

# Exploration Drilling Hits 29m @ 5,919ppm TREYO at Karloning

**Widespread clay-hosted REE mineralisation intersected in the Company's first AC drill program substantially expanding the high-grade clay hosted rare earth discovery**

## Highlights

- Excellent results received from inaugural 80-hole air-core (AC) drill program at the Karloning REE Project in WA.
- Hole KGAC054 intersected exceptional mineralisation through the clays and into saprock material, returning a standout intercept of **29m at 5,915ppm TREYO from 12m, including 4m grading 12,366ppm (1.2%) from 24m\***.
- Widespread enriched clay-hosted REE's intersected, with assays including\*:
  - **20m grading 1,554ppm TREYO from 8m, including 4m grading 2,014ppm TREYO from 18m** (KGAC057)
  - **14m grading 1,423ppm TREYO from 12m, including 2m grading 1,931ppm TREYO from 16m** (KGAC058)
  - **10m grading 1,812ppm TREYO from 8m, including 2m grading 2,194ppm TREYO from 16m** (KGAC060)
  - **10m grading 1,540ppm TREYO from 14m** (KGAC016)
  - **12m grading 1,337ppm TREYO from 6m, including 2m grading 2,156ppm TREYO from 8m** (KGAC009)
- **The results above highlight the potential scale of the project given that only ~6% of Codrus's total land position has been drill tested to date.**
- Significantly, up to 24% of the mineralisation is contained in the high-value REE's which are critical in the supply chain for manufacturing magnets (MREO) for electric motors. This includes Neodymium (Nd), Praseodymium (Pr), Dysprosium (Dy) and Terbium (Tb) (MREO = Magnet Rare Earth Oxides).
- The results from the first expansive drill program reinforce the outstanding potential of the Karloning REE Project, and Codrus' enviable position in an exciting emerging rare earth district in Western Australia.
- The Karloning Project represents an excellent opportunity to support Codrus's diversification into the critical minerals space and build on its current gold and copper assets, providing exposure to a commodity sector with outstanding fundamentals and a strong growth outlook.

(\*2m samples reported, down hole width reported)



## ASX Announcement

19 September 2023

### Directors

**Andrew Radonjic**

Non-Executive Chairman

**Shannan Bamforth**

Managing Director

**Jamie Byrde**

Non-Executive Director &  
Company Secretary

### Investment Highlights

ASX Code	CDR
Issued Capital	75,790,004
Share Price	\$0.07
Market Cap.	\$5.3M
Cash (Jun '23)	\$1.8M

### Contact

Level 2, 16 Altona Street  
West Perth WA 6005

[codrusminerals.com.au](http://codrusminerals.com.au)



[@CodrusMinerals](https://twitter.com/CodrusMinerals)



[Codrus Minerals](https://www.linkedin.com/company/codrus-minerals)

Codrus Minerals (ASX: **CDR, Codrus or the Company**) is pleased to advise that it has received highly encouraging assay results from its inaugural AC drilling program at the recently acquired **Karloning REE Project** in WA, substantially expanding the scale and potential of what is emerging as a significant new clay-hosted rare earth element (REE) discovery.

The drilling program has intersected multiple zones of enriched clay-hosted REE mineralisation across large areas of the tenement that was targeted by the program, confirming the potential of the Karloning Project as an outstanding REE growth opportunity. The opportunity to identify further mineralisation in the recently enlarged tenement holding is significant, with only 6% of the Company’s overall tenure position tested to date.

In November 2022, Codrus entered into a farm-in and joint venture agreement with Talgamine Minerals Pty Ltd (Talgamine) to earn up to a 90% interest in the Karloning Project, which is located in Western Australia’s Wheatbelt region.

The Company has also pegged additional tenements in the region in its own right and entered into an additional farm in agreement with Fleet Street Holdings Pty Ltd (Fleet Street) adjacent to this (see Figure 1 and Figure 2 and ASX announcement “Codrus Secures Large-Scale Niobium-Rich REE Project in WA”, 23<sup>rd</sup> November 2022, and “Codrus increase Landholding at Karloning REE Project 16-fold” 2<sup>nd</sup> August 2023).

The Project offers compelling exploration potential for the high-value REE’s used in the manufacture of high-strength permanent magnets – namely praseodymium, neodymium, terbium and dysprosium.

These elements are in high demand because of the explosive growth in industries that rely on permanent rare earth magnets, such as electric vehicles, wind turbines and other renewable energy applications.



**Figure 1. Location of the Karloning REE Project in Western Australia’s Wheatbelt.**

**Codrus Managing Director, Shannan Bamforth, said:**

*“The recent air-core program was designed to build on the successful RC program earlier this year, which covered an initial area of around 400m by 300m. The assays have confirmed what we wanted to see – that the shallow mineralization has both scale and grade, substantially upgrading the potential of the Karloning Project.*

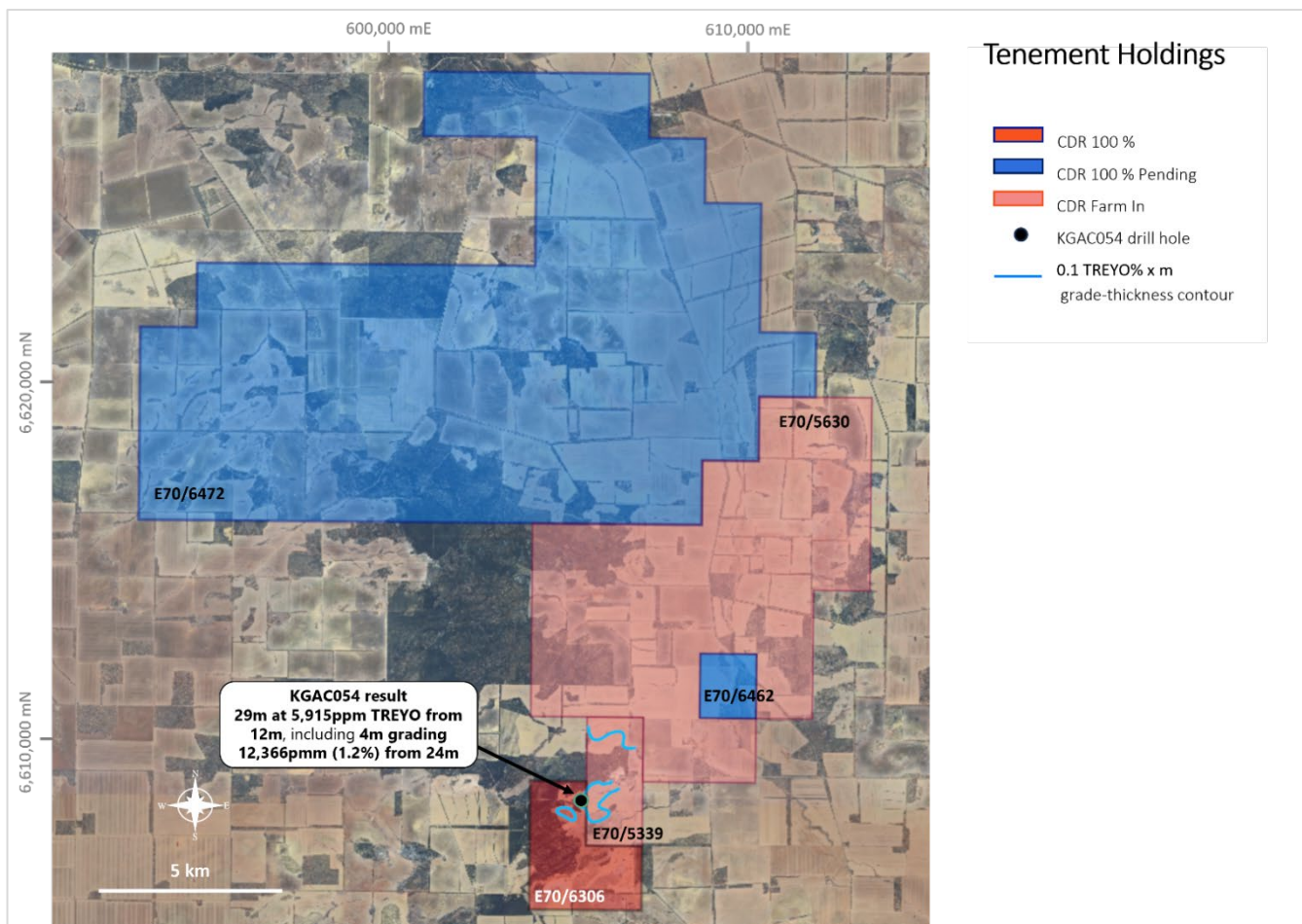
*“The recent air-core program has intersected multiple zones of shallow, high-grade mineralization in a total area that now measures ~2,700m by 1,500m, a significant expansion on the area covered by the original RC drilling.*

*“Of particular note are the consistent high grades returned and the exciting result in hole KGAC054, which intersected 29m grading 5,915ppm TREYO from 12m including 4m grading 12,366ppm TREYO in weathered granite just below the clay zone. This is a phenomenal result which shows that the system has the potential to host remarkable grades well in excess of what you would normally expect in a clay-hosted REE deposit.*

*“The other key takeaway for investors is that our drilling to date covers just 6 per cent of our recently expanded landholding and the mineralization to the north remains completely open. The next step is to secure permits for an expanded air-core drilling program to establish the presence of mineralization on our recently expanded tenure. If we are successful, we will be in a position to declare a major new rare earths discovery, and accelerate our drill programs to unlock its full potential for our shareholders.”*

**The Karloning Project**

The Karloning Project can be easily accessed by sealed roads via the town of Mukinbudin. The geology within the tenements (E70/5339 and E70/6306) comprises mainly medium-to-coarse grained biotite granite and adamellite with a large quartz-microcline pegmatite, known as the Karloning Pegmatite.



**Figure 2. Karloning Project location showing the location of existing E70/5339 (Talgomine Joint Venture CDR earning in) and E70/6306 (100% CDR), where the AC drilling program was focused. The new Fleet Street Farm-In tenement E70/5630 and the new 100% CDR applications E70/6472, E70/6462 are also shown.**



Tertiary lateritic duricrusts skirt the granite outcrops and are eroded by the Quaternary paleo drainages, forming broad sheetwash areas consisting of sands, clays and silts.

Mapping by the Geological Survey of Western Australia (1:250,000 Perth map sheet) shows a strike extent of ~1.5km for the Karloning Pegmatite, and Codrus believes there is a potential significant extension to the pegmatite beneath cover and for multiple pegmatite horizons to be discovered within the project area.

There are also broader zones of lower grade REE mineralisation in the widespread alkaline granite investigated to date.

## Drilling

The AC drill program comprised 80 holes for 1,308m of drilling. The holes were drilled to a depth of up to 54m in places with an average hole depth of 16m. The drilling was designed to test for the presence of shallow clay-hosted mineralisation on E70/5339 and E70/6306, to the north and the south of the previous Reverse Circulation (RC) drilling that was completed earlier in the year.

The drill spacing was nominally conducted at ~200m to 400m across the project with some holes drilled at 100m centres closer to the maiden RC drilling completed earlier this year. The drilling was designed to give the Company a clearer understanding of the depth of clay formation and distribution of clay-hosted REE's across the immediate landholding (see Figure 3 and ASX announcement "Codrus confirms Karloning clay hosted REE discovery", 9<sup>th</sup> June 2023).

Drilling was completed to the north and south of granite with pegmatite outcrops (including the quarry), with all holes drilled into areas interpreted to potentially contain clay and saprolite zones in weathered granite with pegmatite veins.

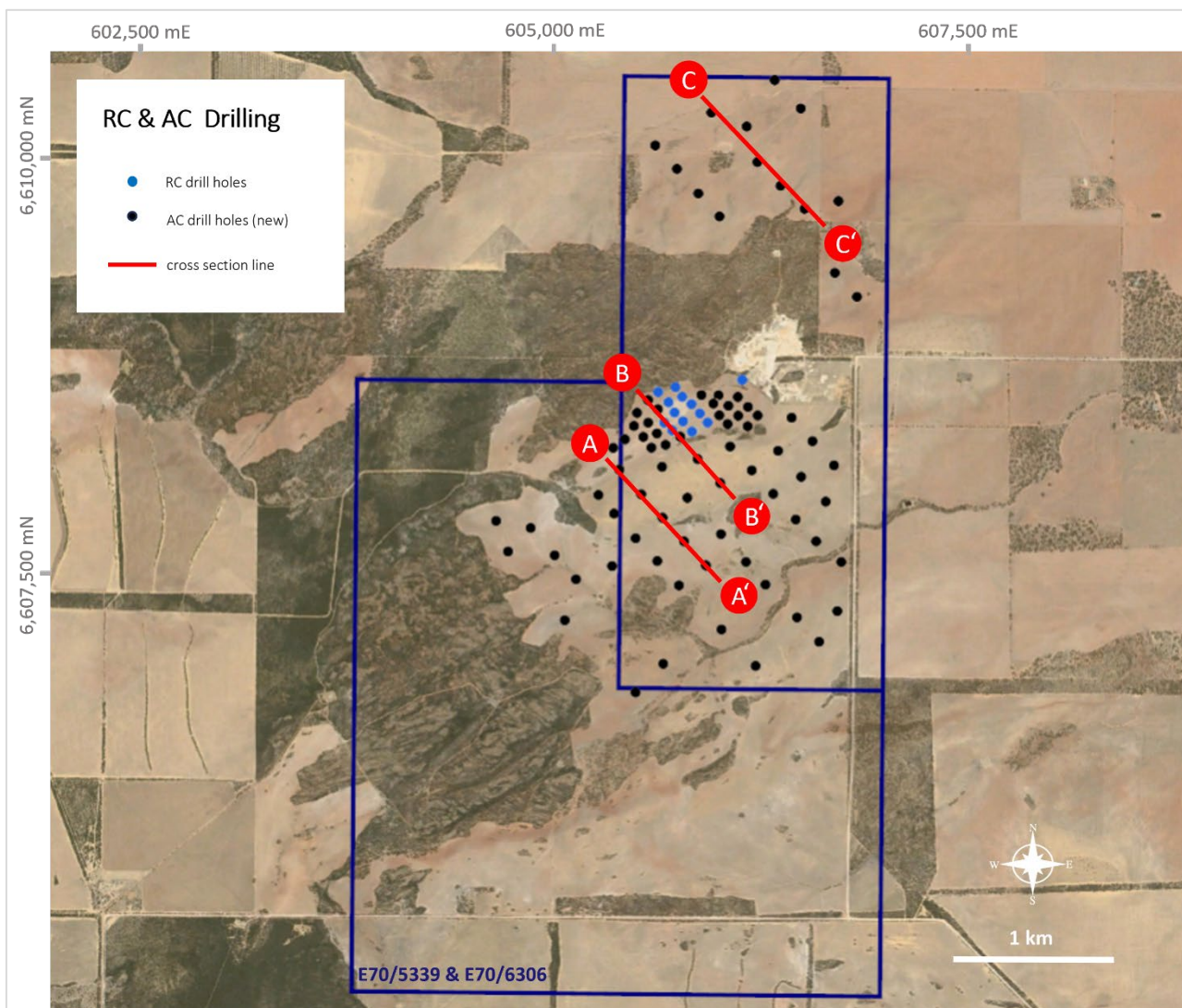


Figure 3. Air-core drilling completed in the program over the tenements current at the time of the drill program.

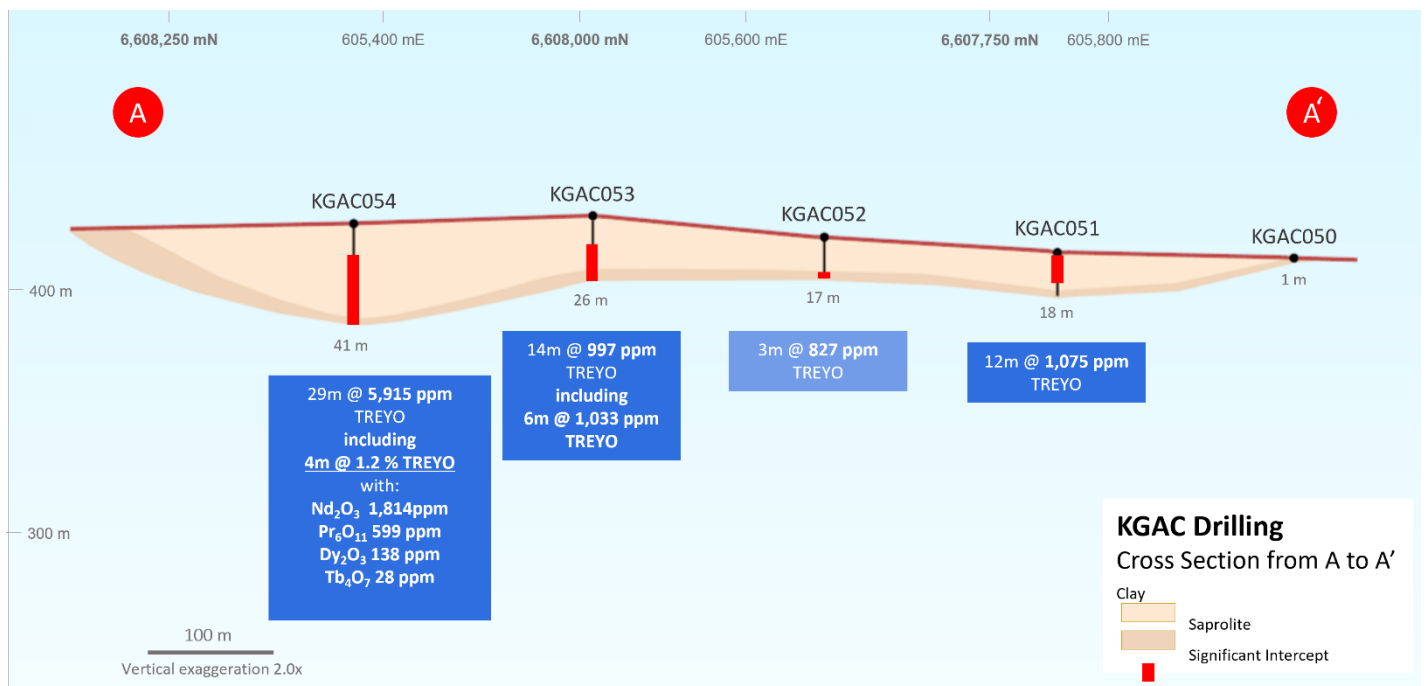
The enriched clay mineralisation ranges in thickness with the thickest zones in the AC drilling being 24m (note all samples are 6m or 2m composite samples) (see Table 1, and Figures 4, 5, 6) and notably has significant enrichment in the high-value REEs used in the manufacture of high-strength permanent magnets – namely praseodymium, neodymium, terbium and dysprosium (MREO). Significantly, of the 80 holes drilled, 42 returned significant intersections, a very promising result (a result of greater 800ppm, where a cut-off grade of 800ppm TREYO was applied and a maximum of 4m of internal dilution included is deemed significant).

The Company is also optimistic to see clay-hosted mineralisation developed to the north of the quarry in the first holes drilled in this area.

Best intersections include:

- 20m grading 1,554ppm TREYO from 8m, including 4m grading 2,014ppm TREYO from 18m (KGAC057),
- 14m grading 1,423ppm TREYO from 12m, including 2m grading 1,931ppm TREYO from 16m (KGAC058),
- 10m grading 1,812ppm TREYO from 8m, including 2m grading 2,194ppm TREYO from 16m (KGAC060),
- 10m grading 1,540ppm TREYO from 14m (KGAC016),
- 12m grading 1,337ppm TREYO from 6m, including 2m grading 2,156ppm TREYO from 8m (KGAC009).

*(For significant assay results see Table 1.)*



**Figure 4. Cross-section (A - A') of drilling at the Karloning REE Project.**

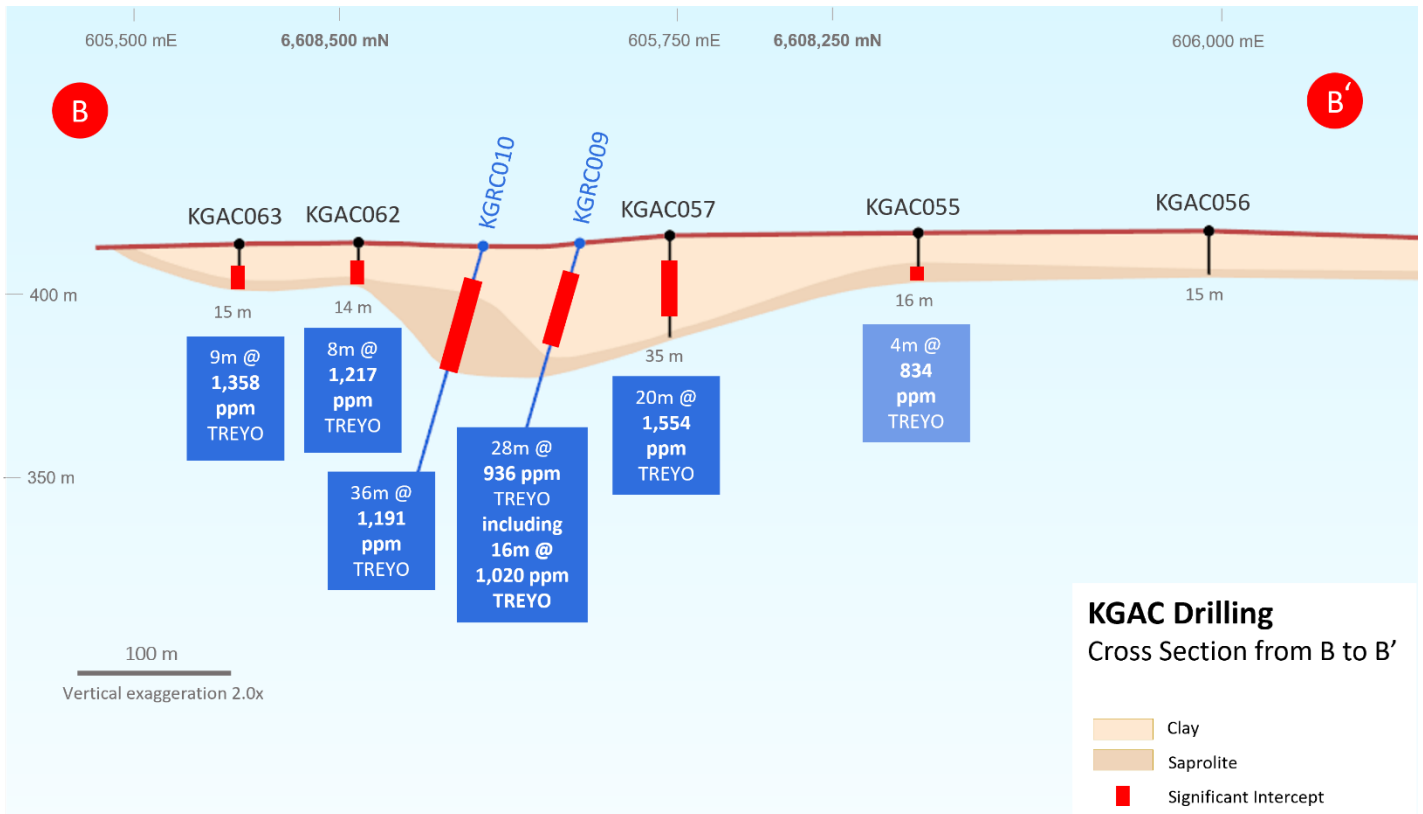


Figure 5. Cross-section (B - B') of drilling at the Karloning REE Project.



Figure 6. Cross-section (C - C') of drilling at the Karloning REE Project.

Hole KGAC054 intersected a high-grade zone of mineralisation, 29m at 5,915ppm TREYO, that extended from the clays into the saprock, with a cohesive zone of higher-grade mineralization seen where the clays are developed to a greater depth (see Figures 7, 8).

As exploration progresses across the project, including the remaining 94% of the tenure (when granted), it is envisaged that additional zones of high-grade mineralization will be encountered surrounded by zones of more moderate grade where the weathering has developed thicker zones of the clay host unit.

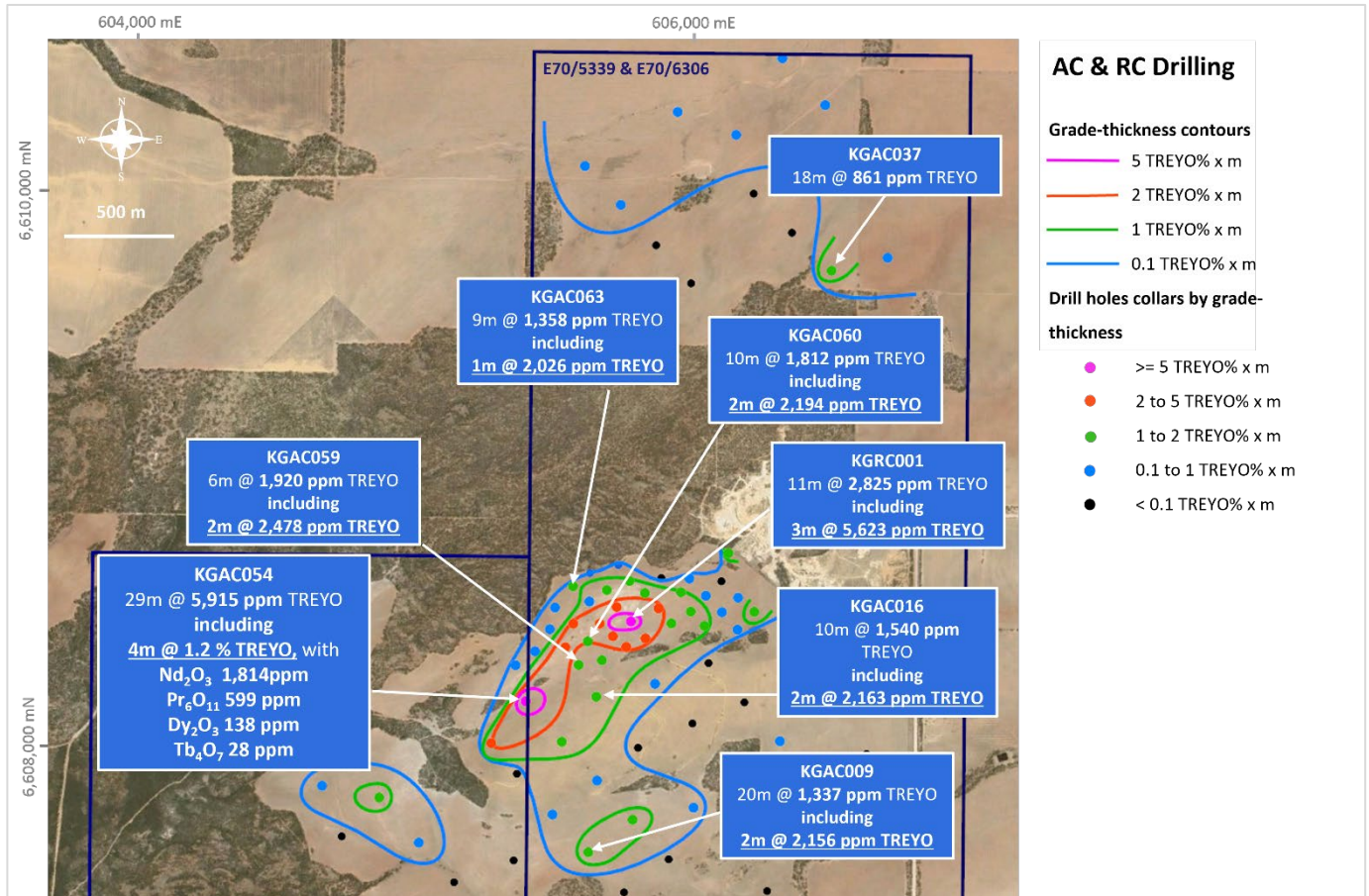
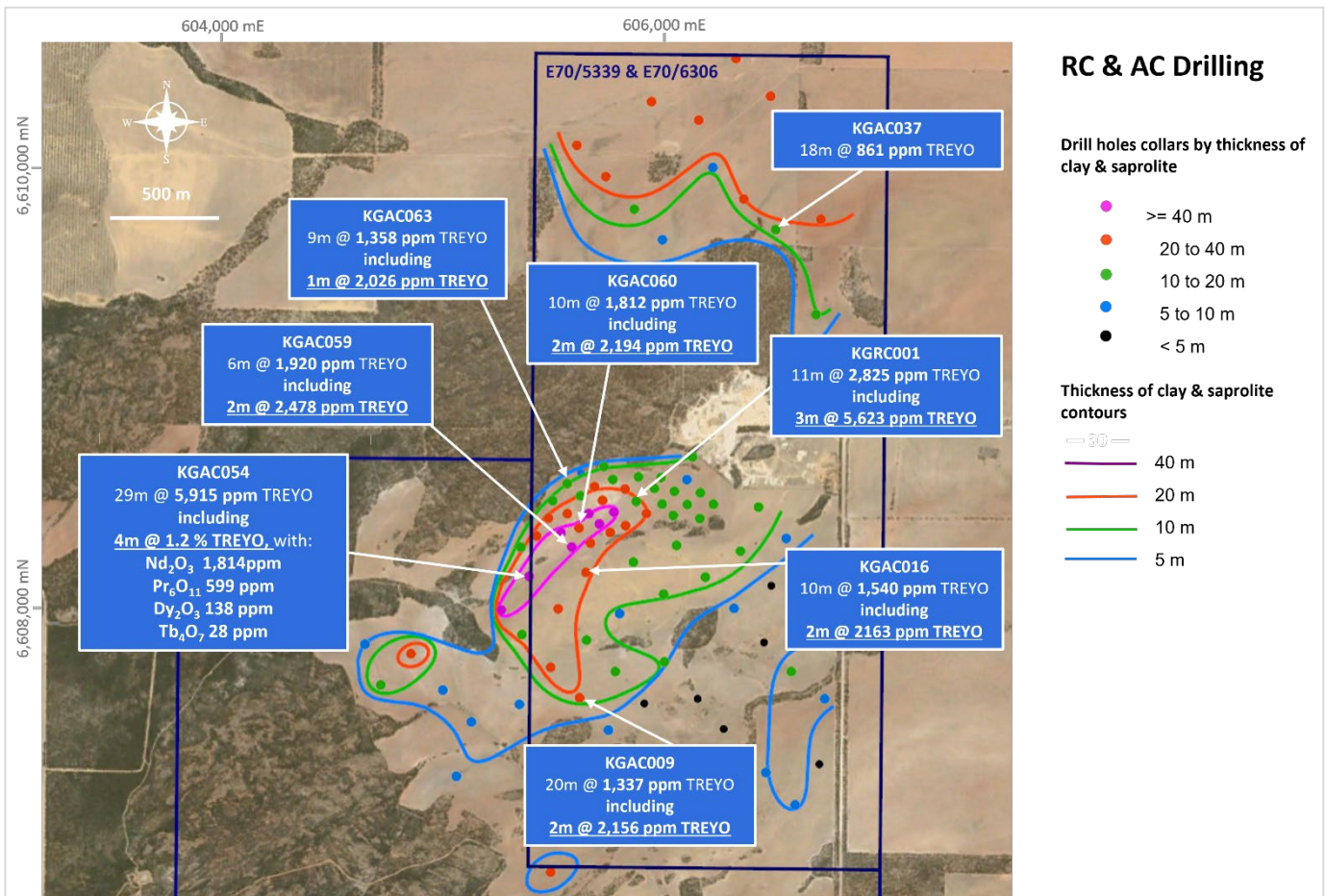


Figure 7. Collar plan coloured by grade x thickness of REE development.





**Figure 8. Collar plan coloured by depth of clay development over granite and pegmatite basement.**

### Next Steps

Following the outstanding results returned from this drilling program, additional air-core drilling on the newly acquired tenure is being planned. Land access agreements are being sought and statutory approvals will be applied for to enable this program to commence. A review of available geophysical techniques to model the depth of clay zone development will also be undertaken.

The Company has selected and submitted samples for leaching test work of the clay zone mineralisation and mineralogical assessment.

**This announcement was authorised for release by the Board of Codrus Minerals.**

**ENDS**

#### **Investor Inquiries:**

Shannan Bamforth, Managing Director  
Codrus Minerals

#### **Media Inquiries:**

Nicholas Read  
Read Corporate  
**Phone: +61 8 9388 1474**



## About Codrus Minerals Limited

Codrus Minerals recently secured an exciting new growth and diversification opportunity in the rare earths sector after entering into a farm-in and joint venture agreement with Talgominie Minerals Pty Ltd to earn up to a 90% interest in the Karloning Rare Earth Element (REE) Project, located in Western Australia's Wheatbelt. In addition to our REE project, Codrus has a portfolio of exciting projects in Western Australia (WA) and Oregon, United States of America (USA). All of our Australian assets are located in close proximity to existing operating mines and the Bull Run Project in the USA is located in a rich historic gold producing area. Codrus currently has four projects in WA, comprising 31 tenements with a total landholding of approximately 243km<sup>2</sup>. The Karloning REE Project in the Wheatbelt, the Silver Swan South and Red Gate Projects are in the Eastern Goldfields, whilst the Middle Creek Project is located in the Eastern Pilbara. The tenements are prospective for rare earth elements and potential economic gold mineralisation, with Silver Swan South also being prospective for Nickel. In the USA, the company holds a 100% legal and beneficial interest for 79 claims and is party to an 'Option Agreement', which covers a further 11 claims in Baker County in Eastern Oregon. In total the claims cover approximately 7km<sup>2</sup> in the Ironside Mountain Inlier. The Bull Run project is prospective for gold and has been mined intermittently since approximately 1929.

## Competent Persons Statement

The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Mr. Shannan Bamforth who is a Member of the Australasian Institute of Mining and Metallurgy. Mr. Bamforth is a permanent employee of Codrus Minerals and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr. Bamforth consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Information in this announcement that relates to previous exploration results for the Projects is extracted from the following ASX announcement:

- *"Codrus Secures Large-Scale Niobium Rich REE Project in WA" 23<sup>rd</sup> November 2022*
- *"Codrus Confirms High Grades at Niobium-Rich REE Project" 12<sup>th</sup> December 2022*
- *"Exploration Update - Karloning REE Project, WA" 27<sup>th</sup> February 2023*
- *"Drilling commences at Niobium-Rich Karloning REE Project", 12<sup>th</sup> April 2023*
- *"High-grade clay REE mineralisation identified at Karloning" 5<sup>th</sup> May 2023*
- *"Assays from maiden drill program confirm significant high-grade clay-hosted rare earth discovery at Karloning", 9 June 2023*
- *"Drilling at Karloning to expand clay-hosted REE discovery" 31<sup>st</sup> July 2023*
- *"Codrus increase Landholding at Karloning REE Project 16-fold" 2<sup>nd</sup> August 2023*

The above announcement is available to view on the Company's website at [codrusminerals.com.au](http://codrusminerals.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant original market announcements. The Company confirms that the information and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

## Exploration and Resource Targets

Any discussion in relation to the potential quantity and grade of Exploration and Resource Targets is only conceptual in nature. While Codrus is continuing exploration programs aimed at reporting additional JORC compliant Mineral Resources, there has been insufficient exploration to define mineral resources and it is uncertain if further exploration will result in the determination of maiden JORC compliant Mineral Resources.

## Forward-Looking Statements

Forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions which are outside the control of Codrus. There is continuing uncertainty as to the full impact of COVID-19 on Codrus's business, the Australian economy, share markets and the economies in which Codrus conducts business. Given the high degree of uncertainty surrounding the extent and duration of the COVID-19 pandemic, it is not currently possible to assess the full impact of COVID-19 on Codrus' business or the price of Codrus securities. Actual values, results or events may be materially different to those expressed or implied in this presentation. Given these uncertainties, recipients are cautioned not to place reliance on forward-looking statements. Any forward- looking statements in this presentation speak only at the date of issue of this presentation. Subject to any continuing obligations under applicable law and the ASX Listing Rules, Codrus does not undertake any obligation to update or revise any information or any of the forward-looking statements in this presentation or any changes in events, conditions or circumstances on which any such forward-looking statement is based.

Table 1 | Karloning AC drill program significant intercepts.

Hole	From (m)	To (m)	Interval (m)	TREYO ppm	MREO ppm	MREO/ TREYO %	La <sub>2</sub> O <sub>3</sub> ppm	CeO <sub>2</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Nd <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Lu <sub>2</sub> O <sub>3</sub> ppm	Y <sub>2</sub> O <sub>3</sub> ppm
KGAC004	6	8	2	1343	321	24%	357	491	66	232	4	20	1	89
KGAC005	6	22	16	1098	200	18%	308	494	46	143	2	10	BD	49
Including	6	8	2	1543	219	14%	534	705	55	153	2	9	BD	41
KGAC006	12	36	24	996	191	19%	232	474	43	136	2	11	BD	52
Including	12	16	4	1417	258	18%	336	698	58	183	3	14	BD	65
KGAC008	12	18	6	855	173	20%	198	404	38	125	2	9	BD	39
KGAC009	6	18	12	1337	256	19%	347	619	57	184	2	13	BD	56
Including	8	10	2	2156	418	19%	545	1019	92	303	4	19	BD	81
KGAC014	6	12	6	870	179	21%	212	391	39	129	2	10	BD	43
KGAC016	14	24	10	1540	308	20%	367	707	67	221	3	17	1	83
Including	16	18	2	2163	419	19%	528	987	89	301	5	25	1	125
KGAC017	18	36	18	1126	224	20%	266	562	51	159	2	12	BD	54
Including	26	32	6	1315	248	19%	308	651	58	176	2	12	BD	53
KGAC018	6	18	12	1141	228	20%	257	532	49	163	2	14	1	66
KGAC021	6	8	2	1307	165	13%	181	863	36	116	2	12	1	48
KGAC033	12	18	4	928	190	20%	228	404	42	135	2	11	1	55
KGAC034	12	18	4	1279	281	22%	334	507	62	201	3	15	1	84
Including	12	14	2	1908	460	24%	522	710	103	331	4	22	1	105
KGAC037	0	18	18	861	178	21%	198	359	39	125	2	13	1	74
KGAC040	6	12	6	987	170	17%	286	426	39	120	2	10	1	61
KGAC041	12	24	12	828	168	20%	184	368	37	119	2	11	1	59
KGAC042	18	20	2	966	193	20%	215	393	42	133	3	16	1	100
KGAC043	26	32	6	1027	202	20%	237	444	45	143	2	13	1	83
KGAC044	18	21	3	826	144	17%	186	357	32	100	2	11	1	90
KGAC047	2	6	4	1227	204	17%	350	599	52	143	2	8	BD	34
KGAC051	0	12	12	1075	202	19%	297	494	48	144	2	9	BD	39
Including	2	6	4	1356	235	17%	395	639	57	166	2	10	BD	41
KGAC052	14	17	3	827	172	21%	197	376	38	124	2	9	BD	40
KGAC053	12	26	14	977	203	21%	225	456	45	145	2	11	BD	45
Including	20	26	6	1033	216	21%	242	476	48	155	2	11	BD	47
KGAC054	12	41	29	5915	1203	20%	1457	2726	278	853	12	61	1	258
Including	24	41	17	7729	1581	20%	1909	3549	366	1120	16	79	2	336
	24	28	4	12366	2578	21%	3012	5637	599	1814	28	138	3	550
	26	28	2	17117	3632	21%	4129	7749	843	2554	39	196	4	775
KGAC055	12	16	4	834	176	21%	190	382	39	128	2	9	0	43
KGAC057	8	28	20	1554	300	19%	401	725	70	213	3	15	BD	60
Including	18	22	4	2014	419	21%	486	938	94	300	4	21	BD	79

Hole	From (m)	To (m)	Interval (m)	TREYO ppm	MREO ppm	MREO/ TREYO %	La <sub>2</sub> O <sub>3</sub> ppm	CeO <sub>2</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Nd <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Lu <sub>2</sub> O <sub>3</sub> ppm	Y <sub>2</sub> O <sub>3</sub> ppm
KGAC058	12	26	14	1423	287	20%	338	682	65	207	3	13	BD	54
Including	16	18	2	1931	384	20%	461	950	90	276	3	15	BD	58
KGAC059	24	30	6	1920	336	18%	532	920	81	239	3	15	BD	62
Including	26	28	2	2478	499	20%	589	1207	115	360	4	20	1	82
KGAC060	8	18	10	1812	293	16%	522	864	72	204	3	15	BD	69
Including	16	18	2	2194	224	10%	862	1023	65	149	2	9	1	44
KGAC061	12	36	24	1045	225	22%	227	475	49	162	2	13	BD	61
Including	20	22	2	1556	346	22%	332	705	75	250	3	19	1	87
KGAC062	6	14	8	1217	223	18%	298	547	49	157	3	15	1	87
Including	12	14	2	1543	294	19%	360	675	64	206	4	21	1	126
KGAC063	6	15	9	1358	293	22%	315	575	64	209	3	18	1	98
Including	14	15	1	2026	491	24%	506	823	110	357	4	21	1	103
KGAC064	6	11	5	1043	214	21%	250	449	47	151	2	14	1	72
Including	6	8	2	1469	307	21%	351	642	69	218	3	17	1	94
KGAC065	14	21	7	979	167	17%	221	501	37	118	2	10	BD	47
KGAC066	18	27	9	1079	215	20%	272	489	48	154	2	11	BD	54
KGAC067	12	16	4	924	186	20%	233	402	41	131	2	12	BD	56
KGAC069	12	16	4	962	205	21%	246	355	46	142	3	16	1	94
KGAC071	8	14	6	1063	220	21%	257	479	49	157	2	13	BD	54
KGAC072	6	15	9	1227	255	21%	326	519	58	181	3	14	1	66
KGAC073	8	18	10	1055	212	20%	248	449	47	149	2	15	1	86
KGAC074	6	12	6	1262	264	21%	292	587	58	189	3	14	BD	58
Including	8	10	2	1884	405	21%	409	904	90	292	4	20	1	75
KGAC075	6	10	4	1292	280	22%	363	507	62	200	3	16	1	75
KGAC076	6	17	11	1058	220	21%	261	462	48	158	2	13	BD	61
Including	6	8	2	1740	371	21%	420	756	81	266	4	21	1	101
KGAC077	6	12	6	924	190	21%	217	424	45	134	2	10	BD	46

NSI - No significant

intercept BD - below

detection

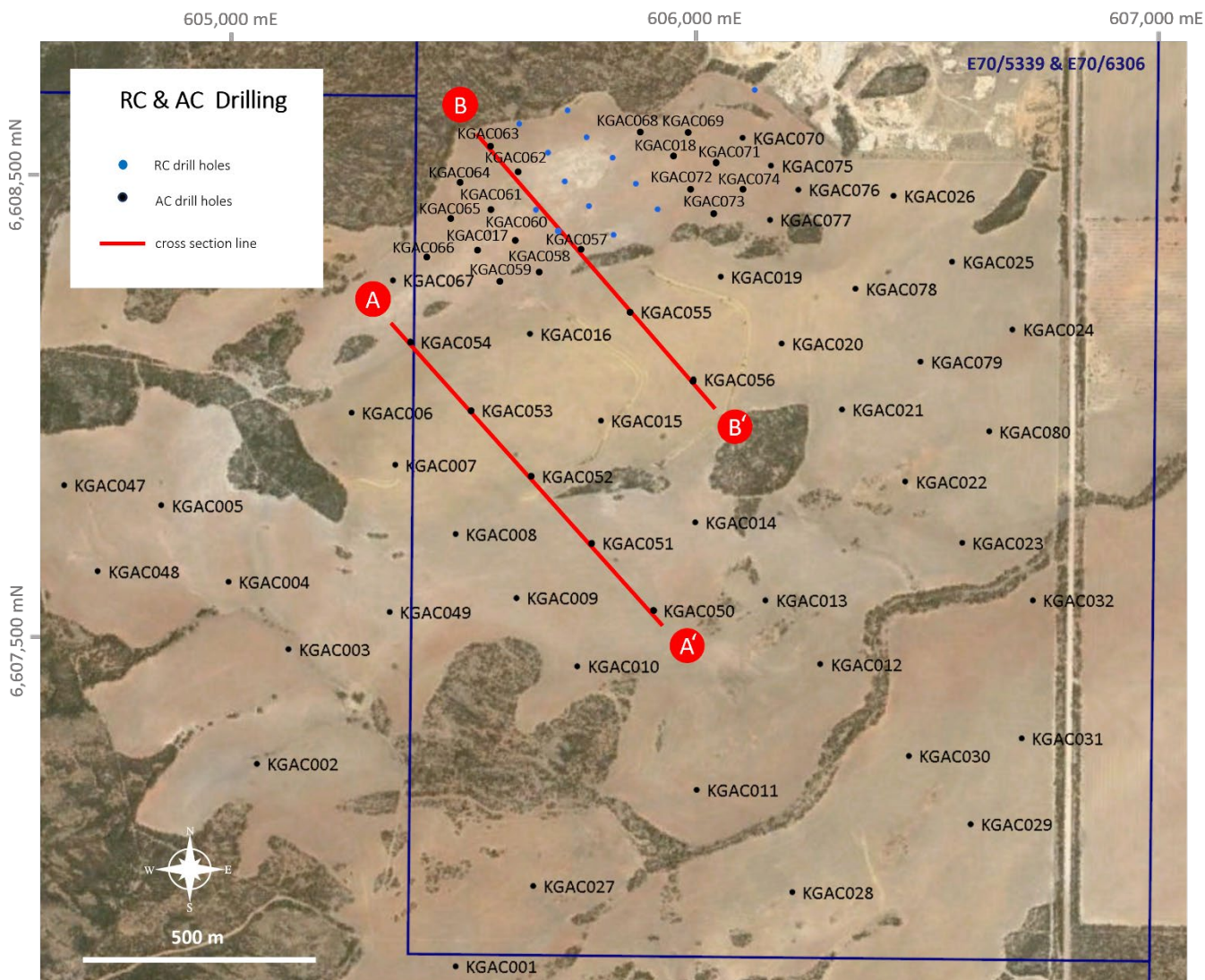
A cut off grade of 800ppm TREYO was applied and a maximum of 4m of internal dilution included. Assays rounded to the nearest whole number.

Table 2 | Karloning AC drill Collar table

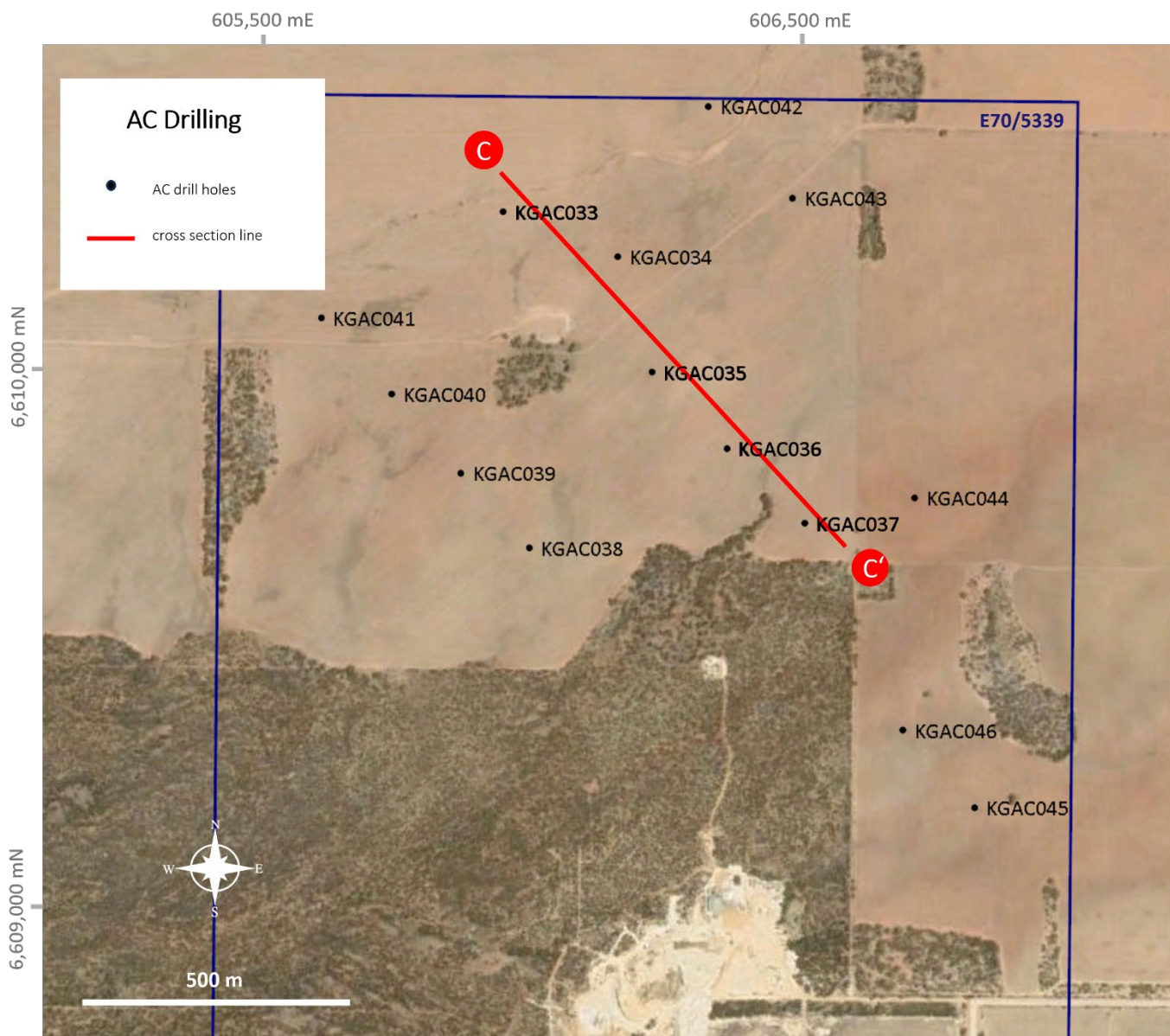
Hole	East (m)	North (m)	RL (m)	Azi MGA	Dip	EOH (m)
KGAC004	604993	6607624	420	0	-90	8
KGAC005	604848	6607789	428	0	-90	27
KGAC006	605258	6607988	432	0	-90	42
KGAC008	605482	6607727	427	0	-90	25
KGAC009	605613	6607589	419	0	-90	20
KGAC014	605998	6607752	411	0	-90	18
KGAC016	605642	6608158	428	0	-90	34
KGAC017	605529	6608339	420	0	-90	54
KGAC018	605952	6608540	412	0	-90	18
KGAC021	606314	6607995	410	0	-90	8
KGAC033	605940	6610297	398	0	-90	31
KGAC034	606154	6610213	388	0	-90	33
KGAC037	606503	6609716	398	0	-90	18
KGAC040	605732	6609957	399	0	-90	22
KGAC041	605601	6610099	394	0	-90	28
KGAC042	606323	6610493	397	0	-90	20
KGAC043	606480	6610322	394	0	-90	32
KGAC044	606708	6609763	396	0	-90	21
KGAC047	604639	6607832	392	0	-90	8
KGAC051	605775	6607708	417	0	-90	18
KGAC052	605645	6607851	423	0	-90	17
KGAC053	605516	6607993	432	0	-90	26
KGAC054	605384	6608141	429	0	-90	41
KGAC055	605857	6608205	420	0	-90	16
KGAC057	605752	6608340	419	0	-90	35
KGAC058	605663	6608291	419	0	-90	26
KGAC059	605578	6608274	423	0	-90	45
KGAC060	605611	6608360	420	0	-90	36
KGAC061	605558	6608425	419	0	-90	36
KGAC062	605617	6608506	416	0	-90	14
KGAC063	605557	6608562	416	0	-90	15
KGAC064	605491	6608484	417	0	-90	11
KGAC065	605472	6608405	419	0	-90	21
KGAC066	605418	6608324	421	0	-90	27
KGAC067	605347	6608273	423	0	-90	16
KGAC069	605983	6608590	408	0	-90	15
KGAC071	606043	6608527	408	0	-90	13
KGAC072	605988	6608469	411	0	-90	15
KGAC073	606038	6608417	411	0	-90	18
KGAC074	606102	6608467	410	0	-90	13
KGAC075	606161	6608520	407	0	-90	10
KGAC076	606220	6608468	406	0	-90	17
KGAC077	606159	6608403	411	0	-90	12

Co-ordinates expressed as MGA zone50 GDA94





**Figure 9. Collar plan southern zone.**



**Figure 10. Collar plan northern zone.**

## JORC Code, 2012 Edition | Table 1 report

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>Nature and quality of sampling (e.g., 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g., '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 gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Laboratory assay results are being reported for the 6m and 2m composite samples from a recently completed 80 holes (1308 m) Air Core (AC) drilling program at Codrus Minerals' Karloning REE Project, WA.</li> <li>The AC drill cuttings of c. 3-10 kg were collected on a 1m basis from the drill rig cyclone into large plastic bags and arranged in rows at the drill site for assay sampling. Composite samples of 6 m length were collected into calico bags from the bulk 1 m samples along the whole depth of the hole using a scoop. A c. 1-2 kg 2m composite sample was also collected for each of the 6m composites, that showed a elevated pXRF (Olympus Vanta) measurement result.</li> <li>Assay sample weights ranged from 0.5-2.6 kg. Sample sizes is considered appropriate for the material sampled.</li> <li>Commercial assay standards were included in the laboratory submittals at a rate of one per 25 samples.</li> <li>Duplicate samples collected in the same manner as the primary sample, were collected for every 20<sup>th</sup> sample.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g., 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).</li> </ul>	<ul style="list-style-type: none"> <li>Air Core (AC) holes were drilled with Air Core Blade bits using Bostech Drillboss 200 rig mounted on 4WD Truck.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The bulk AC samples were visually assessed for recovery.</li> <li>Samples are considered representative with good recovery.</li> <li>Only hole KGAC059 encountered water and did not significantly impact recovery.</li> <li>Sample bias was not observed.</li> </ul>
<b>Logging</b>	<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 were qualitatively geologically logged by a suitably qualified Codrus geologist.</li> <li>Sample intervals and lengths were selected according to lithology, sample size criteria and pXRF (Olympus Vanta) measurement results.</li> </ul>



Criteria	JORC Code explanation	Commentary
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether quarter, half or all cores 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>• Composite samples of 6 m length were collected into calico bags from the bulk 1 m samples along the whole depth of the hole using a scoop. A c. 1-2 kg 2m composite was also collected for each 2 meters of the 6m composites, that showed a elevated pXRF (Olympus Vanta) measurement result.</li> <li>• Assay sample weights ranged from 0.5-2.6 kg. Sample sizes is considered appropriate for the material sampled.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<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 (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>• Samples were submitted to ALS Geochemistry, Perth (ALS) for where they were oven dried then pulverized to P80 -75 microns for each sample (ALS method PUL-23).</li> <li>• Assaying for all samples was conducted by ALS Geochemistry Perth using a lithium borate fusion at 1025 deg C followed by nitric + hydrochloric + hydrofluoric acid digestion of the melt and ICP-MS finish for a 32 element suite including the REEs and Y (ALS method ME-MS81).</li> <li>• In addition to the ME-MS81 for 6m composites 34 element four acid ICP-AES method was conducted by ALS Geochemistry Perth (ALS method ME-ICP61).</li> <li>• For one sample (2K1068) an overlimit method for Th detection was conducted (ALS method MeMS81h)</li> <li>• Commercial laboratory standards reported good precision and accuracy within the target ranges of elements.</li> <li>• Duplicates are reported with good precision and accuracy.</li> </ul>
<b>Verification of sampling and assaying</b>	<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>• Sampling and data processing were conducted by suitably qualified Codrus Minerals field technicians and verified by Codrus Minerals geologists.</li> <li>• The use of twinned holes is not considered necessary at this reconnaissance stage of exploration.</li> <li>• Primary data is stored and documented in industry standard ways.</li> <li>• Codrus Minerals assay data is as reported by ALS and has not been adjusted in any way.</li> <li>• Remnant assay pulps are currently held in storage by ALS.</li> </ul>
<b>Location of data points</b>	<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>• Drill hole locations were determined by handheld GPS with a nominal accuracy of +/- 5 metres.</li> <li>• All coordinates and maps presented here are in the MGA Zone 50 GDA94 system.</li> <li>• Topographic control is provided by government 250,000 topographic map sheets and Worldwide 3 arc second SRTM spot height data.</li> </ul>
<b>Data spacing and distribution</b>	<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>• The reported AC holes were drilled on c. 200 m and 400m spacings to trace and expand a previously reported REE mineralisation. 100 m spacing was applied withing the RC drilling zone with the confirmed REE mineralisation.</li> <li>• The current drilling is of reconnaissance exploration nature and was not conducted for resource estimation purposes.</li> <li>• Samples were composited for assaying as described above.</li> </ul>



Criteria	JORC Code explanation	Commentary
<b>Orientation of data in relation to geological structure</b>	<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>The AC holes were drilled vertically as previous RC drilling revealed a sub horizontal mineralization in the clay zone.</li> <li>The intersected clay and saprolite zones dip very gently south and southeast such that downhole thicknesses are estimated to be c. 80-90% of true thickness.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>The chain of custody for all Codrus Minerals samples from collection to dispatch to assay laboratory was managed by Codrus Minerals personnel.</li> <li>Sample numbers are unique and do not include any locational or interval information useful to non-Codrus Minerals personnel.</li> <li>The level of security is considered appropriate for such exploration drilling.</li> </ul>
<b>Audits or reviews</b>	<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>The assay results are appropriated for clay hosted REE mineralisation and compare well with Codrus Minerals pXRF (Olympus Vanta) testing.</li> <li>No audits or reviews of sampling g have been done at this stage</li> </ul>
<b>Mineral tenement and land tenure status</b>	<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> <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>	<ul style="list-style-type: none"> <li>The AC drilling was entirely conducted within granted exploration licenses E70/5339 (under JV with Talgomin Pty Ltd) and E70/6306 (100% Codrus ownership).</li> <li>The tenement is in good standing, without known impediments.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Most previous owners and explorers' efforts were focused on the quarrying of feldspar and quartz from the Karloning pegmatite as aggregate products saleable to the construction industry and not relevant to the Codrus Minerals' exploration interests. Some 20 RAB holes are known to have been drilled historically (1970s) within the Karloning quarry area but were only assayed for K and Na.</li> <li>Kinloch Resources completed a partial soil survey over the northern flank of the Karloning pegmatite in the 2011-2012 period which showed multiple soil anomalous zones with &gt; 1000ppm TREEs. To Codrus Minerals knowledge there has been no other systematic exploration of the Karloning Project area for REEs</li> </ul>

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary																																
<b>Geology</b>	<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 Karloning REE Project is located within granitic basement of the western Yilgarn Craton. Numerous pegmatite occurrences are known within the Mukinbudin district and the GSWA maps a c. 1.5 km long pegmatite zone at Karloning on the Bencubbin (SH50-11) 1:250,000 geological map sheet. The Karloning pegmatite is a Niobium-Yttrium-Fluorine (NYF) type which is prospective for REEs. NYF pegmatites are typically zoned inwards from biotite adamellite through graphic granite and albite zones to a quartz core. Reconnaissance rock sampling previously reported to the ASX by Codrus Minerals demonstrates potentially significant REE mineralization associated with the Karloning pegmatites.</li> </ul>																																
<b>Drill hole Information</b>	<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 <ul style="list-style-type: none"> <li>explain why this is the case.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Location and orientation details are given in Table 2.</li> <li>Drill hole locations were determined by handheld GPS with a nominal accuracy of +/- 5 metres.</li> <li>All coordinates and maps presented here are in the MGA Zone 50 GDA94 system.</li> <li>Topographic control is provided by government 250,000 topographic map sheets and Worldwide 3 arc second SRTM spot height data.</li> </ul>																																
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., 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>Intersections given in Table 1 are length weighted and no upper cuts have not been used.</li> <li>A cut off grade of 800ppm TREYO was applied and a maximum of 4m of internal dilution included in reported significant intercepts</li> <li>Metal equivalents have not been applied.</li> <li>Standard element to oxide conversion factors have been used.</li> </ul> <table border="1" data-bbox="1265 1197 1854 1450"> <tbody> <tr> <td>La<sub>2</sub>O<sub>3</sub></td> <td>1.173</td> <td>Tb<sub>4</sub>O<sub>7</sub></td> <td>1.176</td> </tr> <tr> <td>CeO<sub>2</sub></td> <td>1.228</td> <td>Dy<sub>2</sub>O<sub>3</sub></td> <td>1.148</td> </tr> <tr> <td>Pr<sub>6</sub>O<sub>11</sub></td> <td>1.208</td> <td>Ho<sub>2</sub>O<sub>3</sub></td> <td>1.146</td> </tr> <tr> <td>Nd<sub>2</sub>O<sub>3</sub></td> <td>1.166</td> <td>Er<sub>2</sub>O<sub>3</sub></td> <td>1.143</td> </tr> <tr> <td>Sm<sub>2</sub>O<sub>3</sub></td> <td>1.16</td> <td>Tm<sub>2</sub>O<sub>3</sub></td> <td>1.142</td> </tr> <tr> <td>Eu<sub>2</sub>O<sub>3</sub></td> <td>1.158</td> <td>Yb<sub>2</sub>O<sub>3</sub></td> <td>1.139</td> </tr> <tr> <td>Gd<sub>2</sub>O<sub>3</sub></td> <td>1.153</td> <td>Lu<sub>2</sub>O<sub>3</sub></td> <td>1.137</td> </tr> <tr> <td></td> <td></td> <td>Y<sub>2</sub>O<sub>3</sub></td> <td>1.27</td> </tr> </tbody> </table>	La <sub>2</sub> O <sub>3</sub>	1.173	Tb <sub>4</sub> O <sub>7</sub>	1.176	CeO <sub>2</sub>	1.228	Dy <sub>2</sub> O <sub>3</sub>	1.148	Pr <sub>6</sub> O <sub>11</sub>	1.208	Ho <sub>2</sub> O <sub>3</sub>	1.146	Nd <sub>2</sub> O <sub>3</sub>	1.166	Er <sub>2</sub> O <sub>3</sub>	1.143	Sm <sub>2</sub> O <sub>3</sub>	1.16	Tm <sub>2</sub> O <sub>3</sub>	1.142	Eu <sub>2</sub> O <sub>3</sub>	1.158	Yb <sub>2</sub> O <sub>3</sub>	1.139	Gd <sub>2</sub> O <sub>3</sub>	1.153	Lu <sub>2</sub> O <sub>3</sub>	1.137			Y <sub>2</sub> O <sub>3</sub>	1.27
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Criteria	JORC Code explanation	Commentary
<b>Relationship between mineralisation widths and intercept lengths</b>	<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 (e.g., 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>• The intersected clay and saprolite zones dip very gently south and southeast such that downhole thicknesses are estimated to be c. 80-90% of true thickness.</li> </ul>
<b>Diagrams</b>	<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>• An appropriate drill hole plan is included in this report.</li> </ul>
<b>Balanced reporting</b>	<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 avoiding misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>• All the available drill hole REE assay results to date are given in Tables 1 and 2.</li> </ul>
<b>Other substantive exploration data</b>	<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>• The results are considered indicative only of the mineralisation in the area.</li> <li>• An appropriate drill hole plan is included in this report.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>• The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>• Appropriate maps and diagrams are included in this report.</li> <li>• Codrus Minerals will review and plan follow up work.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

Not applicable

### Section 4 Estimation and Reporting of Ore Reserves

Not applicable