ALVO
ASX: ALV

Preliminary Metallurgical Testwork Indicates Excellent Recoveries

HIGHLIGHTS

- **Preliminary metallurgical testwork on representative** drill core from the C3 Prospect **has returned very positive results**
- **Locked-cycle testwork is underway designed to maximise recovery to concentrates, targeting a bulk sulphide concentrate grade of >20% Cu and ~5% Pb, and a Zn concentrate grade > 50%**
  - The bulk sulphide concentrate also contains appreciable levels of silver (>200 g/t Ag) which will improve the payability.
- **Excellent Bond Ball Mill Work Index of 14.0 kWhr/t, considered relatively soft for VMS projects globally**
- Single-pass testwork using standard grind sizes and flotation parameters, separated 2 concentrates
  - **The Sulphide concentrate (Cu & Pb) returned grades of 25% Cu and 3% Pb**
  - **The Zinc concentrate returned a grade of 46% Zn**
- **Positive conceptual study into producing saleable sulphuric acid from tailings which, through the production process also has the potential to generate electrical power for use on site**
  - This solution would significantly enhance the sustainability credentials of the project combined with extensive locally available hydroelectricity in the immediate vicinity
- C1 metallurgical samples sent to Australia are being composited and tested once the C3 testwork is complete
- Phase 2 diamond drill program targeting extensions to high-grade mineralisation at the C3 prospect is ongoing and targeting new targets clustered around the C3 prospect including Mafico, Ema, Pelicano and Pombo
- Fixed loop electromagnetic (FLEM), Downhole electromagnetic (DHEM) and Induced Polarisation (IP) surveys are active across the Palma Project

Alvo Minerals Limited (ASX: ALV) ("**Alvo**" or **the** "**Company**") is pleased to announce preliminary metallurgical testwork results from a bulk sample of mineralised Volcanogenic Massive Sulphide (VMS) samples from the C3 prospect of the Palma Project ("**Palma**" or "**the project**").

Rob Smakman, Alvo's Managing Director commented on the testwork results:

"These test results represent a great step forward for the Palma Project. Metallurgy for VMS style projects is vital and we are really pleased with the initial results. There is a lot of work still to go with the testing, however with the locked cycle tests underway, we are confident the numbers can be confirmed shortly and enhanced.

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PROJECT
Palma Project

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

"We are also extremely conscious of our sustainable mining responsibilities and are considering various options for processing. It was under this framework that we also initiated a study into converting the sulphur rich tails into sulphuric acid. We understand the tails will naturally generate acid and that potential environmental issue will need mitigation.

"The desktop study completed by our consultants has confirmed that by floating the sulphur rich minerals in the tails and passing through a separate process route, we can not only generate commercial sulphuric acid (which is sought after in the region and globally), but iron ore and more importantly, energy to power a portion of the plant. Alvo will look to incorporate the potential processing options as a key part of our ESG framework."

Metallurgical testwork and Results

Alvo prepared and sent over 315kg of diamond core in 202 individual samples from the C3 prospect 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.

The samples were received and logged, composited and the preparation of a master composite was completed. The master composite was selected to approximately match the overall expected grade of the C3 VMS mineralised zone. The sample was initially tested with a 2-stage rougher flotation at P_{80} 125µm, 106µm and 75µm and the results analysed for future work.

The finest of the rougher tests (P_{80} at 75µm) was chosen for single-pass Rougher and Cleaner stage Flotation tests as illustrated in the testwork flowsheet in Figure 1. The various samples were sent to the Nagrom independent laboratory for assaying. Results were received from these tests are reported below in Table 1.

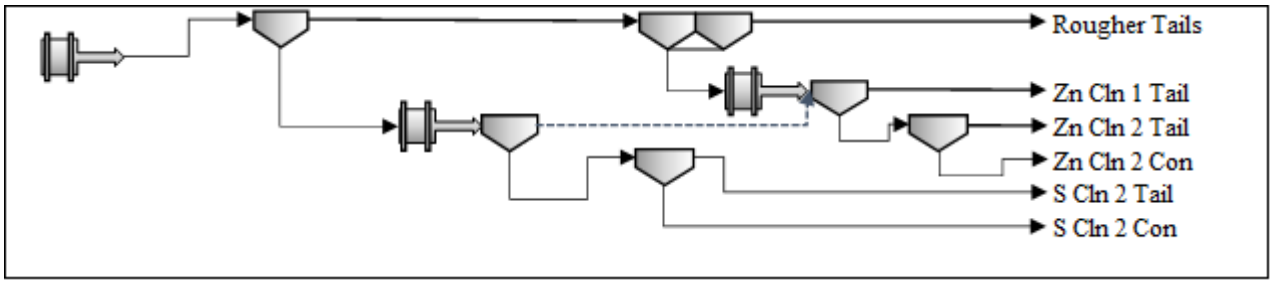

Figure 1: *Single pass rougher and cleaner flowsheet.*
In the locked cycle test, cleaner tails are re-cycled to scavenge additonal metals into the concentrates

Two concentrates were successfully separated, with the Copper and Lead reporting to the first bulk sulphide concentrate containing grades of 25.2% Cu, 3.35% Pb, 1.84% Zn, 246g/t Ag, 0.9g/t Au (see Table 1). The recovery of the Cu to this concentrate was >70%, however there is significant metals in the tails which may be recovered during additional testwork (there was only 1.6% of the Cu rejected in the rougher tails). A calculated projected recovery to this concentrate for the Cu (to be confirmed by locked cycle tests currently underway) is 81.1% Cu, at >20% Cu grade (see Table 2).

The second concentrate was a Zinc Concentrate which reported a grade of 46.2% Zn, 1.93% Cu, 0.25% Pb, 0.12 g/t Au and 20 g/t Ag. The recovery of the Zn to this concentrate was >56%, however there is significant metals in the tails which may be recovered during additional testwork. Overall assumed recovery of the Zn in this concentrate (to be confirmed by locked cycle tests currently underway) is estimated 82.3% Zn at >50% Zn grade (see Table 2).

Table 1: *C3 Master Composite- Summary of single pass streams*

Fraction	Mass Yield (%)	Cu		Pb		Zn		Au		Ag		As	
		Grade (%)	Dist (%)	Grade (%)	Dist (%)	Grade (%)	Dist (%)	Grade (g/t)	Dist (%)	Grade (g/t)	Dist (%)	Grade (ppm)	Dist (%)
C3 Master Composite Feed Grade	-	1.48	-	0.28	-	5.72	-	0.09	-	24	-	180	-
Copper and Lead Concentrate	7.05	**25.2**	70.7	**3.35**	49.2	12.54	1.84	0.90	40.7	201	46.5	**94**	2.16
Zinc Concentrate	6.98	1.93	9.13	0.25	6.21	**46.2**	56.4	0.12	8.97	20	5.78	**<50**	1.94
Rougher Tails	60.9	0.59	**1.59**	0.13	1.84	0.96	**10.3**	0.02	12.0	11	27.7	200	67.6

*Distribution totals do not equal 100% as there is material still in the circuit following the single pass testing. Locked cycle testing will better simulate the overall production circuit.

The ongoing locked cycle testwork will better estimate the final concentrate grades and recoveries as the cleaner tails are re-circulated. This will allow for the metal in the system to either report to a concentrate or final tailings.

The deportment of Au & Ag to the rougher tails is relatively low at 12% & 27.7%, however the feed grades are relatively low at 0.09ppm Au and 24.2ppm Ag.

The arsenic rejection to the rougher tail is significant at ~67%. The grades observed in the final concentrates are well below normal penalty specifications, however, as the target metal recoveries increase in a locked cycle, the values of the As and other metals may increase.

No product marketing of the concentrates has been completed to date, however based on industry standards these concentrate grades are considered attractive, particularly the copper and lead concentrate. Optimisation is ongoing to elevate the zinc concentrate to >50 % contained Zn.

Table 2: *Estimated Circuit Recovery in a locked cycle*

	Recovery to final Con Single Pass Tests	Rougher Recovery From Single Pass Tests	Estimated Recovery to Graded, Individual Concentrates LC
	%	%	%
Zn Con (Zn)	56.4	89.7	82.3
Sulphide Con (Cu)	70.7	98.4	81.1
Sulphide Con (Pb)	49.2	87.0	69.9

The metallurgists from BHM view the preliminary results as extremely positive.

"Given the very high rougher recoveries, it is projected that significant improvements in terms of both overall recovery and zinc product grade can be achieved in locked cycle testing as much of the remaining metal exists in secondary product and recycle streams, not as a loss to tailings as referenced in the third column of the above table."

Desktop Review: Acid Production from Tailings

The Company requested BHM undertake a concept review of generating sulphuric acid from the tailings using known processing, as a way of increasing sustainability credentials, mitigating environmental risk and adding another potential revenue stream to the project.

BHM have reported that, assuming the grade of the tailings is similar to the C3 master composite generated from the testwork described above.

"From a desktop perspective, there is sufficient sulphur and the right mineralogy to produce a mineral concentrate that ***should be suitable for the production of sulphuric acid for sale****. This process will generate* ***electrical energy from the thermal reactions on site, potentially enough to run its own plant and off-set some of the concentrator power demand also.***

The resulting "iron oxide" tailings from the acid operation may have recoverable metals and should be suitable for co-deposition with the base metals tails if the product is not on-sold. The resulting base metals tailings should be reduced in acid generating potential such that no further treatment or pH modification would be required for tailings disposal."

The conversion of sulphur to sulphuric acid is exothermic and the gasses produced may be suitable for heat recovery and used to generate power. BHM also reported that one of the by-products may be high-grade iron ore (blend of hematite and magnetite), which may also be saleable.

Testwork will be initiated to test this theory in addition to desktop work to understand the typical capital and operating costs of "off-the-shelf" sulphuric acid plants.

Summary of the BWI test and results

Auralia Metallurgy also completed a Bond Mill closed circuit grindability test on the C3 master composite sample. The open test aperture for this sample was 106µm and the resultant Bond ball mill work index was 14.0 (kilowatt hours/dry tonne). On the standard scale of material property, this is considered Medium-Hardness and relatively soft compared to other VMS projects.

Figure 2: Flotation testwork underway on C3 bulk composite sample. Zinc re-cleaner with chocolate coloured froth (lefthand side) and Copper and Lead cleaner cell with green/gold froth (righthand side)

Next Steps and Upcoming Newsflow:

- Metallurgical test work at C3 – **Scheduled to be complete Q4 2022**
- Metallurgical test work at C1 – **Samples Dispatched - Proposed to commence Q4 2022**
- 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**
- Geochemical sampling across known exploration prospects – **Ongoing**
- Induced Polarisation (IP) surveys at C3 and C1 – **Ongoing**

References to Previous ASX Announcements

Reference in this report is made to previous announcements including:

As reported in the announcement "ALVO LAUNCHES MAIDEN DRILL PROGRAM AT C3" dated 26 October 2021 issued by Alvo Minerals Limited

As reported in the announcement "ALVO INTERCEPTS BROAD ZONE IN TE FIRST HOLE AT C3" dated 4 November 2021 issued by Alvo Minerals Limited

As reported in the announcement "ALVO TO INITIATE EM SURVEY AND SECURES ADDITIONAL RIG FOR 2022" dated 8 December 2021 issued by Alvo Minerals Limited

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

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 Mineral Resource Estimate 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.

Competent Person's Statement

The information contained in this announcement that relates to Metallurgical Testwork Results is based upon information compiled by Mr Steven Hoban of BHM Process Consultants, a Competent Person and Member of the Australasian Institute of Mining and Metallurgy. Mr Hoban is a full-time employee of BHM Process Consultants 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 Hoban 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

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.*

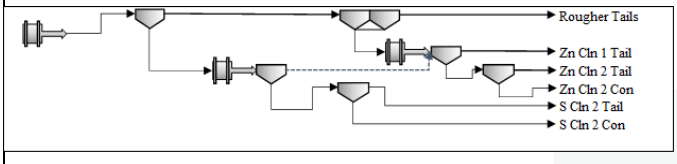
Alvo is committed to fostering best in class stakeholder relations and supporting the local communities in which it operates.

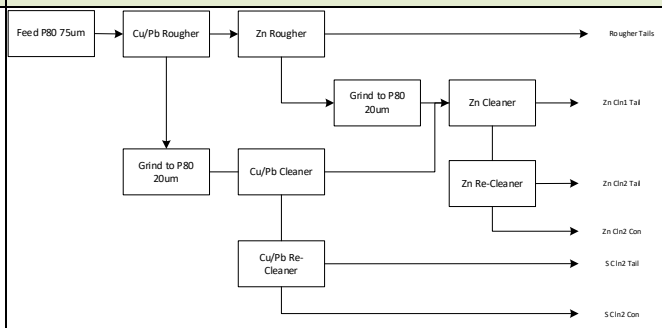
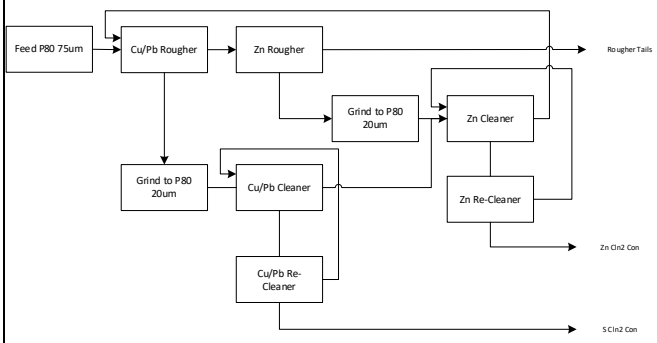
APPENDIX 1

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	• *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.*	• Quarter diamond core was sampled and submitted for testing, with sampling selected in conjunction with Alvo and BHM to ensure representivity of the sample zones. Sampling was typically 1m. • Sampling was supervised by Alvo geologists who selected the sampling zones in conjunction with BHM • Geologists log the mineralisation as massive, semi-massive disseminated, stringer, brecciated or barren. These logs were used to determine the main mineralisation zones along with assay results from earlier analytical sampling. These results along with the geological logging 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 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. Before metallurgical sampling was undertaken, assay results were included in defining the geological units to be sampled and care was taken to ensure representivity of the samples. • 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. 202m of C3 phase 1 drilling (4,691m) was selected for sampling in this phase of Metalurgical testwork.
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 at the assay lab. The remaining half is wrapped in cling film to ensure any exposed sulphides do not oxidise and the stored by Alvo in its dedicated facility. Once results are returned from the laboratory, samples are selected for the Metallurgical testwork campaign and these are sawn into quarter core, wrapped in plastic film and bagged into separate metres. • Sample size, being generally 1m sample intervals, is appropriate to the material being sampled and considered to be representative. Compositing of the overall samples to be tested is done under supervision of BHM once the samples arrived at the Auralia Laboratory.
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.*	• Master Composite C3 was prepared for metallurgical test work at Auralia Metallurgy, a specialist metallurgical and mineral processing testwork laboratory in Perth Australia. • Samples received and logged at Auralia • Compositing, stage crushing and sample preparation of "C3 Master Composite" • 2-stage Rougher Flotation at P80 75µm, 106µm and 125µm • Cleaner Stage Flotation completed at P80 75µm o Assays received (see diagrams below) • Locked Cycle Testing Commenced 

Criteria	JORC Code explanation	Commentary
		 The Locked cycle testing currently underway is illustrated below 
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.*	• 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. This Access database was used to select samples for the testwork. • No adjustments to the data were made. Weighted averages were used to calculate significant intercepts and calculate head grades for the composites.
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 GPS to locate and record the drillhole collar locations. All drillholes are downhole surveyed using the Gyro 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- aimed at infilling between historical holes drilled by the CPRM. The drilling aims to fill between 100m spaced section lines and between 30-50m on section. • Drill spacing is considered sufficient to complement the previously reported Inferred JORC 2012 MRE. Results will improve the geological and grade continuity. • Compositing has been applied to the sample selection to ensure sufficient sample is available for the master composite in a grade that should approximate the expected head grade of the overall deposit.

Criteria	JORC Code explanation	Commentary
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 and normally oriented holes.
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. Once the metallurgical samp,ling program was defined, the samples were cut and bagged by Alvo staff and packed into barrels for transport to Australia. The samples were individually wrapped, bagged and then sealed into barrels which were airfreighted to Australia. The samples passed customs inspection in conjunction with Auralia staff.
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 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). • 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.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• 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. • 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. The historical testwork was reviewed by BHM prior to undertaking the sampling testwork and was considered adequate for the time. No issues were noted in the historical work.
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 metamafic volcanic unit and meta-sedimentary schist and comprises pyrite, pyrrhotite, sphalerite, chalcopyrite, galena, occurring as disseminated, brecciated and massive form.

Criteria	JORC Code explanation	Commentary
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.*	All drill collar information from C3 is as reported in the announcements: "ALVO LAUNCHES MAIDEN DRILL PROGRAM AT C3" dated 26 October 2021 issued by Alvo Minerals Limited "C3 DELIVERS EXCEPTIONAL DRILL RESULTS INCLUDING 10.57m @ 6.27% COPPER & 14.76% ZINC" dated 14 February 2022 issued by Alvo Minerals Limited "FURTHER OUTSTANDING DRILL RESULTS INCLUDING 36m @ 1.49% COPPER & 8.58% ZINC" dated 30 March 2022 issued by Alvo Minerals Limited • Intercept lengths are reported below.
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.* • *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.*	Geometallurgy sample compo — PALMA VMS PROJECT *C3 Prospect* • Samples were selected from the Phase 1 drilling at C3 and compsited as per the above table. Some adjustments were made to these samples once they arrived in Perth and the master composite was composed of samples from C3_001 and C3_002. • Weighted averages were calculated for all samples. • No metal equivalents are reported
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 cut the mineralised domain in a perpendicular manner. The downhole depths are reported, true width is not accurately known at this stage. • The downhole depths are reported, true widths* is not accurately known at this stage.

COMPOSITE SAMPLE_ID	HOLE_ID	FROM	TO	LENGTH_m	Individual samples	Mineralization
SAMPLE_C3_002	PD3-001	188.00	208.00	20.00	20	Massive Sulfide
	PD3-005	225.00	228.00	3.00	3	Massive Sulfide
	PD3-008	293.00	303.74	10.74	11	Massive Sulfide
	PD3-012	299.00	303.00	4.00	4	Massive Sulfide
	PD3-014	254.71	265.00	10.29	10	Massive Sulfide
	PD3-007	271.00	278.04	7.04	7	Massive Sulfide
				55.07	55	Massive Sulfide
SAMPLE_C3_003	PD3-018	11.00	48.00	37.00	37	Supergene
	PD3-002	42.00	57.00	15.00	10	Supergene
	PD3-010	9.00	40.39	31.39	16	Supergene
	PD3-003	59.00	65.75	6.75	4	Supergene
				90.14	67	Supergene
SAMPLE_C3_004	PD3-018	81.00	90.00	9.00	9	Host rock
	PD3-004	178.00	189.00	11.00	11	
				20.00	20	
SAMPLE_C3_001	PD3-007	259.85	267.47	7.62	7	Disseminated+SMS+massive
	PD3-012	278.50	282.00	3.50	3	Disseminated+SMS+massive
	PD3-012	289.25	298.00	8.75	9	Disseminated+SMS+massive
	PD3-012	315.00	321.00	6.00	6	Disseminated+SMS+massive
	PD3-011	259.00	267.00	8.00	11	Disseminated+SMS+Stringer
	PD3-013	320.93	336.70	15.77	5	Disseminated+SMS+Stringer
	PD3-015	169.00	174.00	5.00	6	Disseminated+SMS+Stringer
	PD3-003	174.00	180.00	6.00	5	Disseminated+SMS+Stringer
	PD3-006	120.00	125.00	5.00	8	Disseminated+SMS+Stringer
				65.64	60	

COMPOSITE_SAMPLE_ID	Length (m)	Weight (kg)	Grades weight average Cu%	Zn%	Pb%	Ag ppm	Au ppm	Mineralization Style
SAMPLE_C3_001	65.64	85.49	1.27	4.50	0.24	15.39	0.06	Disseminated+SMS+massive
SAMPLE_C3_002	55.07	86.31	2.29	16.62	0.31	22.77	0.08	Massive Sulfide
SAMPLE_C3_003	**90.14**	**118.92**	**0.54**	**0.65**	**0.04**	**0.13**	**0.01**	**Supergene**
SAMPLE_C3_004	**20.00**	**25.19**	**0.27**	**0.03**	**0.04**	**1.69**	**0.01**	**Host Rock**

Criteria	JORC Code explanation	Commentary
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 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. 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. 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. • 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.
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 with the Metalurgical testwork program with Locked Cycle testwork currently underway. The program may also include testing of the supergene zone, tailings, waste zone and the high-grade massive sulphide zone. The program will evolve as results are received and will focus on collecting sufficient information to support a Scoping study level of study- should the company decide one is warranted. • 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. • Alvo is also in the process of purchasing a full Induced Polarisation (**IP**) equipment in order to undertake IP surveys across the tenement package.