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#### **Company Information**

ASX Code	MWN
Share Price A\$	0.14
Ord Shares	30m
Options	22.4m
Partly Paid Shares	11.7m
Market Cap A\$	4.2m
Cash A\$	2.9m
Total Debt A\$	-
EV A\$	1.3m
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Source: Midwinter Resources

#### Directors

Non-Exec Chairman	Martin Pyle
Managing Director	Adrian Griffin
Non-Exec Director	Bryan Dixon
Non-Exec Director	Philip Miolin
Non-Exec Director	David Seymour
Source: Midwinter Resources	

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#### **Company Details**

Address	Level 2, 38 Richardson Street, West Perth, WA 6005
Phone	+618 9322 6451
Web	www.midwinterresources.com.au
Source: Midwinter Resources	

#### **One year Price Chart**



Source: Bloomberg

# **Midwinter Resources (MWN)**

Exploration for high grade, low impurity magnetite iron ore

## Recommendation: Speculative **BUY**

# Key Points

- Well defined project with identified targets
- Maiden drill program confirms presence of high purity magnetite
- Largest magnetic anomalies yet to be drill tested
- Mineralogy suggests a superior concentrate quality is achievable
- Project location supported by well-established infrastructure
- Opportunity to supply domestic and export steel markets

Midwinter Resources is a company focused on exploration for magnetite iron ore deposits located in the Limpopo province of South Africa. The company has identified a number of magnetic anomalies which have the potential to lead to significant resources in the project area with further drill testing. Early drilling results have already demonstrated the presence of high grade magnetite mineralisation with low impurity levels

#### Company Overview

Midwinter Resources (ASX: MWN) is a company which is principally focused on the exploration for iron ore deposits in the Limpopo Province of South Africa.

The company recently acquired an initial 49% interest in Capricorn Iron Limited which in turn owns a 70% interest in the 'Northern Lights' project. The Northern Lights project area is prospective for a number of magnetite iron ore deposits, identified by a recently flown aeromagnetic survey.

An initial drilling campaign consisting of 38 RC drill holes for a total of 3,605m has been completed targeting the anomalies identified in the survey. The campaign confirmed the nature of the mineralisation and highlighted the potential for Northern Lights to host a significant magnetite resource within the Banded Iron Formations (BIFs).

Midwinter has also carried out ore characterisation studies from samples taken from the two identified deposits. Test work indicates the ore contains course magnetite grains (~1mm) with very low impurity levels which should be amenable to cost effective processing techniques. High purity magnetite concentrates typically command premium prices

The outlook for the iron ore sector remains robust. The World Steel association is forecasting a 5.9% increase in steel production for 2011 followed by a further 6% increase in 2012. Longer term growth is likely to be compounded by continuing industrialisation of economies such as India and China.

## **Investment Review**



In September 2010, Midwinter Resources acquired 49% of the shares in Capricorn Iron Limited by the issue of 4m shares in Midwinter Resources. Capricorn Iron, in turn, owns a 70% in the Northern Lights Iron Project in South Africa.

Under the terms of the agreement, Midwinter will move to 100% ownership of Capricorn Iron, and thus 70% ownership in the Northern Lights Project, once certain mile-stones have been met. The conditions of the transaction are outlined below:

- The issue of a further 5m shares (totalling 9m shares) once all South African regulatory requirements have been met
- The issue of 10m 25 cent contributing shares partly paid to 0.01 cents when a JORC resource of 200 million tonnes at a grade of no less than 30% Fe is established
- The issue of 5m contributing shares to be issued when a JORC resource of 500 million tonnes at a grade of no less than 30% Fe is established
- The issue of 5m contributing shares to be issued when a JORC resource of 1 billion tonnes at a grade of no less than 30% is established

Through the ownership of Capricorn Iron Ltd, Midwinter now has exposure to a prospective iron ore project with thirteen key targets already identified on current tenure. A successful maiden drilling program identified high quality magnetite mineralisation with low impurity levels. Mineralogical test work demonstrates the magnetite should be easily liberated from the host rock which consists of quartz and magnetite. The coarse magnetite grains (~1mm across) are also amenable to low energy concentration techniques such as low intensity magnetic separation. With a coarse grain size and low impurity levels, the concentrate is likely to attract a premium.

The Northern Lights project area is located close to major arterial roads and railway lines which connect to domestic steel producers and deep water ports available for product export. Other established infrastructure such as high tension transmission lines and groundwater resources are also nearby.

Black Economic Empowerment (BEE) is an initiative rolled out by the South African government with an aim to bring the black majority into the economic mainstream. A BEE company holding the remaining 30% interest in the Northern Lights project represents the interests of the local community. Midwinter views their BEE partner as supportive and committed to creating value for equity holders

Moving forward, the company intends to continue to drill test the magnetic anomalies on their granted tenure with a view to defining a JORC Resource. Importantly, all the deposits identified have mineralisation open at depth and will require further testing along strike. Midwinter also currently has an application for a neighbouring licence which hosts a ~10km magnetic anomaly. Granting of the licence is expected shortly with drilling expected to commence soon after. Initial scoping levels studies over the Northern Lights project area are anticipated by 2012.

Midwinter will move to 100% ownership of Capricorn Iron once regulatory requirements have been met

Midwinter will own a 70% interest in the Northern Lights project

High quality, low impurity magnetite mineralisation identified

Established infrastructure

Supportive BEE partner

Drilling will continue with the biggest anomaly yet to be tested

# **Project Review**

# **Northern Lights**

Midwinter recently acquired a 49% interest Capricorn Iron Ltd, with the right to move to 100% ownership following regulatory approvals being obtained. Capricorn Iron has a 70% interest in the Northern Light Project.

## Northern Lights – South Africa



Midwinter will move to 70% interest in Northern Lights project

Outcropping occurs at

surface

Source: Midwinter Resources

'Northern Lights' is a magnetite iron ore project in a known iron ore province of the Limpopo district of South Africa. The project area displays surface outcrop of magnetite and has limited previous exploration.

Midwinter recently conducted an aeromagnetic survey over their exploration licence which covered an area of  $\sim$ 80km<sup>2</sup>.



Aeromagnetic Survey: Magnetic Anomalies and Drill Targets

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Source: Midwinter Resources

The survey highlighted thirteen distinct magnetic anomalies which warrant follow up drilling. To this end, Midwinter undertook a maiden drill programme comprising 38 RC holes for a total of 3,605m drilled to an average depth of 95m. The most advanced prospects to date are 'Caledonia-One' and 'Klip-One'.

# Two of thirteen targets drill tested

High grade magnetite

intersections

### **Caledonia-One Deposit**



Source: Midwinter Resources

Drilling at the Caledonia–One prospect identified a number of high grade magnetite intersections as highlighted above including 37m @ 36.3% Fe (~20m true width)

The Klip-One prospect demonstrated similar grades and intercept widths to that of Caledonia-One.



## Klip-One Deposit

The Banded Iron Formations for both the Caledonia-One and Klip-One-appear to be sub vertical units and as such may constrain open pit mining economics due to high stripping ratios. Mineralisation is consistent with nearby magnetite deposits

Northern Lights

deposits demonstrate

low impurity levels

Midwinter have undertaken ore characterisation studies which indicated mineralisation is similar in style to that defined by Ferrum Crescent Ltd at the Moonlight Project around 50km the south (310Mt @ 29%) and Kumba's Zandriverspoort deposit to the east (non-JORC 520Mt @ 35%).

The main ore mineral is magnetite and shows some alteration to hematite close to the surface, however, oxidation decreases rapidly with depth. Mineralogical test work demonstrates the magnetite should be easily liberated from the host rock (quartz) and in the areas where oxidation of the magnetite to hematite occurs, the remnant cores of the magnetite remain which should enable both minerals to be recovered by low intensity magnetic separation. The magnetite grains are coarse (~1mm across) which should also enhance low energy concentration techniques.

The purity of the Northern Lights mineralisation within the BIF's is of great contrast to magnetite derived from intrusive rocks commonly found in South African magnetite deposits. Magnetite mineralisation derived from intrusive structures tend to result in high levels of  $TiO_2$  (titanium dioxide), V (vanadium) and Cr (chromium) which require costly processing to recover the iron. The magnetite within the BIF samples at Northern Lights contained very low or 'below detectable'  $TiO_2$ , V, Cr.

#### Northern Lights: Second licence under application



Source: Midwinter Resources

Midwinter have a second exploration licence currently under application, adjacent to their current tenure. This licence hosts the largest magnetic anomaly (~10km in length) identified by the aeromagnetic survey. The potential of this magnetic anomaly should not be underestimated.

Drilling to date has confirmed the nature of the mineralisation and highlighted the potential for Northern Lights to host a significant magnetite resource within the Banded Iron Formations. It is anticipated that mineralisation will be **amenable to producing a high purity magnetite concentrate**, which have versatile, down-stream processing characteristics and consequently can be used in a wide range of iron and steel making applications and **typically command premium prices**.

The largest anomaly has yet to be drill tested

# Characteristics and perceptions of Iron Ore

Iron is the fourth most abundant element in the Earth's crust and is usually found in ore deposits as an oxide. There are many iron minerals but the only ones of worldwide importance are hematite ( $Fe_2O_3$ ), magnetite ( $Fe_3O_4$ ) and limonite (FeOOH). Other ores such as chamosite or pyrite are no longer important for iron production.

Most common use for Iron is in the production of steel.

Typically, it takes 1.5 tonnes of iron ore and 450kg of coke (an almost pure form of carbon processed from coking coal) to produce a tonne of pig iron, the raw iron that comes out of a blast furnace. Pure iron is quite soft however adding a small amount of carbon makes it significantly harder and stronger.

## **Magnetite vs Hematite**

**Hematite** ( $Fe_2O_3$ ) is an iron oxide mineral that contains 70% Fe. Hematite deposits vary widely in grade and until recently, most deposits needed to have an average grade of more than 60% to be economic. However some deposits can now have iron grades of 56-59% and can be commercially viable.

**Magnetite** ( $Fe_3O_4$ ) is also an iron oxide mineral containing 72% Fe. Magnetite ore however, generally has a lower iron content than that of hematite and must be upgraded to make it suitable for steel making.

Magnetite requires beneficiation however it usually commands a premium in price Processing involves crushing, screening, grinding, magnetic separation, filtering and drying. The final product is a high iron grade magnetite concentrate (+65% Fe) with typically low impurities. Further processing involves the agglomeration and thermal treatment of the concentrate to produce pellets which can be used directly in a blast furnace.

The additional processing cost for the magnetite concentrate can generally be offset by the premium price which it attracts from steel mills due to the high iron content.

## Market perception of magnetite

Traditionally, Australia has associated 'iron ore' with DSO quality hematite, which has been underpinned the development of the Pilbara region as one of the world's great iron ore provinces. As a result, magnetite has been greatly misunderstood and undervalued by the market.

60% of global steel production is sourced from magnetite projects which today are capable of producing high-quality concentrate grading up to 68-69% Fe. This is higher grade than many of the Pilbara hematite lump and fines ores currently being produced.

Magnetite is becoming a more sort after product

It is also well established that hematite grades are generally declining globally and impurity levels are rising while the demand for quality, premium steel from China and India is continuing to increase. With hematite grades declining, high-grade magnetite concentrate is becoming an increasingly sought-after product.

# The outlook for Iron Ore



About 98% of world iron ore production is used to make an iron alloy in the form of steel. Steel is the most useful metal known to man and is used 20 times more than all other metals put together.

The World Steel Association recently released a robust short term outlook for 2011 and 2012 global steel use. The forecast suggests a **5.9% global increase to 1,359Mt in 2011**, which follows **13.2% growth in 2010**. In 2012, the World Steel Association is forecasting steel use will grow by a further 6% to reach a new record of **1,441Mt**.

The 2012 steel use forecast suggests the developed world will still be at 14% below the 2007 record level, s where as in the emerging and developing economies, steel use will be 38% above 2007 levels. In 2012, the emerging and developing economies will account for 72% of world steel demand in contrast to 61% recorded in 2007.



Monthly Annualised Crude Steel Production Rate for China, USA and the World  $_{\mbox{Mt p.a.}}$ 

Source: World Steel Association and Breakaway Research

China remains the major consumer of steel and given the pace of initial production in 2011, China's total use for 2011 may exceed the 5% growth forecasted. The chart below emphasises the size and growth of China's steel production relative to the USA.

## Annualised Steel Production of China and the USA



China is biggest end user of steel

Outlook for steel remains robust

Source: World Steel Association and Breakaway Research

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# **Directors and Management**

Martin Pyle is a geologist and has over 23 years of experience in the resources sector. His previous roles have included Corporate Finance Director at stockbroking firm 'Hartleys' where he was responsible for resource related equity raisings, M&A, Chairman corporate advisory and research. Mr Pyle is also Chairman of Syndicated Metals Limited and executive Director of Aurora Minerals Limited and Desert Energy Limited Adrian Griffin specialises in mine management and production and has had exposure to metal mining and processing worldwide during a career spanning over 30 years. He has helped develop extraction technologies for a range of minerals over the years. **Managing Director** Previous positions held include former CEO of Dwyka Diamonds Limited, an AIM- and ASX-listed diamond producer, a founding executive director of Washington Resources Limited and also a founding director of Empire Resources Limited, Ferrum Crescent Limited and Reedy Lagoon Corporation. Currently he is a founding Non-Executive Director of ASX-listed Northern Uranium Limited and Non-Executive Chairman of ASX listed Potash West NL. Bryan Dixon is a Chartered Accountant and with substantial experience in the mining **Non-Executive** sector through the management of public and listed companies. Previous employment Director includes KPMG, Resolute Samantha Limited, Société Générale and Archipelago Resources. Mr Dixon is also a Non-Executive director of Hodges Resources Limited and Blackham Resources Limited. Philip Miolin has a long history of involvement in the resources sector through **Non-Executive** investment in emerging resource companies. He has a strong network of mining Director industry contacts which will assist in the Company's growth. David Seymour has over 25 years' experience at executive level within financial **Non-Executive** markets. He spent over 10 years as a director of Capital Markets with UBS and has Director held positions of Treasurer and General Manager with other financial institutions. Mr Seymour brings experience in capital market raisings, risk management and ASX compliance.



#### **Analyst Verification**

We, Gavin Wendt and Andrew McLeod, 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 hold direct and indirect shares in Midwinter Resources. It has also received a commission on the preparation of this research note.

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