ASX Announcement

19 July 2024

ALVO MINERALS

ASX: ALV

65% Increase in Open-Pit Resources to 7.6Mt @ 2% CuEq at the Palma Project

Palma estimated to contain >150k of Copper Equivalent tonnes

HIGHLIGHTS

- Over 20km of drilling incorporated into an updated JORC Mineral Resource Estimate (MRE) for the high-grade copper-zinc Palma VMS Project in Central Brazil
- **Substantial 65% increase to the high-grade MRE** compared to the 2021 MRE, including a significant portion of Indicated Resources at C1 and C3
- At a cut-off grade NSR of US$50/t for C1 and C3 and US$80/t for C4, the total MRE comprises:

  7.6Mt @ 2.0% CuEq* or 6.2% ZnEq (0.7% Cu, 3.4% Zn, 0.6% Pb, 16g/t Ag and 0.03g/t Au)

- Indicated Resources at C1 and C3 estimated at:

  3.3Mt @ 2.3% CuEq or 6.9% ZnEq (1.0% Cu, 4.0% Zn, 0.4% Pb, 14g/t Ag and 0.03g/t Au)

- **Maiden Inferred MRE at C4 (US$80/t NSR cut-off) of 1.5Mt @ 1.8% CuEq or 5.5% ZnEq** (0.2%, 3.3% Zn, 1.3% Pb, 28g/t Ag and 0.03g/t Au)
- At a lower cut-off grade NSR of US$20/t for C1, C3 and C4, the open-pit MRE comprises:

  14.6Mt @ 1.3% CuEq or 3.8% ZnEq (0.5% Cu, 2.1% Zn, 0.4% Pb, 12g/t Ag and 0.02 g/t Au)

- **Maiden C3 Oxide Inferred MRE** (0.15% Cu cut-off) of 1.2Mt @ 0.3% Cu. Mineralisation is shallow and open along strike
- **All Deposits constrained by conceptual open-pits**
- Focus remains on assessing the district scale potential of Palma through ongoing diamond drilling of **untested high priority targets** defined by EM, IP, geochemistry and auger drilling
  - Over 15 untested high-priority regional targets identified across the >70km of prospective VMS strike, with **8 to be tested in the ongoing drill program**
  - Mineralisation at C1 and C3 remains open at depth with DHEM used to target extensions
  - Significant potential to increase the C4 MRE through strike extensions (SW) and drill testing of C4-NE coincident IP and soil anomaly
- **Alvo remains well funded following its A$4.2M strategic placement** in April 2024

*Refer to the detailed explanation of assumptions and pricing underpinning the copper equivalent (CuEq) and zinc equivalent (ZnEq) calculations on page 13 of this announcement and in Section 2 of the attached JORC Code Table (Appendix 1)

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Bluebush Ionic Clay REE Project
Ipora REE Project

Shares on Issue 117,158,886
ASX Code **ALV**

Rob Smakman, Alvo's Managing Director commented:

"We are really pleased to deliver such an important upgrade in size and confidence on our Palma Cu-Zn Project in Brazil. Palma is Alvo's formation asset and the growth over the past drilling campaigns confirms our confidence in the project since partnering with the Brazilian Geological Survey in 2019. We expect that growth to continue as we progress exploring and pursuing the opportunities highlighted by this MRE update.

"We now have >150kt of CuEq in resources, a size sufficient to consider development options for the Project. The fundamentals of the deposits are sound: high grades near-surface, clean and standard metallurgy, receptive community and access to enviable infrastructure, we are confident that a development pathway can utilise these resources as a solid base.

"In addition to the increases in resources at C1 and C3 - which are enhanced by the significant volume of Indicated material, we are encouraged by the maiden estimate of oxide resources at C3 and excited by the maiden MRE for C4 - an early success from our multi- disciplinary exploration efforts. Both of the maiden results have excellent upside potential, and we intend to continue working on these new prospects in coming months.

"2024 has seen stronger copper and zinc prices, with most analysts forecasting continued strength going forward. We firmly believe it's an ideal time to be actively exploring for these critical metals and the diamond drilling program currently underway is an exciting part of Alvo's future. We are confident that each day we are getting closer to another major discovery in the Palma district."

Alvo Minerals Limited (ASX: ALV) ("Alvo" or "the Company") is pleased to report a substantial increase in the JORC MRE for its 100%-owned Palma VMS Project ("Palma" or the "Project") located in Central Brazil.

The updated JORC MRE significantly increases the high-grade resource base, demonstrating the potential for Palma to emerge as a globally significant VMS district. The Company continues to test high-priority targets across the >70km of prospective VMS strike which could add significantly to the growing inventory.

The MRE updates the C1 and C3 deposits, which includes resources into the higher confidence Indicated category for the first time, a Maiden MRE for the newly discovered C4 deposit and a Maiden MRE for the near surface oxide component of the C3 deposit.

All Deposits remain open along strike and at depth, are potentially mineable by open-pit methods and have potential to expand and upgrade with additional drilling, metallurgy and engineering studies.

Background

Alvo acquired the Palma Volcanogenic Hosted Massive Sulphide (VMS) Project from the Brazilian Geological survey (CPRM) in 2019. Based upon the historical drilling performed by the CPRM across the Palma District, Alvo was able to declare a maiden MRE for Palma's C1 and C3 deposits in 2021.

Following Alvo's IPO in late 2021, Alvo commenced extensive drilling programs across the wider Palma Project, including the C1 and C3 deposits, in order to confirm and expand the MREs. Alvo also instigated exploration at C4, which included detailed geophysical surveys followed by drilling, resulting in the discovery of a new deposit at C4. This report details the Maiden MRE for C4.

During exploration at C3, shallow, copper and zinc oxide mineralisation was noted and a campaign of Reverse Circulation (RC) holes were drilled to investigate the extent and importance of this previously unrecognised mineralisation. This report details the Maiden MRE for C3 oxide.

Updated JORC Mineral Resource Estimate Palma Project

Utilising assay results from diamond and RC drilling completed by Alvo up until the end of 2023, along with the historical drilling by the CPRM, MB Geologia Ltda has prepared an updated MRE for the C1 and C3 sulphide deposits as well as a maiden MRE for the C4 sulphide and C3 Oxide deposits, a part of the Palma VMS Project in central Brazil.

All of the resources have been estimated assuming an open-pit mining scenario with different cut-off grades applied for the different deposits (see Table 1 and Figures 1-4). At a USD$50 Net Smelter Return (NSR) cut-off for C1 and C3 and a USD$80 NSR for C4, the sulphide resource estimate comprises:

7.6Mt @ 2.02% CuEq or 6.2% ZnEq (NSR of US$174/t) for 153kt of contained CuEq tonnes

(0.7% Cu, 3.4% Zn, 0.6% Pb, 16g/t Ag and 0.03 g/t Au)

Total metal contents in the updated MRE (at the cut-off outlined above- not including the Oxide at C3) includes 55kt of copper, 260kt of zinc, 40kt of lead, 4 Moz of silver and 6koz of gold all contained in mathematical open pits, based on operating and capital costs for similar projects in Brazil. Additional work to consider an ideal cut-off for future possible mining scenarios requires additional drilling, metallurgy and engineering as well as economic and other modifying factors. As mining studies are advanced and the costs and mining methods are clarified, the cut-offs should be modified accordingly.

The higher confidence **Indicated** resources estimated for the C1 and C3 sulphide deposits at a USD$50 NSR cut-off comprises:

3.3Mt @ 2.3% CuEq or 6.9 ZnEq (NSR of US$200/t) for 76kt of contained CuEq tonnes

(0.1% Cu, 4.0% Zn, 0.4% Pb, 14g/t Ag and 0.03 g/t Au)

At higher cut-offs, a significant portion of the resources are still included, indicating a significant portion of the mineralisation is contained in the higher-grade massive sulphide lenses at the centre of each deposit. At a USD$100/t NSR cut-off for C1, C3 & C4, the Indicated and Inferred MRE comprises:

4.9Mt @ 2.7% CuEq or 8.5% ZnEq (NSR of US$231/t)
(0.9% Cu, 4.7% Zn, 0.7% Pb, 22g/t Ag and 0.03 g/t Au)

In contrast, at lower cut-offs, a larger volume of material is incorporated into the MRE, which could be relevant for future potential higher throughput scenarios. At a USD$20/t NSR cut-off for C1, C3 & C4, the MRE comprises:

14.2Mt @ 1.3% CuEq or 3.8% ZnEq (NSR of US$111/t)
(0.5% Cu, 2.1% Zn, 0.4% Pb, 12g/t Ag and 0.02 g/t Au)

A breakdown of the MRE at different cut-offs for each deposit is included in Tables 2-4.

Table 1: July 2024 JORC compliant MRE for C1, C3 & C4 sulphide resources.

Deposit	Category	Cut-off Grade: NSR**	Tonnes (Mt)	NSR $USD	Cu%	Metal Cu (t)	Zn %	Metal Zn (t)	Pb %	Metal Pb (t)	Ag ppm	Metal Ag (Oz)	Au ppm	Metal Au (Oz)	CuEq*** (%)	CuEq (t)	ZnEq*** (%)
C1	Indicated	50	1.3	148	0.7	9,600	2.5	33,900	0.5	7,200	13	540,000	0.01	600	**1.7**	**23,300**	4.7
	Inferred		1.2	173	0.5	6,500	3.8	45,800	0.7	8,000	17	640,000	0.01	500	**2.0**	**23,400**	6.4
C1 Total			2.5	160	0.6	16,100	3.1	79,700	0.6	12,500	14	1,180,000	0.01	1,100	**1.8**	**46,700**	5.5
C3	Indicated	50	2.0	236	1.1	21,600	5.0	97,200	0.2	4,500	15	920,000	0.04	2,200	**2.7**	**53,100**	8.4
	Inferred		1.6	144	1.0	14,900	2.0	31,500	0.1	2,100	10	523,000	0.04	1,800	**1.7**	**25,800**	5.1
C3 Total			3.5	195	1.0	36,500	3.7	128,600	0.2	6,600	13	1,440,000	0.04	4,000	**2.2**	**78,900**	6.9
C4	Inferred	80	1.5	150	0.2	3,200	3.3	50,600	1.3	19,700	28	1,380,000	0.03	1,300	**1.8**	**28,000**	5.5
C1+C3	**Indicated**	**50**	**3.3**	**200**	**0.9**	**31,200**	**4.0**	**131,100**	**0.4**	**11,700**	**14**	**1,460,000**	**0.03**	**2,800**	**2.3**	**76,400**	**6.9**
C1+C3+C4	**Inferred**	**(50 & 80)**	**4.3**	**154**	**0.6**	**24,700**	**3.0**	**127,800**	**0.7**	**29,800**	**18**	**2,540,000**	**0.03**	**3,600**	**1.8**	**77,300**	**5.6**
Total Sulphides			**7.6**	**174**	**0.7**	**55,800**	**3.4**	**258,900**	**0.5**	**41,500**	**16**	**4,000,000**	**0.03**	**6,400**	**2.0**	**153,600**	**6.2**

*Rounding discrepancies may occur

***The NSR (Net Smelter Return) and Cu/ZnEq values are reported based on copper, zinc, silver, lead and gold prices of US$8,914/t Copper, US$3,017/t Zinc, US$2,173/t Lead, US$23.3/oz Silver, and US$1,891/oz gold (price deck based 3-year average Metals Prices). Recovery factor for C3: Cu; 95%, Zn; 86%, Pb; 77%, Ag 74% & Au 70%. Recovery for C1 and C4: Cu; 93%, Zn; 90%, Pb; 86%, Ag 96% & Au 85%. The NSR calculation is as follows: NSR (US$/t) = [Cu %] * {Price Cu] * [RecCu %] +[Zn %] * {Price Zn] * [RecZn] + [Pb %] * {Price Pb] * [RecPb] + [Ag ppm] * {Price Ag] * [RecAg]/31.1035+ [Au ppm] * {Price Au] * [RecAu]]/31.1035 (Adjustments are necessary to normalized to US$/t basis).*

****The CuEq calculation is as follow: Cu+(Cu*((Zn % * RecZn*Price Zn) + (Pb % * Price Pb * RecPb) + (Ag ppm * Price Ag * RecAg) + (Au ppm * Price Au * RecAu)) / (Cu % * Price Cu * RecCu). ZnEq is calculated with the same formula as CuEq, swapping Cu and Zn.*

Table 2: July 2024 JORC Compliant MRE for C3 Oxide Resource

		COG Cu%	Tonnes (Mt)	NSR $USD	Cu%	Metal Cu (t)
C3-OXIDE	Inferred	0.15	1.2	27	0.3	3,600

*Rounding discrepancies may occur

***The NSR (Net Smelter Return) value is reported based on copper price of US$8,914/t Copper. Estimated recovery was 70% and the NSR calculation is as follows: NSR (US$/t) =Cu % *(CuPrice * CuRec %)*

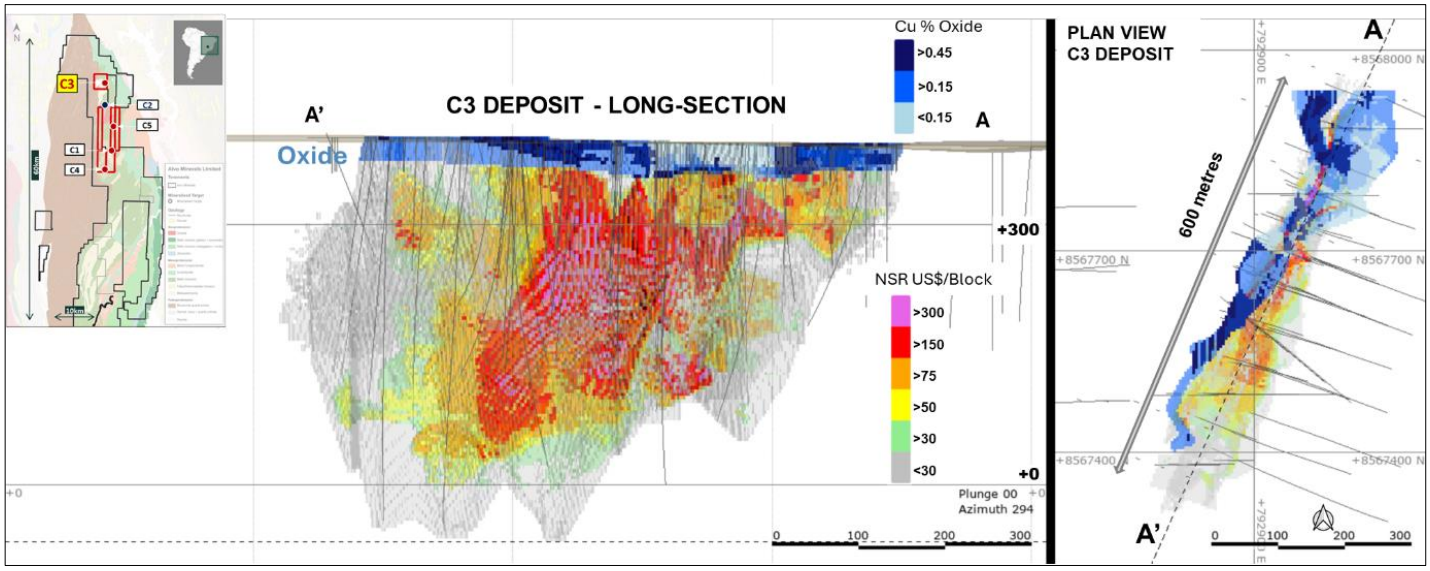

Figure 1: C3 deposit with 3D block model in long section with NSR, drilling and Plan View (RHS). Note the higher NSR blocks (red and pink) are centred, associated with the massive sulphide mineralisation seen at C3. Oxide resource block model is included in blue.

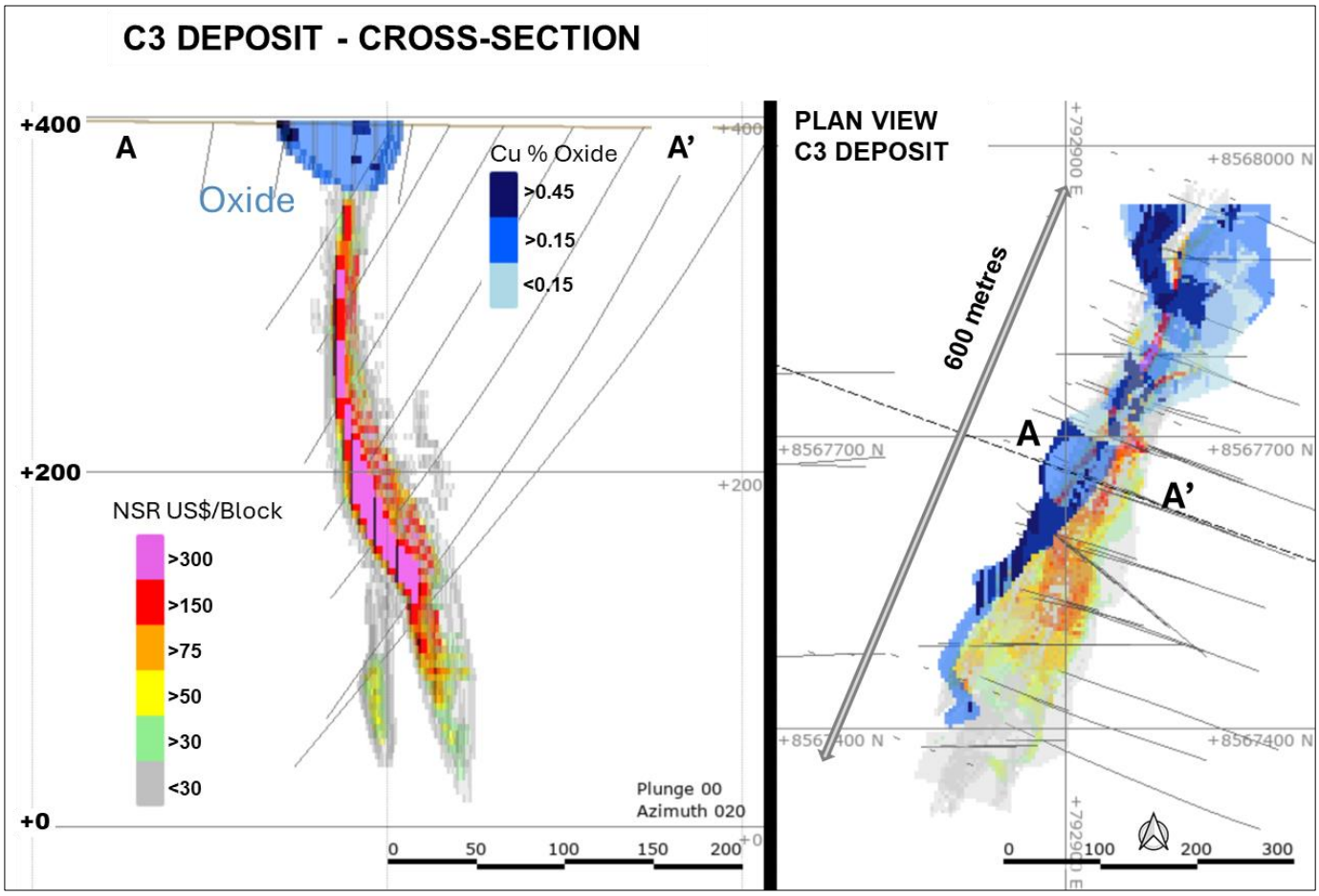

Figure 2: C3 deposit with 3D block model in cross- section with NSR, drilling and Plan View (RHS). Note the higher NSR blocks (red and pink) are centred, associated with the massive sulphide mineralisation seen at C3. Oxide resource block model is included in blue.

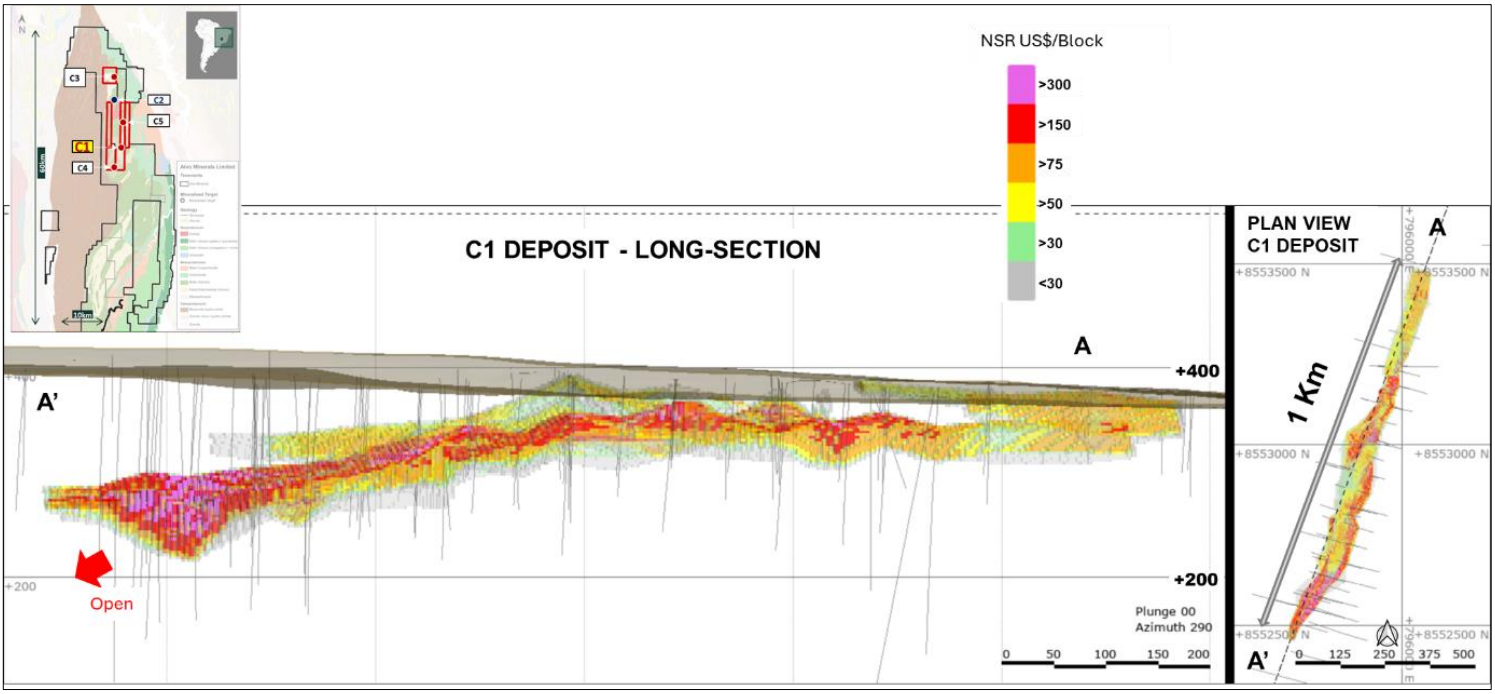

Figure 3: C1 Deposit with 3D block model in long section with NSR, drilling and Plan View (RHS). Note the long, near-surface mineralisation plunges to the south, where it remains open down plunge. Alvo geologists have interpreted a fault displacing mineralisation to the south, with geophysics and structural interpretation guiding future exploration for southern extensions.

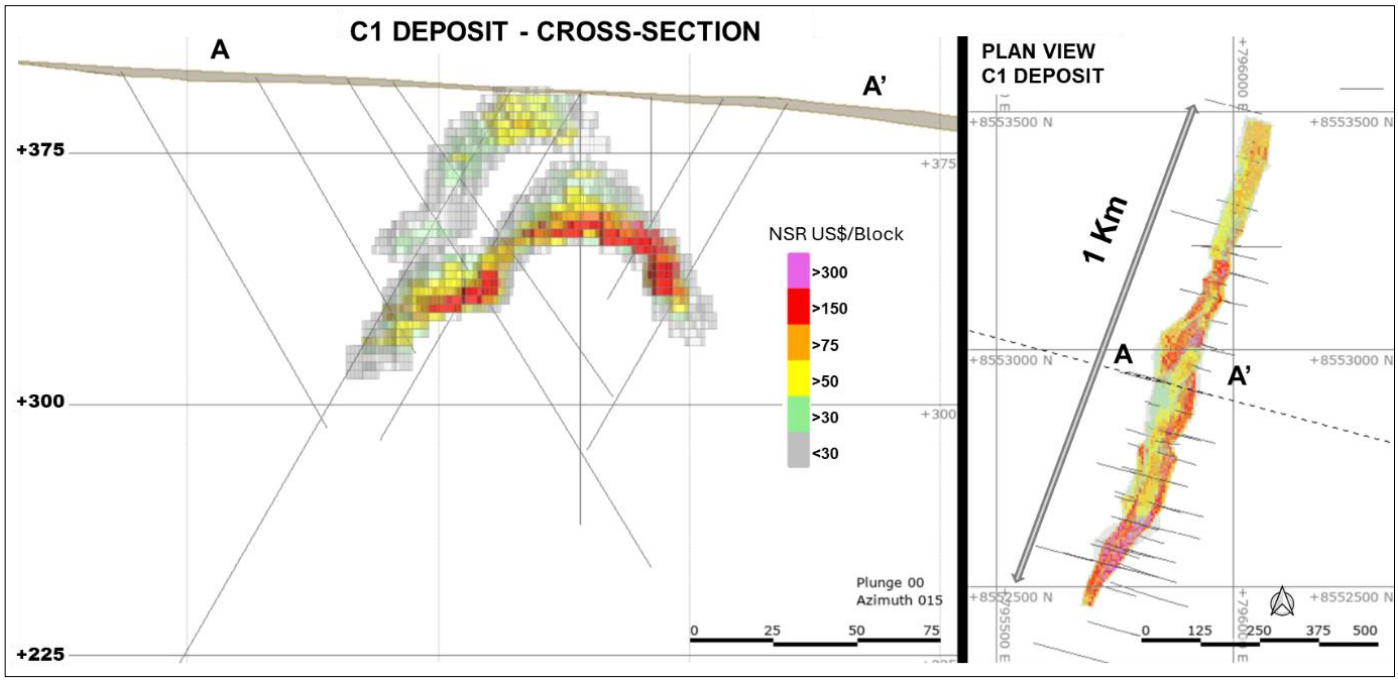

Figure 4: C1 deposit with 3D block model in central cross-section with NSR, drilling and Plan View (RHS).

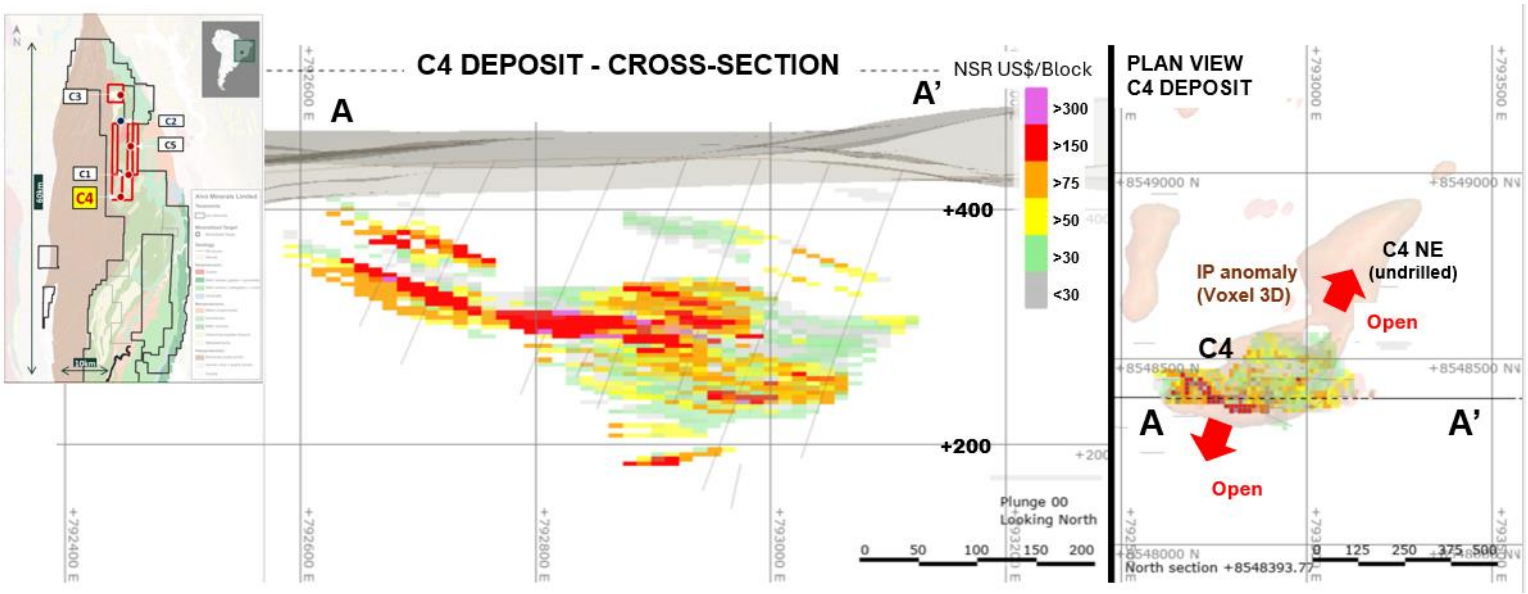

Figure 5: C4 Deposit with 3D block model of NSR, drilling and Plan View (RHS). Note the mineralisation appears to be open to the SW and to the NE at the neighbouring prospect C4NE, where a similar geophysical Induced Polarisation anomaly is present with a strong geochemical anomaly. This new prospect will be tested in coming months during the current round of exploration drilling.

The July 2024 MRE is a significant increase on the 2021 MRE which was based on the historical drilling of the CPRM (see Table 2). The 2021 MRE was estimated for the C1 and C3 deposits only, at a higher cut-off (USD$60), using lower metals prices and higher overall recoveries. No estimate for gold was completed due to insufficient information in 2021.

In comparison, the 2024 MRE shows an increase of 65% on total sulphide resources (from 4.6Mt to 7.5Mt), using a range of cut-offs, updated metallurgy assumptions and including the C4 discovery.

Table 3: MRE from 2021, based on the historical drilling of the CPRM, assumed metallurgical recoveries and lower overall metals price deck.

Prospect	NSR Cut Off ($USD)	TONNES (t)	Cu (%)	Metal_Cu (t)	Zn (%)	Metal_Zn (t)	Pb (%)	Metal_Pb (t)	Ag (ppm)	Metal_Ag (oz)
C1	60	1,800,000	0.8	14,000	3.2	59,000	0.8	14,000	15	900,000
C3	60	2,800,000	1.1	30,000	4.3	120,000	0.2	6,000	23	2,100,000
Total For Palma Project	**60**	**4,600,000**	**1.0**	**44,000**	**3.9**	**179,000**	**0.4**	**20,000**	**20**	**3,000,000**

Due to the rounding in the table, the figures the value may not add-up.

**For the 2021 MRE, the NSR cut-off of USD$60/t was calculated using the following prices: 2.905/lb Cu, 1.045/lb Zn, 0.795/lb Pb, 24.55/oz Ag and assuming recoveries of 90% for all metals in sulphides and 45% for all metals in oxides. The selected cut-off of USD$60 NSR has been applied in the calculation as a value indicative of an underground mining scenario within the region.*

Further Exploration

Alvo is currently undertaking a major regional exploration program, targeting multiple new advanced prospects for VMS style mineralisation, across the wider Palma Project. Alvo has ~850km^2 under tenure, spread along approximately 70km of strike and is the main holder of this underexplored VMS district.

The Company intends to drill up to 5,000m of diamond across eight prospects after advancing these prospects using cutting edge geophysics (IP and EM), geochemistry (soils and auger drilling) and geology.

The Company has another 15 prospects which are being progressively explored, where drilling may be considered in the future.

C1, C3 and C4 all remain open at depth and along strike. Additional drilling to expand the size and upgrade the category is now being planned based on the MRE. Planning will emphasise high-grades, close to surface which can add to the overall tonnages as well as upgrading the resource category from Inferred to Indicated.

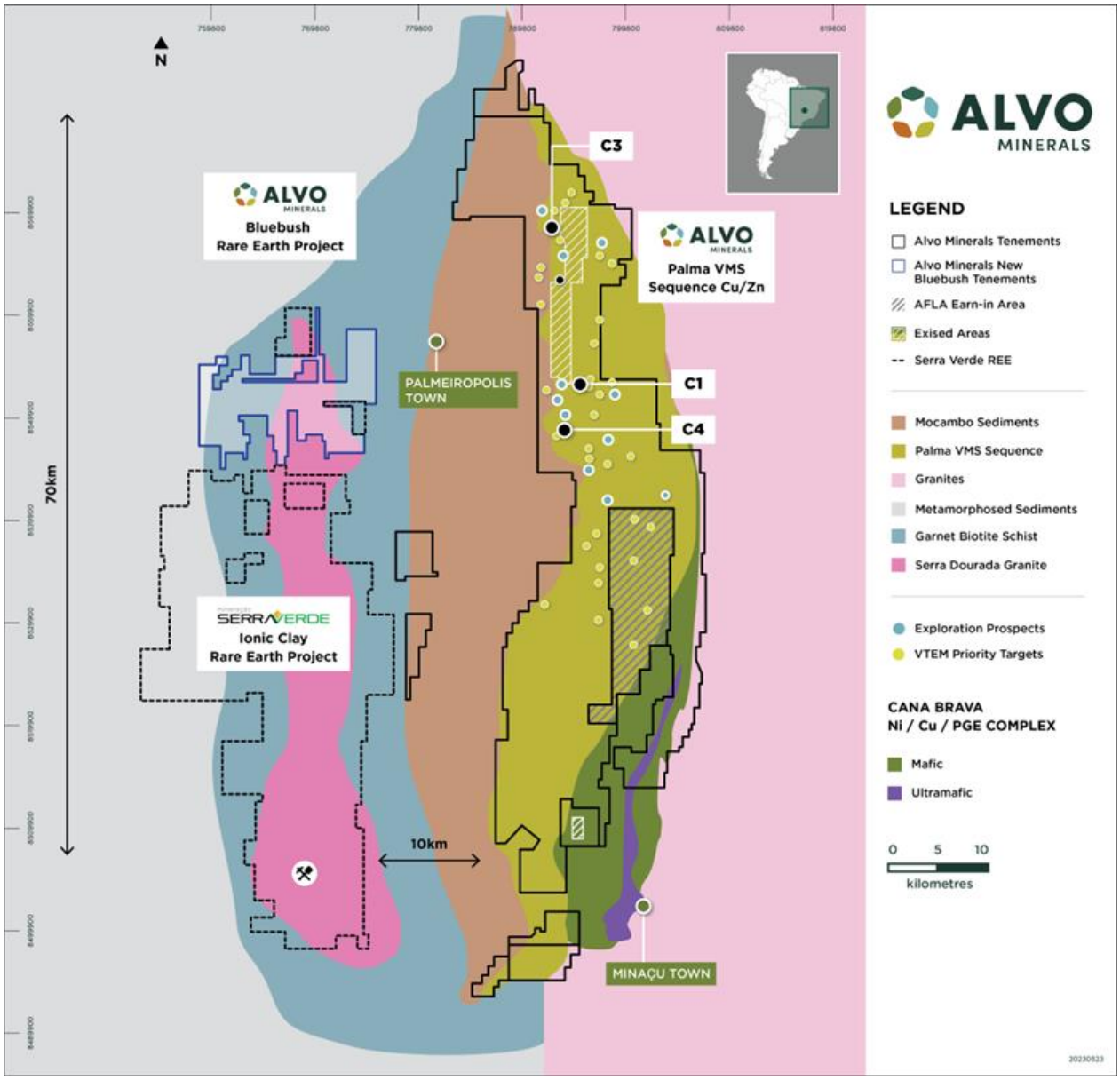

Figure 7. Regional map of the Palma VMS Project, showing the location of the MRE Deposits in this release. The Palmeiropolis Volcano-Sedimentary sequence that hosts the mineralisation is in light green.

Summary of the Resource Estimate and Reporting Criteria

Geology and Geological Interpretation

Volcanogenic Massive Sulfide (VMS) deposits are significant sources of copper, zinc, lead, gold, and silver. These deposits form in deep marine environments where there is circulation of hydrothermal fluids originating from magmatic sources. Upon contact with seawater, these fluids interact and precipitate massive sulfides with high concentrations of the referred metals.

Massive sulphide bodies commonly occur as stratiform lenses overlying zones of vein stockwork, with stringer and disseminated sulphides and are surrounded by hydrothermal alteration halos.

The polymetallic deposits of the Palma Project are situated in the central-northern portion of the N-S trending Neoproterozoic Brasilia thrust and fold belt of Central Brazil. The Brasilia belt is the result of a continental collision between the Amazonas and Sao Francisco cratons.

The Palmeiropolis volcano-sedimentary sequence (also referred as the Palmeiropolis Complex), which hosts the Palma deposits is composed of a series of bimodal volcanic rocks and associated sedimentary units, metamorphosed under amphibolite facies.

Massive sulphide bodies of zinc, copper, and lead are associated with a thick package of basic metavolcanic rocks (amphibolite) and meta sedimentary units, are closely linked to the hydrothermally altered portions of these units. These hydrothermal altered zones consist of anthophyllite, biotite, and cordierite, as well biotite, sericite, chlorite and plagioclase.

The mineralised bodies exhibit similar mineralogical compositions, comprising pyrrhotite and pyrite, with varying proportions of sphalerite, chalcopyrite, and galena. The presence of intensely hydrothermally altered zones, especially in the interpreted footwall of the mineralisation, constitutes the primary control of mineralization.

The C3 deposit is primarily massive sulphides of pyrrhotite, sphalerite (zinc sulphide), chalcopyrite (copper sulphide), pyrite and galena (lead sulphide). Gossans mapped at surface define the oxidised extension of the VMS mineralisation, which is mapped as being fresh from approximately 40m depth. The C3 Oxide MRE is interpreted as secondary mineralisation, re-mobilised in the weathered zone by movement of groundwater.

Primary VMS mineralisation extends for over 600m in strike length, varies from 1- 36m thick and extends to 350m depth. All reported mineralised material is contained in mathematical open-pits to a maximum depth of 275m. The mineralised zone is open at depth, with downhole electromagnetic surveys indicating extensions down-plunge to the SE. Alvo's diamond drilling program confirmed and updated the previous mineral resource estimation from 2021, especially the massive sulphide intercepts and confirms the deposit as the largest and highest-grade of the Palma Project.

The C3 oxide deposit is a shallow, sub-horizontal mineralised zone, formed by weathering of the primary VMS sulphide mineralisation, where groundwater circulation has re-mobilised copper and zinc into the weathered zone. The oxide mineralisation is spread along the same strike as C3 (NW-SE) over 500m and extends up to 80m wide. Mineralisation is sub-horizontal and averages 40m thick. (note: C3 sulphide mineralisation is steeply dipping to the SE).

Copper oxide mineralisation is logged as chalcocite, cuprite and bornite with mineralisation recognised as a black, brown and reddish minerals on fractured areas within the weathered zone. A 0.15% Cu cut-off was applied, based on the same copper price as the other deposits in the MRE and similar open-pit costs. As no metallurgical testing has been done on the C3 oxide material, a 'recovery factor' of 70% has been applied to the NSR, based on similar heap-leach style projects in South America. A density of 1.95g/cm^3 was applied as an average across the deposit, based on oxide density measurements of samples from drilling across C3.

The C3 oxide material is located directly on top of the C3 sulphide mineralisation, and it is likely that open-pit mining of the C3 sulphide deposit will require mining of the oxide zone, potentially improving overall project economics. It is also worth noting that metallurgical testwork of the C1 & C3 sulphide deposits has considered a sulphuric acid plant as an option to deal with potentially high sulphur concentrations in the tails. The sulphuric acid generated from such a plant could be used as an important consumable in a heap leach operation.

No estimate for zinc mineralisation was completed due to low grades and uncommon metallurgical processing.

Table 4 below shows the MRE for C3 (Indicated and Inferred) at different Cut-off grades.

Table 5 below shows the MRE for C3 Oxide (Inferred) at different Cut-off grades.

Table 4: C3 Deposit - COG (NSR US$/t) 2024 Mineral Resources

COG	Tonnes (Mt)	NSR $USD	Cu%	Metal Cu (t)	Zn %	Metal Zn (t)	Pb %	Metal Pb (t)	Ag ppm	Metal Ag (Oz)	Au ppm	Metal Au oz	CuEq (%)	CuEq (t)	ZnEq (%)
20	5.3	140	0.8	41,400	2.5	132,700	0.1	7,500	10	1,642,000	0.03	5,480	**1.6**	**85,100**	4.8
30	4.5	162	0.9	39,600	2.9	131,500	0.2	7,200	11	1,578,000	0.03	4,580	**1.9**	**83,000**	5.6
40	3.9	179	1.0	38,000	3.3	130,300	0.2	6,900	12	1,508,000	0.03	4,270	**2.1**	**80,900**	6.3
50	3.5	195	1.0	36,500	3.7	128,600	0.2	6,600	13	1,443,000	0.04	4,020	**2.2**	**78,900**	6.9
60	3.1	211	1.1	34,900	4.0	126,900	0.2	6,300	14	1,385,000	0.04	3,770	**2.4**	**76,700**	7.6
70	2.8	227	1.2	33,500	4.4	124,300	0.2	6,100	15	1,337,000	0.04	3,580	**2.6**	**74,700**	8.2
80	2.6	241	1.2	32,200	4.7	122,400	0.2	5,900	15	1,295,000	0.04	3,420	**2.8**	**72,800**	8.7
100	2.2	266	1.3	29,800	5.3	118,300	0.2	5,500	17	1,212,000	0.04	3,140	**3.1**	**69,100**	9.7
120	1.9	292	1.4	27,200	6.0	114,100	0.3	5,100	18	1,131,100	0.05	2,910	**3.4**	**65,100**	10.8

Table 5: C3 Oxide Deposit - COG (Cu% 0.2 %) 2024 Mineral Resources

COG - Cu%	Tonnes (Mt)	Cu%	Metal Cu (t)
0.10	1.4	0.3	3,910.00
0.15	1.2	0.3	3,620.00
0.20	0.9	0.4	3,090.00
0.25	0.7	0.4	2,630.00
0.30	0.5	0.4	2,130.00

At the C1 deposit, the VMS mineralisation is associated with massive, semi-massive, and disseminated sulphides and extends for over 1km along strike. Pyrrhotite, sphalerite (zinc sulphide), chalcopyrite (copper sulphide), pyrite, and galena (lead and silver sulphide) are the main sulphide species.

Alvo´s diamond drilling program confirmed the historical work and upgraded this deposit, with the results indicating mineralisation is folded along a NE/SW axis, with mineralisation thickening around the fold hinge. Alvo has structurally interpreted a shallow southerly plunge to the fold axis that remains open. The plunge orientation interpretation is supported by the geophysical surveys and geological mapping. A fault, which may be truncating mineralisation has been interpreted at the southern end of C1 and additional geophysics and drilling is required to test the southerly plunge orientation.

Table 6 below shows the MRE for C1 (Indicated and Inferred) at different Cut-off grades.

Table 6: C1 Deposit - COG (NSR US$/t) 2024 Mineral Resources

COG	Tonnes (Mt)	NSR $USD	Cu%	Metal Cu (t)	Zn %	Metal Zn (t)	Pb %	Metal Pb (t)	Ag ppm	Metal Ag (Oz)	Au ppm	Metal Au (Oz)	CuEq (%)	CuEq (t)	ZnEq (%)
20	3.7	121	0.5	19,000	2.3	83,600	0.4	16,300	11	1,251,000	0.01	1,260	**1.4**	**50,800**	4.0
30	3.2	134	0.6	18,200	2.6	82,700	0.5	15,900	12	1,229,000	0.01	1,220	**1.5**	**49,700**	4.5
40	2.9	146	0.6	17,300	2.8	81,400	0.5	15,600	13	1,205,000	0.01	1,150	**1.7**	**48,400**	4.9
50	2.5	160	0.6	16,100	3.1	79,700	0.6	15,200	14	1,180,000	0.01	1,100	**1.8**	**46,700**	5.5
60	2.2	173	0.7	15,000	3.5	77,800	0.7	14,900	16	1,157,000	0.01	1,050	**2.0**	**45,000**	6.1
70	2.0	182	0.7	13,500	3.7	74,500	0.7	14,300	17	1,117,000	0.02	1,010	**2.2**	**43,300**	6.6
80	1.8	182	0.6	11,700	3.7	67,900	0.7	13,200	18	1,043,000	0.02	960	**2.3**	**41,800**	7.1
100	1.5	222	0.8	11,700	4.6	67,900	0.9	13,200	22	1,043,000	0.02	900	**2.6**	**38,600**	8.1
120	1.3	242	0.9	10,700	5.0	62,900	1.0	12,300	24	980,700	0.02	860	**2.9**	**35,900**	8.9

The C4 deposit is formed by a stacked series of sub-horizontal layers of disseminated and semi-massive sulphides, primarily sphalerite (Zn), galena (Pb and Ag), with chalcopyrite (Cu), pyrite and pyrrhotite. Mineralisation at C4, being largely flat-lying, has dimensions of 500m (E-W), 250m (N-S) with thickness of up to 50m. Mineralisation starts at 50m below surface and continues to a depth of 275m from surface. A higher cut-off grade (NSR of USD$80) was applied to the MRE at C4, due to a higher volume to overburden that would need to me mined in an open-pit mining scenario.

No metallurgical sampling has been undertaken at C4. The visual similarities of C4 mineralisation to C1 has prompted the use of the same metallurgical recoveries as C1 for calculations of the C4 NSR.

C4 remains open to the southwest and a recent Induced Polarisation (IP) geophysical survey shows a potential extension to the northeast, in an area called the C4-NE prospect. This area of high IP chargeability is expected to be drilled in coming weeks.

Table 7 below shows the MRE for C4 (Inferred) at different Cut-off grades.

Table 7: C4 Deposit - COG (NSR US$/t) 2024 Mineral Resources

COG	Tonnes (Mt)	NSR $USD	Cu%	Metal Cu (t)	Zn %	Metal Zn (t)	Pb %	Metal Pb (t)	Ag ppm	Metal Ag (Oz)	Au ppm	Metal Au (Oz)	CuEq (%)	CuEq (t)	ZnEq (%)
20	5.2	75	0.2	7,900	1.5	78,100	0.6	30,600	15	2,457,000	0.02	2,830	**0.9**	**47,300**	2.6
30	4.3	86	0.2	7,200	1.7	74,700	0.7	29,200	17	2,292,000	0.02	2,400	**1.0**	**44,600**	3.0
40	3.4	99	0.2	6,100	2.0	69,500	0.8	27,500	19	2,099,000	0.02	2,010	**1.2**	**40,900**	3.5
50	2.8	112	0.2	5,200	2.3	64,800	0.9	25,600	21	1,903,000	0.02	1,710	**1.4**	**37,400**	4.0
60	2.3	123	0.2	4,600	2.6	60,600	1.0	23,600	23	1,712,000	0.02	1,520	**1.5**	**34,400**	4.4
70	1.9	137	0.2	3,800	2.9	55,400	1.1	21,500	25	1,530,000	0.02	1,370	**1.6**	**31,000**	5.0
80	1.5	150	0.2	3,200	3.3	50,600	1.3	19,700	28	1,380,000	0.03	1,280	**1.8**	**28,000**	5.5
100	1.1	172	0.2	2,500	3.8	43,300	1.5	16,700	31	1,143,000	0.03	1,040	**2.1**	**23,600**	6.4
120	0.9	193	0.2	1,900	4.3	37,100	1.7	14,200	35	952,600	0.03	870	**2.3**	**19,900**	7.2

Drilling Techniques and Statistics

The Mineral Resource Estimate (MRE) utilises data from 194 drillholes for 40,122m of drilling. Historic drilling included in the MRE includes drilling completed by the CPRM (19,679m for 110 holes). Drilling by Alvo includes 84 drillholes for 20,443m of diamond drilling and 37 holes for 1,466m of Reverse Circulation (RC) drilling only at C3.

The Alvo drilling programs were completed between October 21, 2021, to November 2023. For the specific deposits, 36 diamond holes for 7,101m were completed at C1; 33 holes for 9,586m at C3 and 15 holes for 3,757m at C4. 15 holes for 3,856m were drilled at other prospects.

The orientation of the drill holes were adjusted to intercept the predicted mineralisation as close to perpendicular as possible. The lengths of the drill holes were determined through daily supervision by geologists and technicians to ensure that the holes extended beyond the VMS intersections.

Drilling was completed with HW diameter in soil, HQ diameter in saprolite/saprock material and NQ diameter in fresh rock, with an average core recovery rate of over 96%.

The diamond drilling procedures adhered to high exploration standards, which included:

- Core orientation using REFLEX ACT III tool and hole deviation measurements using REFLEX GYRO SPRINT-IQ™ tool
- Structural data measurements, captured using Vektore™ equipment/software
- Drill Core advance and recovery information was recorded and checked by Alvo staff
- Geological logging of all drilling including alteration, lithology, weathering, alteration, sulphide content, structure and texture.
- Density Measurements approximately every 1m, resulting in a database of 21,135 density measurements (17,008 from Alvo and 4,127 historic).
- Magnetic susceptibility and conductivity measurements on drillcore
- Standardised digital photography of drill core (wet and dry) and RC samples
- Downhole Electromagnetic Profiling (DHEM), using a EMIT/Digiatlantis probe where possible.

A short RC drilling campaign was conducted on the C3 deposit, aiming to intercept near-surface oxidised mineralisation. In total, 37 RC drill holes for 1,466m were drilled, averaging about 40m in depth.

Sampling and Sub-Sampling Techniques

Drillcore was logged by experienced geologists and marked up for sampling. The sampling plan, which generally subdivided the mineralised intervals into ~1-meter samples and the non-mineralised sections into 2 to 3 metre samples. The drill core was cut in half and half retained in secure storage at Alvo's Palmeiropolis core shed facility.

Samples from the right half are collected, packaged, and organized into batches for dispatch to the internationally certified lab SGS Geosol in Brazil.

Sample Analysis Methods

Physical sample preparation is conducted at the SGS lab in Goiânia and chemical analyses are performed at the SGS lab in Vespasiano. The zinc, copper, lead, and silver grades were analysed using the ICP40B method. This involves digesting the sample with four acids and determining 38 elements by ICP-OES, with detection limits between 3 and 10,000 ppm for zinc and copper, 8 and 10,000 ppm for lead, and 3 and 100 ppm for silver.

Analytical results for zinc, copper, lead, or silver exceeding the upper detection limit, samples are reanalysed using the ICP40B_S method, with higher detection limits. In the case of lead, any samples exceeding the upper limit of the ICP40B_S (>5% Pb) were then analysed using the XRF83B method, which involves lithium tetraborate and lithium nitrate fusion followed by X-ray fluorescence analysis.

Gold assays were conducted using the FAA313, analysis involving sample fusion, digestion, and analysis by fire assay with atomic absorption spectroscopy (AAS) readings. The detection limits for gold ranged from 10 to 100,000 ppb (parts per billion).

In-Situ Bulk Density

Density measurements were performed on Alvo drill core, using the following procedure:

- Intact core samples of between 10 and 25 cm in length were collected, preferably from the beginning of each meter;
- Selected samples were weighed twice: once for the dry weight (in air) and once submerged in water, using a Toledo Prix precision balance with an accuracy of 0.01g;
- The measured values were then recorded in a digital table where the density was calculated according to Archimedes' principle by dividing the dry weight of the sample (Ps) by the difference between the dry weight and the submerged weight (Pi), using the following formula: Density = Ps/(Ps-Pi).

A total of 17,008 density intervals were measured across the diamond drilling, 6,098 at C1; 7,534 at C3 and 3,376 at C4. Density was compared against rock types, weathering and sulphide domains.

Table 6 below presents a summary of the average densities for the sulphide-mineralised domains in the C1, C3, and C4 deposits, with average values of zinc, copper, and lead. Block density for both mineralised areas and waste was determined using the Nearest Neighbour estimator. For the Oxide zone, a constant value of 1.98g/cm^3 was applied (average of weathered diamond core density measurements on prospects C3 and C4).

Table 8: Summary of average densities for sulphide-mineralised domains

Target	Domain Sulphide	Samples	Mean Density g/cm^3	Zn%	Cu%	Pb%
C1	Disseminated	334	**3.01**	1.36	0.4	0.4
	Semi-Massive	113	**3.14**	5.13	0.8	1.2
	Massive	105	**3.3**	13.6	1.7	3.2
C3	Disseminated	501	**3.08**	0.55	0.4	0.1
	Semi-Massive	172	**3.24**	1.55	1.3	0.2
	Massive	262	**3.91**	13.4	2.2	0.4
C4	Disseminated	803	**2.86**	0.72	0.1	0.2
	Semi-Massive	92	**3.16**	5.67	0.3	1.7
	Massive	66	**3.36**	10.3	0.4	3.3
Total		2,448				

Estimation Methodology

Geological modelling for the mineralisation of C1, C3 and C4 was done by interpretation of drill holes along vertical cross-sections, delineating domains for each metal (Cu, Zn, Pb, Ag and Au), conditioned by geological descriptions, grade continuity and structural interpretation. The consolidated polylines of mineralised domains were interpolated between the cross-sections to generate wireframes. Statistical

grade analysis of Cu, Zn, Pb, Ag and Au was performed with the application of grade capping for outlier values. The composited samples were estimated, on individual block models for each deposit, using ordinary kriging (OK) as a result of a variography analysis from each element (Cu, Zn, Pb, Ag and Au).

Density was estimated by Nearest Neighbour except for the Oxide mineralisation from C3 where, an average value of 1.95 was used.

Classification Criteria

Mineral Resource classification was considered based on drill hole spacing and continuity of mineralisation.

The portion of the resources which have drill hole spacing of 50m x 50m or closer, with good continuity of grade and structure has been classified as Indicated. Indicated resources were estimated almost exclusively with the first pass interpolation and extrapolated beyond the drill hole intersections up to 25m, if continuity of mineralisation could be reasonably assumed.

The portions of the MRE where drill-hole spacing is greater than 50m were classified as Inferred. Inferred mineral resources were extrapolated up to 50m from drill holes.

Inferred Resources carry a lower level of confidence compared to Indicated Resources and continued exploration, particularly additional drilling, is required to upgrade Inferred Resources to Indicated Resources. There is no assurance that additional work will upgrade Inferred Resources to Indicated or Measured categories. No Measured Resources have been estimated in the current updated MRE.

Cut-Off Grade and RPEEE

The Cut-off grade definition for the MRE was established based on NSR (Net Smelter Return). At this project stage, the Cut-off grade was calculated using the same criteria for C1, C3, and C4 deposits for exploitation via an open pit mining method. To ensure the reasonable prospects of eventual economic extraction, the calculation incorporated the parameters and assumptions outlined below.

Table 9: Parameters utilised for NSR (Net Smelter Return) Calculation the conceptual Open-Pit designing.

	Average 3 years Prices		Estimated Recoveries	
	US$/ton	US$/Oz	C3	C1 (C4)
Cu	8,914		95%	93%
Zn	3,017		86%	90%
Pb	2,173		76%	86%
Ag		23.30	74%	96%
Au		1,891.12	70%	85%

The cost composition for the cut-off calculation was derived from benchmarks obtained from other open-pit projects and operations in the central region of Brazil.

The NSR cut-off grade for the MRE is established at US$50.00 for C1 and C3 deposits, and US$80.00 for C4 deposits. C4 has more waste above the MRE, requiring a higher cut-off in order to reach mineralisation. These defined cut-off grades align with RPEEE (Reasonable Prospects for Economic Extraction) as outlined in the JORC Code 2012.

Metallurgy

Alvo prepared and sent over 315kg of diamond core in 202 individual samples from the C3 deposit and 155 samples (152Kg) from the C1 deposit in Central Brazil to Auralia Metallurgy (a specialist in minerals flotation) in Perth, Australia. The samples were selected and received under the supervision of BHM Process Consultants ("BHM"), specialists in Metallurgical testwork management and supervision.

Comminution and flotation testwork was undertaken on the samples and reported to the ASX ("Preliminary Metallurgical Testwork Indicates Excellent Recoveries" 9 November 2022). Recoveries using standard processes were well within Industry standards for polymetallic base metals projects and no deleterious elements were highlighted.

Alvo selected recovery values for the NSR calculation based on the preliminary flotation results from C3 and C1. These values (see Table 7 above) are calculated from recovered metals in all of the potentially economic concentrates. No payability was considered in these recovery factors.

Modifying Factors.

No Modifying Factors were applied to the reported Mineral resources. Factors such as mining dilution, open-pit operationalisation, ore loss, metallurgical recovery and payability will be applied during the mining evaluation of the Project.

ENQUIRIES

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References to Previous ASX Announcements

Reference in this report is made to previous announcements issued by Alvo Minerals Limited including:

- As reported in the announcement "Prospectus" dated 18 October 2021
- As reported in the announcement "Preliminary Metallurgical Testwork Indicates Excellent Recoveries" dated 9 November 2022
- As reported in the announcement "Drilling Identifies New Shallow, High-grade Copper Zone at Palma" dated 6 December 2022
- As reported in the announcement "Large Extension of High-grade Copper and Zinc Mineralisation" dated 19 January 2023
- As reported in the announcement "Major Step Out Extends VMS Mineralisation Over 100m Down Plunge" dated 1 May 2023
- As reported in the announcement "New VMS Discovery at Palma Delivers Broadest Base Metals Intercept to date" dated 1 August 2023

- As reported in the announcement "High-Grade Copper-Zinc Intersected at C4 Prospect" dated 24 April 2024

These above-mentioned announcements are available on the Company's website. The Company confirms that it is not aware of any new information or data that materially affects the information included in the above market announcements, and that the form and context in which the Competent Persons findings are presented have not been materially modified from the original market announcement.

Competent Person's Statement

The information contained in this announcement that relates to *information attributed to or compiled from the 'Mineral Resource Estimate'* is based upon information compiled by Mr Marcelo Batelochi, a Competent Person and Member of the Australasian Institute of Mining and Metallurgy. Mr Batelochi is a full-time employee of MB Consultaria and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the "Australasian Code for Reporting of Mineral Resources and Ore Reserves" (or JORC 2012). Mr Batelochi consents to the inclusion in this announcement of the matters based upon the information in the form and context in which it appears.

The information contained in this announcement that relates to recent exploration results is based upon information compiled by Mr Rob Smakman of Alvo Minerals Limited, a Competent Person and Fellow of the Australasian Institute of Mining and Metallurgy. Mr Smakman is a full-time employee of Alvo and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the "Australasian Code for Reporting of Mineral Resources and Ore Reserves" (or JORC 2012). Mr Smakman consents to the inclusion in this announcement of the matters based upon the information in the form and context in which it appears.

Forward Looking Statements

Statements regarding plans with respect to Alvo's exploration programs are forward-looking statements. Forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions which are outside Alvo's control and actual values, results or events may be materially different to those expressed or implied herein. Alvo does not undertake any obligation, except where expressly required to do so by law, to update or revise any information or any forward-looking statement to reflect any changes in events, conditions, or circumstances on which any such forward-looking statement is based.

Often, but not always, forward looking statements can generally be identified by the use of forward-looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", continue", "projected", "scheduled", "believes", "potential", "predict", "foresee", "proposed", "aim", "target", "opportunity", "could", "nominal", and "guidance", or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production outputs.

Forward-looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the Company's actual results, performance, and achievements to differ materially from any future results, performance or achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licenses and permits and diminishing quantities or grades of reserves, political and social risks, changes to the regulatory framework within which the Company operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation.

Forward-looking statements are based on the Company and its management's good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the Company's business and operations in the future. The Company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the Company's business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the Company or management or beyond the Company's control.

Although the Company attempts and has attempted to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements, or events not to be as anticipated, estimated or intended, and many events are beyond the reasonable control of the Company. Accordingly, readers are cautioned not to place undue reliance on forward-looking statements. Forward looking statements in these materials speak only at the date of issue. Subject to any continuing obligations under applicable law or any relevant securities exchange listing rules, in providing this information the Company does not undertake any obligation to publicly update or revise any of the forward-looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.

ABOUT ALVO

Alvo Minerals (ASX: ALV) is an active critical minerals exploration company, with an established exploration base in central Brazil.

The Company was founded to explore for base and precious metals, hunting high-grade copper and zinc at its Palma Project, adjacent to the Company's Bluebush REE Project. The Palma Project has a JORC 2012 Inferred Mineral Resource Estimate of 4.6Mt @ 1.0% Cu, 3.9% Zn, 0.4% Pb & 20g/t Ag.

Alvo is also exploring for Rare Earth Elements (**REE**) at the Bluebush Ionic Clay REE Project in Central Brazil. Bluebush is adjacent to and along strike from the privately-owned Serra Verde Ionic Clay REE Project, which is the only Ionic Clay REE project in commercial production outside of China.

Alvo's Ipora REE Project is an exciting greenfields exploration project targeting the Iporá alkaline intrusive complex, considered highly prospective for REEs, potentially of the highly valued ionic clay type. The Ipora REE Project is located in the State of Goias and is on similar geology and located adjacent to the PCH REE Project (Appia Rare Earths and Uranium Corporation, CSE:API).

Alvo's strategic intent is to aggressively explore and deliver growth through discovery, leveraging managements' extensive track record in Brazil. There are three phases to the exploration strategy – Discover, Expand and Upgrade.

Alvo is committed to fostering best-in-class stakeholder relations and supporting the local communities in which it operates.

APPENDIX 1

JORC Tables

Section 1 Sampling Techniques and Data (Criteria in this section apply to all succeeding sections, note data in this section is extracted from historic reports)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse Nickel that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• Half diamond core was sampled and submitted for analysis, ensuring representivity of the sample zones. Sampling was typically 1m in mineralised zones unless the geologist determined a different length was appropriate. Areas away from the main mineralised zones may have been sampled as 2m composite samples. • Sampling was supervised by Alvo geologists who selected the sampling zones. • Geologists log the mineralisation as massive, semi-massive, disseminated, stringer, brecciated or barren. These logs were used to determine the main mineralisation zones, which dictated the sampling. Mineralisation was also logged as potentially supergene mineralised in the oxidised zone.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• Standard-tube diamond drilling by independent drill contractor. Drillhole diameter was variable- HW for collar and friable material, HQ diameter was generally used until the base of complete oxidation and then the diameter reduced to NQ. All holes are down-hole oriented using Reflex Gyro Sprint-IQ™ tool. Drill core is oriented using NQ ACT 3 orienting tool from Reflex.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Recoveries are recorded by both the driller's assistant (on site) and Alvo field assistant once the core has been received at the core shed. Recoveries are measured by comparing the length of the drill run with the amount of core actually recovered. Recovery has averaged >95% for all drilling to date. • Drillers are penalised for poor recovery and are constantly supervised at the rig to ensure care is taken to ensure high recoveries. • No relationship is believed to exist between recovery and grade.

Criteria	JORC Code explanation	Commentary
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• All holes have been geologically logged by Alvo geologists, to a detail relevant for inclusion in an MRE. Care is taken to ensure metallurgical factors are included (specifically the % of and type of sulphides present). Basic geotechnical logging is standard. • Logging and core processing is both qualitative and quantitative. Core is photographed wet and dry, measured for magnetic susceptibility, conductivity, density, RQD and basic geotechnical logging. All core is structurally logged by geologists to look for planar and linear features. Measurements of these are taken on both oriented and non-oriented core. • All drilling results reported have been logged onsite by Alvo geologists. Logs include hole number, hole location, date drilled, collar, dip and azimuth as well as qualitative data such as rock type, and descriptions of the colour, alteration, weathering, grainsize, mineralisation and texture. • All metreage reported has been logged
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Drill core is sawn in half and one half (consistently the same half) of the core is sampled. The remaining half is stored by Alvo in its dedicated facility. • Sample size, being generally 1m sample intervals, is appropriate to the material being sampled and considered to be representative.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• SGS Geosol Laboratorios Ltda (SGS Geosol) are used for multi element base metals, silver and gold analyses on half diamond core or RC samples. The lab techniques described below are considered appropriate for the style of mineralisation at the Palma Project ○ Samples are dried, crushed until 75% pass 3mm, homogenised and split with 250-300g pulverised until 95% passing 150# ○ Gold is determined by 30g fire assay ○ Multi element (including Cu, Zn, Pb and Ag) are determined by multi-acid digestion and ICP-OES. Samples above 1% Zn, Cu, Pb or 100 g/t Ag are re-tested using a higher lower detection limit. Samples above 5% Pb are re-tested using a higher detection limit. • The QA/QC data includes standards, blanks, duplicates and laboratory checks. Alvo inserts internationally certified standards at a rate of 1 in 25 samples, blanks 1 in 50 samples. Duplicates are selected from the crushed samples at a rate of 1 in 25 samples and follow the same assaying procedure. • Alvo has reviewed the QA/QC data for all lab samples and are satisfied the results are within acceptable limits.

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Significant intercept tables are prepared by Alvo personal and checked by at least one other geologist. • No twinned holes are being reported. • All data is received from the laboratories and uploaded into excel spreadsheets where it is checked and uploaded into cloud storage. Once QA/QC procedures have been completed, the data is loaded into an Access database, and more recently using the MX Deposit™ software • No adjustments to the data were made. Weighted averages were used to calculate significant intercepts. For duplicates, the first sample is recorded for intercepts.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Alvo is using differential GPS to locate and record the drillhole collar locations. All drillholes are downhole surveyed using the Gyro Sprint-IQ tool from Reflex. • All location data has been recorded SIRGAS 2000 UTM zone 22S. • Topographic control is adequate for the exploration at Palma.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Drillholes were variably spaced- Phase 2 drilling at C3 has targeted step-outs from the JORC 2012 MRE and other holes considered important for any future MRE update. • Drill spacing is considered sufficient to complement the previously reported (2021) Inferred JORC 2012 MRE. Results will improve the understanding of geological and grade continuity. • No compositing has been applied to the drill results (beyond weight averaging the results). Some sampling at 2m intervals was applied in areas away from the main VMS mineralisation.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Drilling was oriented to intercept mineralisation as perpendicular as possible. No bias is believed to have occurred however geological and geophysical evidence suggests folding and faulting has occurred. Sampling lengths were generally 1m downhole, unless there was a specific geological control required by the geologist. Several 'scissor holes' (holes drilled in the opposite azimuth to the normal) were drilled in order to aid understanding of geological continuity and or ore-body orientation. • All intercepts recorded are downhole intervals and may not equal true width. Scissor holes are reported the same as normally oriented holes, but noted in comments.
Sample security	• *The measures taken to ensure sample security.*	• Drillcore is transported from the field to a locked facility by Alvo or drilling staff daily. Samples are prepared in the coreshed by Alvo staff and transported to the lab by a dedicated transport company.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits of the techniques or data has been undertaken at this stage.

Section 2 Reporting of Exploration Results (Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The C3 deposit is located on exploration tenement 800.744/1978, C1 is located on tenements 811.702/1975, 811.686/1975 and 860.310/1984 and C4 is located on tenement 860.317/1984 which are a part of the agreement Alvo has with the CPRM (Geological Survey of Brazil). Alvo has the right to explore and eventually transfer 100% of this and other tenements, subject to several staged payments, drilling and payment of 1.71% royalty (above statutory government royalties). • Alvo is confident the tenements are in good standing and no known impediments exist for further exploration or eventual mining, apart from normal statutory reporting, local access agreements and state and federal approvals.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Exploration was mainly completed by the CPRM . The work was completed to high standard for the time and Alvo was able to estimate an inferred JORC compliant Mineral Resource Estimate based on the information and work completed by the CPRM. The interpretation of this historical work has guided much of the drilling and exploration to date which has been successful in upgrading and extending the geological potential.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Palma polymetallic project is located principally in the Palmeiropolis volcano-sedimentary sequences (PVSS), composed of a series of bimodal volcanic rocks and associated sedimentary units, regionally metamorphosed to amphibolite facies. The mineralisation is of a Volcanogenic Massive Sulphide (VMS) type, occurring at or near the contact between a metavolcanic unit and meta-sedimentary schist and comprises pyrite, pyrrhotite, sphalerite, chalcopyrite, galena, occurring as disseminated, brecciated and massive form.

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*
		• No new drilling is reported in the report. Previous reports with drilling hole information are included in the text.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.*	• Significant intercepts (of the drilling) were calculated using minimum sample length of 1m, with up to 2m of consecutive dilution, samples included with values > 0.2%Cu or >0.5% Zn or >0.1g/t Au. No upper cuts were considered. No Significant Intercepts are added in this report. • Weighted averages were calculated for all intercepts.

Criteria	JORC Code explanation	Commentary
	• *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• At C3, the mineralised domain dips moderately to steeply towards east-southeast with the drill holes planned to intersect the mineralised domain in a perpendicular manner. • At C4, mineralisation is interpreted as being overall planar (horizontal or shallowly dipping) and the intercepts are therefore interpreted to be approximately true width. At C1, the overall mineralised domainis folded, sometimes dipping steeply to the SE with localised folding observed in drillcore. The folding has resulted in complex shapes and drilling cannot always intercept perpendicular to mineralisation. The fold hinge has been measured as plunging shallowly to the South. The downhole depths are reported, true width is not accurately known at this stage.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• See diagrams reported in the announcement
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• All results are reported above the cut-offs described above. Not all of all the holes are sampled.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Extensive exploration data and information has been completed at the Palma Project and previously reported. A summary is provided below; • Airborne geophysics. There have been several combined aeromagnetic and radiometric surveys which cover the area, generally flown by Brazilian Government Agencies. These are generally broad spaced and useful for regional context. In 2008, private groups Lara Minerals and Voltorantim SA flew an heli-borne VTEM survey across the area which highlighted multiple conductors within the PVSS. These may be related to massive sulphide accumulations, however most of these potential conductors were not followed up. • Drilling: Drilling by the CPRM was completed in the '70's and '80's and is included in this summary for the C1 and C3 prospects. CPRM also drilled other targets at C2, C4 and C5 where they discovered mineralisation. Mineralisation continuity and drill density was insufficient to consider in Alvo's MRE estimate of 2021. CPRM also drilled several targets that did not intersect economic mineralisation. JICA (Japanese government Agency) drilled 7 holes in the 1980's mainly around the C4 target. Lara/Votorantim drilled 11 holes into targets they defined from the VTEM survey.

Criteria	JORC Code explanation	Commentary
		• Metallurgical testwork: The CPRM completed several phases of metallurgical testwork including bench and pilot plant scale. This testwork is summarised in the Prospectus issued by Alvo Minerals Ltd in 2021. • Alvo estimated a JORC compliant MRE for the C1 and C3 prospects in 2021, based on the historical drilling of the CPRM. • Ground geophysics has been completed by Alvo across these prospects. Surveys have included fixed loop electromagnetic surveys (FLEM), Downhole electromagnetic surveys (DHEM) and Induced Polarisation Surveys (IP).
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Alvo will continue regional exploration program – aiming to discover other VMS mineralisation that could collectively add to the Project Inventory. Additional drilling at C1, C3 and C4 is being considered in order to increase and upgrade the mineralisation. • Alvo has in-house electromagnetic survey equipment and is performing IP, FLEM and DHEM surveys. It is expected these surveys will enhance the drilling program by delineating possible extensions of the highly conductive mineralisation.

Section 3; Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database Integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Alvo Minerals provided data for C1, C3 and C4 Deposits in exported in text file from a Microsoft Access database constructed internally which has been updated from Microsoft Excel worksheets. • The database is composed by: - historical drilling data obtained from CPRM; - drilling campaign conducted by Alvo Minerals since October 2021. • Updating an Access database with Excel worksheets can streamline the data management for a Junior Company with restricted staff and budget, but it introduces several risks that must be mitigated to ensure the process of updating and consolidation are both effective and secure. • Following this approach, the relational database has been validated for internal consistency within and between tables for collar, survey, assay and lithology files. All original files and printed copies of the assay data and drill logs has been filed in the project and backup. • The CP checked the data integrity for: - The drilling logs, codification, downhole intervals of lithology and geological observations by visual inspection and during the field visit. - The original assay certificates were reviewed and cross-verified with the corresponding the Assays text file received. • The data set is suitable for resource estimation, which the mineral resource estimation was performed using 99.99% of the meters assayed. The historic data does not have downhole survey information and the core recovery is often below 90%, which the loss of core relevant for low confidence of the assays.

Criteria	JORC Code explanation	Commentary
Site Visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Mr M. Batelochi has visited the project in Palmeiropolis during 24-29th July 2023. The onsite checks was focused on: - Regional Geology and regional VMS targets inspecting outcrops and geomorphology expression of the geological formations; - Deposits C1, C3 and C4 where checked the drill collar coordinates by handheld GPS (metric precision) that were marked with wooden pegs and concrete plugs (with steel printed identification tags); - visual inspection of cores from several drill holes performed by Alvo Minerals for referred deposits. The Drillhole intervals were compared against database results and drill logs. - discussions on the complexity of the structural geology that affects directly the geometries of the orebodies. Also, the understanding of the sulphide and oxide species and the oxidized Copper Ore; - Verification of the infrastructure of storage sites for diamond drilling cores.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• The geological information provided by Alvo Minerals included detailed observations, enabling a comprehensive understanding of their interpretative work. The level of detail allowed the CP own interpretations through three-dimensional Ore Modeling. • The Geological Interpretation and Grade shell modeling was conducted to define the mineralized domains of in the VMS Polymetallic system, for eventual economic extraction of Zinc, Copper, Lead, Silver and Gold. The delineated mineralised bodies were also differentiated in relation to sulfide and weathered zones due to their distinct geometallurgical behavior. • The methodology applied for modeling the mineralization of C1, C3, and C4 Deposits involved the traditional interpretation of drill holes along vertical sections, delineating domains for each type of mineralization, conditioned by geological descriptions and structural interpretation. The consolidated polylines of mineralised domains were interpolated between the vertical sections to generate wireframes. • Due to the complexity of the mineralisation it was decided to create a series of 3D wireframes via interpretation of the sections. Section spacing varied between 10 to 100m and the interpretation included an oxidation surfaces for all targets. Also, due to an assessment of the variation of the mineral grades between drillholes and the diffuse boundaries to the mineralisation within drillholes it was decided to create high-grade domains. This was done to minimize the possibility of a conditional bias to the composite data that could result in overstatement of the grades in the resource. • It was established that there is an association between massive and disseminated sulphides and stringers containing anomalous values of Zinc, Copper, Lead/Silver and Gold within the altered meta-volcano-sedimentary Palmeiropolis Complex. The grade shell thresholds (Thr) were defined Statistically and via Visual Inspection. The Thr for the various deposits are listed below: • For C3 Deposit: o Cu LG (Low Grade) = >0.1%; CuHG (High Grade) = >1%; o ZnLG = >0.4%; Zn HG >4%; o AgLG = >4ppm; AgHG = >16ppm. o Au = >0.1 g/t • For C1 Deposit: o Zn = >2%; o Ag = >6ppm; o Cu = >0.20%. o Au = >0.1 g/t • For C4 Deposit: ○ Zn LG = >0.4%; Zn HG = >2% ○ Cu = >0.2% ○ Ag (Pb)= >5 ppm ○ Au = >0,1 ppm For C3 Oxide Deposit: o Cu = >0.1%; • Generated High Grade and Low Grade envelopes, by linking Vertical Sections, for Zinc, Copper, Lead/Silver, and Gold mineralisation.

Criteria	JORC Code explanation	Commentary
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource*	• The C1 deposit extend along strike for 1000m (along S20W orientation) in a restricted 100m wide folded structure, up to 150m depth. The modeling was conducted in stages, utilizing the assays of core sample to delineate independent domains for Copper, Zinc, Lead/Silver and Gold. For each model the delineation of shape of the mineralisation was conditioned by mineral paragenesis, geology/structures and levels of hydrothermal alteration. • The C3 Deposit extends along strike for 600m, an overall planar structure oriented S25E and 75SE dipping, extending up to 350m depth. As with C1, the modeling was conducted in stages, utilizing the assays of core sample to delineate independent High Grade and Low-Grade domains for Copper, Zinc, Lead/Silver and Gold. Each solid was conducted in several stages. Initially, a general contour encompassing zones of massive and disseminated sulfides (High and Low grade respectively) supported by paragenesis hydrothermal alteration zones, and structural information from geological logs • C4 deposit extends 500m along E-W and about 250m along N-S as a subhorizontal layer dipping slightly to the northeast. The modelling was also conducted in stages, utilizing the assays of drill core samples to delineate independent High-Grade and Low-Grade domains for Copper, Zinc, Lead/Silver, and Gold. All the information available from geological logs, including paragenesis hydrothermal alteration zones and structural information, was considered • The oxide estimated on C3 is the material, including soil and saprolite, from the topographic surface to the limit of the fresh rock, around 40 meters deep. At the surface, it extends 500m along the strike of the sulphide mineralisation S20E, deposit with varying widths, averaging 80m. .

Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	• The Mineral Resource Estimates update are supported from historical drilling data obtained from CPRM, which were partially re-assayed and validated by Alvo Minerals. Alvo Minerals conducted a drilling campaign of over 20,000m of diamond drilling and 1,500m of RC from October 2021.
		• The estimate was prepared by Marcelo A. Batelochi, Member AusIMM (Chartered Professional), supported by guidelines compliant with the Joint Ore Reserves Committee of Australasia 2012 (JORC) reporting code that is accordance with the principles of the CRIRSCO Template (Including under the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves).
		• The Mineral Resource Estimate (MRE) started with the analysis of a data room provided by Alvo, followed by a field visit in July 2023. The methodology employed involved:
		  ◦ Database consolidation and QAQC;
		  ◦ 2m composite Data Analysis and Capping Definitions
		  ◦ Variography - 3 directions – along strike; along Dip and Orthogonal;
		  ◦ Interpolation by Ordinary Kriging ("OK"). Block Density was determined using the Nearest Neighbour estimator.
		  ◦ Mineral resources classification based on drilling spacing and continuity of mineralisation.
		  ◦ The Cut-off grade definition for Mineral Resources was established based on NSR (Net Smelter Return). At this project stage, the Cut-off grade was calculated using the same criteria for C1, C3, and C4 deposit

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td rowspan="2">Estimation and modelling techniques</td><td>

The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.
The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.
The assumptions made regarding recovery of by-products.
Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).
In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.
Any assumptions behind modelling of selective mining units

</td><td>

Following the completion of grade estimation encompassing the mineralized wireframes from C1, C3 and C4 deposits, a visual check of the block model was conducted, and it was concluded that the block model fairly represents the grades observed in the drillholes.
Additionally, validation of the block model was performed through comparative analysis of summary statistics and Swath Plots. These analyses confirmed the suitability of the estimated grades methodology and results for inclusion in the Mineral Resources Report, with no significant issues identified.
No by-product recovery has been calculated in the resource estimate.
No deleterious elements or other non-grade economically significant variables have been modelled due to a lack of Geometallurgical Studies.

<table>
<tr><th colspan="4">C1 Target - Block model dimension</th></tr>
<tr><th>Type</th><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>Minimum Corner</td><td>795,200</td><td>8,552,200</td><td>97.5</td></tr>
<tr><td>Maximum Corner</td><td>796,550</td><td>8,553,800</td><td>430</td></tr>
<tr><td>User Block Size</td><td>5</td><td>5</td><td>2.5</td></tr>
<tr><td>Nb of Blocks</td><td>270</td><td>320</td><td>133</td></tr>
<tr><td>Rotation (anti-clockwise in Z axis for Az.)</td><td>Azimuth</td><td>Dip</td><td>Pitch</td></tr>
<tr><td></td><td>0</td><td>0</td><td>0</td></tr>
<tr><th colspan="4">C3 Target - Block model dimension</th></tr>
<tr><th>Type</th><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>Minimum Corner</td><td>792,624</td><td>8,567,200</td><td>-102</td></tr>
<tr><td>Maximum Corner</td><td>793,324</td><td>8,568,100</td><td>430</td></tr>
<tr><td>User Block Size</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>Nb of Blocks</td><td>175</td><td>225</td><td>133</td></tr>
<tr><td>Rotation (anti-clockwise in Z axis for Az.)</td><td>Azimuth</td><td>Dip</td><td>Pitch</td></tr>
<tr><td></td><td>0</td><td>0</td><td>0</td></tr>
<tr><th colspan="4">C4 Target - Block model dimension</th></tr>
<tr><th>Type</th><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>Minimum Corner</td><td>792,370</td><td>8,548,090</td><td>14.137</td></tr>
<tr><td>Maximum Corner</td><td>793,414</td><td>8,548,810</td><td>470.137</td></tr>
<tr><td>User Block Size</td><td>12</td><td>12</td><td>4</td></tr>
<tr><td>Nb of Blocks</td><td>87</td><td>60</td><td>114</td></tr>
<tr><td>Rotation (anti-clockwise in Z axis for Az.)</td><td>Azimuth</td><td>Dip</td><td>Pitch</td></tr>
<tr><td></td><td>0</td><td>0</td><td>0</td></tr>
<tr><td colspan="4">Coordinates UTM Zone 22L | Datum SIRGAS</td></tr>
</table>

Economic evaluation of the deposit is at a Pre-Economic Assessment stage, and the resource evaluation does not consider selective mining units (SMU).

</td></tr>
<tr><td>

Any assumptions about correlation between variables.

</td><td>

Grade modelling did not include any specific assumptions about correlation between variables.

</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td>• Description of how the geological interpretation was used to control the resource estimates.</td><td>• It was established that there is an association between massive and disseminated sulphides and stringers containing anomalous values of Zinc, Copper, Lead/Silver, and Gold within the altered meta-volcano-sedimentary Palmeiropolis Complex.
• The grade shell thresholds (Thr) were defined by Statistical analysis and Visual Inspection.</td></tr>
<tr><td></td><td>• Discussion of basis for using or not using grade cutting or capping.</td><td>• Extreme values ("outliers") are those that fall outside the normal range in data distribution analysis. The treatment of these values aims to avoid problems and errors in the grade estimation of blocks affected by such extreme values. This is because outliers, which are point information without volumetric relevance, are not appropriate for the change of support from point data to block data and can lead to overestimated block interpolated values.
• At the Palma Project, the occurrence of extreme values in the grades of Zn, Cu, Pb, Ag, and Au were analyzed using probability plots on a logarithmic scale
• In deposit C1, there were no significant extreme values in the samples from the different modeled domains; therefore, capping was not applied. In deposit C3, despite the delineation of high-grade (HG) and low-grade (LG) domains, there were still occurrences of extreme values, which were subsequently transformed. In deposit C4, only the grades of Cu% and Au ppm showed extreme values, which were appropriately treated.
<table>
<tr><th>Target</th><th>Domain</th><th>Element</th><th>Capping</th></tr>
<tr><td rowspan="6">C1</td><td>Zn</td><td>Zn %</td><td>Not applied</td></tr>
<tr><td>Cu HG</td><td>Cu %</td><td>Not applied</td></tr>
<tr><td>Cu LG</td><td>Cu %</td><td>Not applied</td></tr>
<tr><td rowspan="2">Ag LG</td><td>Ag g/t</td><td>Not applied</td></tr>
<tr><td>Pb %</td><td>Not applied</td></tr>
<tr><td>Au C1</td><td>Au g/t</td><td>Not applied</td></tr>
<tr><td rowspan="8">C3</td><td>Zn HG</td><td>Zn %</td><td>Not applied</td></tr>
<tr><td>Zn LG</td><td>Zn %</td><td>Not applied</td></tr>
<tr><td>Cu HG</td><td>Cu %</td><td>10.0</td></tr>
<tr><td>Cu LG</td><td>Cu %</td><td>2.0</td></tr>
<tr><td rowspan="2">Ag HG</td><td>Pb %</td><td>4.5</td></tr>
<tr><td>Ag g/t</td><td>230.0</td></tr>
<tr><td rowspan="2">Ag LG</td><td>Pb %</td><td>4.5</td></tr>
<tr><td>Ag g/t</td><td>44.0</td></tr>
<tr><td>Au C3</td><td>Au g/t</td><td>3.0</td></tr>
<tr><td rowspan="6">C4</td><td>Zn HG</td><td>Zn %</td><td>Not applied</td></tr>
<tr><td>Zn LG</td><td></td><td>20.0</td></tr>
<tr><td>Cu LG</td><td>Cu %</td><td>1.6</td></tr>
<tr><td rowspan="2">Ag LG</td><td>Pb %</td><td>9.2</td></tr>
<tr><td>Ag g/t</td><td>180.0</td></tr>
<tr><td>Au C4</td><td>Au g/t</td><td>1.0</td></tr>
</table>
• No capping was applied on C3 Oxide</td></tr>
<tr><td>Moisture</td><td>• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</td><td>• Tonnages are estimated on a dry basis.</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Cut-off Parameters</td><td>• The basis of the adopted cut-off grade(s) or quality parameters applied.</td><td>• The Cut-off grade definition for Mineral Resources was established based on NSR (Net Smelter Return). At this project stage, the Cut-off grade was calculated using the same criteria for C1, C3, and C4 deposits for an Open Pit mining Method. To ensure the reasonable prospects of eventual economic extraction, the calculation incorporated the parameters and assumptions
<table>
<tr><th rowspan="2">Metal</th><th colspan="3">TABLE SIMUALTION - link to tables below</th><th rowspan="2">Metallurgical Recovery C3: Source: BHM 2023</th><th rowspan="2">Metallurgical Recovery C1&C4: Source: BHM 2023</th></tr>
<tr><th>US$/ton</th><th>US$/lbs</th><th>US$/Oz</th></tr>
<tr><td>Cu</td><td>8,914</td><td>4.043</td><td></td><td>95%</td><td>93%</td></tr>
<tr><td>Zn</td><td>3,017</td><td>1.369</td><td></td><td>86%</td><td>90%</td></tr>
<tr><td>Pb</td><td>2,173</td><td>0.985</td><td></td><td>77%</td><td>86%</td></tr>
<tr><td>Ag</td><td>724,798</td><td></td><td>23.30</td><td>74%</td><td>96%</td></tr>
<tr><td>Au</td><td>58,818,575</td><td></td><td>1,891.12</td><td>70%</td><td>85%</td></tr>
</table>
Mining costs of 4.79 US$/ton ROM and 2.06 US$ for waste. Processing plant cost of 13.31 US$/ton and G&A cost of 5.69 US$/t. Theses costs are based on similar operations in central region of Brazil.
• The NSR (Net Smelter Return) cut-off grade for Mineral Resource Estimates is established at US$50 for C1 and C3 deposits, and US$80 for C4. At these parameters, all of the resources reported are within theoretical open-pit limits. These defined cut-off grades align with RPPEE (Reasonable Prospects for Economic Extraction) as outlined in the JORC Code 2012.
• Copper Grade in Percentage was reported for Oxide Material at C3.
• For the C3 Oxide Material, a Cut Off Grade of 0.15% Cu was adopted, with a Cu recovery of 70%, based on a similar South American Projects.</td></tr>
<tr><td>Mining factors or assumptions</td><td>• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made</td><td>• Economic evaluation of the mineralisation is at an Pre-Economic Assessment stage, and the mining parameters are not yet being considered consistent for any assumptions.</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Metallurgical factors or assumptions</td><td>● The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</td><td>● The Mineral Processing and Metallurgical Testing report conducted by BHM Consultants under the title: "Alvo Minerals Limited Metallurgical Testwork Report Palma VMS Base Metals Project - Project: 1140-ALV-TR-001 Rev0 - May 2023".
● Based on reported work by BHM, the assumed recovery factor for the NSR calculation are below. These include all of the recovered metals to all concentrates, and assume 100% payability):
<table><tr><th>Metal</th><th>Metallurgical Recovery C3: Source: BHM 2023</th><th>Metallurgical Recovery C1&C4: Source: BHM 2023</th></tr><tr><td>Cu</td><td>95.3%</td><td>93.3%</td></tr><tr><td>Zn</td><td>86.4%</td><td>89.7%</td></tr><tr><td>Pb</td><td>76.5%</td><td>85.6%</td></tr><tr><td>Ag</td><td>74.3%</td><td>96%</td></tr><tr><td>Au</td><td>70%</td><td>85%</td></tr></table>● For Oxide Material it was assumed 70% of Copper Recovery, supported by benchmark information from other copper Heap-Leach projects in South America.</td></tr>
<tr><td>Environmental factors or assumptions</td><td>● Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made</td><td>● Environmental considerations for economic extraction of the deposits have not yet been evaluated in detail.
● Some testing of tailings from C3 have been reported in order to consider the suitability for sulphuric acid plant for treating of the sulphur rich tailings.
● Alvo has recently received the Terms of Reference (TOR) for an Environmental Impact Assessment (EIA), issued by the state environmental authority. Alvo believes the TOR and EIA are standard and constitute normal stages of potential project development.</td></tr>
</table>

Criteria	JORC Code explanation	Commentary

Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*
	• *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.*
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*
		• The density measurements were performed in the majority of the drill cores, following the procedure:
		  • samples of 10 to 25 cm in length were collected, preferably from the beginning of each meter of the intact core;
		  • samples were individually weighed using a Toledo Prix precision balance with a resolution of 0.01g (two decimal places);
		  • Each density sample was measured twice: once for the dry weight (in air) and once for the submerged weight (in water).
		  • The measured values were then recorded in a digital table where the density calculations were performed. Density was calculated according to Archimedes' principle by dividing the dry weight of the sample (Ps) by the difference between the dry weight and the submerged weight (Pi), using the following formula: $\boldsymbol{Densi}$ty =$\boldsymbol{Ps}$ / ($\boldsymbol{Ps}$–$\boldsymbol{Pi}$)
		• During the diamond drilling campaign, a total of 17,536 density intervals were measured, of which 6,098 at C1; 7,534 at C3 and 3,904 at C4. In C1 and C4, the massive sulfide domains have similar densities and dispersions compared to those of the C3 deposit. The C3 deposit has a higher mean and less pronounced dispersion. Semi-massive sulfides generally show low variability in data with approximate average values, except in the C4 deposit, where average values are higher, possibly due to spatial correlation with the massive domains.
		• The density for C3 Oxide was assumed to be 1.95 g/cm^3 based on weathered drill core measurements from samples around C3, (43 saprolite samples and 4 soil samples).
		• Density data for the C1, C3, and C4 deposits in the modeled mineralised domains were estimated using the Nearest Neighbour method. In waste regions, a constant value was applied as in the Oxide Zone.
		• The density samples were unconstrained to support the estimates by Nearest Neighbour (NN), with a hard boundary between Ore and Waste. A single pass with similar search parameters was utilized to cover of all blocks on the density block model. Raw data was applied for C1 and C3 deposits, while composite data at 1m intervals was used for the C4 deposit

Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*
	• *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*
		• Mineral Resource classification is based on drill density and the continuity of mineralisation.
		• The portion of the resources which has drill hole spacing of 50m x 50m or closer, with good continuity of grade and structure has been classified as Indicated. Indicated resources were estimated almost exclusively with the first pass interpolation and extrapolated beyond the drill hole intersections up to 25m, if continuity of mineralisation could be reasonably assumed.
		• The portions of the MRE where drill-hole spacing is greater than 50m were classified as Inferred. Inferred mineral resources were extrapolated up to 50m from drill holes.
		• The C4 deposit is classified as Inferred due to wider drill spacing.
		• The QP has an opinion that the classification criteria has some positive and negative considerations:
		• Positive aspects:
		  • The geological model is relatively straightforward, primarily in the structural hanging wall of a basal structure/contact.
		  • Adequate drillhole density supports the classification of Mineral Resources estimates.
		  • Alvo drilling adheres to good sampling procedures, and there are no issues with the QAQC data.
		  • A significant amount of density data of reasonable quality is available.
		  • The grade interpolation method is deemed appropriate.

Criteria	JORC Code explanation	Commentary
		Negative aspects: • Data point spacing in peripheral areas, particularly in domain 2 drilling, is wide. • Lack of appropriate QAQC data for the CPRM drilling introduces uncertainty in accuracy. ● Inferred Resources carry a lower level of confidence compared to Indicated Resources and cannot be converted to a Mineral Reserve. Continued exploration, particularly additional drilling, is required to upgrade Inferred Resources to Indicated Resources.
Audits or reviews	● The results of any audits or reviews of Mineral Resource estimates.	● The acquired data on the deposits has been subject to internal audits and revised by the Competent Person for Mineral Resources Estimates. ● A Foreign Estimate was previously Reported at Palma in the ALVO MINERALS LIMITED IPO PROSPECTUS (October 2021): *"A foreign resource estimate for the C1, C2, C3 and C4 prospects was reported by the Brazilian Geological Survey (CPRM 2016). The foreign estimate is not reported in accordance with the JORC Code. A competent Person has not done sufficient work to classify the foreign estimate as mineral resources in accordance with the JORC Code and it is uncertain that following evaluation and or further exploration that the foreign estimate will be able to be reported as mineral resources according to the JORC Code.* *The CPRM classified the resource as inferred based around broadly similar assumptions around geological continuity, sample integrity and spatial certainty as the JORC Code, however they are not reported according to the JORC code. The foreign estimate is considered relevant to the current MRE. It was estimated by locally qualified geoscientists and despite a different wireframe interpretation, estimation method and lower cut-off, the numbers are broadly similar to the current MRE. The foreign estimate was not relied upon by the authors.* *The information used by the CPRM, which they relied upon to estimate the foreign estimate is the same information that has been described elsewhere in this report. CPRM used a cross-sectional geological interpretation to build the 3D wireframes and utilised a lower cu-off of Zn+Pb >1% as their criteria for building the block model. Grades were composited to 0.5m and block model grade was estimated using the Inverse Distance Squared method.* *The authors did not rely upon any new information for the current MRE beyond what was included in the foreign estimate.* *The authors analysed the drill, geological, assay and survey data from the C4 prospect, however in* *their opinion, there was not enough data to support a JORC compliant resource estimate."*

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	• Sample spacing: the pass categories are derived from the search parameters which contain data point requirements in order to estimate metal block grades i.e. a function of the data point spacing, which ultimately is a function of the drillhole spacing. The resource classification is derived from the pass category allocated to each block with subsequent consideration of other impacting factors. • The geology of the deposit and the style of mineralization: VMS mineralization with structurally overprinted mineralization in a high strain regime tends to have lower continuity which can affect the confidence in the accuracy of the MRE. • The sampling methods: the bulk of the resource estimates have been generated from diamond drilling results which is generally considered the best sampling technique (assuming good core recoveries) and thus provides increased confidence for the MRE. • Variography: as described above for the densely drilled sectors, <50m hole spacing, had good spatial variability. But in non-densely drilled sectors indicate potential issues with understanding the spatial continuity. It is important to be clear that the concept of weak to moderate variography has a limiting effect on the confidence of the MRE. • Density data: there is a substantial amount of density data which appears to be of good quality and can be modelled by estimators interpolants. The range in densities for the mineralization and surrounding host rock is relatively small which increases the confidence in the estimated density data and hence the MRE. • The QAQC procedures and outcomes: these are considered to be to industry standard. The QAQC outcomes impart a high level of confidence in the appropriateness of the sampling methods and the accuracy of these assays. • The historic data: this is lower confidence with unsampled sections and no records of historical QAQC data, despite the validation of dataset carried out by CPRM. Some twin holes are recommended. The Confidence in the MRE is reduced if there is a lack of QAQC data. • Core recoveries: Alvo's core recovery of >95% is reasonable to ensure the confidence of the samples. • Mineralised envelope interpretation. The use of unconstrained composite data precludes the need for mineral domains. This simplifies the grade interpolation and removes the risk of introducing conditional biases, which can lead to an overstatement of metal grades, especially with the use of high-grade metal domains. The mineralization at Palma is marked by a rather abrupt basal termination associated with folded and or sheared contact. This contact was well logged in the drilling data such that a 3D surface could easily be created and this surface was used to both cut the base of the unconstrained composited data and to prevent any grade interpolation below it. Progressing up sequence from this basal contact the mineralization gradually peters out into the hanging wall, providing a natural limit to the values of the block grade interpolation. The result is a rather simple geological model but with some clear cut geological controls to mineralization.

Criteria	JORC Code explanation	Commentary
		• The block size. With varying drillhole spacing achieving an optimal block size depends on compromises. Often a small block size can lead to over-smoothing of grades and thus an over-statement of grade for Mineral Resources. Large block sizes do not provide the appropriate resolution for selective mining in open pit scenarios. Normally a recoverable resource model would have a panel/block size with dimensions equal to the drillhole spacing. At this Mineral Resource Estimates the block sizes were defined intuitively for the Competent Person that the SMU is considered appropriate size for selective mining and represents the minimum dimensions of any mining unit. Further studies should be conducted to determine the best block size and SMU for the deposits. • Top cutting. Whilst the use of top cutting is regarded as standard industry practice, consideration should have a sound geological or statistical basis. MB generally has concerns to apply top cuts preferring to control any high-grade samples by a combination of the grade interpolation method, geological interpretation, composite length, variography and search parameters. For Palma, top cuts were applied to the composite data for C3 and C4, but for C1 it was not considered as high grades didn't require top cutting. Top cut should be subject of constant monitoring focusing on increases the confidence of the MRE. • The Estimation grade method is affected by outliers (very high-grade samples), indicating skewed data distribution with extreme values. It is recommended for the next phase of the project to test of a more sophisticated grade interpolation technique. In a check model there are some blocks where the OK block grades having a poor match with the drilling data as well as an apparent overstatement of grades i.e. high grade drill data had been smeared out into low grade or no grade areas. The OK method is acceptable for grade interpolation for these elements but a more sophisticated grade interpolation technique could increase the level of confidence. • Search strategy is considered adequate for the estimates of Indicated and Inferred resources. • Reporting Mineral Resources used NSR as a cut-off, supported by metallurgical testwork carried out at C1 and C3 deposits, costs based on bench-marked Brazilian deposits and long term metals prices are appropriate for this type and stage of Project. It is recommended to advance the conceptual studies to provide more robust and accurate parameters for the Project Evaluation. • The Competent Person is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the potential development of this mineral resources updates.

Criteria	JORC Code explanation	Commentary
	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• Economic viability can only be assessed through the completion of engineering studies defining reserves, including PFS and FS. Resource classification adheres to JORC 2012 standards; it cannot be assumed that all or any part of Inferred Mineral Resources will be upgraded to Indicated or Measured as a result of continued exploration. • A US$ 50 per tonne NSR cut-off value was used as the base case for reporting mineral resources at C1 and C3 Deposits, and for C4, US$80 per tonne. At C4, the higher cut-off was established due to the deeper mineralisation. • The Mineral resources have reasonable prospects for eventual economic extraction. • The NSR cut-off was derived from US$ metal prices of US$8,914/t Copper, US$3,017/t Zinc, US$2,173/t Lead, US$23.3/oz Silver, and US$1,891/oz gold (price deck based 3-year average Metals Prices). • Recovery Factors used for C3; 95% Cu, 70% Au, 86% Zn, 77% Pb, and 74% Ag. For C1 (and C4); 93% Cu, 85% Au, 90% Zn, 86% Pb, and 96% Ag • NSR calculation is as follows: NSR (US$/t) = [Cu %] * {Price Cu] * [RecCu %] +[Zn %] * {Price Zn] * [RecZn] + [Pb %] * {Price Pb] * [RecPb] + [Ag ppm] * {Price Ag] * [RecAg]/31.1035+ [Au ppm] * {Price Au] * [RecAu]]/31.1035 (Adjustments are necessary to normalized to US$/t basis). • The CuEq calculation is as follow: Cu+(Cu*((Zn % * RecZn*Price Zn) + (Pb % * Price Pb * RecPb) + (Ag ppm * Price Ag * RecAg) + (Au ppm * Price Au * RecAu)) / (Cu % * Price Cu * RecCu). ZnEq is calculated with the same formula as CuEq, swapping Cu and Zn. • Copper Grade in Percentage was reported for Oxide Material at C3 • A generated pit shell was used to report resources at the C1, C3 and C4 deposits. The generation of the pit shell considered 55-degree slope angles, US$ operating costs of Mining: 2.06/t for Waste and 4.79/t for mineralisation; US$ 13.31/t for processing, G&A of US$5.69/t, based on benchmark of Central Brazilian Open pit Mining Operations • Grades were estimated using ordinary kriging using capped assays composited to two-metre intervals, with estimation block sizes of 5x4x2.5m for C1; 4x4x4m for C3 and 12x12x4m for C4 deposit. • Mineral resources that are not mineral reserves and do not have demonstrated economic viability. • The Competent Person for the Mineral Resource Estimate is Marcelo Antonio Batelochi, P.Geo, as an independent Consultant. The CP relied on the competence of Mr. Mauricio Prado who carried out the Estimates on the C4 deposit, which the CP carried out the Peer review.