

## SHEFFIELD RESOURCES LIMITED (SFX)

### Heading into another high news flow period

Sheffield Resources Limited's Thunderbird deposit is a very significant mineral sands project. The Company has three important catalysts over the next 4-6 months.

- An updated resource estimate for Thunderbird – expected before Christmas;
- Results from the 15t metallurgical test work – Q1 15
- The PFS for Thunderbird – expect late Q1 2015.

### We expect PFS will improve on scoping study

The scoping study was based on 20.8Mtpa, mine life 32 years, capex \$309m including contingency, 118ktpa zircon, 545ktpa ilmenite and A\$252/t average cash costs. We expect that the PFS could improve on the scoping study. Possibilities include:

- reducing start-up capex (eg incremental ramp-up, leasing equipment, lowering product specs);
- reducing opex (eg using local gas, better recoveries and higher grades in early years grades at surface, more detailed mine plan scheduling);
- Increasing mine life (infill drilling to increase M&I categories, transition to dredge mining).

### Fraser Range Nickel exploration...new target identification

SFX plans to undertake moving loop EM (Mar Qtr.) over the northern prospect at the Red Bull project in the Fraser Range. While no formal timeframe has been committed, we expect that drilling the Hook and northern prospects may occur mid-2015.

### Hartleys expects first 10 year EBITDA \$163m pa

Our model is slightly more conservative than the scoping study, and certainly does not include potential improvements to the PFS. This is to err on the side of conservatism given experience with other listed companies suggests subsequent studies rarely improve on the scoping study. We are quietly hopeful that SFX will be an exception given, to date, the Company has exceeded our expectations several times over the past three years.

Our model (assumes avg zircon selling prices US\$1309/t, ilmenite US\$187/t, AUDUSD 0.91) estimates first 10 year EBITDA of \$163m pa and life of mine EBITDA of \$129m pa. At spot prices assumes avg zircon selling prices US\$1050/t, ilmenite US\$159/t, AUDUSD 0.87), we estimate 10 year EBITDA of \$116m pa and life of mine \$88m pa.

### Retain Buy

Thunderbird is a significant mineral sands project that can add considerable global supply of sulphate ilmenite and zircon (circa 5-10%). Such a large addition would surely reduce selling prices below what they would otherwise settle at, and hence SFX is a strategic asset valuable to both customers and other producers. Back-of-the envelop calculations suggest every \$100/t reduction in zircon prices reduces the NPV<sub>8</sub> of a 300ktpa zircon producer by ~\$300m, and adds ~\$1.2b of value to the ~1.2mtpa zircon end user base. We have twelve month price target of \$1.83 and have Buy recommendation.

Share Price	\$0.82
Preliminary valuation	\$1.53
Price Target (12 month)	\$1.83

#### Brief Business Description:

Mineral sands developer plus an exciting multi-commodity exploration portfolio (Fraser Range Ni, Oxley potash, Nth Pilbara iron ore).

#### Hartleys Brief Investment Conclusion

The Dampier project is large (could add 5-10% pa of global zircon supply) and scoping study economics to develop are very compelling.

#### Chairman & MD

Will Burbury (Exec-Chairman)

Bruce McQuitty (MD)

#### Top Shareholders

Will Burbury - The Burbury Family A/C	5.9%
Bruce McQuitty	5.8%
David Archer Family Super Fund	5.8%

#### Company Address

Level 1, 57 Havelock Street  
West Perth, WA 6005

Issued Capital	134.4m
- fully diluted (itm)	142.1m

Market Cap	A\$110.2m
- fully diluted	A\$116.5m

Cash (30 Sep 14a)	A\$8.7m
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Debt (30 Sep 14a)	A\$0.0m
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EV	A\$101.5m
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	FY17e	FY18e	FY19e
EBITDA	-8.4	141.7	160.8
Op Cash Flw	-8.2	192.7	141.4
Norm NPAT	-22.4	96.0	97.8
CF/Share (cps)	-3.3	78.3	57.4
EPS (cps)	-9.1	39.0	39.7
P/E	-9.0	2.1	2.1



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Hartleys has assisted in the completion of a capital raising for Sheffield Resources Limited ("Sheffield") in the last 12 months for which it has earned fees. Hartleys has also provided corporate advice within the past 12 months and continues to provide corporate advice to Sheffield, for which it has fees and continues to earn fees. Analyst has a beneficial interest in SFX shares.



Fig. 1: Scoping study and Hartleys assumptions

Production Assumptions:	Scoping Study (14 April 2014)	Hartleys	Hartleys Difference v. scoping	Hartleys using spot prices	Hartleys Spot v. Hartleys Base
<b>Mining inventory</b>					
Mining inventory	669.0Mt	697.1Mt	4.2%		
Mining inventory grade	10.2%	10.2%	0.0%		
Zircon in-situ mining inventory grade	0.83%	0.81%	-2.9%		
- first 10 years	n/a	0.92%	nm		
Leuc. in-situ mining inventory grade	0.27%	0.21%	-21.3%		
- first 10 years	n/a	0.21%	nm		
Ilmenite in-situ mining inventory grade	2.92%	2.89%	-1.2%		
- first 10 years	n/a	2.91%	nm		
Mined Zircon	n/a	167.7kt pa	nm		
- first 10 years	n/a	190.4kt pa	nm		
Mined Leuc./HiTi	n/a	44.2kt pa	nm		
- first 10 years	n/a	44.6kt pa	nm		
Mined Ilmenite	n/a	600.2kt pa	nm		
- first 10 years	n/a	605.5kt pa	nm		
<b>Mining &amp; processing</b>					
Average Mining Rate	20.8Mt pa	20.8Mt pa	0.0%		
Strip ratio LOM	0.64x	0.65x	1.5%		
- first 10 years	0.24x	0.24x	0.0%		
Mine Life	32.0yrs	32.0yrs	0.0%		
HMC processed	2132kt pa	2222kt pa	4.2%		
HMC production	1477kt pa	1539.5yrs	4.2%		
- recovery	69%	69%	0.0%		
Recoveries Zircon	n/a	71%	nm		
Recoveries Leuc./HiTi	n/a	48%	nm		
Recoveries Ilmenite	n/a	90%	nm		
Production Zircon	118.2kt pa	119.0kt pa	0.7%		
- first 10 years	135.1kt pa	135.2kt pa	0.1%		
Production Leuc./HiTi	21.7kt pa	21.2kt pa	-2.2%		
- first 10 years	n/a	21.4kt pa	nm		
Production Ilmenite	545.0kt pa	540.2kt pa	-0.9%		
- first 10 years	n/a	545.0kt pa	nm		
Total production saleable product	684.9kt pa	680.5kt pa	-0.6%		
<b>Financials</b>					
Zircon selling price	US\$1475/t	US\$1309/t	-11.3%	US\$1050/t	-19.8%
Leuc/HiTi selling price	US\$870/t	US\$795/t	-8.6%	US\$713/t	-10.4%
Ilmenite selling price	US\$185/t	US\$187/t	1.0%	US\$159/t	-14.7%
AUD/USD	0.90cents	0.91cents	1.0%	0.87cents	-3.9%
Zircon contribution to revenue	62%	57%	-5.0% pts	55%	-1.7% pts
Leuc/HiTi contribution to revenue	2%	6%	3.9% pts	7%	0.5% pts
Ilmenite contribution to revenue	36%	37%	1.1% pts	38%	1.2% pts
LOM revenue	\$10,010m	\$9,633m	-3.8%	\$8,283m	-14.0%
Unit Revenue	\$456.7/t	\$442.4/t	-3.1%	\$380.4/t	-14.0%
EBITDA	\$140m pa	\$128.8m	-8.0%	\$88.0m	-31.6%
- first 10 years	\$187m pa	\$162.7m	-13.0%	\$115.9m	-28.8%
Unit cash costs	\$252.3/t	\$253.1/t	0.3%	\$251.0/t	-0.8%
Unit EBITDA margins	44.8%	42.8%	-4.4%	34.0%	-20.5%
Rev./Cost Ratio	1.8x	1.7x	-3.4%	1.5x	-13.3%
Pre-production capex (inc conting. & studies)	\$309.2m	\$321.2m	3.9%	\$321.2m	0.0%
<b>Valuation</b>					
Decision to mine	CY16	CY16		CY16	
First production	CY17	Sep qtr 2017		Sep qtr 2017	
Discount rate	n/a	12%		12%	
Capital requirement	n/a	\$374m		\$374m	
pre-tax NPV unfunded, dec. to mine	n/a	\$657m		\$352m	-46.4%
pre-tax IRR, dec. to mine	n/a	42.1%		29.0%	
New shares	n/a	112.7m		139.1m	23.4%
- assumed raising price	n/a	\$1.33/shr		\$1.08/shr	
pre-tax NAV funded, today	n/a	\$649m		\$394m	-39.3%
per diluted share	n/a	\$2.55/shr		\$1.40/shr	-45.0%
corporate o/head, tax	n/a	-\$1.02/shr		-\$0.65/shr	-35.9%
SFX valuation NPV12	n/a	\$1.53/shr		\$0.75/shr	-51.0%
SFX valuation NPV8	n/a	\$2.64/shr		\$1.44/shr	-45.5%

Source: Sheffield Resources, Hartleys Estimates

**Fig. 2: SFX Price Target**

Price Target Methodology	Weighting	Spot	12 mth out
NPV <sub>12</sub> consensus prices	48%	\$1.53	\$1.83
NPV <sub>12</sub> at spot commodity and fx prices	15%	\$0.75	\$0.91
NPV <sub>8</sub> consensus prices	20%	\$2.64	\$2.75
NPV <sub>8</sub> at spot commodity and fx prices	3%	\$1.44	\$1.42
8.0x FY18 (EV + capital) / EBIT	5%	\$3.13	\$3.13
4.0x FY18 (EV + capital) / EBIT	5%	\$1.24	\$1.24
Net cash backing	4%	\$0.06	\$0.06
<b>Risk weighted composite</b>		<b>\$1.64</b>	
<b>12 Months Price Target</b>		<b>\$1.83</b>	
Shareprice - Last		\$0.820	
<b>12 mth total return</b>		<b>123%</b>	

Source: Hartleys Estimates

**Fig. 3: Key assumptions and risks for valuation**

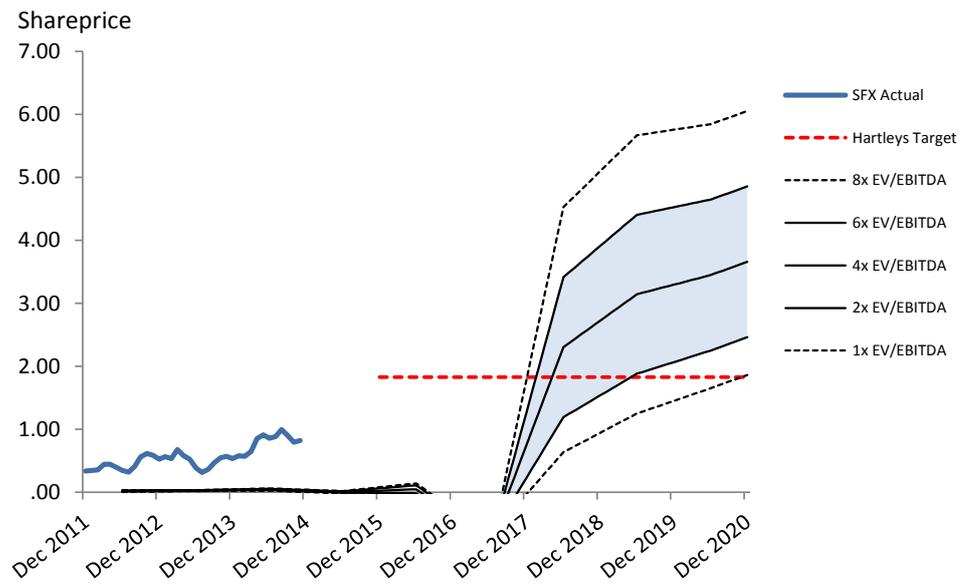
Assumption	Risk of not realising assumption	Downside risk to valuation if assumption is incorrect	Comment
First production in late CY17 for Thunderbird	High	Moderate	The construction period for any future mine is expected to be long with significant approval and construction timeframes.
Mineral sands prices in line with sell-side consensus	Moderate	Significant	The consensus is for modestly improving prices
32 year mine life	Moderate to high	More likely to be upside	Our model assumes only the high grade resource is mined and none of the low grade resource. It's possible that mine life is too conservative.
Capex for Thunderbird is 60:40 debt/equity	Low to Moderate	upside/downside risk is equal as we are conservative on our assumption for equity dilution. Its also possible a much higher proportion of debt funding is available (80:20)	Capital requirements are large for a company of this size and there is risk that SFX will not be able to raise sufficient funds, although as the studies have progressed and markets have improved slightly, it seems an increasingly lower risk that SFX will not be able to fund development
Operating costs	Moderate	Moderate	We are happy with our operating cost assumptions
No value for other projects	High	Upside	Our valuation is based only on the Thunderbird project. Although it seems difficult to see the equity market attributing much value for the other projects in the near term, it should be remembered that potentially asset sales could fund a large proportion of the development studies.

**Conclusion**

While the assumptions we have used are reasonable, we consider some assumptions as moderate to high risk and the consequential reduction to our valuation would be significant if they were not achieved.

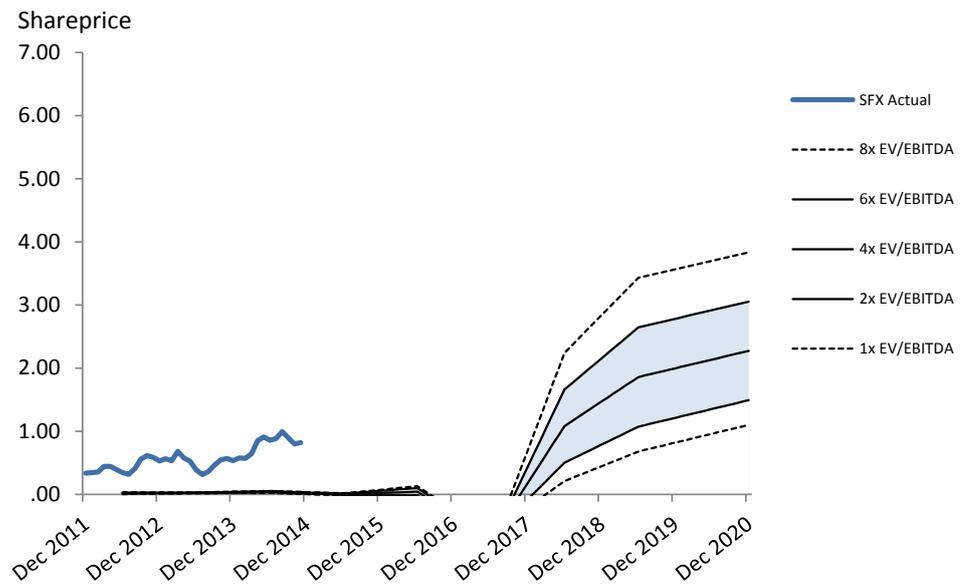
Source: Hartleys Research

**Fig. 4: Using Hartleys base case commodity forecasts**



Source: Hartleys Research, IRESS

**Fig. 5: Using spot commodity prices**



Source: Hartleys Research, IRESS

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## Hartleys Recommendation Categories

Buy	Share price appreciation anticipated.
Accumulate	Share price appreciation anticipated but the risk/reward is not as attractive as a "Buy". Alternatively, for the share price to rise it may be contingent on the outcome of an uncertain or distant event. Analyst will often indicate a price level at which it may become a "Buy".
Neutral	Take no action. Upside & downside risk/reward is evenly balanced.
Reduce / Take profits	It is anticipated to be unlikely that there will be gains over the investment time horizon but there is a possibility of some price weakness over that period.
Sell	Significant price depreciation anticipated.
No Rating	No recommendation.
Speculative Buy	Share price could be volatile. While it is anticipated that, on a risk/reward basis, an investment is attractive, there is at least one identifiable risk that has a meaningful possibility of occurring, which, if it did occur, could lead to significant share price reduction. Consequently, the investment is considered high risk.

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