

## DRILLING IDENTIFIES NEW SHALLOW, HIGH-GRADE COPPER ZONE AT PALMA

### HIGHLIGHTS

- RC drilling targeting near surface supergene mineralisation at the C3 deposit has intercepted significant broad zones of supergene mineralisation, including zones of exceptionally high-grade copper
- Significant RC drill intercepts include:
  - **29m @ 2.0% Cu**, 0.3% Zn, 0.1% Pb, 7.6g/t Ag & 0.03g/t Au from 28m in hole PRC3-013
    - *Inc. 6m @ 7.1% Cu*, 0.4% Zn, 0.3% Pb, **68.0g/t Ag** & 0.04g/t Au from 32m
  - **32m @ 1.0% Cu & 0.6% Zn** from 17m in hole PRC3-008
    - *Inc. 6m @ 2.3% Cu* & 0.4% Zn from 41m
- Alvo plans to test the extent of the potentially large-scale supergene system in 2023
- Mechanical auger drill rig has arrived in Brazil and will be operational shortly, designed to test the multitude of geological and geophysical prospects across the 60km of strike at Palma
- Two diamond drill rigs are operational at C3, targeting extensions to high-grade VMS mineralisation in addition to testing new discovery targets including Mafico, Ema, Pelicano and Pombo, clustered around the C3 prospect

**Alvo Minerals Limited (ASX: ALV)** (“Alvo” or the “Company”) is delighted announce the completion of Reverse Circulation (“RC”) drilling at the C3 prospect within the Palma Project (“Palma” or “the Project”), located in Central Brazil. The Company has completed 1,466m in 37 holes at C3, targeting shallow supergene mineralisation, a previously unknown style of mineralisation first discovered by Alvo during diamond drilling on the Project in early 2022 (see ASX announcement 14 February 2022).

#### **Rob Smakman, Alvo’s Managing Director commented on the RC drill results:**

*“We are pleased to report on extremely positive RC drill results at C3 which demonstrates the previously unknown supergene mineralisation has an extensive footprint, close to the projected surface of the main mineralisation. First pass drilling returned some spectacular grades and this could be a material enhancement of the overall Palma Project. We have samples of the supergene material at the metallurgy lab, with testwork scheduled to start in the next month.”*

*Diamond drilling is ongoing at the C3 cluster testing extensions to high-grade mineralisation at depth and along strike and testing the high-priority conductive regional targets. Concurrently our team is busy advancing multiple work streams including metallurgical testwork, DHEM surveys, FLEM surveys and geochemistry at regional exploration targets. With lots of activity underway on site we expect strong newsflow over the festive season.”*



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#### PROJECT

Palma Project

Shares on Issue 72,830,314  
Cash \$4.2M (at 30 Sep 2022)  
ASX Code ALV

RC drilling was successful in intercepting supergene mineralisation over a length of ~200m and ~250m width with thickness up to 30m. Supergene mineralisation remains open to the NE. The mineralised intercepts are shallow and laterally extensive, with zones of exceptionally high-grade copper including **6m @ 7.1% Cu** from 28m in PRC3-013 and **6m @ 2.3% Cu** from 41m in PRC3-008.

Two diamond drill rigs are currently operating around the C3 deposit, testing extensions to the high-grade VMS mineralisation. Drilling is also testing new targets including the Mafico, Ema, Pelicano and Pombo Prospects, clustered around C3. Electromagnetic surveys (both surface – FLEM and downhole DHEM) and Induced Polarisation (“IP”) surveys are ongoing to assist in targeting potential new VMS mineralised prospects.

Alvo has recently imported a truck mounted auger drilling rig which will soon be operational and will provide fast, efficient and cost-effective regional geochemical sampling to a depth of 30m. The auger rig will enable testing below a complex laterite cover (between 1 and 8m thick) in which traditional soil geochemistry has been partially ineffective. This will provide important information across Palma and enhance VMS target identification, ranking and drill testing across the extensive 60km of prospective strike length.

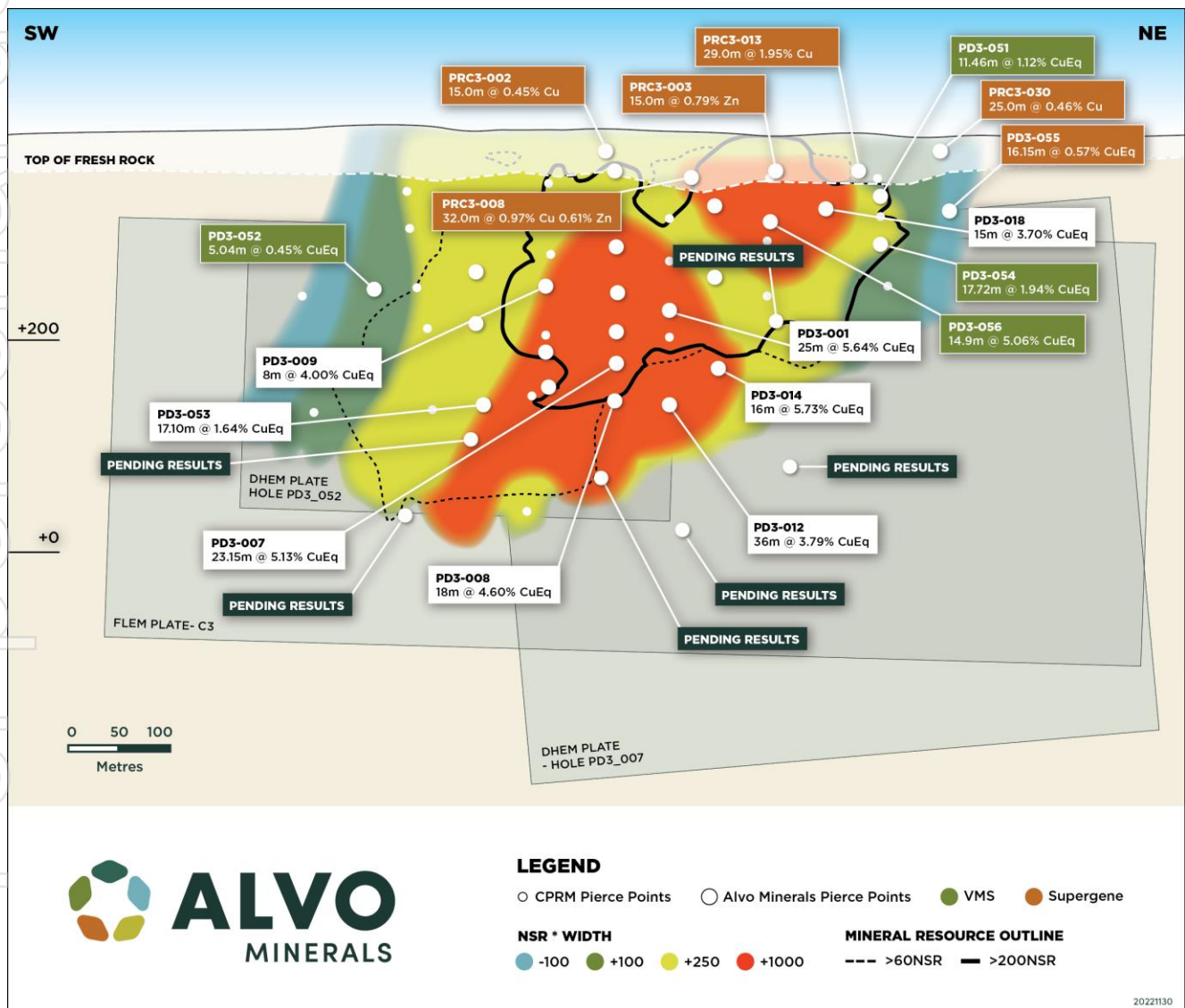


Figure 1: C3 Long section illustrating selected significant supergene intercepts, DHEM plates and Phase 2 drilling.

### Reverse Circulation Drilling at C3

Supergene mineralisation at C3 was discovered by Alvo in early 2022 during the Phase 1 diamond drill program when mineralisation was noted by geologists in the drill core and later confirmed by assaying. The supergene appears to form as a blanket of oxidised material around the near-surface extension of the unoxidized Volcanogenic Massive Sulphide (“VMS”) mineralisation.

Alvo initiated an RC drill program to test the grade and extent of the supergene mineralisation across C3. Results confirmed the mineralisation is primarily concentrated in the NE of the C3 and appears to be getting broader towards the NE.

The near-surface mineralisation was expected to be broad and lower grades, however there are some exceptional high-grade and wide intercepts that confirm the potential of a significant supergene zone. Significant results include:

- 15m @ 0.5% Cu, 0.2% Zn from 3m in hole PRC3-002
- 14m @ 0.6% Cu, 0.1% Zn, 0.4% Pb, 6.1g/t Ag & 0.46g/t Au from 6m in hole PRC3-013
- **29m @ 2.0% Cu**, 0.3% Zn, 0.1% Pb, 7.6g/t Ag & 0.03g/t Au from 28m in hole PRC3-013
  - *Inc. 6m @ 7.1% Cu*, 0.4% Zn, 0.3% Pb, **68.0g/t Ag** & 0.04g/t Au from 32m
- **32m @ 1.0% Cu & 0.6% Zn** from 17m in hole PRC3-008
  - *Inc. 6m @ 2.3% Cu* & 0.4% Zn from 41m
- **16m @ 0.3% Cu & 0.5% Zn** from 7m in hole PRC3-016
- **17m @ 0.2% Cu & 0.4% Zn** from 13m in hole PRC3-029
- **25m @ 0.5% Cu & 0.4% Zn** from 4m in hole PRC3-030
- **25m @ 0.3% Cu & 0.4% Zn** from 3m in hole PRC3-031

Samples from the C3 diamond drilling that intercepted the supergene zone were sent to Australia for metallurgical testwork. These samples will be tested later in the metallurgical test work program, recognising any potential flowsheet will need to reflect the different nature of the mineralisation. Note that results can only be announced as metal equivalent grades once metallurgical testwork is completed (unlike the VMS intercepts where recent preliminary positive testwork was announced – see ASX announcement 8 November 2022).



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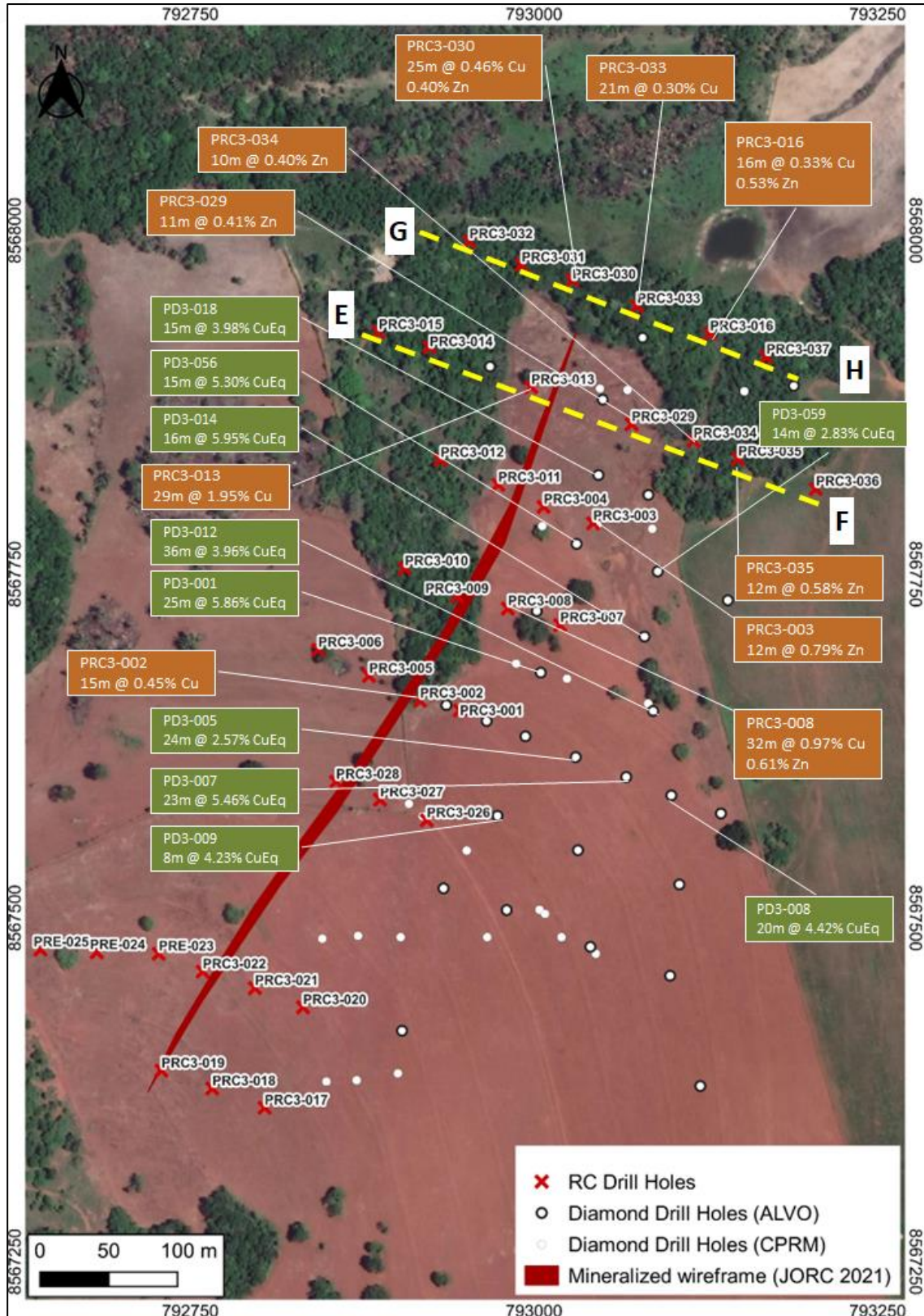


Figure 2: Drill plan over C3. Orange boxes refer to RC Supergene results and green boxes are VMS (previously announced).



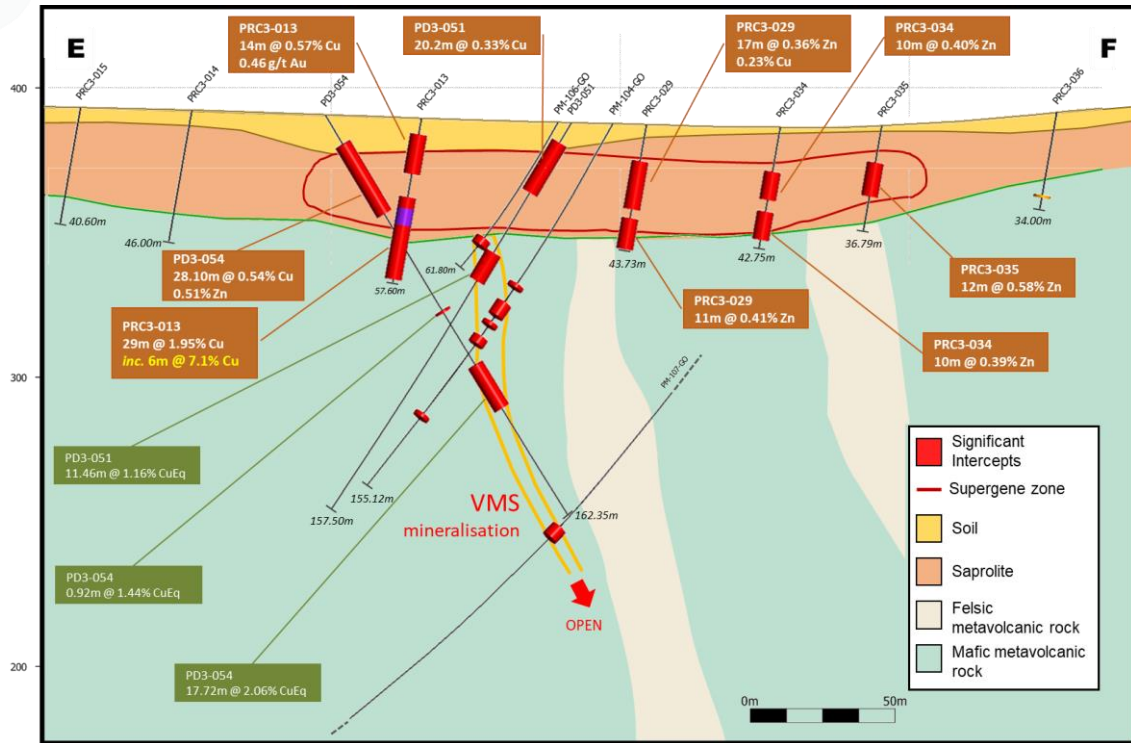


Figure 3: Cross section E-F from C3 prospect

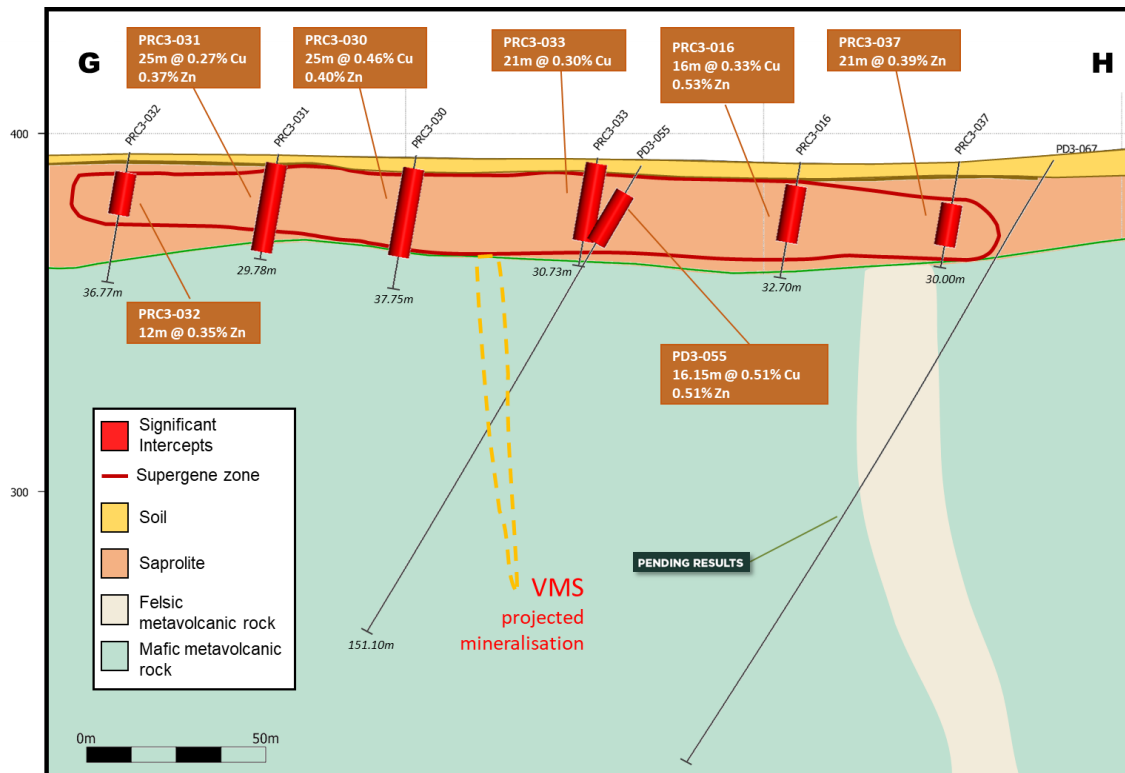


Figure 4: Cross section G-H from C3 prospect

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## Regional Exploration at the Palma Project

Alvo has purchased and imported a mechanical auger drill-rig to commence extensive regional exploration coverage in early CY2023. The auger rig will provide important information across Palma to identify potential VMS clusters along the extensive tenement package. This method will allow Alvo to quickly and effectively identify and rank a multitude of new targets prior to drill testing.

Alvo considers effective geochemistry a fundamental tool for regional exploration and when combined with geological mapping and geophysics, Alvo will be uniquely positioned to quickly explore and identify potential new VMS clusters across the massive Palma Project landholding.

The use of this style of auger drilling has been revolutionary in West Africa and Australia, where the Auger can quickly and effectively penetrate the complex lateritic cover to access a more representative in-situ geochemical sample.



*Figure 5: Example of the mechanical Auger unit (photo not actual auger unit).*

**Table 1: Significant intercepts C3 RC drilling program.**

Hole ID	Length (m)	From (m)	Cu %	Zn %	Pb %	Ag g/t	Au g/t	Comment
PRC3-001	-	-	-	-	-	-	-	NSI
PRC3-002	15.00	3.00	0.45	0.18	0.00	0.00	0.00	Supergene
including	1.00	8.00	1.07	0.63	0.00	0.00	0.00	Supergene
PRC3-003	12.00	23.00	0.22	0.79	0.00	0.00	0.00	Supergene
PRC3-004	3.00	42.00	0.35	0.04	0.00	0.00	0.00	Supergene
PRC3-005	-	-	-	-	-	-	-	NSI
PRC3-006	-	-	-	-	-	-	-	NSI
PRC3-007	8.00	40.70	0.14	0.34	0.00	0.88	0.00	Supergene
PRC3-008	32.00	16.75	0.97	0.61	0.01	0.00	0.00	Supergene
including	6.00	40.75	2.31	0.37	0.01	0.00	0.00	Saprock
PRC3-009	2.00	11.61	0.11	0.19	0.00	0.00	0.00	Supergene
PRC3-010	-	-	-	-	-	-	-	NSI
PRC3-011	9.00	11.00	0.20	0.11	0.00	1.44	0.00	Supergene
PRC3-012	-	-	-	-	-	-	-	NSI
PRC3-013	14.00	5.60	0.57	0.10	0.39	6.07	0.46	Supergene
PRC3-013	29.00	27.60	1.95	0.30	0.11	7.59	0.03	Saprock
including	6.00	31.60	7.10	0.35	0.27	68.00	0.04	Saprock
PRC3-014	-	-	-	-	-	-	-	NSI
PRC3-015	-	-	-	-	-	-	-	NSI
PRC3-016	16.00	6.70	0.33	0.53	0.00	0.00	0.00	Supergene
PRC3-017	-	-	-	-	-	-	-	NSI
PRC3-018	-	-	-	-	-	-	-	NSI
PRC3-019	-	-	-	-	-	-	-	NSI
PRC3-020	-	-	-	-	-	-	-	NSI
PRC3-021	-	-	-	-	-	-	-	NSI
PRC3-022	-	-	-	-	-	-	-	NSI
PRE-023	-	-	-	-	-	-	-	NSI
PRE-024	-	-	-	-	-	-	-	NSI
PRE-025	-	-	-	-	-	-	-	NSI
PRC3-026	6.00	8.73	0.02	0.23	0.00	0.00	0.00	Supergene
PRC3-027	-	-	-	-	-	-	-	NSI
PRC3-028	-	-	-	-	-	-	-	NSI
PRC3-029	17.00	12.73	0.23	0.36	0.00	0.00	0.01	Supergene
PRC3-029	11.00	32.73	0.07	0.41	0.00	0.00	0.00	Saprock
PRC3-030	25.00	3.75	0.46	0.40	0.00	1.60	0.00	Supergene
PRC3-031	25.00	2.78	0.27	0.37	0.01	0.28	0.00	Supergene
PRC3-032	12.00	5.77	0.11	0.35	0.00	0.00	0.00	Supergene
PRC3-033	21.00	1.73	0.30	0.19	0.01	5.90	0.00	Supergene
PRC3-034	10.00	15.75	0.19	0.40	0.00	0.00	0.00	Supergene
PRC3-034	10.00	29.75	0.05	0.39	0.00	0.00	0.00	Saprock



Hole ID	Length (m)	From (m)	Cu %	Zn %	Pb %	Ag g/t	Au g/t	Comment
PRC3-035	12.00	12.79	0.01	0.58	0.00	0.00	0.00	Supergene
PRC3-036	1.00	29.00	0.00	0.04	0.00	0.00	0.38	Saprock
PRC3-037	12.00	12.00	0.01	0.39	0.00	0.00	0.00	Supergene

Table of significant intercepts calculated using a 0.2% Cu or 0.3% Zn lower cut-off, minimum interval of 1m and a maximum of 2m of internal dilution.

Table 2: RC drill collar details. Coordinates are in SIRGAS\_2000 Zone22S.

Hole ID	Prospect	Easting	Northing	RL	Depth	Azimuth	Dip	Comment
PRC3-001	C3	792946	8567651	336	45.0	290	-80	
PRC3-002	C3	792917	8567658	349	24.0	290	-80	
PRC3-003	C3	793043	8567787	384	38.0	290	-80	
PRC3-004	C3	793007	8567799	364	45.0	290	-80	
PRC3-005	C3	792880	8567676	395	43.0	290	-80	
PRC3-006	C3	792843	8567695	393	42.6	290	-80	
PRC3-007	C3	793019	8567713	392	48.7	290	-80	
PRC3-008	C3	792981	8567725	388	53.8	290	-80	
PRC3-009	C3	792944	8567734	392	35.6	290	-80	
PRC3-010	C3	792906	8567754	391	33.6	290	-80	
PRC3-011	C3	792974	8567815	327	40.0	290	-80	
PRC3-012	C3	792932	8567833	328	39.5	290	-80	
PRC3-013	C3	792998	8567886	371	57.6	290	-80	
PRC3-014	C3	792924	8567915	364	46.0	290	-80	
PRC3-015	C3	792887	8567926	365	40.6	290	-80	
PRC3-016	C3	793128	8567925	365	32.7	290	-80	
PRC3-017	C3	792804	8567362	357	40.0	290	-80	
PRC3-018	C3	792766	8567376	367	39.8	290	-80	
PRC3-019	C3	792729	8567389	362	41.8	290	-80	
PRC3-020	C3	792832	8567435	414	40.7	290	-80	
PRC3-021	C3	792797	8567449	421	41.8	290	-80	
PRC3-022	C3	792759	8567461	410	36.8	290	-80	
PRE-023	EMA	792727	8567474	410	47.8	90	-80	
PRE-024	EMA	792682	8567475	413	36.8	90	-80	
PRE-025	EMA	792641	8567477	411	35.7	90	-80	
PRC3-026	C3	792922	8567571	394	38.7	290	-80	
PRC3-027	C3	792888	8567586	397	35.8	290	-80	
PRC3-028	C3	792856	8567599	397	42.8	290	-80	
PRC3-029	C3	793071	8567859	370	43.7	290	-80	
PRC3-030	C3	793028	8567964	406	37.8	290	-80	
PRC3-031	C3	792991	8567975	399	29.8	290	-80	
PRC3-032	C3	792953	8567992	393	36.8	290	-80	
PRC3-033	C3	793075	8567945	391	30.7	290	-80	
PRC3-034	C3	793116	8567847	407	42.8	290	-80	
PRC3-035	C3	793149	8567834	390	36.8	290	-80	
PRC3-036	C3	793205	8567812	390	34.0	290	-80	
PRC3-037	C3	793169	8567908	402	30.0	290	-80	

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### Next Steps and Upcoming Newsflow:

- Extensional diamond drilling at C3 prospect targeting significant extensions along strike and at depth to high-grade VMS mineralisation – **Ongoing**
- Diamond drilling at new targets within the C3 cluster, including Mafico, Ema, Pelicano and Pombo – **Ongoing**
- DHEM surveys at C3 and C1, on diamond holes completed during phase 1 and phase 2 drill programs – **Ongoing**
- FLEM surveys on regional targets across Palma, defined by the previously completed VTEM surveys – **Ongoing**
- Induced Polarison (IP) surveys at C3, C1 and regional exploration targets – **Ongoing**
- Geochemical sampling across exploration prospects – **Ongoing**
- Metallurgical test work at C3 – **Ongoing**
- Metallurgical test work at C1 – **Proposed to commence Q1 CY2023**
- Auger drill testing across the Alvo tenement package – **Scheduled to commence early CY2023**

### References to Previous ASX Announcements

Reference in this report is made to previous announcements including:

As reported in the announcement “C3 DELIVERS EXCEPTIONAL DRILL RESULTS INCLUDING 10.57m @ 6.27% COPPER & 14.76% ZINC” dated 14 February 2022 issued by Alvo Minerals Limited

As reported in the announcement “FURTHER OUTSTANDING DRILL RESULTS INCLUDING 36m @ 1.49% COPPER & 8.58% ZINC” dated 30 March 2022 issued by Alvo Minerals Limited

As reported in the announcement “RC DRILLING DOWNHOLE AND FIXED LOOP EMSURVEYS TO COMMENCE AT C3” dated 24 May 2022 issued by Alvo Minerals Limited

As reported in the announcement “C1 DELIVERS OUTSTANDING HIGH-GRADE POLYMETALLIC DRILL RESULTS” dated 14 June 2022 issued by Alvo Minerals Limited

As reported in the announcement “MULTIPLE DISCOVERY AND EXTENSIONAL TARGETS HIGHLIGHTED BY EM SURVEYS” dated 8 July 2022 issued by Alvo Minerals Limited

As reported in the announcement “FLEM CONDUCTORS & MINERALISED GOSSANS DEFINE HIGH PRIORITY TARGETS, DRILLING UNDERWAY” dated 16 August 2022 issued by Alvo Minerals Limited

As reported in the announcement “ALVO DELIVERS DRILLING INTERCEPTS UP TO 4.3% CU, 17% ZN & 184G/T AG” dated 30 August 2022 issued by Alvo Minerals Limited

As reported in the announcement “DRILLING AT PALMA EXPANDS POLYMETALLIC POTENTIAL” dated 18 October 2022 issued by Alvo Minerals Limited

As reported in the announcement “PRELIMINARY METALLURGICAL TESTWORK INDICATES EXCELLENT RECOVERIES” dated 9 November 2022 issued by Alvo Minerals Limited

In relation to the Mineral Resource Estimate (the “**MRE**”) and other exploration results or estimates cross-referenced above, these are extracted from the Independent Geologists’ Report prepared by Target Latin America and others (the “**IGR**”), which is included in full in Alvo’s prospectus dated 30 July 2021 (the “**Prospectus**”) and which was announced to ASX within the Prospectus on 18 October 2021. Alvo confirms that



it is not aware of any new information or data that materially affects the information included in the IGR and that all the material assumptions and technical parameters underpinning the Inferred MRE continue to apply and have not materially changed.

### Forward Looking Statements

Statements regarding plans with respect to Alvo's Palma Project and its exploration program 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.

### Competent Person's Statement

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.

**This announcement has been approved for release by the Board of Alvo Minerals Limited.**

## ENQUIRIES

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## ABOUT ALVO

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**Alvo Minerals (ASX: ALV)** is a base and precious metals exploration company, hunting high-grade copper and zinc at its flagship Palma Project, located in Central Brazil. The Palma Project has a JORC 2012 Inferred Mineral Resource Estimate - 4.6Mt @ 1.0% Cu, 3.9% Zn, 0.4% Pb & 20g/t Ag.

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	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• RC samples were collected at the drill rig and split using a Jones type splitter where the sample was divided into a large, approximately 25kg was stored in the field and a sample of up to 3kg was sent to the lab. Sampling was typically 1m unless the geologist determined a different length was appropriate.</li> <li>• Sampling was supervised by Alvo geologists who selected the sampling zones.</li> <li>• Geologists log the mineralisation as supergene and other zones as soil, saprolite, Saprock and fresh rock. These logs were used to determine the main mineralisation zones, which dictated the sampling.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>• <i>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).</i></li> </ul>	<ul style="list-style-type: none"> <li>• Standard Reverse Circulation drilling was completed by independent drill contractor ServDrill. The drillrig was an Atlas Corp with a 1100 psi compressor. 5-inch face sampling hammer was typically used, although some areas with heavy clay required tri-cone drill bit.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Recoveries are estimated by ( ) and Alvo field technicians (on site) by weighing the bulk sample before splitting. Recoveries are measured by comparing the length of the drill run with the amount of sample recovered.</li> <li>• No relationship is believed to exist between recovery and grade.</li> </ul>



Criteria	JORC Code explanation	Commentary
Logging	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>• The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Logging and sample processing is both qualitative and quantitative. Drill chips are photographed in the chip trays.</li> <li>• 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.</li> <li>• The RC drill program totalled 1,466m in 37 holes. All metreage reported have been logged.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>• 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.</li> <li>• Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>• Samples collected from the cyclone were mostly dry and split using a Jones type splitter. Wet samples were collected and spread onto a small tarp to dry and later split using the Jones splitter.</li> <li>• Duplicate samples were taken in the field at a rate of 1 in 50 samples. These were split in the same process as the normal split samples.</li> <li>• Sample size, being generally 1m sample intervals, is appropriate to the material being sampled and considered to be representative.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>• 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.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• SGS Geosol Laboratorios Ltda (SGS) are used for multi element and gold analyses on the samples. The lab techniques described below are considered appropriate for the style of mineralisation at the Palma Project <ul style="list-style-type: none"> <li>○ Samples transported to the lab and are dried, crushed until 75% pass 3mm, homogenised and split with 250-300g pulverised until 95% passing 150#</li> <li>○ Gold is determined by 30g fire assay</li> <li>○ 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.</li> </ul> </li> <li>• The QA/QC data includes standards, blanks, duplicates and laboratory checks (field duplicates above). Alvo inserts internationally certified standards at a rate of 1 in 10 samples, blanks 1 in ~60 samples. Lab duplicates are selected from the crushed samples at a rate of 1 in 20 samples and follow the same assaying procedure. <ul style="list-style-type: none"> <li>• Alvo has reviewed the QA/QC data for all lab samples and are satisfied the results are within acceptable limits</li> </ul> </li> </ul>



Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Significant intercept tables are prepared by Alvo personal and checked by at least one other geologist.</li> <li>No twinned holes are being reported</li> <li>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.</li> <li>No adjustments to the data were made. Weighted averages were used to calculate significant intercepts. For duplicates, the first sample is recorded for intercepts.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Alvo is using pGPS to locate and record the drillhole collar locations.</li> <li>All location data has been recorded SIRGAS 2000 UTM zone 22S</li> <li>Topographic control is adequate for the exploration at Palma.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Drillholes were variably spaced- aimed at defining the extent of the Supergene mineralisation. The drilling was planned on a nominal 40m x 80m grid.</li> <li>Drill spacing is considered sufficient to complement the previously reported Inferred JORC 2012 MRE. Results will improve the geological and grade continuity.</li> <li>No compositing has been applied to the results (beyond weight averaging the results)</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Drilling was oriented to intercept mineralisation as perpendicular as possible. No bias is believed to have occurred. Sampling lengths were generally 1m downhole, unless there was a specific geological control required by the geologist. All intercepts recorded are downhole intervals and may not equal true width.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Drill samples are 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</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>No audits of the techniques or data has been undertaken at this stage</li> </ul>

## 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	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The C3 prospect is located on exploration tenement 800.744/1978 which is 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).</li> <li>Alvo is confident the tenement is 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.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>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.</li> </ul>	
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Exploration by other parties form much of the work completed on the project. 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.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>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 referred to in this announcement is interpreted to be of Supergene style-mineralisation that has formed near to and as a result of weathering process of the Palma C3 Volcanogenic Massive Sulphide (VMS) mineralisation. VMS at C3 occurs at or near the contact between a metamafic volcanic unit and meta-sedimentary schist and comprises pyrite, pyrrhotite, sphalerite, chalcopyrite, galena, occurring as disseminated, brecciated and massive form.</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>See Table 2- Collar table. All drilling from C3 is included in Table 2.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>The significant intercepts were calculated using minimum sample length of 1m, with up to 2m of consecutive dilution, samples included with values &gt; 0.2%Cu or &gt;0.3% Zn. No upper cuts were considered.</li> <li>Weighted averages were calculated for all intercepts.</li> <li>No metal equivalents reported</li> </ul>



Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>• These relationships are particularly important in the reporting of Exploration Results.</li> <li>• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>• 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').</li> </ul>	<ul style="list-style-type: none"> <li>• At C3, the supergene mineralisation is interpreted as largely flat lying and the drill holes planned to cut the mineralised domain in a perpendicular manner. The downhole depths are reported, true width is not accurately known at this stage.</li> <li>• The downhole depths are reported, true widths* is not accurately known at this stage.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• See diagrams reported in the announcement</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• All results are reported above the cut-offs described above. Not all of the holes are sampled.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Extensive exploration data and information has been completed at the Palma Project and previously reported. A summary is provided below;</li> <li>• 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. These may be related to massive sulphide accumulations, however most of these potential conductors were not followed up.</li> <li>• 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. CPRM also drilled several targets that did not intersect economic mineralisation. JICA 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.</li> <li>• 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.</li> <li>• Alvo estimated a JORC compliant MRE for the C1 and C3 prospects.</li> </ul>



Criteria	JORC Code explanation	Commentary
Further work	<ul style="list-style-type: none"> <li>• <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Alvo will continue actively exploring the Palma project- with multiple tools. The diamond drilling program will evolve as results are received and will focus on upgrading and expanding the inferred MRE. Potential exists both along strike and at depth. Additional sampling and or drilling is being planned for the supergene mineralisation. Alvo has also started drilling on new prospects that have high geological probability of hosting mineralised sulphides.</li> <li>• Alvo has in-house electromagnetic survey equipment and is performing both FLEM and DHEM surveys. It is expected these surveys will enhance the drilling program by delineating possible extensions of the highly conductive mineralisation.</li> <li>• Alvo has in-house Induced Polarisation (IP) equipment and is performing surveys to enhance the exploration of the Palma project.</li> <li>• Alvo has recently purchased and imported a Mechanical Auger drill-rig which is designed to drill shallow auger holes in order to more effectively explore using geochemistry.</li> </ul>

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