ASX and Media Release: 9 April 2019 ASX Code: WRM



White Rock mobilising for its next exploration phase at its high-grade Zinc VMS Project

ASX Code: WRM

Issued Securities Shares: 1,636 million Options: 565 million

Cash on hand (31 Dec 2018) \$1.5M

Market Cap (8 April 2019) \$11.4M at \$0.007 per share

Directors & Management Peter Lester Non-Executive Chairman

Matthew Gill Managing Director & Chief Executive Officer

Jeremy Gray Non-Executive Director

Stephen Gorenstein Non-Executive Director

Shane Turner Company Secretary

Rohan Worland Exploration Manager

For further information, contact: Matthew Gill or Shane Turner Phone: 03 5331 4644

info@whiterockminerals.com.au www.whiterockminerals.com.au White Rock Minerals Ltd (**"White Rock"** or the **"Company"**) in conjunction with its joint venture partner Sandfire Resources NL (ASX:SFR) (**Sandfire**) is pleased to provide an update on its plans to conduct a comprehensive program exploring for high-grade zinc and precious metals volcanogenic massive sulphide (**VMS**) deposits at Red Mountain in central Alaska (**Red Mountain Project**). There are already two high grade deposits at the Red Mountain Project, with an Inferred Mineral Resource¹ of **9.1 million tonnes @ 12.9% ZnEq²** for 1.1Mt of contained zinc equivalent.

The 2019 field exploration program has been developed in conjunction with Sandfire and aims to drill test the maximum number of new targets possible within the Company's strategic 475km² belt-scale regional tenement package³. The newly formed Joint Venture Management Committee, comprising two representatives from each company, has approved a 2019 exploration program and Budget of A\$6,000,000 and for this to commence immediately. This funding is \$1M above the minimum contribution required of Sandfire during 2019 given it loaned \$1M in 2018 to the project to allow the continuation of that year's exploration program⁴.

Field exploration activities anticipated to be conducted during 2019 include:-

- A 3,000 line kilometre SkyTEM airborne electromagnetics (AEM) survey commencing mid-April (Figure 1). The new SkyTEM survey will be the first modern high powered time domain EM survey at Red Mountain with the capability of identifying conductivity anomalies to depths of 400m that could fast-track a significant new discovery.
- Satellite spectral analysis including the assessment of hyperspectral data to identify and map alteration zonation ahead of field exploration.
- Regional whole rock lithogeochemical analysis of tenement-wide rock chip samples collected in 2018 and accessed from the Alaskan Geologic Survey to identify regional alteration zonation to assist in prioritising targets for detailed field exploration during 2019.
- Detailed on-ground geological reconnaissance and soil geochemical sampling across regional target areas using a portable XRF analyser to deliver rapid target definition.
- Detailed electrical ground geophysics (CSAMT and MT) across the regional targets replicating the most rapid field acquisition electrical technique that successfully mapped conductivity associated with mineralisation at both the two existing deposits: Dry Creek and West Tundra.
- A diamond drill program commencing late-May to follow-up the successful discovery of new massive sulphide mineralisation at the Hunter prospect in 2018⁵.
- A diamond drill program to test the best of the regional targets defined by the multidisciplinary use of airborne EM, 2018 stream geochemical anomalies, new satellite defined alteration, whole rock lithogeochemical alteration, on ground soil & rock geochemistry and on ground electrical geophysics.
- Selective down hole electromagnetics surveys to identify off-hole conductivity anomalies for follow-up drill testing.



White Rock Mineral's MD & CEO Matt Gill said "Commencing the 2019 exploration program on our globally significant high-grade zinc and precious metals VMS project in central Alaska is an exciting time for the Company and all our shareholders.

"To be able to use a modern high-powered geophysics technique for the first time, not previously applied to this highly prospective field, is a great kick-off to this field season. Having the technical and financial support of Sandfire Resources – a very successful explorer and developer of VMS deposits - is a strong endorsement to the quality and potential of our Red Mountain Project. It is a great vote of confidence that Sandfire have elected to fund above the minimum contribution they could have chosen under the Joint Venture Agreement. We look forward to working with our strategic JV partner and progressing this highly prospective project with the commencement of this program and the subsequent news flow that should result," Mr Gill said.



Figure 1: Location of the airborne EM survey with respect to the tenement holdings, locations for the Dry Creek and West Tundra Flats VMS deposit Mineral Resources¹, the new discovery at the Hunter Prospect and outlier VMS prospects on the terrain map.

¹ Refer ASX Announcement 26th April 2017 "Maiden JORC Mineral Resource, Red Mountain".

² ZnEq = Zinc equivalent grades are estimated using long-term broker consensus estimates compiled by RFC Ambrian as at 20 March 2017 adjusted for recoveries from historical metallurgical test work and calculated with the formula: ZnEq =100 x [(Zn% x 2,206.7 x 0.9) + (Pb% x 1,922 x 0.75) + (Cu% x 6,274 x 0.70) + (Ag g/t x (19.68/31.1035) x 0.70) + (Au g/t x (1,227/31.1035) x 0.80)] / (2,206.7 x 0.9). White Rock is of the opinion that all elements included in the metal equivalent calculation have reasonable potential to be recovered and sold.

³ Refer ASX Announcement 21st November 2018 "Expanded Land Holding with Additional High-Grade VMS Prospects, Red Mountain".

⁴ Refer ASX Announcement 22nd August 2018 "White Rock Sandfire Convertible Loan Funds for Red Mountain".

⁵ Refer ASX Announcement 20th August 2018 "High Grade Zinc Discovery at the Hunter Prospect, Red Mountain".



About the Red Mountain Earn-In and Joint Venture Option Agreement

White Rock entered into an Earn-In and Joint Venture Option Agreement⁶ (**Agreement**) with Sandfire on 23rd March 2019 for the exploration and development of the Red Mountain Project under the following terms:-.

- Sandfire's Joint Venture funding arrangements under the Agreement are structured across four stages as previously announced and include an option to spend a minimum of A\$20M over four years to earn 51%, with a minimum contribution of A\$6M in 2019.
- Sandfire can then elect to increase its interest in the Red Mountain Project to 70% by sole-funding a further A\$10M and by delivering a pre-feasibility study within a further 2 years.
- White Rock can then elect to contribute its percentage share of expenditure to retain its 30% interest.
- The Red Mountain Project includes a 475km² tenement package covering numerous historic VMS prospects with little modern exploration, providing Sandfire and White Rock with a large strategic footprint over a potential new VMS camp³.
- White Rock is the JV Manager during 2019.

⁶ Refer ASX Announcement 25th March 2019 "WRM - Joint Venture Agreement signed with Sandfire Resources".

About Sandfire Resources NL:- Sandfire is a leading Australian copper producer which operates the high-grade DeGrussa Copper-Gold Mine, located 900km north of Perth in Western Australia. Sandfire has a growing portfolio of exploration interests and joint ventures in highly prospective mineral provinces around Australia and overseas. Further details can be found on Sandfire's website <u>www.sandfire.com.au</u>.

No New Information or Data

This announcement contains references to exploration results and Mineral Resource estimates, all of which have been cross-referenced to previous market announcements by the Company. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements and in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

For more information about White Rock and its Projects, please visit our website <u>www.whiterockminerals.com.au</u>

Or contact:

Matt Gill (MD & CEO) Phone: +61 (0)3 5331 4644 Shane Turner (Company Secretary) Phone: +61 (0)3 5331 4644 Peta Baldwin Cannings Purple Phone: +61 455 081 008 Email: pbaldwin@canningspurple.com.au

Email: info@whiterockminerals.com.au

A 24 Skipton Street Ballarat Victoria 3350 Australia т (03) 5331 4644

P PO Box 195 Ballarat Victoria 3353 Australia E info@whiterockminerals.com.au w www.whiterockminerals.com.au



About Red Mountain (as more fully set out in the ASX Announcement dated 15 February 2016)

678,000t zinc, 286,000t lead, 53.5 million ounces silver and 352,000 ounces gold.

- The Red Mountain Project is located in central Alaska, 100km south of Fairbanks, in the Bonnifield Mining District. The tenement package comprises 760 mining claims over a total area of 475km².
- The Red Mountain Project contains polymetallic VMS mineralisation rich in zinc, silver and lead, with potential for significant gold and copper.
- Mineralisation occurs from surface and is open along strike and down-dip.
- White Rock used historical drilling to determine a maiden JORC 2012 Mineral Resource estimate for the Dry Creek and West Tundra Flats deposits (*ASX Announcement 26 April 2017*). The Inferred Mineral Resource contains an impressive base metal and precious metal content with



Table 1 - Red Mountain April 2017 Inferred Mineral Resource Estimate*

Prospect	Cut-off	Tonnage	ZnEq ¹	Zn	Pb	Ag	Cu	Au	ZnEq	Zn	Pb	Ag	Cu	Au
		Mt	%	%	%	g/t	%	g/t	kt	kt	kt	Moz	kt	koz
Dry Creek Main	1% Zn	9.7	5.3	2.7	1.0	41	0.2	0.4	514	262	98	12.7	15	123
West Tundra Flats	3% Zn	6.7	14.4	6.2	2.8	189	0.1	1.1	964	416	188	40.8	7	229
Dry Creek Cu Zone	0.5% Cu	0.3	3.5	0.2	0.04	4.4	1.4	0.1	10	0.5	0.1	0.04	4	1
Total		16.7	8.9	4.1	1.7	99	0.2	0.7	1,488	678	286	53.5	26	352

 Table 2 - Red Mountain April 2017 Inferred Mineral Resource Estimate^{*} at a 3% Zn Cut-off (contained within Table 1, not additional)

Prospect	Cut-off	Tonnage	ZnEq ¹	Zn	Pb	Ag	Cu	Au	ZnEq	Zn	Pb	Ag	Cu	Au
		Mt	%	%	%	g/t	%	g/t	Kt	kt	kt	Moz	kt	koz
Dry Creek Main	3% Zn	2.4	8.7	4.7	1.9	69	0.2	0.4	211	115	46	5.3	5	32
West Tundra Flats	3% Zn	6.7	14.4	6.2	2.8	189	0.1	1.1	964	416	188	40.8	7	229
Total		9.1	12.9	5.8	2.6	157	0.1	0.9	1,176	531	234	46.1	12	260

* The Red Mountain Mineral Resource information was prepared and first disclosed under the JORC Code 2012 as per the ASX Announcement by White Rock Minerals Ltd on 26 April 2017.

¹ Zinc equivalent grades are estimated using long-term broker consensus estimates compiled by RFC Ambrian as at 20 March 2017 adjusted for recoveries derived from historical metallurgical testing work and calculated with the formula:

ZnEq =100 x [(Zn% x 2,206.7 x 0.9) + (Pb% x 1,922 x 0.75) + (Cu% x 6274 x 0.70) + (Ag g/t x (19.68/31.1035) x 0.70) + (Au g/t x (1,227/31.1035) x 0.80)] / (2,206.7 x 0.9).

White Rock is of the opinion that all elements included in the metal equivalent calculation have reasonable potential to be recovered and sold.



- Good preliminary metallurgical recoveries of >90% zinc, >75% lead, >80% gold, >70% silver and >70% copper.
- Previous drilling highlights (ASX Announcement 15 February 2016) include:

Dry Creek

- o 21.2m @ 6.9% Zn, 57 g/t Ag, 3.2% Pb, 0.4 g/t Au & 0.2% Cu from 77.6m
- o 36.1m @ 6.2% Zn, 183 g/t Ag, 2.5% Pb, 1 g/t Au & 0.2% Cu from 6.1m
 - Including 4.6m @ 23.5% Zn, 531g/t Ag, 8.5% Pb, 1.5g/t Au & 1.0% Cu from 6.1m
- o 5.5m @ 25.9% Zn, 346g/t Ag, 11.7% Pb, 2.5g/t Au & 0.9% Cu from 69.5m
- o 7.1m @ 15.1% Zn, 334g/t Ag, 6.8% Pb, 0.9g/t Au & 0.3% Cu from 39.1m

West Tundra Flats

- o 1.3m @ 21.0% Zn, 796g/t Ag,9.2% Pb, 10.2g/t Au & 0.6% Cu from 58.6m
- o 3.0m @ 7.3% Zn, 796g/t Ag, 4.3% Pb, 1.1g/t Au & 0.2% Cu from 160.9m
- 1.7m @ 11.4% Zn, 372g/t Ag, 6.0% Pb, 1.7g/t Au & 0.2% Cu from 104.3m



Figure 1: Cross-section 480,700E looking towards the east through the Dry Creek deposit showing the geometry of the Fosters and Discovery mineralised massive sulphide lenses and drill intercepts.

A 24 Skipton Street Ballarat Victoria 3350 Australia

⊤ (03) 5331 4644

P PO Box 195 Ballarat Victoria 3353 Australia E info@whiterockminerals.com.au w www.whiterockminerals.com.au



Figure 2: Cross-section 484,200E looking towards the east through the West Tundra Flats deposit showing the mineralised massive sulphide lens and drill intercepts.

- VMS deposits typically occur in clusters ("VMS camps"). Deposit sizes within camps typically follow a log normal distribution, and deposits within camps typically occur at regular spacing. The known deposits at Dry Creek and West Tundra Flats provide valuable information with which to vector and target additional new deposits within the Red Mountain camp.
- Interpretation of the geologic setting indicates conditions that enhance the prospectivity for gold-rich
 mineralisation within the VMS system at Red Mountain. Gold mineralisation is usually found at the top of
 VMS base metal deposits or adjacent in the overlying sediments. Gold bearing host rocks are commonly
 not enriched in base metals and consequently often missed during early exploration sampling. This provides
 an exciting opportunity for potential further discoveries at Red Mountain.

White Rock sees significant discovery potential, given the lack of modern day exploration at Red Mountain. This is further enhanced by the very nature of VMS clustering in camps and the potentially large areas over which these can occur.

Expanded tenement package.

The expansion of White Rock's tenement package followed a successful first year of field activities for White Rock where drilling intersected multiple high-grade intervals of zinc-silver-lead-gold-copper mineralisation at Dry Creek, West Tundra and the newly discovered Hunter prospect (*refer ASX Announcements dated 18 June 2018, 4 July 2018 and 20 August 2018*). With some drill hole results returning in excess of **17% zinc, 6% lead**, **1,000 g/t silver, 6 g/t gold and 1.5% copper**, the 2018 field season also saw three reconnaissance crews out in the field mapping and sampling. The culmination of this work has encouraged White Rock to expand its strategic tenement holding to take in more of what has been identified as a highly prospective geological setting (*refer ASX Announcement dated 21 November 2018*).

A 24 Skipton Street Ballarat Victoria 3350 Australia т (03) 5331 4644 Р

P PO Box 195 Ballarat Victoria 3353 Australia E info@whiterockminerals.com.au w www.whiterockminerals.com.au



The majority of the expanded tenement area forms a contiguous block of mining claims that now extend the Red Mountain project over a larger area of the Bonnifield Mining district, to the west along strike and south into the prospective footwall stratigraphy identified as containing multiple VMS prospective time horizons. The new claim areas will allow White Rock to systematically explore what is now held to be a highly prospective regional stratigraphic setting capable of hosting multiple high-grade zinc-rich polymetallic VMS deposits.



Figure 3: Red Mountain Project tenement outline on terrain map with locations for the Dry Creek and West Tundra Flats VMS deposit Mineral Resources^{*}, the new discovery at the Hunter Prospect and outlier VMS prospects.

During the 2018 field season, White Rock also completed a detailed regional stream sediment program over prospective stratigraphy within the Red Mountain project area. This part of the comprehensive 2018 exploration program was optimised based on the geochem orientation survey completed across known mineralisation at Dry Creek. This "calibration" provided a geochemical signature of base metal and precious metal elements together with other pathfinders to use for future exploration of the VMS prospective stratigraphy on both the northern and southern limbs of the regional Bonnifield syncline.

This 2018 reconnaissance program identified a number of extensive alteration features for future exploration. Some of these extend on surface for several kilometres of strike. The results from the regional stream sampling program have successfully highlighted 8 priority anomalies within the area of alteration (Figure 4), providing areas for immediate focus through follow-up ground reconnaissance, surface sampling and the application of electrical geophysics prior to drill targeting (*refer ASX Announcement dated 4 December 2018*).

A 24 Skipton Street Ballarat Victoria 3350 Australia

⊤ (03) 5331 4644

P PO Box 195 Ballarat Victoria 3353 Australia E info@whiterockminerals.com.au w www.whiterockminerals.com.au





Figure 4: Location of high priority stream sediment geochemical anomalies on the DGGS geology map (after Freeman et al., 2016) and terrain surface with locations for the Dry Creek and West Tundra Flats VMS deposits, and the recent Hunter VMS discovery.

No New Information or Data

This announcement contains references to exploration results, Mineral Resource estimates, Ore Reserve estimates, production targets and forecast financial information derived from the production targets, all of which have been cross-referenced to previous market announcements by the Company. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements. In the case of Mineral Resource estimates, Ore Reserve estimates, production targets and forecast financial information derived from the production targets, all material assumptions and technical parameters underpinning the estimates, production targets and forecast financial information derived from the production targets (production targets) and have not materially changed.

A 24 Skipton Street Ballarat Victoria 3350 Australia ⊤ (03) 5331 4644

P PO Box 195 Ballarat Victoria 3353 Australia E info@whiterockminerals.com.au w www.whiterockminerals.com.au