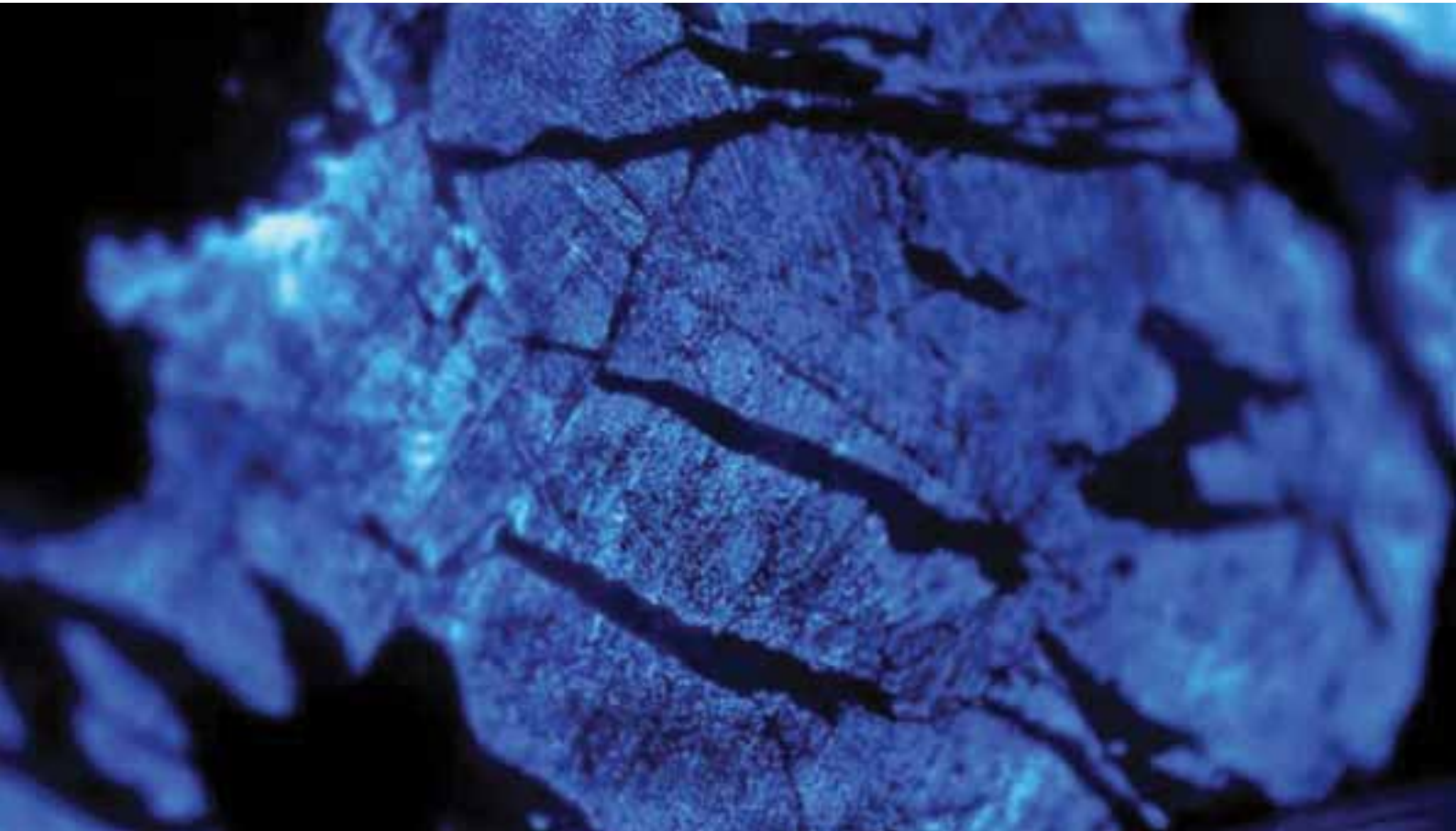


Mining Sector  
Core activities: Mining  
Core area of activity: Australia  
Listing: ASX (VML.AX)

## **Vital Metals Ltd**



*Vital Metals has an advanced tungsten project at Watershed in northeastern Australia that offers significant and as yet unrealised current value.*

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I certify that this report represents my own opinions.

Will Purcell  
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## Key Points

3 Dec 2011  
Price: A\$0.058

*Vital Metals has an advanced tungsten project at Watershed in northeastern Australia that offers significant and as yet unrealised current value. The company also holds an early-stage gold exploration project in Burkina Faso that provides substantial upside potential to investors in the longer term. The company intends to proceed aggressively with development of its tungsten project whilst stepping up exploration at its gold property.*

- **The Watershed tungsten deposit is Vital's flagship project**

Vital Metals' management is focused on aggressively developing its 100-percent-owned Watershed tungsten project in the far north of Queensland, Australia. To advance its timetable, Vital has entered into a formal earn-in agreement with Japan Oil, Gas and Metals National Corp (JOGMEC), whereby JOGMEC will contribute A\$5.4m in exchange for a 30-percent interest. The money will be used to complete a definitive feasibility study.

- **Watershed hosts a substantial tungsten resource**

A JORC-compliant resource compilation completed in 2008 estimated Watershed contained an indicated 15.3 million tonnes of scheelite, averaging 0.46 percent tungsten oxide (WO<sub>3</sub>), based on a cut-off of 0.1 percent WO<sub>3</sub>. This translates to 69,000 tonnes of contained tungsten. Watershed is a large deposit and remains open both along strike and at depth.

- **Vital had largely completed a feasibility study in 2009**

Vital Metals had been advancing Watershed on its own prior to the economic turmoil that developed late in 2008. By early 2009, the company had nearly completed a feasibility study of the project, based on a plan to mine approximately 3.7 million tonnes of ore at 1,750 tonnes per day. The economics were attractive, based on a projected capital cost of A\$69m and operating costs just under A\$65 per tonne.

- **A definitive feasibility study is expected next year**

With the participation of JOGMEC, Vital's management expects to complete a definitive feasibility study later next year. With the bulk of the required work already completed, the only outstanding items are metallurgical testing and model confirmation, as well as the application of new cut-offs, processing rates, mining schedules and a revised pricing of required components and goods.

- **Vital also has an early stage gold prospect under option in Burkina Faso**

Vital has currently earned a 60-percent interest in the Doulnia and Kampala tenements in southern Burkina Faso. A major drill programme took place during the year, with 12,000 metres of drilling completed at Kollo. Among the encouraging intercepts was a near-surface interval that returned 6.39 grammes of gold over 44 metres.

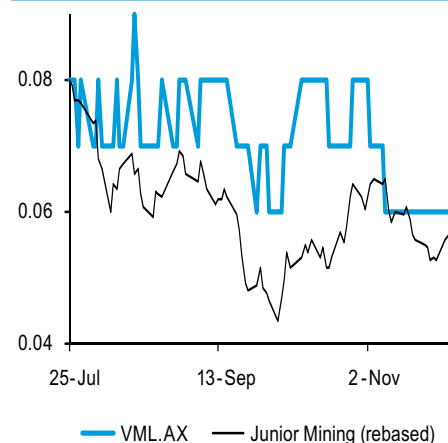
- **Vital is sufficiently financed with the injection of A\$5.4m by JOGMEC into the Watershed project**

As at June 30 2011, Vital Metals had A\$3.6m in cash, trade and other receivables and A\$0.6m in accounts payable. With JOGMEC contributing A\$5.4m to complete the definitive feasibility study of Watershed, the company should have adequate financing in place to advance its Burkina Faso gold prospect. As a result, additional financings may not be required until late 2012.

- **Our assessment of Vital yields a base-case valuation of A\$0.15 per share**

Our assessment of Vital Metals and its Watershed project, based on reasonable probabilities of exploration success, yields a base-case valuation of A\$0.15. Assuming success at all stages of future exploration and development, our assessment would increase to A\$0.25, and with more optimistic assumptions, to A\$0.49.

Price chart (A\$)



### Value of equity

Expected value	A\$35.3m
<b>Value per share</b>	<b>A\$0.15</b>
Optimistic scenario	A\$68.5m
<b>Value per share</b>	<b>A\$0.30</b>

### Company details

Quote	
Shares	
- ASX	VML.AX
Hi-Lo last 12-mos. (A\$)	0.05 - 0.19
Shares issued (m)	228.40
Fully diluted (m)	231.4
Market Cap'n (A\$m)	13.25
Website:	<a href="http://www.vitalmetals.com.au">www.vitalmetals.com.au</a>

### Analysts:

Will Purcell  
[will@objectivecapital.co.uk](mailto:will@objectivecapital.co.uk)

## Fair value summary (US\$m)

Scenario	Base	Pessimistic	Optimistic
Property portfolio			
- Watershed Project	37.8	27.9	71.0
- other	2.2	2.2	2.2
Total	40.0	30.1	73.2
Less: overhead	7.7	7.7	7.7
<b>Expected value of portfolio</b>	<b>32.3</b>	<b>22.4</b>	<b>65.5</b>
Add: other investments	0.0	0.0	0.0
Add: starting cash + new funds	3.3	3.3	3.3
Total current value for firm	35.5	25.7	68.8
Less: bank & other debt	0.0	0.0	0.0
Total value to equity claims	35.5	25.7	68.8
Less: warrants and options	0.3	0.7	0.3
Ordinary equity holders	35.3	25.0	68.5
Value per share (US\$)	<b>0.16</b>	<b>0.16</b>	<b>0.30</b>
Value per share (A\$)	<b>0.15</b>	<b>0.15</b>	<b>0.30</b>

## Expected fair value of Vital Metals

Scenario	Risked mineable resources (m tonnes)	Watershed Project property value (US\$m)	VML Valuation (US\$m)	Value per share (A\$)
<b>Base case outlook</b>	<b>3.8</b>	<b>37.8</b>	<b>35.3</b>	<b>0.15</b>
<b>Value for scenarios of further exploration success</b>				
Full proved up	5.7	65.9	63.1	0.28
Optimistic outlook	5.7	71.0	68.1	0.30
Pessimistic outlook	2.5	27.9	25.5	0.11
<b>Value with no further exploration success</b>				
Current resource estimate	3.2	21.7	19.4	0.08

### Notes:

- 'fully proven up' scenario assumes that current mineable resource estimates are upgraded to 'Proven' status

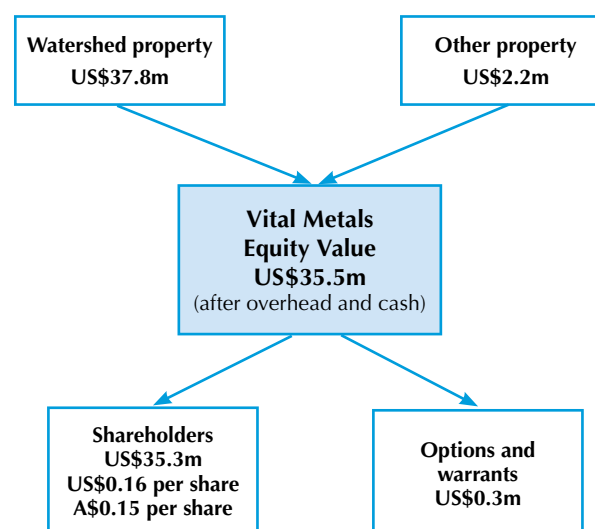
## Sensitivity to market assumption on...

Long run real tungsten price (US\$/t)	160	185	<b>210</b>	235	260
Value (A\$/share)	0.08	0.12	<b>0.15</b>	0.19	0.23
Change in value (%)	-48%	-23%		+25%	+51%
Time for tungsten price to revert to mean (years)	10	11	<b>12</b>	13	14
Value (A\$/share)	0.11	0.13	<b>0.15</b>	0.18	0.19
Change in value (%)	-29%	-14%		+14%	+26%
Volatility of tungsten price (%)	30%	<b>35%</b>	40%	45%	50%
Value (A\$/share)	0.13	<b>0.15</b>	0.18	0.21	0.25
Change in value (%)	-14%		+18%	+39%	+65%
Interest rate (%)	3.5%	3.8%	<b>4.0%</b>	4.3%	4.5%
Value (A\$/share)	0.16	0.16	<b>0.15</b>	0.15	0.15
Change in value (%)	+4%	+2%		-2%	-4%
Sovereign risk premium (years)	<b>0.0%</b>	1.0%	2.0%	3.0%	4.0%
Value (A\$/share)	<b>0.15</b>	0.14	0.13	0.12	0.11
Change in value (%)		-8%	-15%	-22%	-28%

## Sensitivity to operating assumption on ...

Recovery rate (%)	72%	74%	<b>76%</b>	78%	80%
Value (A\$/share)	0.13	0.14	<b>0.15</b>	0.16	0.18
Change in value (%)	-13%	-6%		+7%	+14%
Operating Costs (A\$ per tonne)	63.00	<b>70.00</b>	77.00	84.00	91.00
Value (A\$/share)	0.16	<b>0.15</b>	0.15	0.14	0.13
Change in value (%)	+5%		-5%	-9%	-14%
Increase in Capital Cost (%)	<b>+0%</b>	+10%	+20%	+30%	+40%
Value (A\$/share)	<b>0.15</b>	0.15	0.14	0.13	0.12
Change in value (%)		-6%	-11%	-17%	-22%

## Components of Vital Metals' entity value



## Watershed Project valuation (US\$m)

Scenarios for exploration success	Base	Optimistic	Pessimistic
<b>Net value of production</b>	<b>176.4</b>	176.4	176.4
Expected mining success*	<b>60%</b>	90%	40%
<b>Expected net value of production</b>	<b>105.9</b>	158.8	70.6
Add: tax shield on depreciation charge	<b>4.8</b>	4.8	4.8
Less: development & operational capex	<b>39.7</b>	30.2	22.9
<b>Value of mining operations</b>	<b>71.0</b>	133.4	52.5
Probability of putting into production **	<b>76%</b>	76%	76%
<b>Expected value of deposit</b>	<b>53.9</b>	101.4	39.9
Less:			
- expect pre-development costs***	—	—	—
- further exploration costs ****	—	—	—
Expected value of project	<b>53.9</b>	101.4	39.9
effective risk haircut	<b>62%</b>	33%	75%
Ownership	<b>70%</b>	70%	70%
Vital Metals's share	<b>37.8</b>	71.0	27.9

\* portion of reserve/resource expected to be converted to a mineable resource, probability-weighted for our confidence they will be proven-up

\*\* probability of successfully completing pre-feasibility, full feasibility and required permitting and actual construction in realistic timeframe

\*\*\* shown as expected value of being incurred after allowing for likelihood of reaching each development stage

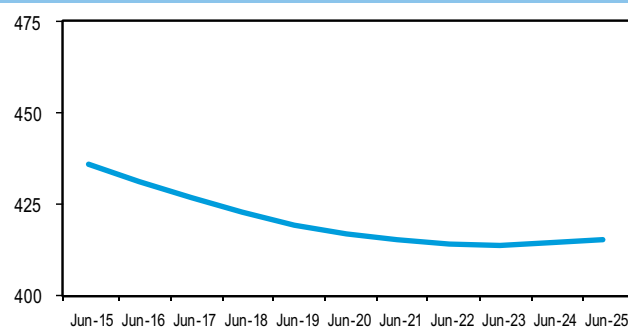
\*\*\*\* present value

## Commodity assumptions

Tungsten APT prices are assumed to be mean reverting based on:

Historic average real level at current prices	210.0 US\$/t
Avg time to revert to mean	8.0 years
Volatility	25%
Inflationary price growth	2.0%

## Expected tungsten price (inflation adjusted) (US\$/t)



# Company overview

Vital Metals Ltd is a junior mineral exploration company listed on the Australian Stock exchange under the symbol VML and based in West Perth, Western Australia. The company has been exploring its Watershed tungsten project in northeastern Australia for several years and more recently acquired an option on a gold prospect in southern Burkina Faso.

## The Watershed project is Vital's flagship project

Vital Metals' Watershed tungsten project lies 150 kilometres northwest of Cairns and 23 kilometres northwest of Mt. Carbine, straddling the border between the shires of Cook and Mareeba. The property enjoys good access via a 24-kilometre graded gravel road connecting with the Peninsula Development Road connecting Cooktown with the Atherton Tablelands region. Drilling to date has focused on an area spanning 1,600 metres by 600 metres and the area proposed for mining and infrastructure lies within seven lease applications.

The most recent JORC-compliant resource calculation for Watershed was completed in late 2008, which resulted in an indicated resource of 15.3 million tonnes, averaging 0.46 percent tungsten oxide (WO<sub>3</sub>), based on a cut-off of 0.1 percent WO<sub>3</sub>. This resource equates to 69,000 tonnes of contained tungsten. The Watershed deposit remains open both along strike and at depth.

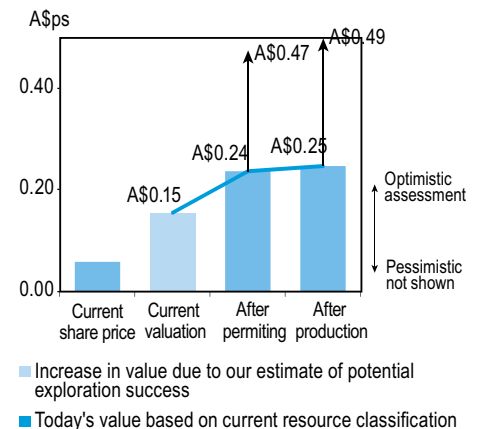
Exploration and planning at Watershed is advanced and will require increasing amounts of capital. To put the project back on an aggressive schedule, the company entered into a formal earn-in agreement with Japan Oil, Gas and Metals National Corp (JOGMEC) in May 2011, whereby JOGMEC will contribute A\$5.4m toward completion of a definitive feasibility study, in exchange for a 30-per-cent interest in the Watershed project.

## Vital Metals expects to complete a definitive feasibility study next year

Vital Metals' had a feasibility study largely completed by 2009, but work was suspended due to the deepening global recession, which dried up the capital markets crucial to junior resource companies. Much of the major work had been completed and will not have to be duplicated. The major outstanding issues are metallurgical testing, further modelling and updates to key price schedules and revisions to the mining and processing plans.

The 2009 feasibility study contemplated a mine operating at 1,750 tonnes per day (610,000 tpa) with an estimated phase-one life of 6.1 years, based on an initial reserve of 3.7 million tonnes grading 0.42 percent WO<sub>3</sub>. The proposed capital cost of the mine was A\$69m, with operating costs estimated at less than A\$65 per tonne. The study projected Watershed would produce over 3,000 tonnes of high-quality concentrate (greater than 65 percent WO<sub>3</sub>), or approximately 195,000 metric tonne units of WO<sub>3</sub>, at a cash cost of A\$210 per metric tonne unit.

## What Vital Metals could be worth - now and in the future



Source: Objective Capital

Vital Metals is also contemplating a mine operating with greater throughputs, which would decrease the expected operating costs and allow a larger quantity of rock to be brought to reserve status.

Vital began the environmental assessment process by filing an environmental impact statement in early 2008. Further work is required to bring the document up to required standards, but the existing work will shorten timelines significantly.

### **Vital also has a promising gold prospect under option in Burkina Faso**

In late 2009, Vital entered into a farm-in agreement with Ampella Mining Ltd that will allow it to earn up to an 80 percent interest in two tenements, Doulnia and Kampala, which comprise the Doulnia gold project in southern Burkina Faso. As a consequence of its initial A\$1.5m exploration programme, Vital Metals currently holds a 60-percent interest in the project. Further, the company has acquired land adjacent to the farm-in tenements in which it currently holds a 100-percent interest.

Vital Metals completed a first phase of exploration at Doulnia in July 2011, completing 12,000 metres of reverse circulation drilling. Assays of samples have confirmed the gold potential of the prospect. The best intercept to date assayed 6.39 grammes of gold over 44 metres commencing at a depth of eight metres. Included within this zone was a four-metre interval averaging 58.03 grammes of gold per tonne, commencing at a depth of 24 metres.

Based on the initial results, Vital's management has authorised spending a further A\$2m to earn an additional 10-percent interest in Doulnia. This proposed work will include another aggressive drilling programme designed to target the full three-kilometre strike length of the Kollo prospect. The company can increase its interest to 80 percent by funding a full feasibility study of the project.

### **Vital Metals is under new management**

On July 1 2011, Mark Strizek was appointed chief executive officer of Vital Metals for a three-month term. He has subsequently been appointed managing director of the company on an indefinite basis.

# Financials

Profit and Loss					
Year ending June (A\$m)	2011A	2012E	2013E	2014E	2015E
<b>Revenues</b>	—	—	—	—	<b>32.0</b>
COGS	—	—	—	—	(17.0)
Gross profits	—	—	—	—	15.1
Administrative Costs	(1.2)	(1.7)	(1.7)	(1.7)	(1.7)
<b>EBITDTA</b>	<b>(1.2)</b>	<b>(1.7)</b>	<b>(1.7)</b>	<b>(1.7)</b>	<b>13.4</b>
Depreciation & amortisation	(0.0)	—	—	(4.2)	(2.5)
Writedowns and Minority interests	(0.5)	—	—	—	—
EBIT	(1.8)	(1.7)	(1.7)	(5.9)	10.8
Interest	—	0.0	0.0	(0.7)	(1.8)
EBT	(1.8)	(1.7)	(1.7)	(6.7)	9.0
Tax paid	—	—	—	—	—
<b>Earnings</b>	<b>(1.8)</b>	<b>(1.7)</b>	<b>(1.7)</b>	<b>(6.7)</b>	<b>9.0</b>
Dividends	—	—	—	—	—
<b>Retained earnings</b>	<b>(1.8)</b>	<b>(1.7)</b>	<b>(1.7)</b>	<b>(6.7)</b>	<b>9.0</b>

Cashflow					
Year ending June (A\$m)	2011A	2012E	2013E	2014E	2015E
EBIT	(1.8)	(1.7)	(1.7)	(5.9)	10.8
Depreciation	—	—	—	4.2	2.5
Stock-based Comp, Writedowns, Tax Recovery	0.5	—	—	—	—
(Increase) decrease in receivables	—	—	—	—	(4.8)
(Increase) decrease in inventory	—	—	—	—	(2.5)
Increase (decrease) in payables	—	—	—	—	1.4
<b>Net cash from Ops</b>	<b>(1.3)</b>	<b>(1.7)</b>	<b>(1.7)</b>	<b>(1.7)</b>	<b>7.4</b>
Tax paid	—	—	—	—	—
Dividends	—	—	—	—	—
Net interest recieved (paid)	—	0.0	0.0	(0.7)	(1.8)
New equity	3.3	0.5	5.0	30.0	—
New (deposits) borrowings	1.5	—	—	20.0	10.0
Capital expenditure	(1.2)	—	—	(42.5)	(16.8)
<b>Net cash from financing</b>	<b>3.6</b>	<b>0.5</b>	<b>5.0</b>	<b>6.8</b>	<b>(8.6)</b>
<b>Net increase (decrease) in cash</b>	<b>2.3</b>	<b>(1.2)</b>	<b>3.3</b>	<b>5.1</b>	<b>(1.3)</b>

Balance sheet					
Year ending June (A\$m)	2011A	2012E	2013E	2014E	2015E
Cash	3.3	2.1	5.4	10.4	9.2
Receivables	0.4	0.4	0.4	0.4	5.2
Inventory	0.0	0.0	0.0	0.0	2.6
Less Payables	(0.7)	(0.7)	(0.7)	(0.7)	(2.0)
<b>Net current assets</b>	<b>3.0</b>	<b>1.8</b>	<b>5.1</b>	<b>10.2</b>	<b>14.9</b>
Less loans	(0.4)	(0.4)	(0.4)	(20.4)	(30.4)
<b>Capital employed</b>	<b>11.6</b>	<b>10.4</b>	<b>13.7</b>	<b>37.0</b>	<b>46.0</b>
<i>Represented by</i>					
Shares in issue	36.8	37.3	42.3	72.3	72.3
Add retained profit					
Prior periods	(23.4)	(25.2)	(26.9)	(28.6)	(35.2)
This period	(1.8)	(1.7)	(1.7)	(6.7)	9.0
<b>Shareholders' funds</b>	<b>11.6</b>	<b>10.4</b>	<b>13.7</b>	<b>37.0</b>	<b>46.0</b>

Source: Objective Capital

We are pleased to bring you this report on **Vital Metals**.



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Gabriel Didham, CFA  
Objective Capital

## Will Purcell

Will has been involved in the resource sector for 30 years in a variety of roles. Since the late 1990s, he has been active in assessed mineral resource investment projects. Will has a B. Math degree from the University of Waterloo in Ontario.

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