

26 April 2023

Bushveld Minerals Limited

(“**Bushveld Minerals**” or the “**Company**”)

Vametco Inferred & Indicated Mineral Resource and Ore Reserve Update for Annual Reporting purposes

Mineral Resources and Ore Reserves

Mineral Resources are the estimated quantities of material that have reasonable prospects for eventual economic extraction from the Group’s properties. Ore Reserves are a subset of Measured and/or Indicated Mineral Resources that can be demonstrated to be able to be economically and legally extracted.

Ore Reserves are declared for open pits inside the LoM pit design (the optimised pit shell in this instance), including diluting materials and allowances for losses, which may occur when the material is mined or extracted, and are defined by studies at Pre-Feasibility or Feasibility level, as appropriate, that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified (JORC, 2012). Ore Reserves are declared for in-situ tonnes in the pits and exclude any stockpiles. Economic assumptions used to estimate reserves change from period-to-period as additional technical and operational data is generated.

BUSHVELD VANADIUM RESOURCES AND RESERVES

The Resource and Reserve estimates are based on the Competent Person’s statements prepared by an independent consultancy company, the MSA Group (Pty) Ltd as at 31 December 2022.

VAMETCO MINE

- Ore Reserves have been depleted from a revised pit design completed in September 2022 which has resulted in a net 1 per cent increase in Ore Reserves from the previous Ore Reserve estimate as at 31st December 2021. The Ore Reserves are reported as at the 31st December 2022 at 264,600 tonnes V₂O₅ in magnetite at a grade of 1.99 per cent V₂O₅ (in magnetite).
- The combined Inferred and Indicated Mineral Resource comprises 3 Seams (The Lower, Intermediate and Upper Seams) and is reported as at the 31st December 2022 at 181.5 Mt at an average grade of 1.98 per cent V₂O₅ (in magnetite), with an average magnetite content of 35.0 per cent (in whole rock) for 699.0 thousand tonnes of contained vanadium. The previously reported combined Inferred and



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Specialist Consultants to the Mining Industry

Indicated Mineral Resource, as a 31st December 2021, was 182.7 Mt at an average grade of 1.98 per cent V₂O₅ (in magnetite), with an average magnetite content of 35.0 per cent (in whole rock) for 703.9 thousand tonnes of contained vanadium.

- Within this, the Ore Reserve in the Probable Category comprise 3 Seams (The Lower, Intermediate and Upper Seams) and is reported as 46.4 Mt at an average grade of 1.99 per cent V₂O₅ (in magnetite), with an average magnetite content of 28.7 per cent (in whole rock) for 148,200 tonnes of vanadium.
- The Lower Seam is the main ore seam and the thickest, ranging from 13.8 to 52.0 metres in thickness, comprising a Probable Reserve of 36.2 Mt at an average grade of 2.03 per cent V₂O₅ (in magnetite), with an average magnetite content of 28.1 per cent (in whole rock) for 115,700 tonnes of vanadium.
- The decrease in the total 2022 Mineral Resource, by 0.67 per cent less tonnes than the 31 December 2021 estimate, is attributed to mining of the seams over the last 12 months. No Mineral Resource exploration was carried out over the period.
- The increase in the total 2022 Ore Reserves from 45.3 Mt to 46.4 Mt as at 31 December 2022 is mainly due to the impact of the revised Vametco pit design (September 2022) which incorporated additional Upper and Intermediate Seam tonnage. The additional tonnage was offset by the Ore Reserve depletion which was calculated to be 1.2 Mt for the combined Seams, mined over the 12-month period.
- An adjustment was made to the modifying factors to reflect more accurate Ore Reserve grades for the individual seams. The Ore Reserve modifying factors (mining loss and dilution) were adjusted based on pit to plant reconciliation production data supplied by Bushveld Vametco Alloys (Pty) Ltd. The impact of the revised Pit Design and adjustment to modifying factors is an additional 2.3 Mt.



Table 1: Vametco Mineral Resource at a cut-off grade of 20% magnetite, as at 31 December 2022 – Gross Basis

Class	Seam Name	Tonnes (Millions)	V ₂ O ₅ grade of whole rock %	Magnetite grade of whole rock %	V ₂ O ₅ grade in magnetite %	Tonnes V ₂ O ₅ in magnetite (Thousands)	Tonnes V in magnetite (Thousands)
Indicated	Upper	5.4	1.44	65.9	1.78	62.7	35.1
	Intermediate	27.6	0.67	32.9	1.91	173.1	97.0
	Lower	105.9	0.72	32.4	2.03	697.2	390.4
	Total	139.0	0.74	33.8	2.00	933.0	522.5
Inferred	Upper	10.2	1.46	63.6	1.75	113.3	63.5
	Intermediate	7.0	0.67	32.1	1.92	43.4	24.3
	Lower	25.4	0.74	31.3	2.00	158.4	88.7
	Total	42.6	0.90	39.1	1.93	315.2	176.5
Indicated and Inferred	Upper	15.5	1.45	64.4	1.76	176.0	98.6
	Intermediate	34.7	0.67	32.7	1.91	216.5	121.3
	Lower	131.3	0.72	32.1	2.03	855.6	479.2
	Total	181.5	0.77	35.0	1.98	1,248.2	699.0

Notes:

1. All tabulated data have been rounded and as a result minor computational errors may occur.
2. Mineral Resources which are not Ore Reserves have no demonstrated economic viability.
3. Mineral Resources are inclusive of Ore Reserves (not indicated in the table).
4. Magnetite content (grade) is determined as the proportion of magnetite concentrate recovered using Davis Tube methodology.
5. Due to the magnetite grade being a recovered grade, differences will occur between whole rock V₂O₅ grades back-calculated from concentrate, versus those derived from whole rock assays.
6. Depleted using the January 2023 pit survey.
7. Reported on a Gross Basis. Bushveld Minerals shareholding in Bushveld Vametco Alloys is 74%.



Table 2: Vametco Mineral Resource at a cut-off grade of 20% magnetite, as at 31 December 2022 – Attributable Basis

Class	Seam Name	Tonnes (Millions)	V ₂ O ₅ grade of whole rock %	Magnetite grade of whole rock %	V ₂ O ₅ grade in magnetite %	Tonnes V ₂ O ₅ in magnetite (Thousands)	Tonnes V in magnetite (Thousands)
Indicated	Upper	4.0	1.44	65.9	1.78	46.4	26.0
	Intermediate	20.5	0.67	32.9	1.91	128.1	71.8
	Lower	78.4	0.72	32.4	2.03	515.9	288.9
	Total	102.8	0.74	33.8	2.00	690.4	386.6
Inferred	Upper	7.5	1.46	63.6	1.75	83.9	47.0
	Intermediate	5.2	0.67	32.1	1.92	32.1	18.0
	Lower	18.8	0.74	31.3	2.00	117.2	65.7
	Total	31.5	0.90	39.1	1.93	233.2	130.6
Indicated and Inferred	Upper	11.5	1.45	64.4	1.76	130.3	73.0
	Intermediate	25.7	0.67	32.7	1.91	160.2	89.7
	Lower	97.2	0.72	32.1	2.03	633.2	354.6
	Total	134.3	0.77	35.0	1.98	923.7	517.3

Notes:

1. All tabulated data have been rounded and as a result minor computational errors may occur.
2. Mineral Resources which are not Ore Reserves have no demonstrated economic viability.
3. Mineral Resources are inclusive of Ore Reserves (not indicated in the table).
4. Magnetite content (grade) is determined as the proportion of magnetite concentrate recovered using Davis Tube methodology.
5. Due to the magnetite grade being a recovered grade, differences will occur between whole rock V₂O₅ grades back-calculated from concentrate, versus those derived from whole rock assays.
6. Depleted using the January 2023 pit survey.
7. Reported on an Attributable Basis. Bushveld Minerals shareholding in Bushveld Vametco Alloys is 74%.



Comparative Resource Tables

Table 1a: Vametco Mineral Resource at a cut-off grade of 20% magnetite, 31 December 2022 versus 31 December 2021 – Gross Basis													
Class	Seam Name	Tonnes	V ₂ O ₅ grade of whole rock	Magnetite grade of whole rock	V ₂ O ₅ grade in magnetite	Tonnes V ₂ O ₅ in magnetite	Tonnes V in magnetite	Tonnes	V ₂ O ₅ grade of whole rock	Magnetite grade of whole rock	V ₂ O ₅ grade in magnetite	Tonnes V ₂ O ₅ in magnetite	Tonnes V in magnetite
		(Millions)	%	%	%	(Thousands)	(Thousands)	(Millions)	%	%	%	(Thousands)	(Thousands)
31 December 2022							31 December 2021						
Indicated	Upper	5.4	1.44	65.9	1.78	62.7	35.1	5.6	1.44	65.8	1.78	65.9	36.9
	Intermediate	27.6	0.67	32.9	1.91	173.1	97.0	27.6	0.67	32.9	1.91	173.3	97.1
	Lower	105.9	0.72	32.4	2.03	697.2	390.4	106.8	0.72	32.3	2.03	702.3	393.3
	Total	139.0	0.74	33.8	2.00	933.0	522.5	140.1	0.74	33.8	2.00	941.5	527.2
Inferred	Upper	10.2	1.46	63.6	1.75	113.3	63.5	10.2	1.46	63.6	1.75	113.7	63.7
	Intermediate	7.0	0.67	32.1	1.92	43.4	24.3	7.0	0.67	32.1	1.92	43.4	24.3
	Lower	25.4	0.74	31.3	2.00	158.4	88.7	25.3	0.74	31.3	2.00	158.4	88.7
	Total	42.6	0.90	39.1	1.93	315.2	176.5	42.6	0.90	39.1	1.93	315.6	176.7
Indicated and Inferred	Upper	15.5	1.45	64.4	1.76	176.0	98.6	15.8	1.45	64.4	1.76	179.6	100.6
	Intermediate	34.7	0.67	32.7	1.91	216.5	121.3	34.7	0.67	32.7	1.91	216.7	121.4
	Lower	131.3	0.72	32.1	2.03	855.6	479.2	132.2	0.72	32.1	2.03	860.6	482.0
	Total	181.5	0.77	35.0	1.98	1,248.2	699.0	182.7	0.78	35.0	1.98	1,257.0	703.9

Notes:

1. All tabulated data have been rounded and as a result minor computational errors may occur.
2. Mineral Resources which are not Ore Reserves have no demonstrated economic viability.
3. Mineral Resources are inclusive of Ore Reserves (not indicated in the table).
4. Magnetite content (grade) is determined as the proportion of magnetite concentrate recovered using Davis Tube methodology.
5. Due to the magnetite grade being a recovered grade, differences will occur between whole rock V₂O₅ grades back-calculated from concentrate, versus those derived from whole rock assays.
6. 2021 depletion as at 31 December 2021.
7. 2022 depletion as at 31 December 2022.
8. Reported on a Gross Basis. Bushveld Minerals shareholding in Bushveld Vametco Alloys is 74%.



Table 2a: Vametco Mineral Resource at a cut-off grade of 20% magnetite, 31 December 2022 versus 31 December 2021 – Attributable Basis

Class	Seam Name	Tonnes	V ₂ O ₅ grade of whole rock	Magnetite grade of whole rock	V ₂ O ₅ grade in magnetite	Tonnes V ₂ O ₅ in magnetite	Tonnes V in magnetite	Tonnes	V ₂ O ₅ grade of whole rock	Magnetite grade of whole rock	V ₂ O ₅ grade in magnetite	Tonnes V ₂ O ₅ in magnetite	Tonnes V in magnetite
		(Millions)	%	%	%	(Thousands)	(Thousands)	(Millions)	%	%	%	(Thousands)	(Thousands)
31 December 2022								31 December 2021					
Indicated	Upper	4.0	1.44	65.9	1.78	46.4	26.0	4.2	1.44	65.8	1.78	48.8	27.3
	Intermediate	20.5	0.67	32.9	1.91	128.1	71.8	20.5	0.67	32.9	1.91	128.3	71.8
	Lower	78.4	0.72	32.4	2.03	515.9	288.9	79.0	0.72	32.3	2.03	519.7	291.0
	Total	102.8	0.74	33.8	2.00	690.4	386.6	103.7	0.74	33.8	2.00	696.7	390.2
Inferred	Upper	7.5	1.46	63.6	1.75	83.9	47.0	7.6	1.46	63.6	1.75	84.2	47.1
	Intermediate	5.2	0.67	32.1	1.92	32.1	18.0	5.2	0.67	32.1	1.92	32.1	18.0
	Lower	18.8	0.74	31.3	2.00	117.2	65.7	18.8	0.74	31.3	2.00	117.2	65.7
	Total	31.5	0.90	39.1	1.93	233.2	130.6	31.5	0.90	39.2	1.93	233.5	130.8
Indicated and Inferred	Upper	11.5	1.45	64.4	1.76	130.3	73.0	11.7	1.45	64.4	1.76	132.9	74.4
	Intermediate	25.7	0.67	32.7	1.91	160.2	89.7	25.7	0.67	32.7	1.91	160.4	89.8
	Lower	97.2	0.72	32.1	2.03	633.2	354.6	97.8	0.72	32.1	2.03	636.9	356.6
	Total	134.3	0.77	35.0	1.98	923.7	517.3	135.2	0.78	35.0	1.98	930.2	520.9

Notes:

1. All tabulated data have been rounded and as a result minor computational errors may occur.
2. Mineral Resources which are not Ore Reserves have no demonstrated economic viability.
3. Mineral Resources are inclusive of Ore Reserves (not indicated in the table).
4. Magnetite content (grade) is determined as the proportion of magnetite concentrate recovered using Davis Tube methodology.
5. Due to the magnetite grade being a recovered grade, differences will occur between whole rock V₂O₅ grades back-calculated from concentrate, versus those derived from whole rock assays.
6. 2021 depletion as at 31 December 2021.
7. 2022 depletion as at 31 December 2022.
8. Reported on an Attributable Basis. Bushveld Minerals shareholding in Bushveld Vametco Alloys is 74%.



Table 3: Vametco Ore Reserves, 31 December 2022 – Gross Basis

Class	Seam Name	Tonnes	V ₂ O ₅ grade of whole rock	Magnetite grade of whole rock	V ₂ O ₅ grade in magnetite	Tonnes V ₂ O ₅ in magnetite	Tonnes V in magnetite
		(Millions)	%	%	%	(Thousands)	(Thousands)
Probable	Upper	1.9	1.07	50.2	1.77	16.7	9.3
	Intermediate	8.3	0.57	26.7	1.87	41.3	23.1
	Lower	36.2	0.62	28.1	2.03	206.7	115.7
	Total	46.4	0.63	28.7	1.99	264.6	148.2

Notes:

1. All tabulated data have been rounded and as a result minor computational errors may occur.
2. Ore Reserve tonnes and grades reported on dry run of mine (ROM) (plant feed) basis after mining modifying factors have been applied but before beneficiation down-stream recoveries/losses have been applied.
3. Reporting was prepared on a Mineral Resource model developed by MSA.
4. Ore Reserves depleted as at 31 December 2022 using 31 December 2022 pit survey.
5. Ore Reserve estimate was based on a revised pit design completed in September 2022.
6. Ore Reserve modifying factors adjusted by seam based on analysis of pit to plant production information.
7. Ore Reserve estimate depleted using Datamine Studio 5DP Open Pit software and latest topography supplied by Vametco as of 31 December 2022.
8. Reported on a Gross Basis. Bushveld Minerals shareholding in Bushveld Vametco Alloys is 74%.

Table 4: Vametco Ore Reserves, 31 December 2022 - Attributable Basis

Class	Seam Name	Tonnes	V ₂ O ₅ grade of whole rock	Magnetite grade of whole rock	V ₂ O ₅ grade in magnetite	Tonnes V ₂ O ₅ in magnetite	Tonnes V in magnetite
		(Millions)	%	%	%	(Thousands)	(Thousands)
Probable	Upper	1.4	1.07	50.2	1.77	12.4	6.9
	Intermediate	6.1	0.57	26.7	1.87	30.5	17.1
	Lower	26.8	0.62	28.1	2.03	152.9	85.6
	Total	34.3	0.63	28.7	1.99	195.8	109.7

Notes:

1. All tabulated data have been rounded and as a result minor computational errors may occur.
2. Ore Reserve tonnes and grades reported on dry run of mine (ROM) (plant feed) basis after mining modifying factors have been applied but before beneficiation down-stream recoveries/losses have been applied.
3. Reporting was prepared on a Mineral Resource model developed by MSA.
4. Ore Reserves depleted as at 31 December 2022 using 31 December 2022 pit survey.
5. Ore Reserve estimate was based on a revised pit design completed in September 2022.
6. Ore Reserve modifying factors adjusted by seam based on analysis of pit to plant production information.
7. Ore Reserve estimate depleted using Datamine Studio 5DP Open Pit software and latest topography supplied by Vametco as of 31 December 2022.
8. Reported on a Gross Basis. Bushveld Minerals shareholding in Bushveld Vametco Alloys is 74%.



Comparative Reserve Tables

Table 3a: Vametco Ore Reserve at a cut-off grade of 20% magnetite, 31 December 2022 versus 31 December 2021 – Gross Basis

Class	Seam Name	Tonnes	V ₂ O ₅ grade of whole rock	Magnetite grade of whole rock	V ₂ O ₅ grade in magnetite	Tonnes V ₂ O ₅ in magnetite	Tonnes V in magnetite	Tonnes	V ₂ O ₅ grade of whole rock	Magnetite grade of whole rock	V ₂ O ₅ grade in magnetite	Tonnes V ₂ O ₅ in magnetite	Tonnes V in magnetite
		(Millions)	%	%	%	(Thousands)	(Thousands)	(Millions)	%	%	%	(Thousands)	(Thousands)
		31 December 2022						31 December 2021					
Probable	Upper	1.9	1.07	50.2	1.77	16.7	9.3	0.5	1.05	49.4	1.77	4.7	2.7
	Intermediate	8.3	0.57	26.7	1.87	41.3	23.1	6.3	0.51	23.4	1.88	27.5	15.4
	Lower	36.2	0.62	28.1	2.03	206.7	115.7	38.4	0.63	29.2	2.05	230.1	128.9
	Total	46.4	0.63	28.7	1.99	264.6	148.2	45.3	0.62	28.6	2.02	262.4	146.9

Notes:

1. All tabulated data have been rounded and as a result minor computational errors may occur.
2. Ore Reserve tonnes and grades reported on dry ROM (plant feed) basis after mining modifying factors have been applied but before beneficiation down-stream recoveries/losses have been applied.
3. Reporting was prepared on a Mineral Resource model developed by MSA.
4. 2021 depletion as at 31 December 2021.
5. 2022depletion as at 31 December 2022.
6. Ore Reserve estimate was based on a revised pit design completed in September 2022
7. Ore Reserve modifying factors adjusted by seam based on analysis of historical pit to plant production information.
8. Ore Reserve estimate depleted using Datamine Studio 5DP Open Pit software and latest topography supplied by Vametco as of 31 December 2022.
9. Ore Reserve estimate compared to previous depleted Ore Reserves estimate compiled in December 2021.
10. Reported on a Gross Basis. Bushveld Minerals shareholding in Bushveld Vametco Alloys is 74%.



Table 4a: Vametco Ore Reserve at a cut-off grade of 20% magnetite, 31 December 2022 versus 31 December 2021 – Attributable Basis

Class	Seam Name	Tonnes	V ₂ O ₅ grade of whole rock	Magnetite grade of whole rock	V ₂ O ₅ grade in magnetite	Tonnes V ₂ O ₅ in magnetite	Tonnes V in magnetite	Tonnes	V ₂ O ₅ grade of whole rock	Magnetite grade of whole rock	V ₂ O ₅ grade in magnetite	Tonnes V ₂ O ₅ in magnetite	Tonnes V in magnetite
		(Millions)	%	%	%	(Thousands)	(Thousands)	(Millions)	%	%	%	(Thousands)	(Thousands)
		31 December 2022						31 December 2021					
Probable	Upper	1.4	1.07	50.2	1.77	12.4	6.9	0.4	1.05	49.4	1.77	3.5	2.0
	Intermediate	6.1	0.57	26.7	1.87	30.5	17.1	4.6	0.51	23.4	1.88	20.4	11.4
	Lower	26.8	0.62	28.1	2.03	152.9	85.6	28.5	0.63	29.2	2.05	170.3	95.4
	Total	34.3	0.63	28.7	1.99	195.8	109.7	33.5	0.62	28.6	2.02	194.2	108.7

Notes:

1. All tabulated data have been rounded and as a result minor computational errors may occur.
2. Ore Reserve tonnes and grades reported on dry ROM (plant feed) basis after mining modifying factors have been applied but before beneficiation down-stream recoveries/losses have been applied.
3. Reporting was prepared on a Mineral Resource model developed by MSA.
4. 2021 depletion as at 31 December 2021.
5. 2022 depletion as at 31 December 2022.
6. Ore Reserve estimate was based on a revised pit design completed in September 2022
7. Ore Reserve modifying factors adjusted by seam based on analysis of historical pit to plant production information.
8. Ore Reserve estimate depleted using Datamine Studio 5DP Open Pit software and latest topography supplied by Vametco as of 31 December 2022.
9. Ore Reserve estimate compared to previous depleted Ore Reserves estimate compiled in December 2021.
10. Reported on a Gross Basis. Bushveld Minerals shareholding in Bushveld Vametco Alloys is 74%.