financial advisory services to the resources industry globally. Mr Bain is a member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Company Directors. Mr Bain is currently Non-Executive Chairman of Dart Mining Limited (ASX: DTM).

> **Mr Longworth** is a geologist with 25 years experience across exploration, project evaluation/development, operations and corporate management. He previously held roles as Exploration Manager, COO and CEO/Managing Director with Australian listed companies, and mining analyst with a boutique investment fund. In his senior corporate roles, Mat led multidisciplinary project evaluation and development teams. Additionally, he listed a series of companies realising value for shareholders, and participated in significant fundraisings and corporate transactions, providing the link between technical and corporate advisors. He combines Board level experience with a strong technical and commercial background.

Project Management Consultant **Mr Peter Lester** 

Non-Executive Director

Mr Mathew Longworth

Managing Director

Mr Matthew Gauci

Non-Executive Director

Mr Chris Bain

**Mr Lester** BEng (Mining – Honours), MAICD, MAusIMM, is a mining engineer with more than 40 years experience in the mining industry in various roles including construction, projects and mine management, corporate and financial advisory services and in business development with responsibility for strategic planning and corporate development, predominantly in base metals. He has worked in operational roles at Mt Isa and Broken Hill, as well as senior executive positions with North Ltd, Newcrest Mining Limited, Oxiana / Oz Minerals Limited and most recently with Citadel Resources Group Limited.



Exploration Manager Mr Mike Hannington **Mr** Hannington BSc (Geophysics), LLB, MAICD, ASEG, AIG, is a mining executive with more than 30 years experience in the mining industry in various roles including exploration geoscientist, exploration manager and technical manager with responsibility from project generation to project acquisition through to exploration, evaluation drilling and production, predominantly in base metals. He has worked in operational, exploration and financing roles at North Parkes, Lake Cowal, Golden Grove and Prominent Hill for companies including North Ltd and Oxiana / Oz Minerals as well as a founding director of Alchemy Resources Limited and Talisman Mining Limited.



#### 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 Metalicity Corporation 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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