

Company Information

ASX Code	WRM
Share Price (21 Oct 2019)	A\$0.005
Ord Shares	1636.4m
Market Cap	A\$8.2m
Options	794.6m
Market Cap (fully diluted)	A\$12.2m
Cash (30 June 2019)	A\$3.9m
Total Debt	A\$0m
Enterprise Value	A\$12.1m

Directors

NED Chairman	Peter Lester
M.D & CEO	Matthew Gill
Director (Non-Exec)	Jeremy Gray
Director (Non-Exec)	Stephen Gorenstein

Significant Shareholders

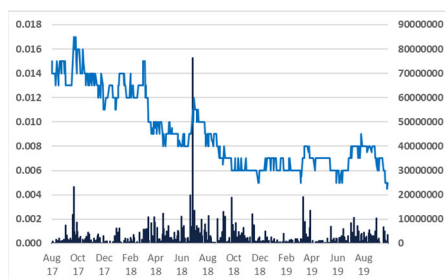
Sandfire Resources	12.7%
Lan Michael Hsiau Yun	6.0%
Suetone	5.2%
Avalon Ventures	4.9%
Cartesian	4.7%
Zijin/Sprott	3.7%
Top Twenty	53.8%

Source: Company 30 September 2019

Company Details

Address	12 Anderson Street Ballarat Victoria
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Web	www.whiterockminerals.com.au

Price Chart



Source: ASX

WHITE ROCK MINERALS LTD (ASX WRM)

Building blocks to build a bigger company

Key Points

- **Base Case valuation is 2.5cps (A\$76.2M):**
 - 5x upside vs current share price
- **Mt Carrington (NSW Australia) valuation A\$47.3M with A\$8M initial capex after potential Cartesian Funding**
 - High valuation/capex ratio = 5.9X and remnant A\$8M funding hurdle achievable for WRM
 - Generates A\$15M pa cash flow at current gold prices
 - The potential funding facility from Cartesian offers White Rock US\$19M (A\$28M) to build the Mt Carrington gold and silver project subject to conditions
 - Resources of 341Koz gold and 23.2Moz silver
- **Red Mountain Alaska worth between A\$9M and A\$50M to WRM**
 - WRM currently owns 100% but diluting to 49-30% with Sandfire funding A\$20-30M of exploration and evaluation.
 - Resource of 16.7Mt at 8.9% ZnEq or 9.1Mt at 12.9% ZnEq
 - Alaska is highly prospective, and becoming better known to Australian investors with Northern Star's acquisition of Pogo Gold Mine
- **2:3 non-renounceable rights issue in progress:**
 - Funds raised will be used to progress Mt Carrington
- **Exploration upside at Red Mountain and at Mt Carrington.**
 - Sandfire funded exploration news flow from the Red Mountain joint venture arrangement
 - Mt Carrington has drill ready near mine gold/silver targets

The current rights issue is a watershed moment for the company. If supported by the market, White Rock will have the funds to progress the DFS and EIS of its 100% owned Mt Carrington Gold Silver Project, while Sandfire funds the exploration of White Rock's Red Mountain zinc and precious metals project in Alaska.

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White Rock Minerals Investment Thesis

White Rock has three assets that are likely to add value for shareholders:

1. the Mt Carrington gold and silver project in Australia,
2. the Red Mountain zinc and precious metals project in Alaska, an exploration joint venture with Sandfire, and
3. the entrepreneurial skills of the board and management.

The last asset is demonstrated with the strategy applied to the second asset! Red Mountain did not exist for the company's shareholders three years ago, and once acquired, would have been cash flow liability before the Sandfire deal converted it into a fully funded exploration asset, the minimum valuation of which is equal to the current market capitalization of the entire company. Exploration success, or a swing in market sentiment towards zinc, would provide upside. The company's Mt Carrington Project is also upside, and the visibility of that upside will improve dramatically post a successful rights issue.

Mt Carrington, Australia – Potential Cartesian Funding brings valuable project within reach

Mt Carrington has three layers, or phases, of project/target generation of relevance to investors:

1. Gold First Project: A Preliminary Feasibility Study was released on 27 December 2017. The project is small at 147Koz of planned production, but we are forecasting cash generation of \$15M pa, well ahead of the company's market capitalization. The initial capital of A\$35.7M has a potential funding solution (the Cartesian Funding) which reduces the initial capital cost for shareholders to around a more manageable A\$8M (note that the annual cash flow of \$15M pa is after servicing the Cartesian Funding).
2. Stage 2 Silver Project: would add a flotation circuit to process the 23 Moz silver resource.
3. The potential for exploration success in the 400 square km collapsed volcanic caldera structure and several epithermal-style precious metal targets contained within it and with many having advanced to a drill ready status.

The potential Cartesian Funding facility is expensive when compared to debt, but cheap if compared to the dilution of an equity raising at the current share price to cover the initial capex. It also takes on more price gold risk than the banks are likely to accept. Shareholders can either bid up the share price to a point where debt and equity funding become viable or accept the Cartesian cost as the price to production.

Red Mountain, Alaska – Worst case value close to WRM's current market capitalization

Sandfire is committed to spending A\$20M to explore and earn a 51% stake, and then with the option to spend a further A\$10M and produce a Preliminary Feasibility Study and ore reserve to earn 70%. White Rock is therefore funded to a residual position of 30% in the project, and can elect to reduce further, which sets a minimum value on the project of A\$30M, of which White Rock's share is 30% or \$9M. On its own, this conservative value is higher than the company's current market capitalization.



With a supportive equity market, the following could happen

White Rock has a 2:3 rights issue at A\$0.005/sh (0.5cps) under way. This is a potential watershed event. If this is supported by shareholders, and any balance placed into the market, the company is likely to be funded to the completion of the Mt Carrington Bankable Feasibility Study, to complete its Environmental Impact Assessment and obtain the required approvals. With the DFS and approvals in place, the Cartesian Funding facility could then be finalized, minimizing any subsequent call on shareholders.

1. At current gold prices, Mt Carrington once developed could spin off A\$15M pa in free cash flow after servicing the Cartesian gold stream facility used to build the project.
2. That cash flow could be enhanced with the development of bolt-on pits
3. The broader Mt Carrington as an exploration target is full of potential value adding discoveries, which can be unlocked by that cash flow.
4. Cash flow would allow White Rock to present a stronger face to the Red Mountain project, retain more equity, and therefore more value for shareholders.

Valuation

Our base case valuation is a conservative A\$0.025/sh, 5x current price

Because of the share price history, we have chosen to focus on a conservative valuation approach which results in a price target 5x the price of the current issue. Our base case valuation assumes:

1. 100% of the current rights issue is taken up, or any shortfall is subsequently placed, resulting in the completion of the Definitive Feasibility Study and obtaining the required approvals.
2. The market reacts to the positive project momentum and rerates the share price to above A\$0.020/sh (2cps) triggering the exercise of options.
3. As a result of the above, the Mt Carrington Gold First Project is fully funded on the PFS initial capex by the current rights issue, and the subsequent exercise of options.

Table 1 Base Case Valuation of A\$0.025/sh (2.5cps) at 30 June 2020

Valued after tax	Minimum Take Up		50% Rights Take Up		100% Rights Take Up		100% Rights takeup + option exercise	
	A\$M	A\$/sh	A\$M	A\$/sh	A\$M	A\$/sh	A\$M	A\$/sh
Mt Carrington Stage 1	38.0	0.023	38.0	0.017	38.0	0.014	38.0	0.012
Mt Carrington Stage 2	9.4	0.006	9.4	0.004	9.4	0.003	9.4	0.003
Mt Carrington Total	47.3	0.028	47.3	0.021	47.3	0.017	47.3	0.015
Corporate Overhead	-9.8	-0.006	-9.8	-0.004	-9.8	-0.004	-9.8	-0.003
Tax Benefit	12.1	0.007	12.1	0.005	12.1	0.004	12.1	0.004
Cash on hand	0.3	0.000	2.9	0.001	5.4	0.002	12.8	0.004
Debt	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
Other Assets	15.0	0.009	15.0	0.007	15.0	0.006	15.0	0.005
Net Working Capital	-1.2	-0.001	-1.2	-0.001	-1.2	0.000	-1.2	0.000
Valuation A\$M	63.7	0.038	66.3	0.030	68.9	0.025	76.2	0.025
Issued Shares M		1687.72		2207.42		2727.12		3092.40

Source: Breakaway Research estimates. The first three scenarios reflect different levels of rights takeup. The last scenario on the right assumes the share price reaches A\$0.02/sh and the options to June 2020 are exercised and is our valuation base case.



The base case is the final columns. The Mt Carrington Net Present Value is based on:

1. PFS project economics net of the potential Cartesian Funding facility
2. Current spot gold price (A\$2160/oz, US\$1450/oz, AUDUSD 0.67)
3. Discount Rate of 5%pa in real terms (i.e. zero inflation)

The Red Mountain valuation ranges from A\$9-10M based on the Sandfire buy in price to A\$9M-A\$30M based on comparison with peers. We have chosen A\$15M, which is equivalent to the June 2018 book value plus White Rock's 49% share of the A\$20M Sandfire exploration spend to the point where Sandfire has a 51% interest.

The upside to our valuation includes:

1. Obtaining a lower cost funding solution for the Mt Carrington project than the Cartesian option.
2. The Red Mountain valuation excludes further additional value for discovery potential. There will be news flow generated by the Sandfire funded exploration.
3. There is no value included for additional project upside at Mt Carrington, either in terms of conversion of existing gold and silver inferred resources currently outside the PFS mine plan, nor the larger potential from follow up of historical drill hits, nor the major potential of discovering a copper gold porphyry system.

Sensitivities: Issuance, funding, and gold price

Valuing White Rock during a large rights issue that is not underwritten adds uncertainty, but it is relatively easy to dimension the range of appropriate valuations. In the table below, the Minimum Issue assumes only Cartesian takes up their rights entitlement, and the Half Issue assumes 50% of the non-Cartesian balance subscribes. The Share Price at June 2020 and thereafter drives the take up of options, adding to the company's cash position, as well as diluting existing shareholders.

The two critical outcomes are:

1. The impact of share dilution and cash raised on the NPV
2. The funding shortfall at December 2022 as the Carrington project is being completed

The NPV falls in a range of between A\$0.025/sh (2.5cps) and A\$0.037/sh (3.7cps), with the lower valuation being fully funded into the Carrington Project and the higher value being unfunded, but reflecting a potential corporate sale price, and hence is still a valid valuation.

The funding picture highlights how the project is fully funded assuming the PFS estimates plus an allowance for working capital, and the full rights issue, plus the options exercise if the share price is above A\$0.020/sh. It highlights the importance of the options and the impact of a share price rerating.

If the current issue is completely unsupported, and the share price remains below the options exercise price, the funding shortfall would be A\$14M. If the Entitlement offer is taken up and the share price exceeds A\$0.020/sh, there is a \$2.8M cash buffer.



Table 2 Sensitivity to how much of the current issue is placed and share price performance

	Minimum Issue	Half Issue	Maximum Issue
NPV June 2020 A\$/sh			
	Share Price June 2020		
0.005	0.038	0.030	0.025
0.010	0.038	0.030	0.025
0.020	0.035	0.029	0.025
0.030	0.035	0.029	0.025
0.040	0.035	0.029	0.025
	Cash Balance Dec 2022		
	A\$M		
0.005	-13.9	-11.2	-8.5
0.010	-13.8	-9.3	-4.9
0.020	-6.1	-1.6	2.8
0.030	-6.0	-1.6	2.9
0.040	-5.7	-1.3	3.2

Source: Breakaway Research estimates

The sensitivity of our valuation base case to the gold price is detailed in the table below.

Table 3 Sensitivity to the gold price

Gold Price A\$/oz	1600	1800	2000	2200	2400
NPV A\$M	34.7	49.4	64.1	78.8	93.5
NPV A\$/sh	0.011	0.016	0.021	0.025	0.030

Source: Breakaway Research estimates.

Changing the gold price by A\$100/oz changes the valuation by A\$14.7M or A\$0.005/sh (0.5cps). The current issue price of A\$0.005/sh is pricing the company at A\$1340/oz gold price or under US\$900/oz, on our assumptions.

The other major risks are:

1. Geological – Will the orebody perform as expected.
2. Cost – Will the capex and opex assumptions be validated.
3. Execution – Will the White Rock management deliver the project on time and budget.

While these are valid reasons for caution, we would make the following comments:

1. The mine has been operated previously and the performance is on record, with the first two gold pits pre-stripped, and gold ore exposed.
2. The construction and operation of gold plants in Australia is a common and very well understood activity.
3. The Board and Management have experience in building, commissioning, and operating projects.



Funding assumptions for the Mt Carrington First Gold Project

One of White Rock's major shareholders, Cartesian Royalty Holdings, has provided a binding conditional term sheet proposing a two phase financing package (see WRM release 27 June 2016), the second phase comprises a US\$19M (A\$28M) package to fund working capital, construction, and commissioning of Mt Carrington, in return for a share of gold and silver production, to be paid from pre-tax revenues.

We have assumed the use of this funding as our base case. The current market capitalization of A\$8.2M to \$13.6M at the rights issue price of A\$0.005/sh is subject to how much of the rights issue is taken up. The effect of the Cartesian Funding is to reduce the peak funding requirement from A\$42M to A\$14M (Breakaway Research estimate). At A\$14M, the project becomes a reasonable funding proposition for the company at its current capitalization.

Of itself, as currently formulated, the Cartesian Funding option will not cover 100% of the pre-production capex. Potential options include:

1. A larger renegotiated Cartesian facility.
2. Project debt.
3. Equity top up, including the exercise of options.
4. A combination of debt, equity and hedging.

Also, the financing has not reached the final documentation stage, which requires, among other things, the Definitive Feasibility Study and obtaining approvals. The fact that Cartesian is supporting the current rights issue is evidence of their continued interest and support for the project.

As envisaged, the US\$19M funding facility is predicated on receiving 20% of the gold or gold equivalent silver production to a minimum of 40,000 oz of gold over the first 84 months of the life of the mine. The planned production of the Gold First PFS is 147Koz, 20% of which is 29Koz. The Stage 2 Silver Project adds more than the balance. However, this was struck at a June 2016 gold price of US\$1277/oz vs the September 2019 average of US\$1511/oz (18% higher), and the higher price may assist in the renegotiation of the financing.

Cartesian Royalty Holdings Streaming Finance Option

Cartesian has a 4.7% shareholding and owns 153.8M options in White Rock (Note:- subject to shareholder approval, this will be reduced to 100M shares). Subject to certain Conditions Precedent and definitive documentation, White Rock has the option of drawing down US\$19M in four tranches over a 6-12 month period to fund the construction and commissioning of Mt Carrington.

If White Rock completes the DFS, EIS and funding documentation, and has the Cartesian financing made available to it but does not proceed with the drawdown, and decides on an alternate funding route, it will have to pay Cartesian a break fee of US\$1.5M at that time. At present, it is believed that White Rock can walk away with no break fee payable.

If the US\$19M is drawn down, White Rock pays a 3% establishment fee, then Cartesian is entitled to 20% of the gold (or gold equivalent if silver is being mined) production



over a period of 84 months, paid from pre-tax revenues with a minimum repayment of 40,000 ounces. Once the 40,000 ounces has been repaid, Cartesian will receive a 1.75% royalty on gold and silver revenues from the Mt Carrington tenements.

This facility is currently A\$28M vs the PFS initial capex of A\$35.7M, with the likelihood that the DFS could add capital costs and working capital (although the Estimate does include a A\$4M contingency), so more could be required.

The facility is available subject to conditions, including:

1. Completion of the DFS, EIS and full permitting.
2. Due Diligence by Cartesian.
3. Acceptance by Cartesian of the mine plan and capital expenditure.
4. Access to grid power.
5. Execution of definitive documentation.

Financials

Table 4 Profit & Loss

PROFIT & LOSS	Jun-20	Jun-21	Jun-22	Jun-23	Jun-24	Jun-25	Jun-26	Jun-27
Operating Revenue	0.0	0.0	0.0	26.0	65.2	65.1	65.1	49.3
Other Income	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unusual Revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Revenue	0.3	0.0	0.0	26.0	65.2	65.1	65.1	49.3
Costs	-1.8	-1.8	-1.8	-22.7	-45.3	-46.9	-48.7	-36.1
EBITDA	-1.5	-1.8	-1.8	3.3	19.9	18.2	16.4	13.3
Depreciation	0.0	0.0	0.0	-4.3	-10.7	-10.7	-10.7	-6.3
Impairment (usual)	0.0	0.0	0.0	13.0	0.0	0.0	0.0	0.0
EBIT	-1.5	-1.8	-1.8	12.1	9.2	7.5	5.7	6.9
Interest Costs	0.1	0.3	0.1	0.1	0.1	0.6	0.8	1.1
Financing Costs	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PBT	-1.5	-1.5	-1.7	12.2	9.3	8.1	6.6	8.0
Tax Expense	0.0	0.0	0.0	-3.7	-2.8	-2.4	-2.0	-2.4
NPAT	-1.5	-1.5	-1.7	8.6	6.5	5.7	4.6	5.6
Shares on Issue	3092	3094	3457	3457	3557	3557	3557	3557
Adj EPS A\$/sh	-0.0005	-0.0005	-0.0005	0.0025	0.0018	0.0016	0.0013	0.0016
Options on Issue M	848.5	470.2	101.2	100.0	0.0	0.0	0.0	0.0

Source: Breakaway Research estimates

In FY28, the Mt Carrington earnings have ceased on the PFS mine plan. There is upside to our valuation if the mine life is extended, which we believe is achievable. The A\$13.1M "Impairment" reversal in FY23 is the recognition of the currently off balance sheet tax asset, which becomes an asset once Mt Carrington comes into production.

Table 5 Assumptions

Assumptions	Jun-20	Jun-21	Jun-22	Jun-23	Jun-24	Jun-25	Jun-26	Jun-27
Gold US\$/oz	1450	1450	1450	1450	1450	1450	1450	1450
Silver US\$/oz	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
US\$/A\$	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Inflation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Tax Rate	30%	30%	30%	30%	30%	30%	30%	30%

Source: Breakaway Research estimates

**Table 6 Cash Flow**

CASH FLOW	Jun-20	Jun-21	Jun-22	Jun-23	Jun-24	Jun-25	Jun-26	Jun-27
Receipts From Customers	1.5	0.0	0.0	23.2	60.9	65.1	65.1	51.0
Payments to Suppliers	-4.2	-1.4	1.2	-20.9	-46.1	-46.4	-47.9	-39.7
Other Revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest Received	0.1	0.3	0.1	0.1	0.1	0.6	0.8	1.1
Interest Paid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Taxes Paid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Cash from Operations	-2.5	-1.1	1.3	2.4	14.9	19.3	18.1	12.5
PP&E	-1.0	-2.0	-18.9	-17.9	0.0	0.0	-1.5	-4.5
Acquisitions	-0.3	-0.8	0.0	0.0	0.0	0.0	0.0	0.0
Cartesian Funding (Asset Sale)	0.0	0.0	14.2	14.2	0.0	0.0	0.0	0.0
Investing Activity	-1.3	-2.8	-4.7	-3.7	0.0	-2.8	-1.5	-4.5
Issue of Equity.	12.8	0.0	3.6	0.0	1.0	0.0	0.0	0.0
Dividends	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Borrowings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financing Costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financing Activity	12.8	0.0	3.6	0.0	1.0	0.0	0.0	0.0
FX Difference	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Increase in Cash	8.9	-3.9	0.2	-1.2	15.9	16.5	16.6	8.0
YE Cash on Hand	12.8	8.9	9.1	7.9	23.8	40.3	56.9	64.8

Source: Breakaway Research estimates

Table 7 Balance Sheet

BALANCE SHEET	Jun-20	Jun-21	Jun-22	Jun-23	Jun-24	Jun-25	Jun-26	Jun-27
Cash	12.8	8.9	9.1	7.9	23.8	40.3	56.9	64.8
Receivables	0.0	0.0	0.0	2.9	7.1	7.1	7.1	5.4
Inventories	0.0	0.0	0.0	1.7	3.6	3.7	3.9	2.8
Prepaid Costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Current Assets	12.8	8.9	9.1	12.4	34.5	51.2	67.9	73.1
PP&E	1.3	3.3	22.2	35.8	25.0	14.3	5.1	3.3
Expln & Mine Devt	17.9	17.9	17.9	17.9	17.9	20.7	20.7	20.7
Deferred Tax Asset	0.0	0.0	0.0	13.0	10.2	7.8	5.9	3.4
Total Non Current Assets	19.3	21.3	40.1	66.7	53.2	42.8	31.6	27.4
Total Assets	32.0	30.1	49.2	79.1	87.7	94.0	99.5	100.5
Trade Payables	1.3	0.6	3.4	6.7	7.4	7.7	8.2	6.7
Prepaid Revenue	0.0	0.0	14.2	28.4	28.4	28.4	28.4	28.4
Borrowings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Current Tax Liabilities	0.0	0.0	0.0	3.7	3.7	3.7	3.7	3.7
Deferred Tax Liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Provisions	1.4	1.6	1.8	2.0	2.3	2.7	3.1	0.0
Total Liabilities	2.7	2.2	19.4	40.7	41.8	42.4	43.3	38.7
Net Assets	29.4	27.9	29.8	38.4	45.9	51.6	56.2	61.8
Issued Capital	61.2	61.2	64.9	64.9	65.9	65.9	65.9	65.9
Reserves	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Retained Profits	-32.6	-34.1	-35.9	-27.3	-20.8	-15.1	-10.5	-4.9
Shareholder Equity	29.4	27.9	29.8	38.4	45.9	51.5	56.1	61.8

Source: Breakaway Research estimates

The cash flow low point is December 2022. The cash on the balance sheet to that time is completely dependent on the success of the current rights issue and the 4x increase in the share price to the point where options exercise is triggered in FY20 and FY22.



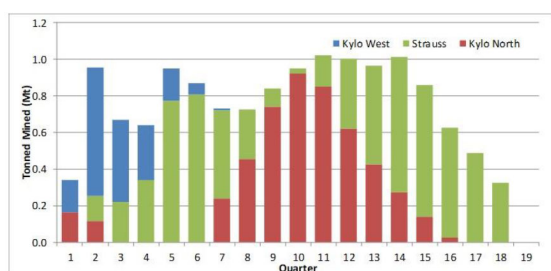
Table 8 Mt Carrington Stage 1 Gold First Project

	LOM	Jun-21	Jun-22	Jun-23	Jun-24	Jun-25	Jun-26	Jun-27
Gross Revenue	318.8	0.0	0.0	32.5	81.5	81.4	81.4	41.9
Cartesian Share	-63.8	0.0	0.0	-6.5	-16.3	-16.3	-16.3	-8.4
Revenue	255.0	0.0	0.0	26.0	65.2	65.1	65.1	33.6
Cost	-177.5	0.0	0.0	-20.9	-43.5	-45.1	-46.9	-21.1
EBITDA	77.5	0.0	0.0	5.1	21.7	20.0	18.2	12.4
D&A	-42.0	0.0	0.0	-4.3	-10.7	-10.7	-10.7	-5.5
EBIT	35.6	0.0	0.0	0.9	11.0	9.3	7.5	6.9
Sustaining Capex	-2.8	0.0	0.0	0.0	0.0	-2.8	0.0	0.0
Pre Prodn Capex	-38.7	-2.0	-18.9	-17.9	0.0	0.0	0.0	0.0
Cartesian Funding	28.4	0.0	14.2	14.2	0.0	0.0	0.0	0.0
Free Cash Pre tax	61.0	-2.0	-4.7	1.5	21.7	17.3	18.2	8.9
Pre Tax NPV	46.3	50.7	56.6	66.1	46.9	27.6	13.7	-3.5
Free Cash Flow After Tax	50.3	-2.0	-4.7	1.2	18.4	14.5	16.0	6.9
Post Tax NPV	38.0	41.9	47.4	55.6	39.4	23.0	11.0	-3.5
Mining								
Waste Kt	10040	0	0	1400	1820	2940	2930	950
SR	2.6	0.0	0.0	2.5	1.3	5.3	3.3	2.2
Ore Kt	3800	0	0	550	1360	550	900	440
Grade g/t Au	1.4	0.0	0.0	1.4	1.4	1.4	1.4	1.4
Grade g/t Ag	1.6	0.0	0.0	1.6	1.6	1.6	1.6	1.6
Contained Gold Koz	171.1	0.0	0.0	24.8	61.2	24.8	40.5	19.8
Contained Silver Koz	195.5	0.0	0.0	28.3	70.0	28.3	46.3	22.6
Processing								
Ore Kt	3949	0	0	402	1009	1009	1009	520
Grade g/t Au	1.4	0.0	0.0	1.4	1.4	1.4	1.4	1.4
Grade g/t Ag	1.6	0.0	0.0	1.6	1.6	1.6	1.6	1.6
Contained Gold Koz	177.8	0.0	0.0	18.1	45.4	45.4	45.4	23.4
Contained Silver Koz	203.2	0.0	0.0	20.7	51.9	51.9	51.9	26.8
Au Recovery	83%	0%	0%	83%	83%	83%	83%	83%
Ag Recovery	0%	0%	0%	0%	0%	0%	0%	0%
Recovered Gold Koz	147.3	0.0	0.0	15.0	37.7	37.6	37.6	19.4
Recovered Silver Koz	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gold Sales Net of Cartesian								
		0.0	0.0	0.0	12.0	30.1	30.1	30.1
AISC A\$/oz on Net Sales					3618	1588	1558	702

Source: WRM PFS release 27 December 2017, Breakaway Research estimates

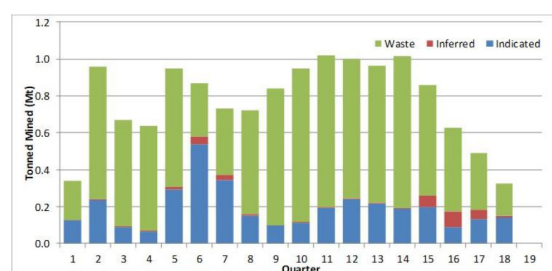
The Cartesian Funding option reduces the Capex in FY22 and FY23, and is repaid from the pre-tax revenue stream.

Figure 1 Material moved by deposit



Source: WRM PFS release 27 December 2019

Figure 2 Ore and waste mined





Mt Carrington

Location

Mt Carrington is 5 km from the township of Drake in northern NSW. It is located on the Bruxner Highway, approximately 4 hours by car south west of Brisbane and 2 hours west from Byron Bay. This region has been in the news in September and October 2019 as a result of the devastating bush fires in the region, and an industrial project of this magnitude is likely to be strongly supported by both locals and the NSW State government in a region which will be rebuilding for some years.

History

Between 1974 and 1976 Mt Carrington Mines Ltd extracted a small tonnage of high-grade silver (Ag) and gold (Au) from the Lady Hampden open pit. In 1988 a mining campaign focused on extracting open pit oxide Au/Ag ore from the Strauss, Kylo, Guy Bell and Lady Hampden deposits. The oxide ore was depleted by 1990, and with low metal prices of US\$370/oz Au and US\$5/oz Ag the small scale mine was closed.

In April 2008 Rex Minerals Ltd acquired Mt Carrington and completed 2 years of validation exploration. The project was spun out of Rex in June 2010 with the formation of White Rock Minerals Ltd.

Between 2013 and 2016, a number of Scoping Studies were released, with the study of 29 March 2016, (and fully summarized in the release of 20 October 2016) detailing a preproduction capex of A\$24M for an 800Ktpa comminution, flotation, and CIL plant producing 111koz gold and 6.7Moz silver in concentrate over 7 years.

Cartesian signed up with a conditional streaming based funding proposal of US\$19M (A\$28M) on 27 June 2016.

On 27 December 2017, a Preliminary Feasibility Study was released on a “Gold First” project detailing a preproduction capex of A\$35.7M, a CIL plant to process 1Mtpa and production of 147Koz gold in dore bullion over 4.3 years.

Figure 3 Location



Figure 4 Site overview



Figure 5 Pre-stripped pit

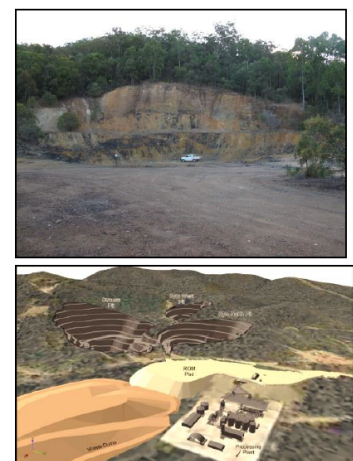
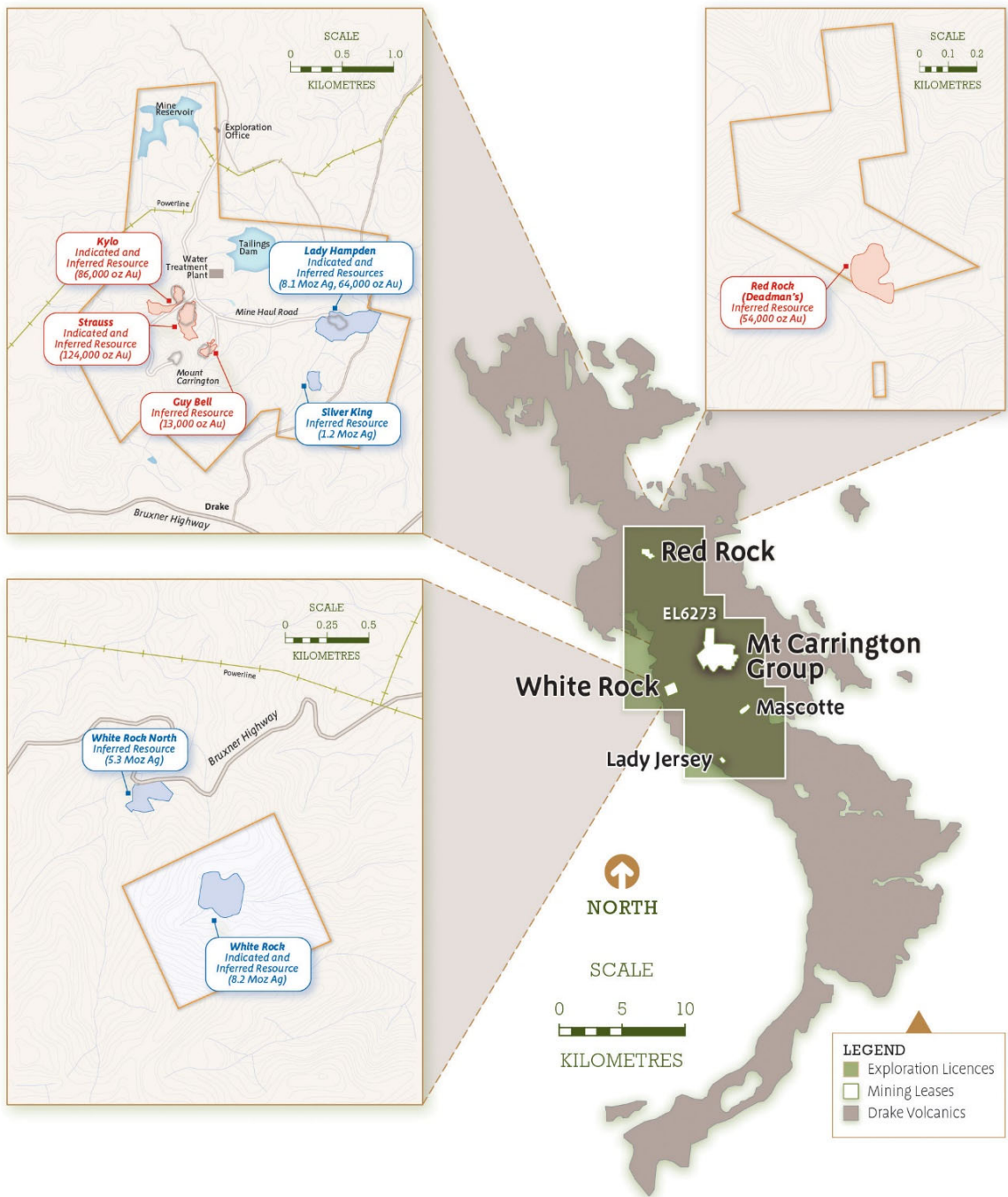


Figure 6 Lease Map and Deposit Locations

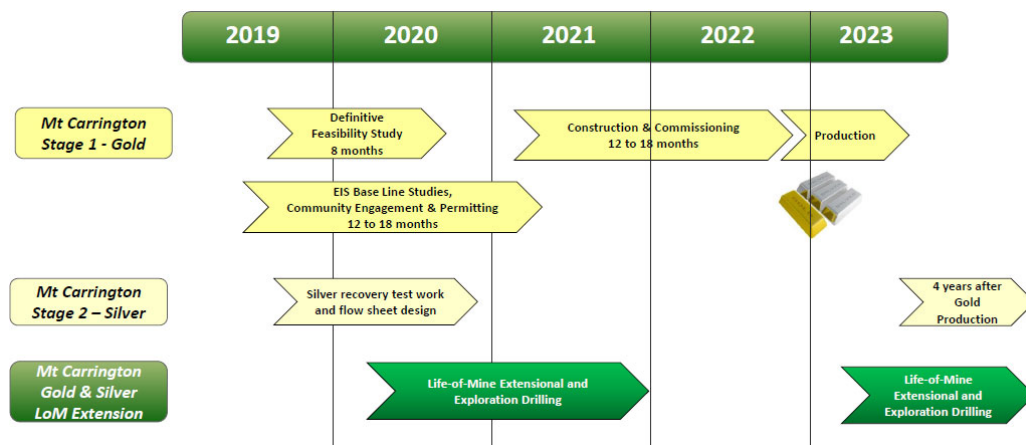


The Stage 1 Gold First comprises the Kylo and Strauss deposits, while Sliver Stage 2 involves Lady Hampden, Silver King and the White Rock deposits.

Project Basics

The Gold First Project (also called Stage 1) is based on the higher grade and more oxidised Kylo and Strauss open pits. There are a number of other pits which could add to the project with drilling to convert inferred resources to indicated.

Figure 7 Current time line



Source: WRM presentation 30 September 2019

Capital Cost

Table 9 Pre-Production Capital Costs

Initial Capex	White Rock	Egan Street
Date of study	27-Dec-17	19-Jul-18
Type of Study	PFS	DFS
Capacity	1Mtpa	0.5Mtpa
Process Plant 145tph	20.2	24.3
TSF	3.7	
Site & Infrastructure	3.7	3.0
Mining Facilities	1.1	
EPCM	3.7	5.1
Contingency	4.0	3.7
Total	36.4	36.1
Funds From Streaming	-28.4	
Net Capex	8.0	36.1

Source: WRM PFS 27 Dec 2017, EGA DFS 19 July 2018

The initial capital cost is a PFS quality number with +/- 15-25% accuracy, meaning that the costs could be \$8M higher. If the initial capex were increased by \$8M, the NPV would be lower by A\$5.4M or A\$0.002/sh, and the funding requirement would be \$8M higher. While both these effects would be negatives, they would not be fatal to the project, would not impact our overall investment conclusion.

The costs appear to be in the region of the later Egan Street Rothsay Project DFS costings, given that White Rock will be processing open pit oxide and transition as well as fresh ore, while Egan Street/Rothsay will be all fresh underground ore. Importantly, because there has been past mining at Mt Carrington, some A\$20M in existing infrastructure already exists – the first two gold deposits are already pre-stripped, there is a tailings storage facility and a 750ML fresh

water dam on site, the plant site and a number of haul roads are already cleared and there is state power grid to site. This is not just a significant capex saving but also adds to the de-risked nature of this advanced project.

To that we have added A\$4M in DFS costs prior to the commitment to the project. The previous costs to DFS provided by White Rock were in the Scoping Study Presentation of 28 September 2016 which detailed \$2M for the DFS proper and A\$1.3M to complete the environmental studies and obtain approvals. Existing assets include:

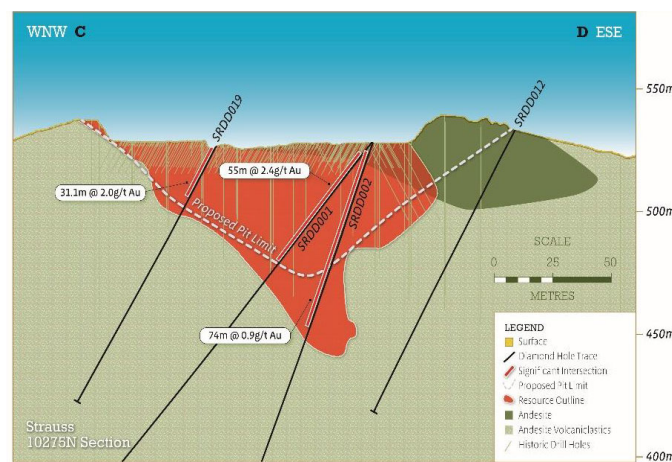
- Granted Mining Leases.
- 1.5Mt Tailings Dam.
- 750ML Freshwater Dam.
- Site Office.
- Reverse Osmosis water treatment plant.
- Access to State Power Grid.
- Workers can live in local towns.

Table 10 Life of Mine operating cost structure

	A\$M	A\$/t ore	A\$/oz Au
Revenue (no Cartesian Funding)	324.1	81.93	2200
Mining	-72.5	18.33	492
Processing	-83.7	21.15	567
G&A	-14.7	3.71	99
Royalties	-8.7	1.46	59
Rehabilitation	-3.5	0.88	23
Total	-183.1	45.53	1241
Sustaining	-2.8	0.70	19
AISC	-185.8	46.99	1262
Pre-production Capex	-35.7	9.03	242
All In Cost	-221.5	56.01	1504
Cash Flow	102.5	25.9	696.0
Physicals		Kt	Koz
Life of Mine Total		3955	147.3
From Reserves		3800	
From Stockpiles		155	

Source: WRM PFS release 27 December 2017, Strip Ratio 2.6:1 drives mining costs

Figure 8 Strauss pit highlighting low strip ratio



Source: WRM presentation September 2016

Resources

White Rock has expanded the Resource base by more than 230% since listing in 2010 for both gold and silver with the majority of ore considered in development studies now classified as Indicated. The Mineral Resource estimate for all deposits at the Mt Carrington Project currently totals 341,000 oz gold and 23.2 Moz silver.

Table 11 Resources for the Gold First Project

MT CARRINGTON MINERAL RESOURCES						
Gold Dominant						
Resource Category	Deposit	Tonnes	Gold grade (g/t)	Gold ounces	Silver grade (g/t)	Silver ounces
Indicated	Strauss	2,070,000	1.5	103,000	1.7	115,000
	Kylo	2,010,000	1.3	85,000	1.4	92,000
	Sub-Total	4,080,000	1.4	188,000	1.6	207,000
Inferred	Strauss	380,000	1.7	21,000	2.4	30,000
	Kylo	30,000	1.0	1,000	2.1	2,000
	Sub-Total	410,000	1.7	22,000	2.4	32,000
MT CARRINGTON MINERAL RESOURCES						
Gold Dominant						
Resource Category	Deposit	Tonnes	Gold grade (g/t)	Gold ounces	Silver grade (g/t)	Silver ounces
Inferred	Red Rock	1,630,000	1.0	54,000	3.5	182,000
	Guy Bell	160,000	2.5	13,000	4.9	24,000
	Sub-Total	1,790,000	1.2	67,000	3.6	206,000
Silver Dominant						
Resource Category	Deposit	Tonnes	Gold grade (g/t)	Gold ounces	Silver grade (g/t)	Silver ounces
Indicated	Lady Hampden	1,840,000	0.6	37,000	69	4,056,000
	White Rock	1,710,000			77	4,214,000
	Sub-Total	3,540,000	0.3	37,000	73	8,270,000
Inferred	Lady Hampden	2,470,000	0.3	27,000	51	4,023,000
	White Rock	2,660,000			47	3,978,000
	White Rock North	3,180,000			52	5,314,000
	Silver King	640,000			59	1,218,000
	Sub-Total	8,950,000	0.1	27,000	51	14,533,000
MT CARRINGTON COMBINED MINERAL RESOURCES						
Category	Tonnes		Gold ounces		Silver ounces	
Indicated	7,620,000		225,000		8,477,000	
Inferred	11,150,000		116,000		14,770,000	
Total	18,770,000		341,000		23,247,000	

Gold dominant Mineral Resources have been estimated using a cut-off of 0.5g/t Au except Red Rock, which uses a cut-off of 0.7g/t Au. All silver dominant Mineral Resources have been estimated using a cut-off of 25g/t Ag. The Red Rock, Guy Bell, Lady Hampden, White Rock, White Rock North and Silver King Mineral Resource was prepared and reported in accordance with the JORC Code (2004) as per ASX Announcements by White Rock Minerals Ltd on 13 February 2012, 11 July 2013 and 20 November 2013, and the ASX Announcement by Rex Minerals Ltd on 10 December 2008. The Resources figures have not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

Source: WRM 2019 annual report

Mt Carrington – Stage 2 Silver Project

We have modelled the Silver Stage separately based on the 2016 Scoping Study and modified by us. At June 2020, our estimated NPV is A\$32.6M before financing, or A\$11.4M after paying 20% of the pre-tax revenue to Cartesian.

The Stage 2 Silver Project is based on a series of pits which have been mined previously. To achieve acceptable recoveries, the ore must go through a flotation circuit, producing a silver concentrate, with the flotation tailings then being treated by the CIL plant. The capex includes

A\$6M to add the flotation circuit to the project, and we added an extra A\$3M to increase the tailings dam capacity in later years.

We have assumed the same operating costs as for the Gold PFS, with an additional A\$3.30/t for flotation processing costs, and trucking costs for the concentrate. These costs are higher than the 2016 Scoping Study. The strip ratio is 2:1 over the Life of Mine.

Table 12 Stage 2 Silver Project

	LOM	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28	Jun-29	Jun-30
Gross Revenue	228.4	0.0	0.0	0.0	17.6	72.1	79.4	59.3
Cartesian Share	-48.1	0.0	0.0	0.0	-1.8	-9.1	-16.4	-20.8
Net Revenue	180.2	0.00	0.00	0.00	15.76	63.02	63.02	38.44
Cost	-150.2	0.00	0.00	0.00	-13.13	-52.52	-52.52	-32.04
EBITDA	30.0	0.00	0.00	0.00	2.63	10.50	10.50	6.41
D&A	-9.0	0.00	0.00	0.00	-0.79	-3.15	-3.15	-1.92
EBIT	21.0	0.00	0.00	0.00	1.84	7.35	7.35	4.49
Tax	-6.3	0.00	0.00	0.00	-0.55	-2.21	-2.21	-1.35
NPAT	14.7	0.00	0.00	0.00	1.29	5.15	5.15	3.14
Sustaining Capex A\$M	3.0	0.00	0.00	0.00	0.00	0.00	3.00	0.00
Pre Prodn Capex A\$M	6.0	0.00	0.00	1.50	4.50	0.00	0.00	0.00
Free Cash Pre tax	21.0	0.00	0.00	-1.50	-1.87	10.50	7.50	6.41
Pre Tax NPV		16.45	17.27	18.14	25.15	15.72	7.31	0.00
Free Cash Flow After Tax	14.7	0.00	0.00	-1.50	-2.43	8.30	5.30	5.06
Post Tax NPV		11.39	11.96	12.56	19.30	11.82	5.46	0.00
Mining								
Waste Kt	5720	0	0	0	500	2000	2000	1220
SR	2.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0
Ore Kt	2860	0	0	0	250	1000	1000	610
Grade g/t Au	0.35	0.00	0.00	0.00	0.35	0.35	0.35	0.35
Grade g/t Ag	86.00	0.00	0.00	0.00	86.00	86.00	86.00	86.00
Contained Gold Koz	32.2	0.0	0.0	0.0	2.8	11.3	11.3	6.9
Contained Silver Koz	7909	0	0	0	691	2765	2765	1687
Processing								
Ore Kt	2860	0	0	0	250	1000	1000	610
Grade g/t Au	0.35	0.00	0.00	0.00	0.35	0.35	0.35	0.35
Grade g/t Ag	86.00	0.00	0.00	0.00	86.00	86.00	86.00	86.00
Contained Gold Koz	32.2	0.0	0.0	0.0	2.8	11.3	11.3	6.9
Contained Silver Koz	7909	0	0	0	691	2765	2765	1687
Au Recovery	72%	0.0%	0.0%	0.0%	71.8%	71.8%	71.8%	71.8%
Ag Recovery	83%	0.0%	0.0%	0.0%	82.5%	82.5%	82.5%	82.5%
Recovered Gold Koz	23.1	0.0	0.0	0.0	2.0	8.1	8.1	4.9
Recovered Silver Koz	6525	0	0	0	570	2281	2281	1392
Conc Kt	253.6	0	0	0	22	89	89	54
Conc Grade AG g/t		0	0	0	800	800	800	800

Source: WRM Scoping Study Presentation 28 September 2016, Breakaway Research estimates

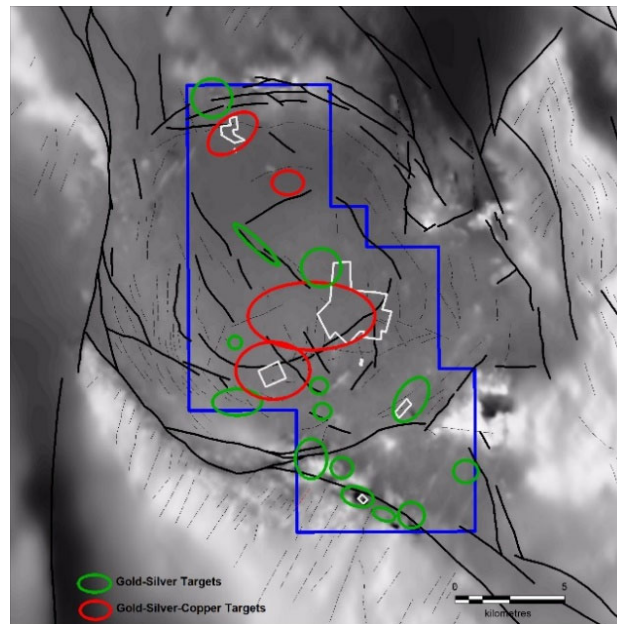
Mt Carrington Exploration potential

Mt Carrington is the caldera of a collapsed volcano, with epithermal precious metals in evidence over a wide area. Outside the pits that form Stages 1 and 2, there is considerable potential for:

1. Closer to surface high grade precious metals, which would be the first priority.
2. Deeper copper porphyry targets which would have considerable upside but would be too costly for White Rock to pursue at this time.

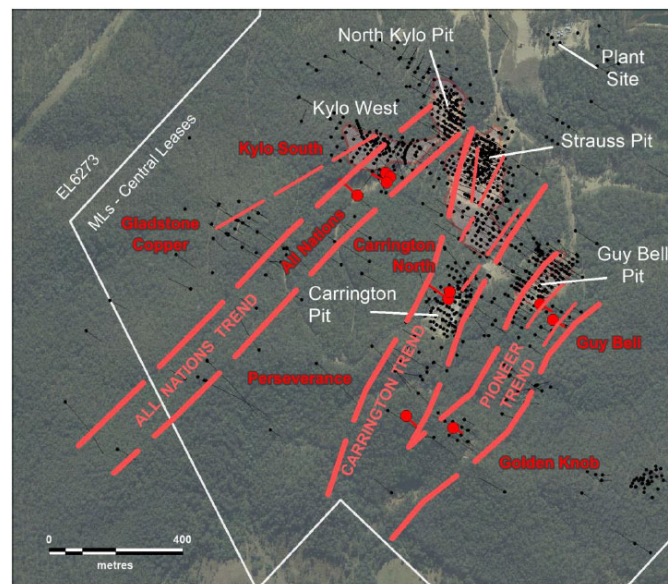
Precious Metals Targets

Figure 9 Caldera Structure and Targets



Source: Company

Figure 10 Interpreted High Grade Trends



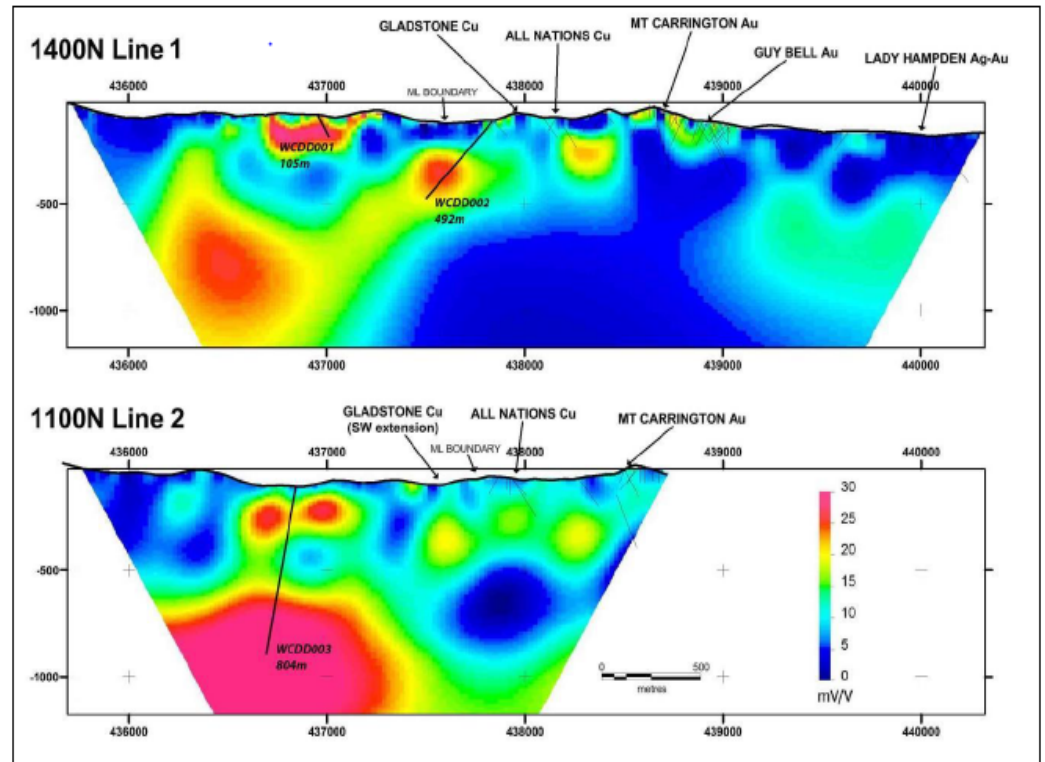
Source: WRM presentation 30 September 2019

The immediate focus will be on the exploration for high grade gold veins in structures interpreted to feed the existing Kylo, Strauss, Guy Bell, and Carrington pits. The All Nations trend is the standout target with 400m of potential strike, and intersections of 0.85m at 18.2g/t Au and 0.4m at 17.2g/t Au.

Other priority targets include Kylo South, Perseverance, Golden Knob, Carrington North and Guy Bell, the last of which has a resource of 13,000oz.

Copper Porphyry Targets

Figure 11 Sulphide Exploration Targets Identified by Induced Polarization



Source: WRM release 30 June 2015

White Rock conducted a three hole program in 2015 to validate the results of the MIMDAS deep penetrating Induced Polarization technique. Two of the holes intersected mineralization shown in the table below.

Table 13 Results of Three Hole Program

Drill Hole ID	From	To	Interval (m)	Cu (%)	Au (g/t)	Ag (g/t)
WCDD001	No significant assay results					
WCDD002	13	14	1	0.14	<0.01	2.2
	17	18	1	0.58	<0.01	<0.5
	96	97	1	0.58	0.01	3.7
	141	142	1	0.12	0.01	1.4
	166	167	1	0.02	0.36	0.8
	190	191	1	0.27	<0.01	0.6
	204	205	1	0.21	<0.01	2.0
	241	242	1	<0.01	0.3	1.0
	385	386	1	0.27	0.02	4.8
	390	391	1	0.44	0.09	3.7
	437	438	1	0.11	0.01	0.5
	456	457	1	<0.01	0.29	5.7
WCDD003	162	163	1	0.11	<0.01	<0.5
	518	519	1	0.22	<0.01	0.8
	537	538	1	0.12	<0.01	0.8

Source: WRM release 30 June 2015

Red Mountain, Alaska

Valuation of White Rock's interest in Red Mountain currently between A\$9M and A\$50M

We have chosen to focus on two peers with base metal resources in Alaska, rather than a broad spectrum of lead zinc silver peers at different stages of production. These peers are:

1. at a similar stage of development,
2. in a similar location, and
3. have comparable gross metal value in resource on either A\$M or A\$/t basis.

Table 14 Red Mountain Resource vs local comparisons

	Cut-off	Tonnage Mtonne	Cu %	Zn %	Pb %	Au g/t	Ag g/t		
Red Mountain (Inferred)									
Dry Creek Main	1% Zn	9.7	0.2%	2.7%	1.0%	0.40	41.0		
West Tundra Flats	3% Zn	6.7	0.1%	6.2%	2.8%	1.10	189.0		
	0.5%								
Dry Creek Copper	Cu	0.3	1.4%	0.2%	0.0%	0.10	4.4		
Total		16.7	0.2%	4.1%	1.7%	0.70	99.0		
Comparisons									
	0.5%								
PolarX	Cu	6.2	2.0%			1.1	7.7		
Palmer (Constantine)		10.24	1.2%	5.2%	0.0%	0.29	29.9		
Lik (Teck, Solitario)		23.45	0.0%	8.2%	2.7%	0.00	47.5		
			Cu Kt	Zn Kt	Pb Kt	Au Koz	Ag Koz	Gross Value A\$/t	Gross Value A\$M
Metal Assumptions									
Red Mountain (Inferred)									
Dry Creek Main			15	262	98	123	12700	201.51	1955
West Tundra Flats			7	416	188	229	40800	549.44	3681
Dry Creek Copper			4	1	0	1	40	129.94	39
Total			26	679	286	353	53540	339.81	5675
Comparisons									
PolarX			126.8			219	1531	257.62	1597
Palmer (Constantine)			123	534	0	95	9850	327.28	3350
Lik (Teck, Solitario)			0	1929	636	0	35788	411.31	9645

Source: Resource statements of WRM, PXX, Constantine Metal Resources and Solitario. Inground Gross Value calculated assuming copper US\$2.56/lb, lead US\$0.98/lb, zinc US\$1.05/lb Gold US\$1504/oz, silver US\$17.51/lb, and AUDUSD 0.67.

The table compares the Red Mountain deposits with three undeveloped deposits in Alaska. The Red Mountain deposits have a gross revenue value per tonne of resource of between A\$339/t and A\$491/t which is comparable to peers of A\$257/t to A\$411/t.

The inground metal value of the Red Mountain Resource is A\$4.5-5.7bn, vs A\$1.6bn to A\$9.6bn for the three peers.

The deposits owned by PolarX (copper) and Constantine Metal Resources (zinc) represent the only assets for these companies. Solitario has a number of assets, so its capitalization is not based on its share of Lik alone.

Peer comparisons suggest Red Mountain has a value of A\$30M to A\$50M before accounting for farm ins

PolarX has a market capitalization of A\$33M, and Constantine owns 51% of Palmer and has a market capitalization of A\$16.6M valuing 100% of its deposit at A\$32.5M. That would suggest that White Rock's Deposit is worth A\$30M or more. It has 33% to 69% more gross metal value than Constantine pointing to a value of A\$40M to A\$50M.

All the peers are involved in funding deals

The three companies have different farm in structures and are all relatively early in the farm in process, which complicates comparisons considerably.

PolarX is selling 51% to Lundin Mining in a staged buy-in for US\$20M (A\$30M) cash and US\$24M (A\$36M) in exploration over three years. If it proceeds to ownership of the 51%, Lundin would have invested US\$44M, of which it would benefit from half the exploration spent in the Joint Venture effectively getting half the US\$24M back, giving a net buy-in of US\$32M, valuing the deposit at US\$64M, and making PolarX look cheap at these prices. The market's discount probably reflects the risk that Lundin does not proceed to the final buy-in stage.

Constantine sold 49% to Dowa Metals and Mining of Japan by way of farm in. Dowa contributed US\$22M over four years to January 2017, to earn its interest, and Constantine is currently trading at a market capitalization of US\$11M in line with 50% of the farm in spend. The total historical spend on the tenements is US\$46.1M to 31 December 2018. Part of the discount to historical spend may be that Constantine now has to contribute to progress the project, and that is difficult for juniors in the current market.

Red Mountain

White Rock is selling to Sandfire by way of farm in, and if Sandfire goes the distance, it will earn 70% for A\$30M plus a delivered PFS. Its share of the Sandfire farm in is 30% of A\$30M or A\$9M.

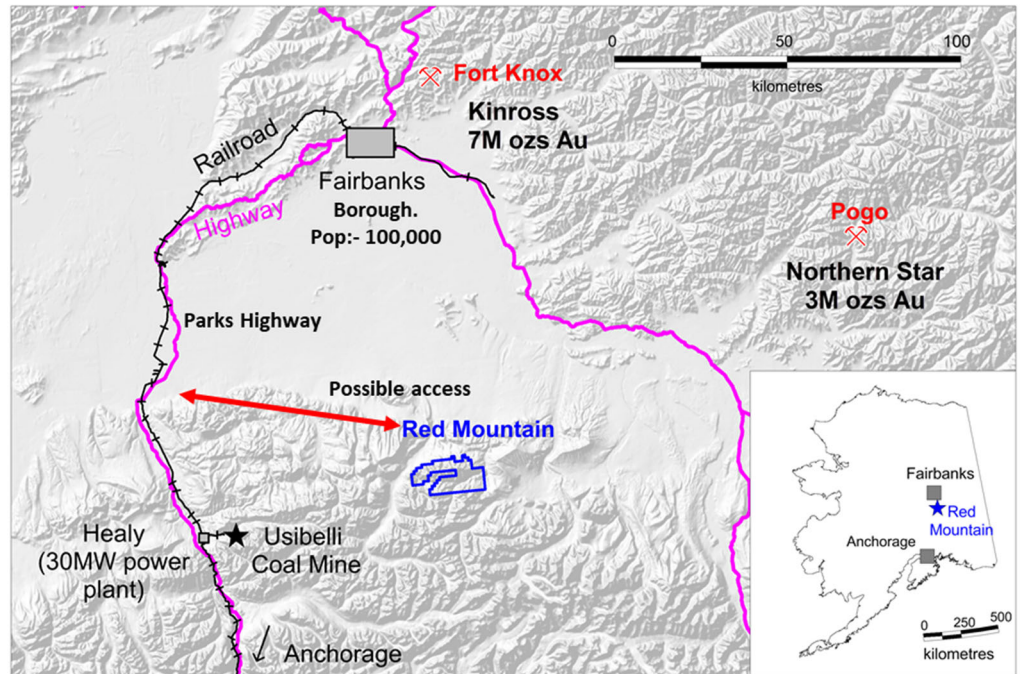
- At a minimum, White Rock's residual 30% share is worth A\$9M ie the same as Constantine trading at its share of the Dowa farm in. However, White Rock does not need to fund the venture for two years, and has exploration news flow, so must be worth more.
- At a maximum, if one sets aside the farm in arrangements, Red Mountain is worth A\$40M to A\$50M. Exploration success could change this picture at any time to the upside, and that potential has option value, but is hard to quantify.
- The book value of Red Mountain at June 2018, before Sandfire was A\$5.8M. If Sandfire go the distance then White Rock would add its share of the A\$30M spend or A\$9M to get to a "book value" of A\$14.8M.

While these comparisons are not definitive, they provide a solid guide that as a stand alone asset in the hands of a junior company, that junior would be trading at around A\$15M, and that is the value we use in the current market for White Rock's share of Red Mountain.

Location and history

Red Mountain is located in central Alaska, 100km south of Fairbanks. The package comprises 754 claims totalling 475Km². The project contains polymetallic VMS resources and targets rich in zinc, gold, silver and lead, with potential copper.

Figure 12 Red Mountain Project location



The proposed acquisition by the company of Atlas Resources (owner of an option over the Red Mountain tenements) was announced on 15 February 2016, and completed on 22 March 2016. Payment was by way of a Share Purchase Agreement with White Rock issuing 63.8M shares, valuing the Red Mountain Project (which was just 15kms² at that time), at approximately A\$1.3M.

The Red Mountain purchase option was exercised on 17 May 2016.

A Maiden Resource was announced on 24 April 2017 of 9.1Mt at 12.9% Zn equivalent within a global estimate of 16.7Mt at 8.9% Zn equivalent.

Joint Venture with Sandfire

On 10 July 2018, the company announced a cornerstone investment and strategic relationship with ASX-listed Sandfire Resources, whereby the parties entered into a Subscription Agreement under which Sandfire provided A\$2.5M in equity and subsequently a further A\$1M in an unsecured convertible loan to White Rock. As part of that deal, Sandfire received an option to enter into a joint venture to explore Red Mountain. On 27 December 2018, Sandfire exercised its option. The Joint Venture stages include:

1. Sandfire to fund A\$20M in exploration to earn 51%, with a minimum expenditure in Year 1 of A\$6M, with White Rock to be the manager for at least the first year, and receive a management fee of 10% above expenditure (ie 10% of at least A\$6M or A\$0.6M).
2. Sandfire to fund a further A\$10M and deliver a pre-feasibility study over an additional 2 years to earn 70%.
3. White Rock may elect to contribute to the Definitive Feasibility Study to retain its 30% interest, or Sandfire will earn 80% by sole funding the DFS.

4. White Rock can elect to contribute to the mine’s development, or Sandfire’s holding will increase to 90%, and White Rocks 10% interest will be earned from the project’s cash flow. That is, Sandfire puts up 100% and receives 100% of cash flow until 10% of the initial capital cost is recovered from the cash flow, possibly with interest, after which time, 10% of the cash flow is paid to White Rock for the balance of the mine life.
5. The remaining payments to the vendor of the Red Mountain assets include US\$200K by 31 December 2019, and US\$550K by 31 December 2020, or A\$1.1M in total, which are paid by the Joint Venture (ie Sandfire).

Table 15 Red Mountain Payments

Paid by the JV	Dec-16	Dec-17	Dec-18	Dec-19	Dec-20	Total
Payments US\$K	50	50	100	200	550	950
Minimum Exploration US\$K	100	200	300	600		1200
2% NSR which can revert to 1% with payment of \$2M						
Sandfire JV	Earned	Expln A\$M	Value of 100% A\$M	WRM share A\$M		
Initial Earn in	51%	20	20	9.8		
To PFS	70%	10	30	9		
Net Value A\$M				9.4		

Source: WRM 2019 annual report

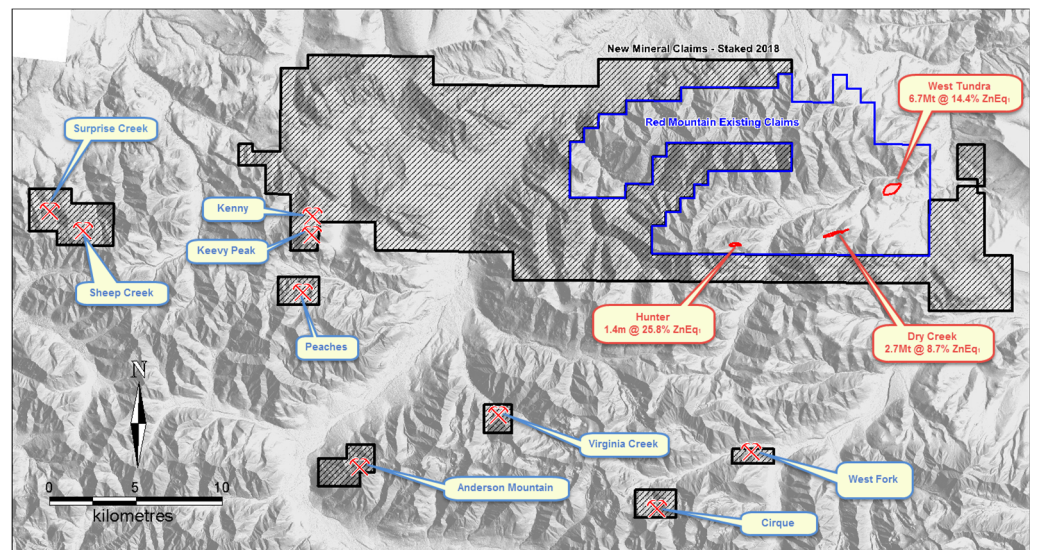
The table above shows that White Rock’s residual share of the farm in spend by Sandfire is A\$9M to A\$9.8M, so there is little change no matter whether Sandfire goes to 51% or 70%.

Exploration activity in 2019

Under White Rock management, the 2018 exploration season achieved considerable success, with 9 out of 20 drill holes returning grades in excess of 10% Zinc Equivalent. Best intersections include:

- 4.7m @ 19.5% zinc 7.8% lead, 466g/t silver and 1.5% copper from 231.1m
- 4.3m @ 4.8% zinc 2.3% lead 1435g/t silver 2.2g/t gold and 0.5% copper from 168.8m
- 3.4m @ 15.1% zinc 6.7% lead 518g/t silver 2.1g/t gold and 0.2% copper from 60.6m

Figure 13 Exploration targets for 2019 exploration season



Source: WRM release 9 April 2019

The Plan

The CY2019 exploration started in April 2019, had an initial A\$6M budget to which Sandfire added an extra A\$2M. and includes:

1. 3000 line kilometre SkyTEM airborne electromagnetics survey able to find conductors to 400m depth (indicative of sulphides).
2. Satellite spectral analysis.
3. Regional whole rock lithological analysis.
4. Soil geochemical sampling and ground geological survey.
5. Detailed ground electrical geophysics.
6. Diamond drilling of Hunter prospect from late May.
7. Diamond drilling to test the best regional targets developed in 2019.
8. Selective down hole electromagnetic surveys to detect off hole conductivity anomalies.

The Outcome

1. As manager, White Rock receives a management fee of 10% of the expenditure (A\$0.8M)
2. SkyTEM survey completed by 20 May 2019
3. Eleven holes were reported as complete as at 13 September 2019, with no significant results. The drilling program has been extended by the increase in funding from Sandfire.
4. A fixed loop ground EM survey was completed at the Cirque prospect, with the identification of a significant conductor starting at 150m depth

Sandfire chose to explore the high risk more distant targets this year, in what has been a disappointing outcome. There are much lower risk targets (basically along strike from the existing high grade known deposits), and we expect the exploration program to focus more on those lower risk targets going forward. We do not see the current season's performance so far as negatively impacting the tenements' potential.

Red Mountain is a VMS mining Camp

Volcanogenic Massive Sulphide (VMS) deposits typically occur in groups (camps) and are typically very high value in terms of metal value per tonne, but can be very small targets, with hundreds of millions of dollars of value in very short strike lengths like 400m. This makes them very hard targets to hit, once the exploration moves away from known deposits that outcrop at surface.

Sandfire has been drilling holes into anomalies detected by surface geochemistry and airborne geophysics, then running down hole geophysics (EM) after drilling, with limited success. That does not invalidate the targets, but is an indication that those targets do not contain any monster deposits so far.

It makes sense that Sandfire would want to look for monster deposits early in the exploration process before focussing on extensional drilling of the known resources, in case they found something.

Share Structure

On 30 September 2019, White Rock detailed the current non renounceable 2 for 3 rights issue. The issue is not underwritten, and the only take up commitment in the release related to Cartesian's holding. As a result, the number of shares on issue post the completion of the rights issue and any subsequent placement of the shortfall is uncertain.

Table 16 Share structure subject to Rights issue outcome

Million	On Issue	Rights Offer	Minimum	Maximum
Issued Shares	1636	1091	1671	2727
New Listed Options		364	17	364
Existing Options	565	-54	511	511
Fully Diluted	2201	1400	2216	3601

Source: WRM entitlement release 20 September 2019, 3B release 1 October 2019

Subject to the outcome of the rights issue:

1. Ordinary shares on issue will be between 1671M and 2727M.
2. Options on issue will be between 528M and 875M.
3. Fully diluted shares will be between 2216M and 3601M.

In the table below the 363.7M options at the top of the table relate to the rights issue, and are therefore uncertain. The balance is the existing options book as at 1 October 2019, adjusted for the cancellation of Cartesian's existing option holding and replacement with the 100M at 1cps.

Table 17 Options on issue assuming 100% take-up of rights issue

Term	Code	Exercise Price A\$	Options on Issue M	Cumulative M	Cum. Funds Raised A\$M
4-Nov-22		0.010	363.657	363.657	3.64
31-Dec-24		0.010	100.000	463.657	4.64
12-Feb-20	WRMAU	0.020	5.000	468.657	4.74
05-Jun-20	WRMAK	0.020	1.500	470.157	4.77
28-Feb-21	WRMAX	0.020	1.200	471.357	4.79
31-May-21	WRMAO	0.020	1.500	472.857	4.82
31-May-22	WRMAP	0.020	1.500	474.357	4.85
26-Mar-21	WRMAAA	0.020	258.405	732.762	10.02
26-Mar-21	WRMAAA	0.020	104.167	836.929	12.10
28-Feb-22	WRMAY	0.022	1.200	838.129	12.13
28-Feb-23	WRMAZ	0.024	1.200	839.329	12.16
30-Apr-20	WRMAJ	0.025	8.000	847.329	12.36
30-Sep-19	WRMAG	0.030	1.400	848.729	12.40
12-Feb-20	WRMAV	0.030	5.000	853.729	12.55
30-Sep-20	WRMAL	0.035	1.400	855.129	12.60
22-Apr-21	WRMAN	0.035	6.384	861.514	12.82
27-Nov-19	WRMAH	0.040	3.000	864.514	12.94
12-Feb-20	WRMAW	0.040	5.000	869.514	13.14
31-Mar-20	WRMAI	0.060	3.000	872.514	13.32
27-Nov-20	WRMAM	0.060	3.000	875.514	13.50

Source: WRM entitlement release 20 September 2019, 3B release 1 October 2019

Shareholders

This shareholder list is as at 31 August 2019, and will change as a result of the 2 for 3 rights issue.

Table 18 Ordinary share ownership

31-Aug-19	
Sandfire Resources Limited	12.7%
Michael Lan (Individual Investor)	6.0%
Suetone P/L (Individual Investor)	5.2%
Avalon Ventures (Individual Investor)	4.9%
Cartesian (New York Private Equity Fund)	4.7%
Zijin/Sprott (Institutional Investor)	3.7%
Top 20	53.8%

Source: WRM Presentation 30 September 2019

Board and Management

Peter Lester - Non-Executive Chairman (B.E (Mining), MAusIMM, MAICD)

Peter Lester has over 40 years' experience in the mining industry and has held senior executive positions with North Ltd, Newcrest Mining Limited, Oxiana Limited, Kidman Resources Ltd, Doray Minerals and Citadel Resource Group Limited. Mr Lester's experience covers operations, project and business development and general corporate activities. Mr Lester is a non-executive chairman of Helix Resources Ltd and a non-executive director of Millenium Minerals Ltd. He joined the Board in 2013.

Matt Gill – Managing Director & CEO (B.Eng (Hons, Mining), M.Eng.Sc, FAusIMM, GAICD)

Matthew Gill is a mining engineer with over 35 years' experience. He has a strong technical, operational and executive management background; having worked as an underground miner, mine planning engineer, supervisor, general manager and managing director in Australia, Papua New Guinea, India, Ghana and Bolivia. He holds three First Class Metalliferous Mine Manager's Certificates of Competency and has been instrumental in the successful development of three gold mines (Porgera, Beaconsfield and Ballarat). He is a three-time winner of the Australian Mine Manager of the Year Award and received the AusIMM Leadership Award in 2008. Previously, he was Group Chief Operating Officer for Singapore-listed LionGold Corp. Also, he has worked for Castlemaine Goldfields, Rio Tinto, WMC, Placer Pacific and Renison Goldfields. He is currently a non-executive director of AuStar Gold Ltd. He commenced with the Company in 2015 and joined the Board in 2016. Matthew also provides technical, leadership and risk management consultancy advice to industry.

Jeremy Gray - Non-Executive Director (B.C (Hons, Finance))

Jeremy has more than 24 years in mining investment including appointments as the Global Head of Basic Materials at Standard Chartered Bank Plc, Head of Metals and Mining Research at Morgan Stanley in London and the Head of Mining Research at Credit Suisse in London. He has held a senior position with Orinoco Gold Ltd. Mr. Gray has been a non-executive director of Axiom Mining Limited since July 2015. He joined the Board in 2017.

Stephen Gorenstein - Non-Executive Director (B.Sc (Hons, Geology & Geophysics), Masters Accounting (Finance))

Stephen has more than 15 years in capital markets including equity analyst roles at both Goldman Sachs JB Were and Bank of America Merrill Lynch. He also has extensive experience in mining business development and mergers and acquisitions. He serves as a director and partner of Jindalee Partners and has been a non-executive director of Parazero Ltd since October 2018. He joined the Board in 2018.

Rohan Worland - Exploration Manager (BSc (Hons, Geology), Grad. Dip (Finance & Investment), MAIG)

Rohan is a geologist with over 25 years' exploration experience including 14 years with the Normandy and Newmont groups. Mr Worland held the roles of exploration manager with, WCP Resources Limited, Buka Gold Limited and Rex Minerals Limited, prior to his role as exploration manager for White Rock Minerals. He has extensive experience in a variety of gold, silver and base metal deposit styles in Australia, North America, South America, Africa and New Zealand. Mr Worland commenced at White Rock in June 2010.

Analyst Verification

I, **Michael Harrowell**, as the Research Analyst, 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.

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We acknowledge that Senior Resource Analyst, **Michael Harrowell**, holds no shares in **White Rock Minerals Ltd**.

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