

Ionic Clays Confirmed at Ipora REE Project

HIGHLIGHTS

- Reconnaissance auger drilling at the Ipora Rare Earth Elements (REE) Project (“Ipora”) intercepted zones of high-grade REEs, with **metallurgical testing confirming ionic adsorption clay-style mineralisation** (“ionic clay”).
- 125 auger drill holes (1,008m) completed across 3 prospect areas at Ipora and intercepted high-grade ionic-clay hosted REEs at the Tapir Prospect, an area covering the Ipora Granite.
- Metallurgical testing has confirmed the REEs are hosted as Ionic Clays, with results from the **standard Ammonium Sulphate wash (pH 4) include extractions up to 90% MRE, averaging 53% MRE**
- Significant results from the drilling at the Tapir Prospect included:
 - **5.5m @ 1,294ppm TREO (27% MREO)** in IPG0079 from 0.5m to end-of-hole (EOH)
 - **Inc: 2m @ 1,528ppm TREO (28% MREO)** from 4.0m
 - **7.5m @ 853ppm TREO (24% MREO)** in IPG0076 from 0.5m to EOH
 - **Inc: 2m @ 1,126ppm TREO (24% MREO)** from 4.0m
- Drilling was widely spaced (up to 500m between holes), aimed at focusing exploration going forward.
- Auger drilling to recommence at Bluebush Ionic Clay REE Project, adjacent to the Serra Verde Ionic Clay REE operation that recently received an investment from the United States Minerals Security Partnership
- Greenfield diamond drilling is ongoing at the Palma Cu-Zn VMS Project that hosts 7.6Mt @ 2.0% CuEq.

Alvo Minerals Limited (ASX: ALV) (“Alvo” or “the Company”) is pleased to provide an update on its progress with a reconnaissance auger drill program at the Ipora Rare Earth Element (REE) Project (“Ipora”), located in the Goiás State in Brazil. Ipora is a Project pegged by Alvo for potential ionic clay hosted REEs after recognising the prospectivity of the region.

Alvo Minerals Managing Director, Rob Smakman, commented:

“We are excited to report not only high-grades from the Tapir and Tatu Prospects at Ipora, but initial metallurgical tests have confirmed the desirable ionic-clay REE mineralisation style. A total of 125 holes for over 1,000 meters have been completed on a very broad spacing across the Project area.

“With modest results from the Tatu and Snapper prospects, we have been able to quickly rationalize our landholding in the area to minimize ongoing costs and we will focus on Tapir and Tatu moving forward.

“We are committed to our parallel copper-zinc and REE work programs in Central Brazil with diamond drilling ongoing at the untested regional targets at the Palma VMS Project including Urubu, Anta and C4-NE.

“This is a great time for our exploration campaigns in Brazil where we are aiming to make a major greenfield discovery.”

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PROJECTS

Palma VMS Cu/Zn Project
Bluebush Ionic Clay REE Project
Ipora REE Project

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Ipora REE Project Exploration Update

A total of 1,008m drilled in 125 auger holes have been completed at the Ipora REE Project (see Figure 1). The auger drill reached a maximum depth of 20m and averaged 8m per hole. Drilling intersected regolith, varying from soils to saprolite clay and saprock, as logged by Alvo geologists.

Drilling was designed as a reconnaissance program to broadly cover the majority of the Ipora Project, which includes the Tapir, Tatu and Snapper Prospects. The auger drilling took advantage of open roads in the region, allowing the drill-rig to cover a wide area. Samples collected (on average every 2 metres for a total of 505 samples) from the surface through the regolith profile is considered an efficient test of the REE potential.

All samples were split on the auger rig, transported back to Alvo's processing facility in Palmeiropolis (at the completion of the drill program), where they were dried and sieved by Alvo staff before being analysed using a portable X-ray-fluorescent analyser (pXRF). The results of the pXRF are compiled and interpreted by Alvo geologists and only the highest relative results were selected for laboratory analysis.

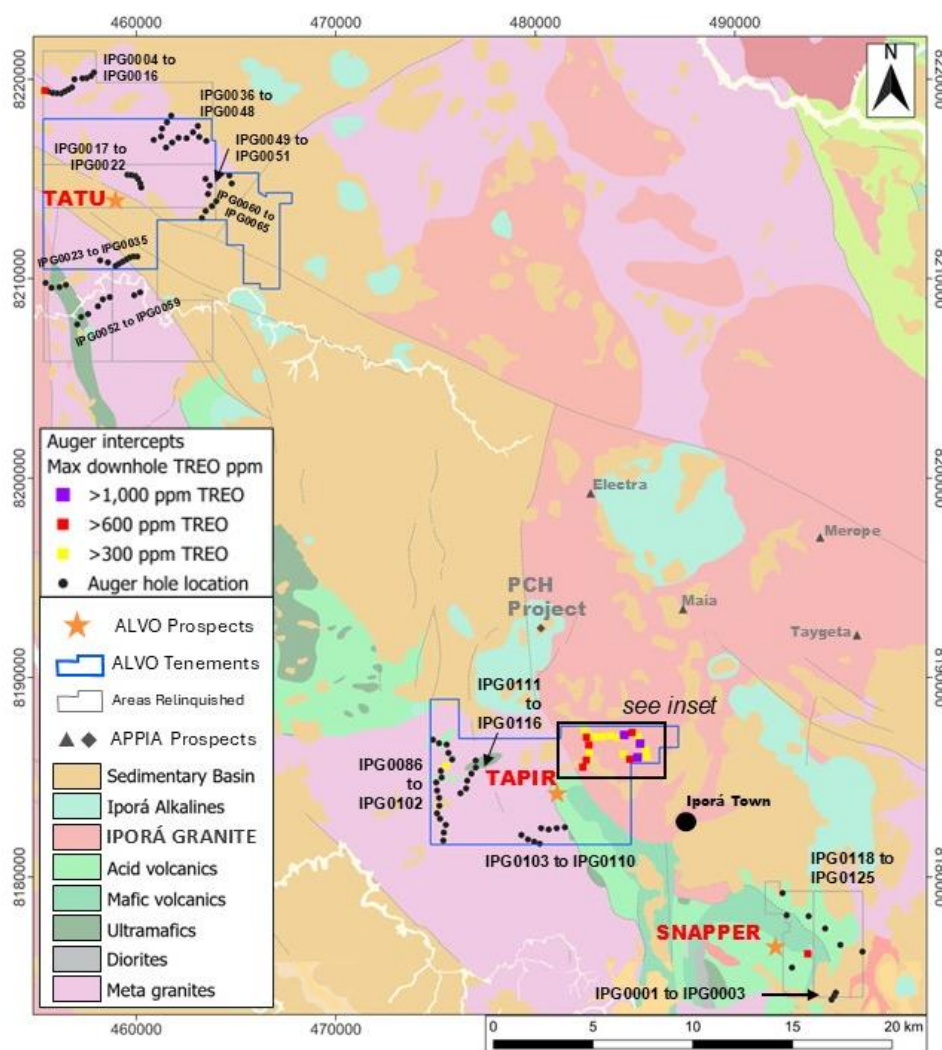


Figure 1: Ipora Ionic-Clay REE Project with maiden drilling and Prospect locations.

Based on the results of the pXRF, Alvo submitted 87 samples to the independent SGS lab for analysis, with better results (see Figure 2) from the Tapir Prospect returning results including:

- **5.5m @ 1,294ppm TREO (27% MREO)** in IPG0079 from 0.5m
 - **Inc: 2m @ 1,528ppm TREO (28% MREO)** from 4.0m
- **7.5m @ 853ppm TREO (24% MREO)** in IPG0076 from 0.5m
 - **Inc: 2m @ 1,126ppm TREO (24% MREO)** from 4.0m
- **5.5m @ 684ppm TREO (22% MREO)** in IPG0082 from 0.5m
 - **Inc: 2m @ 1,102ppm TREO (25% MREO)** from 4.0m

Better results from the Tatu and Snapper Prospects returned the following results:

- **9.5m @ 591ppm TREO (23% MREO)** in IPG0016 from 0.5m to EOH Tatu
 - **Inc: 4m @ 718ppm TREO (27% MREO)** from 4.0m
- **5.5m @ 703ppm TREO (23% MREO)** in IPG0124 from 0.5m Snapper

A full table of significant intercepts from the independent laboratory is included as Table 1 below.

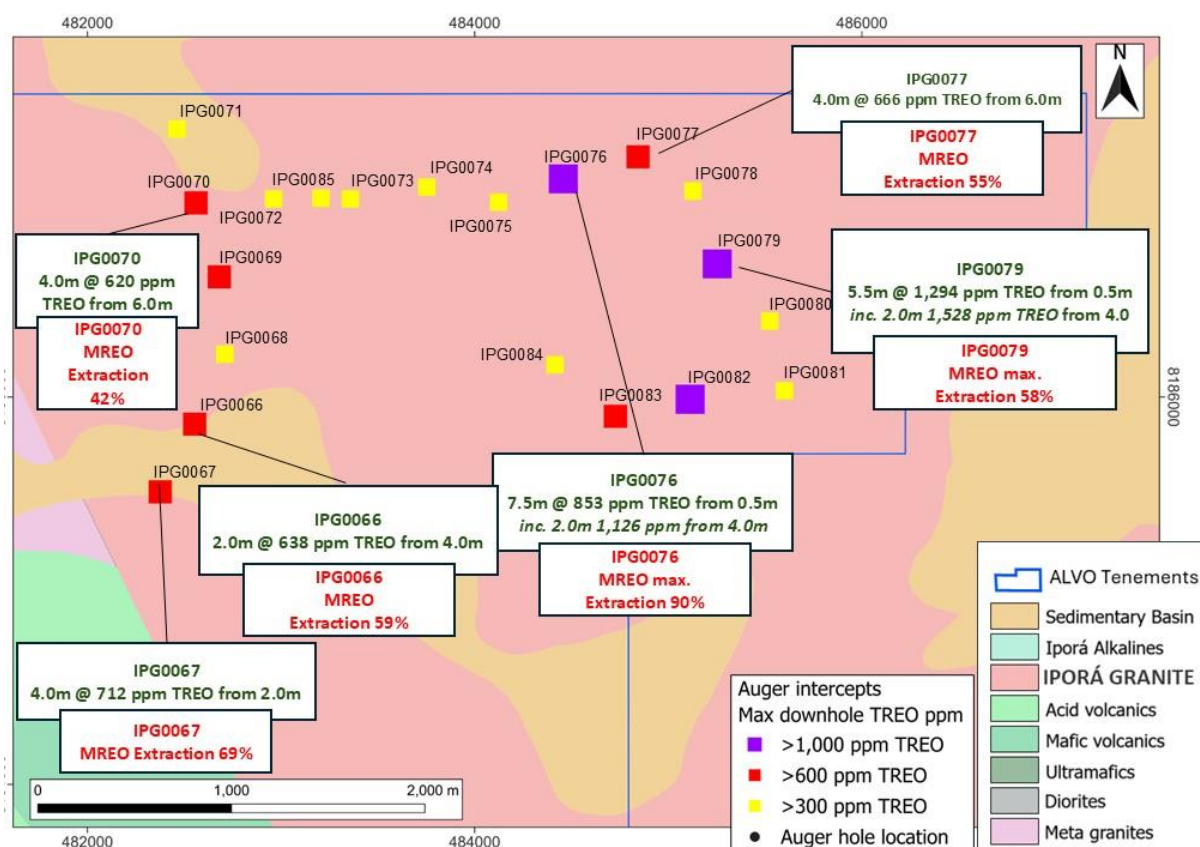


Figure 2: Tapir Prospect with auger drill results and preliminary metallurgical sample results.

Fifteen samples from the more mineralised holes (Tatu Prospect only) were selected for preliminary metallurgical testing using the ‘ammonium sulphate solution’ (AMSUL) test, considered indicative for the Ionic-clay hosted style of mineralisation. Ionic clays are the preferred hosts of REEs as their potential extraction is considered less harmful to the environment, cheaper and therefore more sustainable than other styles.

Standard sample preparation at the lab (see Appendix 1) was undertaken before a sample was screened to -4mm. The ionic adsorption clay-hosted rare earth element leach test used a diluted solution of 0.5 molar ammonium sulphate at room temperature and a pH 4 for 30 minutes. Recoveries above 30% are considered by Alvo to confirm the ionic nature of the mineralisation.

High-value **magnet rare earth oxides (MREO)** recovery rates AMSUL test at ambient temperatures achieved the following excellent extractions (after 30 minutes):

- **Neodymium (Nd): up to 92% averaging 55%.**
- **Praseodymium (Pr): up to 97%, averaging 55%.**
- Dysprosium (Dy): up to 68%, averaging 44%.
- Terbium (Tb): up to 75%, averaging 49%.

Total MREO (Nd, Pr, Dy +Tb): up to 90%, averaging 53%.

The extractions of the MREOs are considered excellent and especially high for the valuable Nd and Pr elements. A full table of the lab extractions (including Heavy Rare Earth Oxides (HREO) and Total Rare Earth Oxides (TREO) is presented in Table 2 below.

Ipora Ionic Clay REE Project Location

The Ipora Project is located close to Appia Rare Earth and Uranium Corp's ("**Appia**") (CSE:API) PCH ionic adsorption clay project ("**PCH Project**") which recently released a maiden NI 43-101 Resource of 52.8Mt @ 2,841ppm TREO¹. The PCH Project is not considered to be ionic clay hosted, however Appia has also recently released results from other prospects on the Ipora granite (the same host as the Tapir Prospect) which have similar grades and recoveries to the REEs described at Tapir²

Further work at Ipora will include follow-up mapping to identify additional areas of Ipora Granite. Accessing the Prospect areas will require agreements with landowners which is currently being initiated, with additional follow-up sampling (auger drilling) being planned for early 2025, following the wet season.

Next Steps and Upcoming News flow

- Diamond Drilling at Palma Cu/Zn VMS Project – **Ongoing**
- FLEM and IP surveys on regional targets across Palma – **Ongoing**
- Geochemical sampling across known exploration prospects across Palma– **Ongoing**
- Drilling update from Bluebush REE Project – **Imminent**

¹ Refer to Appia Announcement dated 1 March 2024: Appia Announces Maiden Rare Earth Mineral Resource Estimate of 6.6 Million Tonnes Indicated Grading 2,513 ppm TREO and 46.2 Million Tonnes Inferred grading 2,888 ppm TREO at the PCH Ionic Adsorption Clay Project in Goiás, Brazil

² Refer Appia Announcement dated 20 August 2024: Appia Confirms Outstanding Desorption Results From Its Ionic Adsorption Clay Targets Maia, Electra, Taygeta and Merope in Goiás, Brazil

ENQUIRIES

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References to Previous ASX Announcements

Reference in this report is made to previous announcements including:

As reported in the announcement "Prospectus" dated 18 October 2021 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

As reported in the announcement "New VMS Discovery at Palma Delivers Broadest Base Metals Intercept to date" dated 1 August 2023 issued by Alvo Minerals Limited

As reported in the announcement "Alvo Acquires REE Project in New High Grade Province" dated 30 January 2024 issued by Alvo Minerals Limited

As reported in the announcement "Diamond Drilling to Commence on Untested Priority Cu-Zn Targets at Palma" dated 1 May 2024, issued by Alvo Minerals Limited

As reported in the announcement "Maiden Drilling complete at Ipora Rare Earths Project", issued by Alvo Minerals Limited

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.

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.

Table 1: Significant Intercepts* from Ipora Auger drilling

AUGER HOLE ID	From (m)	Length (m)	Nd ₂ O ₃ ppm	Pr ₆ O ₁₁ ppm	Dy ₂ O ₃ ppm	Tb ₄ O ₇ ppm	TREO ppm	MREO ppm	% MREO	Prospect	Comment
IPG0016	4.00	2.00	136	39	14	2	718	191	27%	TATU	
IPG0066	0.50	5.50	63	16	16	2	509	98	11%	TAPIR	End of Hole
IPG0067	0.50	5.50	95	26	18	3	602	141	22%	TAPIR	End of Hole
IPG0068	0.50	3.50	63	16	17	2	480	98	21%	TAPIR	
IPG0069	0.50	7.50	66	17	19	3	502	105	20%	TAPIR	End of Hole
IPG0070	4.00	6.00	98	26	21	3	608	148	24%	TAPIR	End of Hole
IPG0071	0.50	3.50	55	15	10	2	402	82	20%	TAPIR	
IPG0072	2.00	6.00	67	18	17	3	493	104	21%	TAPIR	
IPG0073	0.50	9.50	69	18	14	2	465	103	22%	TAPIR	
IPG0074	0.50	7.50	58	15	12	2	440	87	20%	TAPIR	
IPG0075	0.50	7.50	54	14	11	2	377	80	21%	TAPIR	
IPG0076 <i>Including</i>	0.50	7.50	138	38	28	4	853	208	24%	TAPIR	End of Hole
	4.0	2.0	178	49	41	7	1,126	274	24%		
IPG0077	4.00	6.00	93	25	20	3	605	140	23%	TAPIR	
IPG0078	0.50	7.50	50	13	11	2	399	75	18%	TAPIR	
IPG0079 <i>Including</i>	0.50	5.50	246	69	31	6	1,294	351	27%	TAPIR	End of Hole
	4.0	2.0	302	86	32	6	1,528	427	28%		
IPG0080	4.00	4.00	72	19	13	2	421	105	25%	TAPIR	
IPG0081	2.00	6.00	61	16	12	2	429	90	21%	TAPIR	
IPG0082 <i>Including</i>	0.50	5.50	107	28	20	3	684	159	22%	TAPIR	End of Hole
	4.0	2.0	190	49	34	6	1,102	280	25%		
IPG0083	0.50	7.50	82	21	16	3	519	122	23%	TAPIR	
IPG0084	0.50	5.50	66	17	14	2	470	99	21%	TAPIR	
IPG0085	0.50	5.50	57	15	12	2	415	86	21%	TAPIR	
IPG0097	0.50	9.50	53	15	5	1	355	74	21%	TAPIR	
IPG0124	0.50	5.50	111	27	25	4	703	167	23%	SNAPPER	End of Hole

* The significant intercepts were calculated using values > 300ppm TREO only in consecutive intervals of saprolite samples with thickness >2m. No upper cuts were considered. Weighted averages were calculated for all intercepts.

Table 2: Preliminary metallurgical extractions from selected auger sampling at Tapir prospect (Ipورا Project).

Auger Hole ID	From (m)	To (m)	Nd ₂ O ₃ % Extraction	Pr ₆ O ₁₁ % Extraction	Dy ₂ O ₃ % Extraction	Tb ₄ O ₇ % Extraction	TREO % Extraction	MREO % Extraction
IPG0066	4.00	6.00	66	70	21	32	34	59
IPG0067	4.00	6.00	73	75	40	48	47	69
IPG0070	6.00	8.00	44	44	36	40	30	42
IPG0076	0.50	2.00	63	65	38	43	34	60
IPG0076	2.00	4.00	92	97	68	74	65	90
IPG0076	4.00	6.00	86	87	64	71	61	83
IPG0076	6.00	8.00	58	56	59	64	46	58
IPG0077	8.00	10.00	56	54	50	54	37	55
IPG0079	0.50	2.00	59	58	53	58	43	58
IPG0079	2.00	4.00	23	21	33	32	18	24
IPG0079	4.00	6.00	26	22	43	40	21	27
IPG0082	4.00	6.00	17	19	12	13	18	16
IPG0124	4.00	6.00	78	79	68	75	55	76
IPG0016	2.00	4.00	40	38	40	41	21	39
IPG0016	4.00	6.00	40	36	44	45	26	39

Table 3: Collar file of Alvo Auger drilling at Ipورا Project

HOLE_ID	EASTING (m)	NORTHING (m)	RL (m)	EOH (m)	PROJECT NAME	PROSPECT
IPG0001	494850	8173846	486	12.00	IPORA	SNAPPER
IPG0002	494974	8174029	483	12.00	IPORA	SNAPPER
IPG0003	495059	8174198	479	6.00	IPORA	SNAPPER
IPG0004	457874	8220337	425	12.00	IPORA	TATU
IPG0005	457732	8220162	412	3.50	IPORA	TATU
IPG0006	457505	8220051	407	8.00	IPORA	TATU
IPG0007	457297	8220042	421	6.00	IPORA	TATU
IPG0008	456897	8219997	418	8.00	IPORA	TATU
IPG0009	456777	8219591	408	10.00	IPORA	TATU
IPG0010	456591	8219483	408	8.00	IPORA	TATU
IPG0011	456409	8219388	401	6.00	IPORA	TATU
IPG0012	456231	8219288	400	10.00	IPORA	TATU
IPG0013	456020	8219294	395	10.00	IPORA	TATU
IPG0014	455803	8219309	384	6.00	IPORA	TATU
IPG0015	455582	8219383	394	10.00	IPORA	TATU
IPG0016	455414	8219432	397	10.00	IPORA	TATU
IPG0017	459553	8215210	411	6.00	IPORA	TATU
IPG0018	459757	8215193	424	8.00	IPORA	TATU
IPG0019	459950	8215146	435	12.00	IPORA	TATU
IPG0020	460085	8214998	436	8.00	IPORA	TATU
IPG0021	460198	8214768	447	10.00	IPORA	TATU

HOLE_ID	EASTING (m)	NORTHING (m)	RL (m)	EOH (m)	PROJECT NAME	PROSPECT
IPG0022	460246	8214570	453	2.00	IPORA	TATU
IPG0023	460047	8211105	428	8.00	IPORA	TATU
IPG0024	459843	8211110	424	10.00	IPORA	TATU
IPG0025	459655	8211055	430	6.00	IPORA	TATU
IPG0026	459485	8210953	419	8.00	IPORA	TATU
IPG0027	459301	8210842	412	10.00	IPORA	TATU
IPG0028	459127	8210745	403	10.00	IPORA	TATU
IPG0029	458957	8210644	398	10.00	IPORA	TATU
IPG0030	458576	8210815	394	6.00	IPORA	TATU
IPG0031	458188	8210920	408	10.00	IPORA	TATU
IPG0032	455453	8209788	405	8.00	IPORA	TATU
IPG0033	455746	8209544	419	10.00	IPORA	TATU
IPG0034	456149	8209582	428	12.00	IPORA	TATU
IPG0035	456471	8209686	434	10.00	IPORA	TATU
IPG0036	461746	8218172	463	8.00	IPORA	TATU
IPG0037	461533	8217840	448	8.00	IPORA	TATU
IPG0038	461287	8217523	436	8.00	IPORA	TATU
IPG0039	461236	8217128	421	8.00	IPORA	TATU
IPG0040	460870	8216958	416	12.00	IPORA	TATU
IPG0041	463507	8216905	463	8.00	IPORA	TATU
IPG0042	463152	8217109	447	4.00	IPORA	TATU
IPG0043	463083	8217651	458	8.00	IPORA	TATU
IPG0044	462840	8217340	444	8.00	IPORA	TATU
IPG0045	462520	8217040	430	4.00	IPORA	TATU
IPG0046	462114	8217063	444	8.00	IPORA	TATU
IPG0047	461794	8216823	424	10.00	IPORA	TATU
IPG0048	461487	8216573	416	6.00	IPORA	TATU
IPG0049	463467	8215000	460	8.00	IPORA	TATU
IPG0050	463676	8214671	491	10.00	IPORA	TATU
IPG0051	463592	8214243	500	8.00	IPORA	TATU
IPG0052	460189	8209316	394	8.00	IPORA	TATU
IPG0053	459889	8209166	412	12.00	IPORA	TATU
IPG0054	457036	8207708	390	6.00	IPORA	TATU
IPG0055	457235	8208082	387	4.00	IPORA	TATU
IPG0056	457582	8208222	390	10.00	IPORA	TATU
IPG0057	458076	8208613	398	8.00	IPORA	TATU
IPG0058	458319	8208967	391	8.00	IPORA	TATU
IPG0059	458667	8209074	405	8.00	IPORA	TATU
IPG0060	463286	8213031	522	10.00	IPORA	TATU
IPG0061	463474	8213388	517	8.00	IPORA	TATU
IPG0062	463787	8213634	520	12.00	IPORA	TATU
IPG0063	464007	8213882	515	6.00	IPORA	TATU
IPG0064	464781	8214772	509	10.00	IPORA	TATU
IPG0065	464662	8215172	504	6.00	IPORA	TATU
IPG0066	482554	8185860	597	6.00	IPORA	TAPIR
IPG0067	482376	8185510	607	6.00	IPORA	TAPIR

HOLE_ID	EASTING (m)	NORTHING (m)	RL (m)	EOH (m)	PROJECT NAME	PROSPECT
IPG0068	482710	8186221	576	4.00	IPORA	TAPIR
IPG0069	482681	8186620	583	8.00	IPORA	TAPIR
IPG0070	482561	8187002	595	10.00	IPORA	TAPIR
IPG0071	482462	8187383	602	4.00	IPORA	TAPIR
IPG0072	482961	8187022	559	8.00	IPORA	TAPIR
IPG0073	483358	8187023	571	10.00	IPORA	TAPIR
IPG0074	483753	8187083	607	8.00	IPORA	TAPIR
IPG0075	484123	8187005	618	8.00	IPORA	TAPIR
IPG0076	484458	8187126	617	8.00	IPORA	TAPIR
IPG0077	484844	8187240	599	10.00	IPORA	TAPIR
IPG0078	485127	8187063	596	8.00	IPORA	TAPIR
IPG0079	485253	8186687	566	6.00	IPORA	TAPIR
IPG0080	485524	8186392	576	8.00	IPORA	TAPIR
IPG0081	485600	8186032	573	8.00	IPORA	TAPIR
IPG0082	485113	8185988	560	6.00	IPORA	TAPIR
IPG0083	484727	8185900	580	8.00	IPORA	TAPIR
IPG0084	484415	8186166	603	6.00	IPORA	TAPIR
IPG0085	483206	8187026	575	6.00	IPORA	TAPIR
IPG0086	475384	8181826	564	2.00	IPORA	TAPIR
IPG0087	475412	8182223	542	10.00	IPORA	TAPIR
IPG0088	475511	8182610	517	12.00	IPORA	TAPIR
IPG0089	475226	8182914	511	4.00	IPORA	TAPIR
IPG0090	475073	8183189	535	10.00	IPORA	TAPIR
IPG0091	475189	8183568	546	8.00	IPORA	TAPIR
IPG0092	475178	8183966	539	12.00	IPORA	TAPIR
IPG0093	475074	8184334	521	8.00	IPORA	TAPIR
IPG0094	475032	8184738	513	10.00	IPORA	TAPIR
IPG0095	475303	8184988	524	8.00	IPORA	TAPIR
IPG0096	475265	8185316	535	8.00	IPORA	TAPIR
IPG0097	475530	8185564	538	10.00	IPORA	TAPIR
IPG0098	474871	8186878	536	8.00	IPORA	TAPIR
IPG0099	475177	8186702	538	6.00	IPORA	TAPIR
IPG0100	475553	8186637	552	6.00	IPORA	TAPIR
IPG0101	475642	8186219	546	8.00	IPORA	TAPIR
IPG0102	475830	8185890	546	8.00	IPORA	TAPIR
IPG0103	480290	8182444	570	10.00	IPORA	TAPIR
IPG0104	480668	8182380	552	8.00	IPORA	TAPIR
IPG0105	481070	8182444	576	10.00	IPORA	TAPIR
IPG0106	481483	8182488	592	8.00	IPORA	TAPIR
IPG0107	479301	8182104	594	6.00	IPORA	TAPIR
IPG0108	479629	8181881	582	8.00	IPORA	TAPIR
IPG0109	479943	8181767	574	6.00	IPORA	TAPIR
IPG0110	480221	8181667	562	10.00	IPORA	TAPIR
IPG0111	476248	8184198	525	4.00	IPORA	TAPIR
IPG0112	476531	8184437	553	6.00	IPORA	TAPIR
IPG0113	476585	8184823	554	8.00	IPORA	TAPIR

HOLE_ID	EASTING (m)	NORTHING (m)	RL (m)	EOH (m)	PROJECT NAME	PROSPECT
IPG0114	476798	8185179	563	10.00	IPORA	TAPIR
IPG0115	477016	8185486	575	8.00	IPORA	TAPIR
IPG0116	477007	8185833	571	6.00	IPORA	TAPIR
IPG0117	479191	8192055	649	20.00	IPORA	REGIONAL
IPG0118	492601	8178078	499	4.00	IPORA	SNAPPER
IPG0119	492390	8179185	512	4.00	IPORA	SNAPPER
IPG0120	493697	8178033	481	10.00	IPORA	SNAPPER
IPG0121	494528	8177414	453	10.00	IPORA	SNAPPER
IPG0122	495288	8176592	463	6.00	IPORA	SNAPPER
IPG0123	496399	8176254	479	6.00	IPORA	SNAPPER
IPG0124	493656	8176143	473	6.00	IPORA	SNAPPER
IPG0125	492865	8175453	503	6.00	IPORA	SNAPPER

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 Copper Zinc Project. Palma hosts a JORC 2012 Indicated and Inferred Mineral Resource Estimate* of 7.6Mt @ 2.0% CuEq (0.7% Cu, 3.4% Zn, 0.6% Pb, 16g/t Ag & 0.03 g/t Au).

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 Goiás 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.

** For details of the Palma Mineral Resource Estimate, please refer to ALV ASX Announcement dated 19 July 2024: 65% Increase in Palma Resource to 7.6Mt @ 2.0% CuEq*

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.	- Alvo auger drilling: Auger geochemical sampling was completed on 1 or 2 metres continuous samples. The samples are homogenised on a tarp and a representative sample of approximately 1kg is bagged and labelled. - Sampling was supervised by Alvo Minerals field technicians who described the material of each sample as soil, saprolite or weathered rock. Sample information is collected in the field on a tablet - Samples were transported back to Alvo's processing facility in Palmeiropolis (at the completion of the drill program), where they were dried overnight in an oven on individual trays and then and screen to -1mm. A sub-sample of the -1mm fraction is then analysed using a portable Xray-fluorescent scanner (pXRF- SciApps 555 model). The results of the pXRF are compiled and interpreted by Alvo geologists and only the highest relative results were selected for laboratory analysis. The pXRF results are not a part of this release. - Once the pXRF results have been compiled and interpreted, original split from the Auger samples which are considered prospective are dispatched to the independent external lab- SGS Geosol in Goiania, where preliminary prep is completed before being dispatched to SGS in Belo Horizonte for analysis
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).	Auger drilling was completed using a hydraulic auger drilling machine with a 4.5" auger bit and 2m helicoidal rods. The drilling is open hole, meaning there is a significant chance of contamination from the surface and other parts of the auger hole. Holes are vertical and not oriented.
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.	- No recoveries are recorded. - The operator observes the volume of each metre and notes any discrepancy. - 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 were logged by Alvo Minerals geologists or field technicians, detailing the colour, weathering, alteration, texture and any geological observations. Care is taken to identify transported cover from in-situ saprolite/clay zones and the moisture content. - Qualitative logging only, each hole is photographed along with the samples arrayed in drill order. - All auger drilling is logged onsite by Alvo field technicians. Logs include hole number, hole location, date drilled, collar location, dip and azimuth as well as qualitative data such as rock type, and descriptions of the colour, alteration, weathering, grain size, mineralisation and texture.
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.	- All the sampling procedures were conducted by Alvo Minerals trained geologists and technicians using a Standard Operating Procedure. - Auger sampling is completed on site. Samples are collected from a modified bucket around the mouth of the hole and then each sample is homogenised and quartered on a tarp, with a sample bagged on site. Samples are then sent to Alvo's central facility in Palmeiropolis for further processing as described above. - Sampling is considered to be appropriate for the material being collected.
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.	- The samples were dispatched to SGS in Goiania, where the physical preparation was done. Analysis was completed at the SGS Geosol laboratory in Vespasiano (Belo Horizonte) – Minas Gerais state, Brazil. - The SGS Geosol lab sample preparation includes drying, crushing with P75 of 3mm, homogenised, quartered and pulverized of 300g with P95 below 150#. - The SGS Geosol analytical procedures (ICP95A/IMS95A) include lithium metaborate fusion assays by ICP OES/MS, according to standard industry practices. The elements analysed were: Al₂O₃, Ba, CaO, Cr₂O₃, Fe₂O₃, K₂O, MgO, MnO, Na₂O, P₂O₅, SiO₂, Sr, TiO₂, V, Zn, Zr, Ce, Co, Cs, Cu, Dy, Er, Eu, Ga, Gd, Hf, Ho, La, Lu, Mo, Nb, Nd, Ni, Pr, Rb, Sm, Sn, Ta, Tb, Th, Tl, Tm, U, W, Y, Yb. Also, Loss on Ignition (LOI) was determined by calcining the sample at 1000°C. - The Leaching test method ICM694 includes Ammonium Sulfate Leaching followed by ICPOES/ICPMS analysis. The sample was subjected to leaching at room temperature with 160 ml of a 0.5 mol/L ammonium sulfate solution for 30 minutes. Post-leaching, the pulp was filtered using a vacuum pump, and the residue was rinsed with 80 ml of a 0.1% ammonium sulfate solution. An aliquot of the solution was then taken and diluted 25 times with 2% HNO₃. - The diluted solution from the above process was analysed using the method ICPOES / ICPMS. The assays include: Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Hg, Ho, In, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, P, Pb, Pr, Rb, Re, Sb, Sc, Se, Si, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, Zn, Zr.

Criteria	JORC Code explanation	Commentary																																																			
		- Quality Control: The laboratory follows strict quality control procedures, ensuring the accuracy and precision of the assay data. Internally, the laboratory uses replicate assays, standards, and blanks to maintain quality. - No sample duplicates. The Standards and Blanks showed acceptable values.																																																			
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 Company geologist. - No twinned holes are being reported. - All data is stored in Alvo's cloud based database, which is backed-up daily off site. - Adjustments to the assay data were made- transforming the elemental values into the oxide values. The conversion factors used are included in the table below. Only intervals of saprolite Weighted averages were used to calculate significant intercepts. <table border="1"> <thead> <tr> <th>Element</th><th>Oxide</th><th>Factor</th></tr> </thead> <tbody> <tr><td>Sc</td><td>Sc2O3</td><td>1.5338</td></tr> <tr><td>Ce</td><td>CeO2</td><td>1.1713</td></tr> <tr><td>La</td><td>La2O3</td><td>1.1728</td></tr> <tr><td>Sm</td><td>Sm2O3</td><td>1.1596</td></tr> <tr><td>Nd</td><td>Nd2O3</td><td>1.1664</td></tr> <tr><td>Pr</td><td>Pr6O11</td><td>1.2082</td></tr> <tr><td>Dy</td><td>Dy2O3</td><td>1.1477</td></tr> <tr><td>Eu</td><td>Eu2O3</td><td>1.1579</td></tr> <tr><td>Y</td><td>Y2O3</td><td>1.2699</td></tr> <tr><td>Tb</td><td>Tb4O7</td><td>1.1762</td></tr> <tr><td>Gd</td><td>Gd2O3</td><td>1.1526</td></tr> <tr><td>Ho</td><td>Ho2O3</td><td>1.1455</td></tr> <tr><td>Er</td><td>Er2O3</td><td>1.1435</td></tr> <tr><td>Tm</td><td>Tm2O3</td><td>1.1421</td></tr> <tr><td>Yb</td><td>Yb2O3</td><td>1.1387</td></tr> <tr><td>Lu</td><td>Lu2O3</td><td>1.1371</td></tr> </tbody> </table>	Element	Oxide	Factor	Sc	Sc2O3	1.5338	Ce	CeO2	1.1713	La	La2O3	1.1728	Sm	Sm2O3	1.1596	Nd	Nd2O3	1.1664	Pr	Pr6O11	1.2082	Dy	Dy2O3	1.1477	Eu	Eu2O3	1.1579	Y	Y2O3	1.2699	Tb	Tb4O7	1.1762	Gd	Gd2O3	1.1526	Ho	Ho2O3	1.1455	Er	Er2O3	1.1435	Tm	Tm2O3	1.1421	Yb	Yb2O3	1.1387	Lu	Lu2O3	1.1371
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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.	- A GPS are used to locate and records the auger drill collars. No auger drill holes are downhole surveyed. - All location data has been recorded SAD69 (South America 1969 Datum) UTM zone 22S. - Topographic control is adequate for the stage of exploration at Ipora.																																																			
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.	- Auger drillholes are variably spaced utilising existing roads as access. - The results reported may be considered in an MRE, although more drilling demonstrating continuity would be required. - No compositing has been applied to the results- apart from weighted averages																																																			

Criteria	JORC Code explanation	Commentary
<i>Orientation of data in relation to geological structure</i>	• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i> • <i>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.</i>	• Drilling is shallow and considered as first pass sampling - generally lines are oriented across the assumed geological terrain. No bias is believed to have occurred. Sampling lengths were generally 0.5-2m downhole, unless there was a specific geological control required by the technician. • No relationship between mineralisation and drilling orientation is known at this stage.
<i>Sample security</i>	• <i>The measures taken to ensure sample security.</i>	• The auger samples were collected and split in the field and the remaining material was discarded. The quarter was sent to the SGS Geosol, the pulps returned for storage in Palmeiropolis -TO.
<i>Audits or reviews</i>	• <i>The results of any audits or reviews of sampling techniques and data.</i>	• No audit to date.

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 Ipora Project is located in Goais State, Brazil. There are a number of tenements in the Project, granted to the name of Alvo's Brazilian Subsidiary. <table><tr><th>Tenement ID</th><th>Phase</th><th>Area (Ha)</th><th>Prospect Name</th></tr><tr><td>861.107/2023</td><td>Granted Exploration</td><td>1,040</td><td>Tapir</td></tr><tr><td>861.108/2023</td><td>Granted Exploration</td><td>1,604</td><td>Tapir</td></tr><tr><td>861.109/2023</td><td>Exploration Application</td><td>1,877</td><td>Tapir</td></tr><tr><td>861.110/2023</td><td>Exploration Application</td><td>1,691</td><td>Tapir</td></tr><tr><td>861.173/2023</td><td>Application withdrawn</td><td>-</td><td>Snapper</td></tr><tr><td>861.174/2023</td><td>Application withdrawn</td><td>-</td><td>Snapper</td></tr><tr><td>861.175/2023</td><td>Application withdrawn</td><td>-</td><td>Tatu</td></tr><tr><td>861.177/2023</td><td>Application withdrawn</td><td>-</td><td>Tatu</td></tr><tr><td>861.178/2023</td><td>Granted Exploration</td><td>1,950</td><td>Tatu</td></tr><tr><td>861.181/2023</td><td>Granted Exploration</td><td>1,407</td><td>Tatu</td></tr><tr><td>861.182/2023</td><td>Granted Exploration</td><td>1,861</td><td>Tatu</td></tr><tr><td>861.184/2023</td><td>Granted Exploration</td><td>1,960</td><td>Tatu</td></tr><tr><td>861.185/2023</td><td>Application withdrawn</td><td>-</td><td>Tatu</td></tr></table> - 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.	Tenement ID	Phase	Area (Ha)	Prospect Name	861.107/2023	Granted Exploration	1,040	Tapir	861.108/2023	Granted Exploration	1,604	Tapir	861.109/2023	Exploration Application	1,877	Tapir	861.110/2023	Exploration Application	1,691	Tapir	861.173/2023	Application withdrawn	-	Snapper	861.174/2023	Application withdrawn	-	Snapper	861.175/2023	Application withdrawn	-	Tatu	861.177/2023	Application withdrawn	-	Tatu	861.178/2023	Granted Exploration	1,950	Tatu	861.181/2023	Granted Exploration	1,407	Tatu	861.182/2023	Granted Exploration	1,861	Tatu	861.184/2023	Granted Exploration	1,960	Tatu	861.185/2023	Application withdrawn	-	Tatu
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Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	No known historical work was completed across the tenure apart from broad spaced mapping by the Brazilian geological Survey (CPRM)																																																								
Geology	Deposit type, geological setting and style of mineralisation.	Alvo is exploring the Ipora Project for Rare Earth Elelemtns (REE) of the style hosted by Ionic clays.																																																								
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	See Table 3- Collar table. All drilling is included in Table 3.																																																								

Criteria	JORC Code explanation	Commentary
	○ 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.	
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.	● The significant intercepts were calculated using values > 300ppm TREO only in consecutive intervals of saprolite samples with thickness >2m. No upper cuts were considered. Weighted averages were calculated for all intercepts.
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').	● Mineralisation orientation is not known at this stage, although assumed to be flat lying. ● The downhole depths are reported, true widths are not 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 the holes were assayed. All of the holes were analysed with pXRF, and only higher grades sent to lab for analysis. ● The pXRF analyses are not reported.

Criteria	JORC Code explanation	Commentary
<i>Other substantive exploration data</i>	<i>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.</i>	No other data is considered relevant at this time.
<i>Further work</i>	<i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> <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>	Alvo will consider additional geological mapping, geochemical sampling and Auger drilling at Ipora at the end of the wet season (in early 2025). Additional sampling for more definitive metallurgical testing is required for understanding of the exploration potential.