

September 2023 Quarterly Activities Report

Highlights:

- **High levels of REEs identified in the sediments of the Apui project.**
- **Ionic nature of REEs at Ema's REE confirmed with positive recoveries by ammonium sulphate leach at pH 4.**
- **720 sq km land tenure with potential to host world class Ionic Rare Earth deposits.**
- **Bioleach pilot plant tests progress with Au and Pd metals recovered.**

BBX Minerals Limited (ASX: BBX) ("BBX" or the "Company") is pleased to provide details of its activities during the quarter ended 30 September 2023.

The discovery of rare earths in Ema announced in May 2023 led to increased exploration activities in the Apui region with the definition of three major REE projects (figure 1) with different characteristics, all with the potential for hosting large deposits of ionic rare earths:

1. **EMA PROJECT (Ema+Ema East)** with 189 sq km of felsic volcanics (rhyolite) with regolith-hosted ionic adsorbed clay REEs confirmed by ammonium sulphate leach tests, similar to the Chinese deposits.
2. **APUI REE PROJECT** with 358 sq km to be explored for REEs hosted in regolith developed over sediments with a specific radiometric signature, similar to the Makuutu deposit, Uganda.
3. **APUI ENE REE PROJECT** with 173 sq km of flat lying sediments older than those of the APUI REE PROJECT, but retaining similarities with Makuutu.

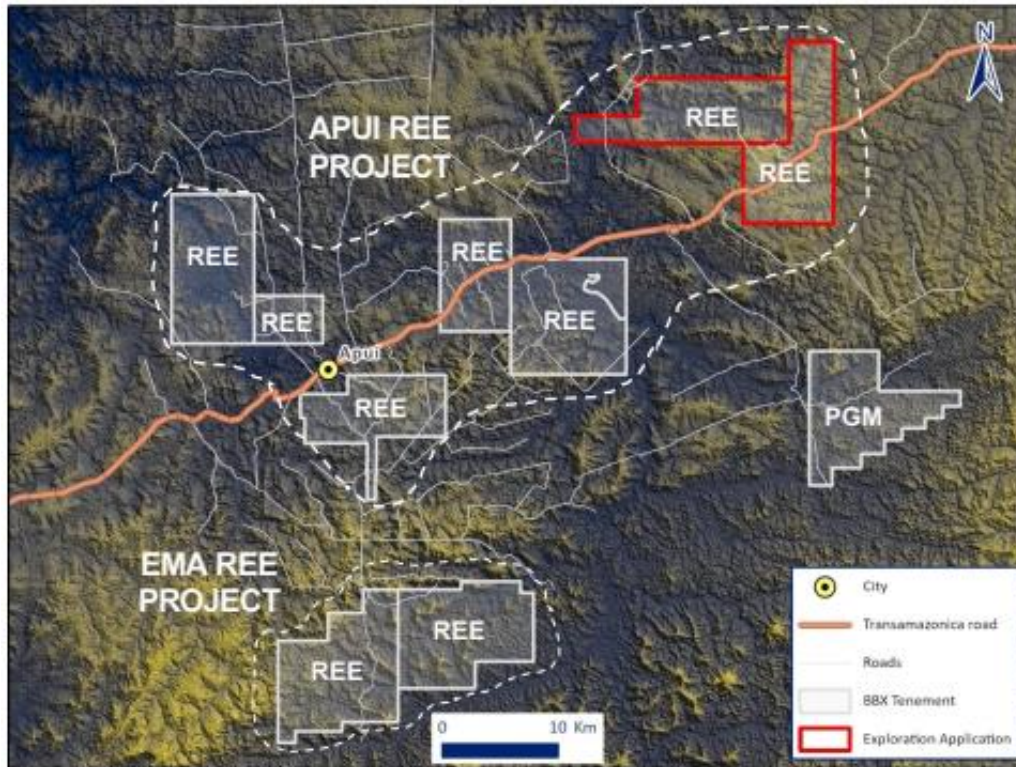


Figure 1 - BBX's REE projects

EMA ionic REE project – Chinese style

Following up the discovery of REEs in selected portions of 13 diamond holes drilled in the felsic volcanics and pyroclastics at Ema, the remaining 25 holes were submitted for multi-element assays at independent laboratory SGS, aiming to evaluate the rare earth element (REE) enrichment level in the lateritic regolith, with the relevant intersections below (see Figure 2):

- EMD018: **14.0m @ 623 ppm TREO¹** from 2.0 metres including 5.3m @ **837 ppm TREO**, located 200m south of EMD017 (positive ammonium sulphate leach test for iREE)
- EMD001: **30.0m @ 414 ppm TREO** from surface including 2.0m @ **841 ppm TREO**
- EMD002: **24.0m @ 407 ppm TREO** from 2.0 metres including 4.0m @ **800 ppm TREO**
- EMD004: **28.0m @ 508 ppm TREO** from 2.0 metres including 10.0m @ **707 ppm TREO**
- EMD005: **24.0m @ 526 ppm TREO** from 4.0 metres including 4.0m @ **627 ppm TREO**
- EMD006: **10.0m @ 544 ppm TREO** from 6.0 metres including 4.0m @ **716 ppm TREO**
- EMD008: **8.0m @ 642 ppm TREO** from 4.0 metres including 4.0m @ **745 ppm TREO**
- EMD020: **12.0m @ 402 ppm TREO** from 2.0 metres including 4.6m @ **692 ppm TREO**
- EMRC001: **12.0m @ 558 ppm TREO** from 4.0 metres including 2.0m @ **1026 ppm TREO**
- EMRC010: **16.0m @ 348 ppm TREO** from surface including 2.0m @ **637 ppm TREO**

These results confirm continuous and extensive regolith-hosted REE mineralisation reflecting the significant REE potential at Ema and the adjacent Ema East tenement for areas with TREO grades exceeding 600ppm.

¹ TREO = La₂O₃ + CeO₂ + Pr₆O₁₁ + Nd₂O₃ + Sm₂O₃ + Eu₂O₃ + Gd₂O₃ + Tb₄O₇ + Dy₂O₃ + Ho₂O₃ + Er₂O₃ + Tm₂O₃ + Yb₂O₃ + Lu₂O₃ + Y₂O₃

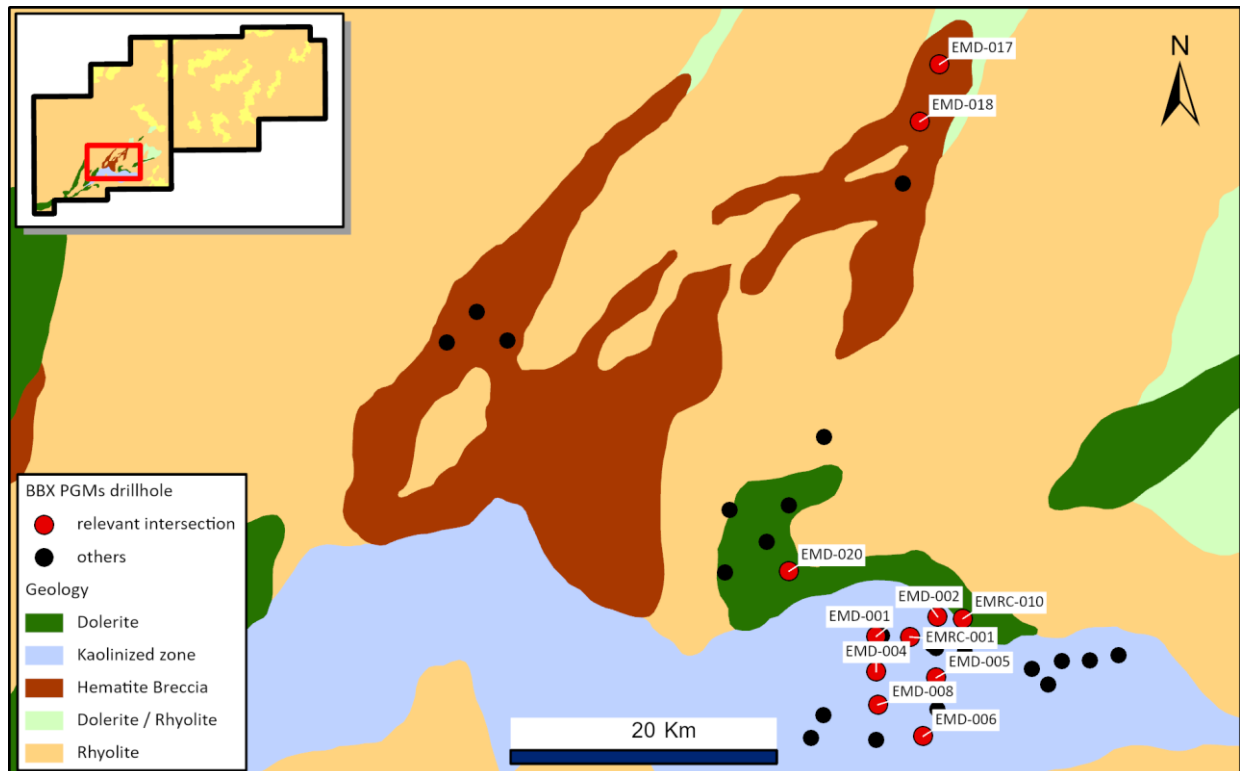


Figure 2 - Ema PGM drill hole location.

Ongoing evaluation of the REE potential at Ema/Ema East involves relatively quick and low-cost auger drilling. Three auger drills were operating at end of July and a fourth started end-September.

Positive initial reconnaissance REE results were received in September with 10 of the 13 holes assayed reporting significant Total Rare Oxide (TREO²) values.

Significant results:

- 4 metres @ **816 ppm TREO** from 5m including 1m @ **1,233 ppm TREO** at EOH (TR-16)
- 2 metres @ **900 ppm TREO** from 8m (TR-10)
- 3 metres @ **739 ppm TREO** from 5m (TR-017)
- 3 metres @ **649 ppm TREO** from 15m, including 1m @ **730 ppm TREO** at EOH (TR-018)
- 8 metres @ **623 ppm TREO** from 12m, including 2m @ **718 ppm TREO** at EOH (TR-013)

The results demonstrate the persistence of REEs in the regolith with a clear enrichment with depth, with the majority of the holes ending in the maximum TREO values obtained. Grades are compatible with typical ionic REE (iREE) deposits, with some auger holes terminated before intersecting the enriched zone due to the intersection of hard material and/or the water table. The mineralisation characteristics of this zone are similar to the enriched zone in previously announced EMD-017.

The assay results from the follow-up auger drilling programme around EMD-017 for rare earth elements (REEs) confirmed consistent values higher than 800 ppm TREO in the high-grade zones at the bottom of the holes.

² TREO = La₂O₃ + CeO₂ + Pr₆O₁₁ + Nd₂O₃ + Sm₂O₃ + Eu₂O₃ + Gd₂O₃ + Tb₄O₇ + Dy₂O₃ + Ho₂O₃ + Er₂O₃ + Tm₂O₃ + Yb₂O₃ + Lu₂O₃ + Y₂O₃

Significant results:

- 5 metres @ **850 ppm TREO** from 9m at EOH (TR-28)
- 17 metres @ **648 ppm TREO** from 4m, including 5m @ **837 ppm TREO** at EOH (TR-024)
- 11 metres @ **627 ppm TREO** from 11m at EOH (TR-23)
- 10 metres @ **869 ppm TREO** from 5m at EOH, including 5m @ **1009 ppm TREO** (TR-32)
- 9 metres @ **607 ppm TREO** from 7m at EOH (TR-25)
- 3 metres @ **860 ppm TREO** from 9m at EOH (TR-022)

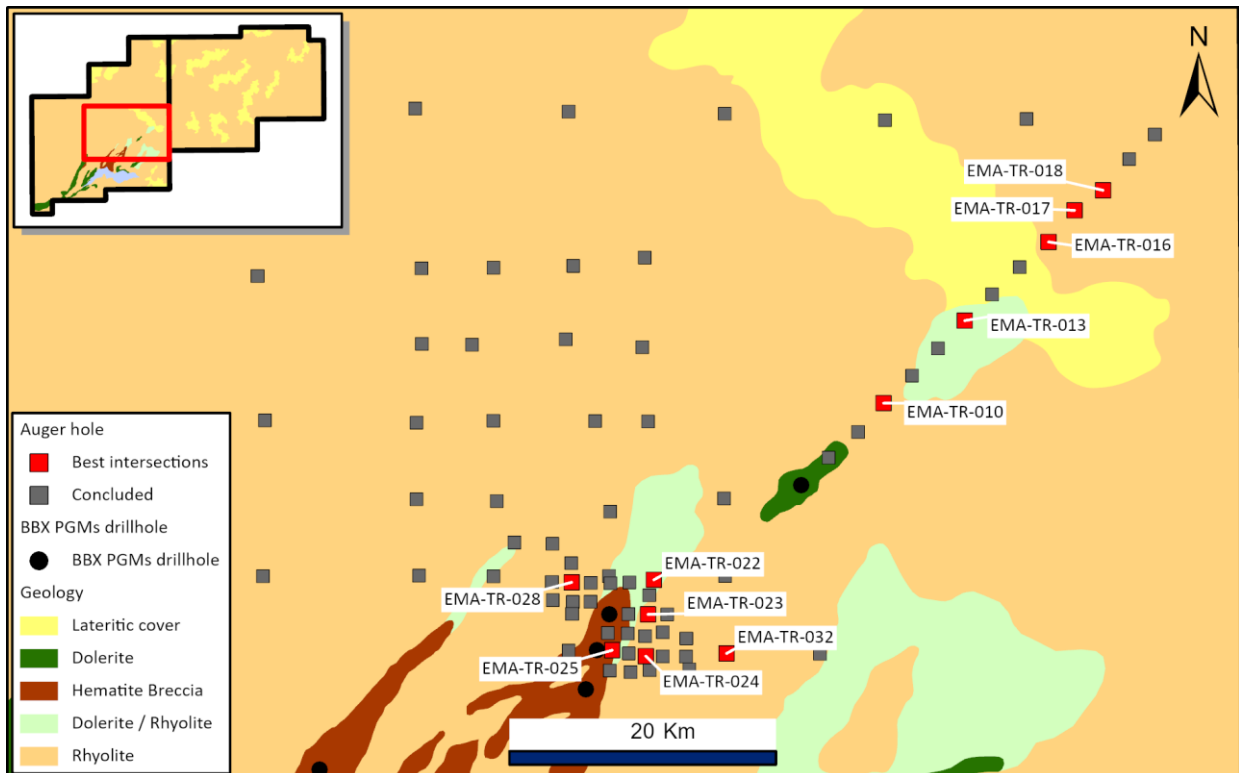


Figure 3 – Ema auger drill hole location

The auger hole TR-024 intersected an exceptional 17-metre-thick zone with progressive REE enrichment with depth from 11 metres, with the last 5 metres averaging 837 ppm TREO, similar to EMD-017. This is generally consistent with grades obtained in other holes in the saprock immediately above the fresh rhyolite.

This hole clearly shows that the levels of NdPr and TbDy increase systematically with depth (Table 1) at a much higher rate than the overall TREO values, reaching the highest values at the base with up to 31% MREO. Good recoveries of up to 61% were previously obtained in this zone by a simple ammonium leach extraction.

Table 1. Auger hole TR-024 assay results (11-21m)

HOLE ID	FROM	TO	TREO ppm	% HREO	% MREO	NdPr ppm	DyTb ppm
EMA-TR-024	11	12	613	18	18	100	11
EMA-TR-024	12	13	591	20	23	124	12
EMA-TR-024	13	14	632	19	27	158	12
EMA-TR-024	14	15	679	18	29	183	12
EMA-TR-024	15	16	623	18	29	167	11
EMA-TR-024	16	17	784	18	30	225	13
EMA-TR-024	17	18	818	19	31	238	15
EMA-TR-024	18	19	827	20	31	243	16
EMA-TR-024	19	20	827	22	31	240	17
EMA-TR-024	20	21	931	26	30	259	22

BBX has received and announced the full assay results for 24 holes of the 123 holes drilled to date (Figure 2). The turnaround time from the laboratory is currently around 8 weeks.

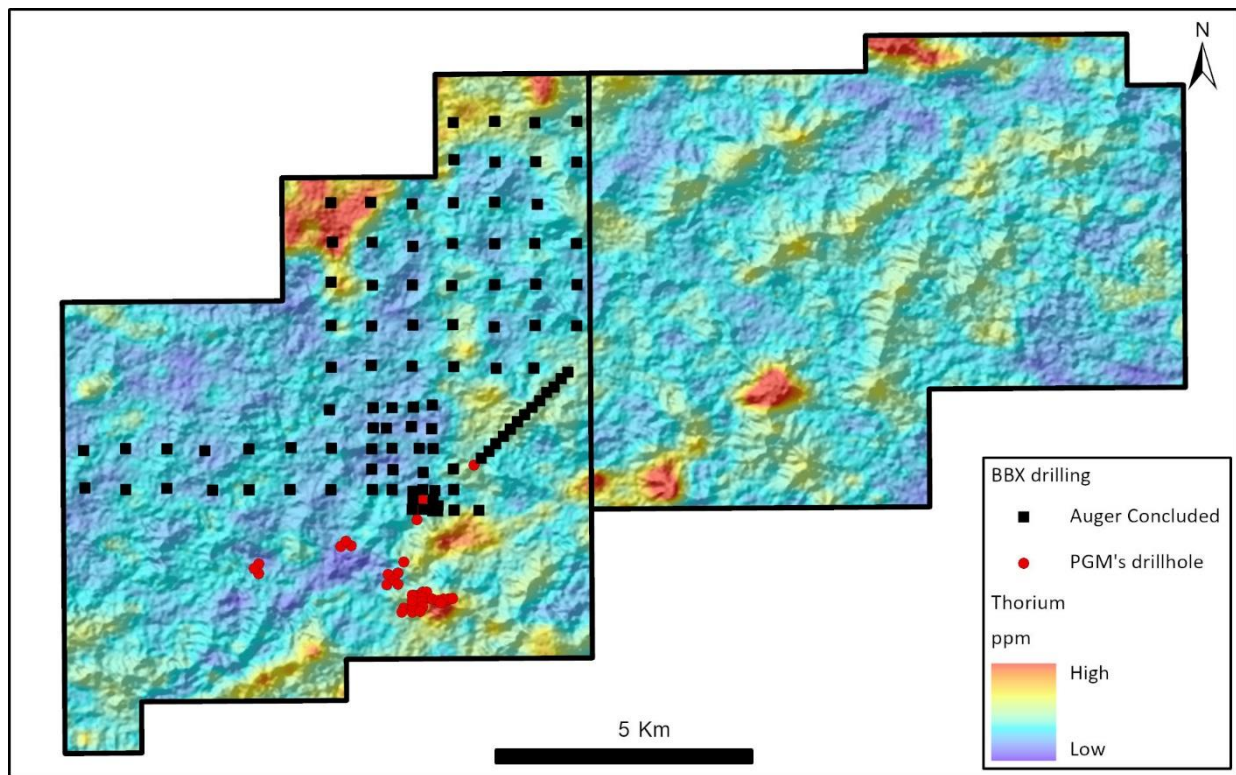


Figure 4 - Ema-Ema East REE project – reconnaissance and infill drilling status

Assays by ammonium sulphate Leach

The analytical procedure at SGS is a simple 2% ammonium sulphate leach performed on a 50g sample to assess its ionic adsorption characteristics and potential baseline recoveries. The resulting solution is then

analysed for multiple elements, including REEs. This test is designed to demonstrate that this mineralisation is typical of ionic adsorbed clay REE deposits, amenable to recoveries via low capex and opex treatment methods. This simple, unoptimized test is merely indicative and does not fully reflect ultimate anticipated metallurgical recoveries under optimised conditions.

Results for 2% ammonium sulphate leach tests at pH 4 for EMD0-17 are shown in table 2.

Key highlights

- Average recovery of the **low temperature magnetic REEs, Pr + Nd of 51%**
- Average recovery of **high temperature magnetic REEs, Tb + Dy of 39%**
- The results show that excellent REE desorption was achieved using a standard ammonium sulphate solution at pH 4 and crucially confirms that **REE mineralization at Ema and Ema East project is an Ionic (Adsorption) Clay REE style.**
- These results form the baseline for **full scale optimised metallurgical testing.**
- **No thorium or uranium recovered**

Table 2. Individual ammonium sulphate leach recoveries for EMD017

REO	12-14m	14-16m	16-17.5m	17.5-19m	AVERAGE
La ₂ O ₃	39%	46%	52%	35%	43%
CeO ₂	12%	9%	20%	10%	13%
Pr ₆ O ₁₁	45%	56%	59%	40%	50%
Nd ₂ O ₃	46%	57%	59%	42%	51%
Sm ₂ O ₃	43%	52%	55%	39%	47%
Eu ₂ O ₃	18%	23%	22%	16%	20%
Gd ₂ O ₃	38%	48%	49%	36%	43%
Tb ₄ O ₇	34%	46%	46%	33%	40%
Dy ₂ O ₃	32%	44%	42%	29%	37%
Ho ₂ O ₃	32%	44%	43%	31%	38%
Er ₂ O ₃	32%	44%	44%	31%	38%
Tm ₂ O ₃	66%	88%	82%	61%	74%
Yb ₂ O ₃	34%	45%	48%	33%	40%
Lu ₂ O ₃	30%	40%	42%	28%	35%
Y ₂ O ₃	31%	44%	41%	31%	37%

Subsequent ammonium leach tests were conducted on auger hole TR-016, with exceptional recoveries of up to **61% for Nd+Pr oxides and 43% for Tb+Dy oxides**. These recoveries are comparable with typical Chinese ionic REE (iREE) deposits developed on top of felsic volcanics (rhyolites).

Table 3: Auger hole TR-016 REO recoveries down-hole

Interval (m)	Head grade TREO ppm	Recovered TREO ³ ppm	REC %	Recovered NdPr ppm	REC %	Recovered DyTb ppm	REC %
11-12	632	231	37	92	56	3	30
12-13	640	217	34	91	56	2	22
13-14	760	327	43	141	61	5	38
14-15	1233	503	41	>170 ⁴	>42²	10	43

APUI REE project

Initial reconnaissance soil sampling for rare earth elements (REEs) conducted on new leases within the Apuí region in Brazil reported significant Total Rare Oxide (TREO⁵) values.

Significant soil results:

- **569 ppm TREO** average in 32 samples, with a maximum of **1,000 ppm TREO – Target 1**
- **576 ppm TREO** average in 11 samples, with a maximum of **920 ppm TREO – Target 2**
- **503 ppm TREO** average in 10 samples, with a maximum of **710 ppm TREO – Target 3**

The obtained values demonstrate compatibility with the near-surface TREO content found in the lateritic cap at Makuutu. This mineralisation style is amenable to well-known, low-cost metallurgical processes such as ammonium sulphate leach acidulated with sulphuric to pH 1.

Out of the total 53 samples collected, only one sample yielded a TREO minus CeO₂ value below 200 ppm, with all other samples materially higher, with an average value of 555 ppm.

Initial follow-up reconnaissance auger drilling confirmed the presence of REEs from surface to end of hole in the entire unit characterised by a distinctive ternary radiometric signature, with clear enrichment in Heavy Rare Earth Oxides with depth in holes APTR 001, 002, 004 and 010.

Significant results:

- APTR 001: 12 meters @ **606 ppm TREO** from surface
- APTR 002: 12 meters @ **714 ppm TREO** from surface
- APTR 004: 9 meters @ **815 ppm TREO** from surface, including 4m @ **930 ppm TREO** from 5 metres

All holes were terminated, due to intersection of the water table or hard ironstone, in REE mineralisation with grades higher than 200 ppm TREO-CeO₂.

The auger holes were over 1 km apart, strategically conducted to validate the presence of REEs within the regolith in the target areas with a specific radiometric signature. The total tested area of these radiometric targets is 92.4 km², 39% of the total area with the ternary radiometric signature. The specific ternary radiometric signature, distinct from that of the surrounding rocks, is similar to that observed at Makuutu, a surface signature characteristic of the zones enriched in REEs.

³ TREO (Total Rare Earth Oxide) = La₂O₃ + CeO₂ + Pr₆O₁₁ + Nd₂O₃ + Sm₂O₃ + Eu₂O₃ + Gd₂O₃ + Tb₄O₇ + Dy₂O₃ + Ho₂O₃ + Er₂O₃ + Tm₂O₃ + Yb₂O₃ + Y₂O₃ + Lu₂O₃

⁴ Nd assay result above upper detection limit (>100 ppm)

⁵ TREO = La₂O₃ + CeO₂ + Pr₆O₁₁ + Nd₂O₃ + Sm₂O₃ + Eu₂O₃ + Gd₂O₃ + Tb₄O₇ + Dy₂O₃ + Ho₂O₃ + Er₂O₃ + Tm₂O₃ + Yb₂O₃ + Lu₂O₃ + Y₂O₃

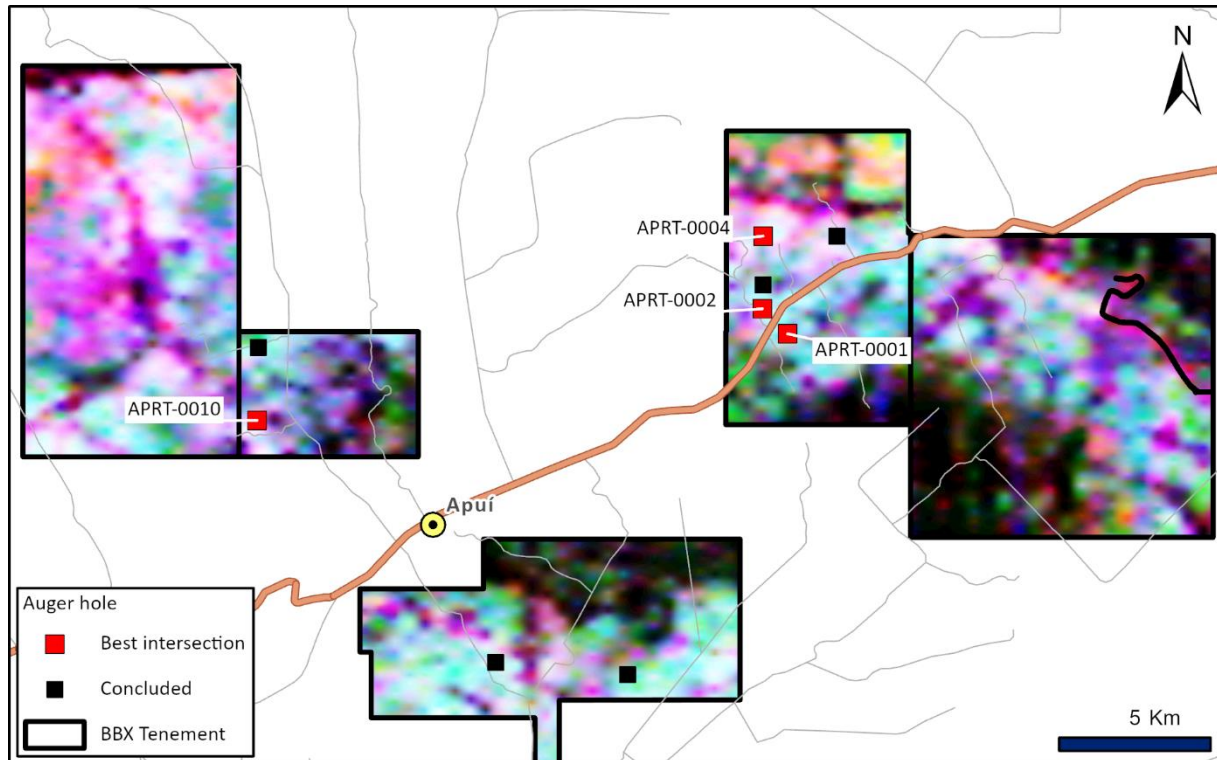


Figure 5 – Apui REE project drill status on ternary radiometric image

Refer to the relevant ASX releases below.

Date	Title
17 July 2023	Ema and Ema East exploration update
19 July 2023	Assays by Ammonium Sulphate Leach Confirm Ionic Adsorbed Clay REE
31 July 2023	Ema assay results confirm continuous and extensive REE mineralization
13 Sep 2023	Positive initial reconnaissance REE results for Ema
19 Oct 2023	Detailed auger drilling at Ema continues to deliver positive REE results.

Biobleaching pilot plant testing

On 22 August the Company announced initial results for recovery tests on a sample from hole TED 020, Três Estados, following biobleaching pilot plant test work conducted by EcoBiome Metals, LLC (**EcoBiome**).

The EcoBiome biobleaching pilot plant in Texas operated for 216 hours, from the 05th to the 14th of June 2023, using a 50Kg sample from drill hole TED 020. EcoBiome’s proprietary technology and EcoBiome Cultured Gold and PGM microbes demonstrated the suitability of the biobleaching method on the BBX mineralised rock. Some refractory minerals containing locked precious metals cannot be successfully treated by conventional hydromet or pyromet processes. EcoBiome has demonstrated the efficiency of an improved biobleach process for the recovery of PGM’s.

The material treated at EcoBiome's leaching plant in Texas was analysed at ALS Canada and the residual mass after treatment sent for further studies at the BBX Laboratory in Catalão, Goiás, Brazil. The objective was to initiate the development of a processing route for the production of metals, commencing on the following fronts:

- Physical separation of metals by chemical and metallurgical means
- Direct cyanidation
- Concentration by desliming and reverse flotation of silicates (in progress)

Initial test work results:

The product from the bioleaching of the TED 20 sample at Ecobiome was analysed at Catalão by conventional lead fire assay with an AA finish. The results were very close to those reported by ALS Canada (below):

BBX Catalão results

Sample ID	Au	Pd	Pt
BLK QF 16	-	-	-
TED 020 Head 1	0.68	17.83	-
TED 020 Head 2	0.75	15.89	0,13
TED 020 Head 3	0.69	16.37	0,05
OREAS 684*	0.25	1.67	3,61
ITAK 681**	7.14	-	-
AVERAGE HEAD	0,71	16,70	0,01

TED 020 - ALS Assay (ppm)			
Sample ID	Au	Pd	Pt
TED 020 - 196h	0.62	15.90	-

Note: Assays were by fire assay.

*OREAS 684 Spec (g/t): Au=0.25; Pd=1.72; Pt=3.87

**ITAK 681 Spec (g/t): Au=7.57

" -- " Below 0.10 ppm

Physical separation of the metals:

The TED020 sample was dissolved in nitric acid, the pulp filtered using 20 micrometre filter paper and the fractions dried and analysed. The results are shown in the table below:

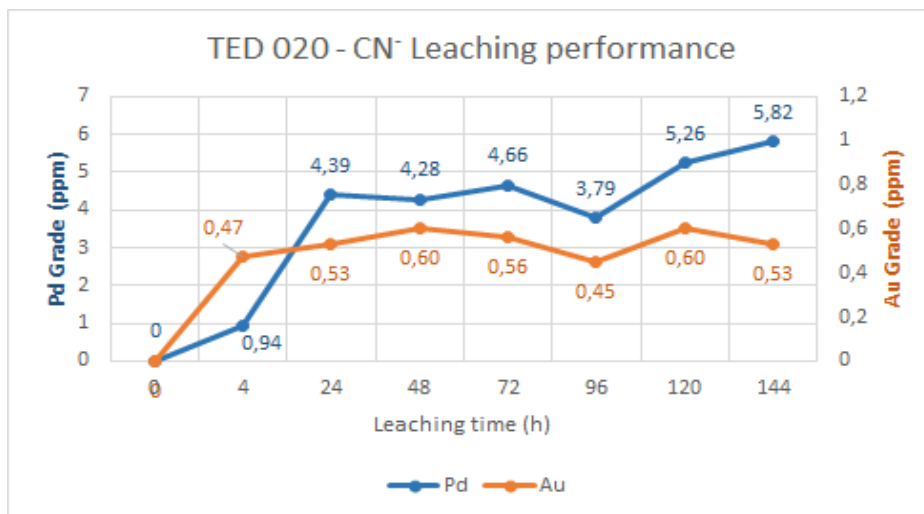
HNO ₃ Leaching Assay results (ppm)			
Sample ID	Au	Pd	Pt
Cake	0.28	18.41	-
Dry filtrate	2.82	0.28	-
Calculated head	0.67	15.60	-

The results indicate that gold is concentrated in the aqueous phase and palladium in the liquid phase. Although not conclusive at this stage, it is possible that gold is present in the aqueous phase due to its very fine granulometry (below 20 micrometers). Palladium remained insoluble in the solid phase retained on the filter paper.

Cyanide leaching

Part of the sample was leached in a 2g/l sodium cyanide solution for 144 hours. Assays of the resultant solutions after filtration of the pulp are shown in the table and graph below:

CN ⁻ Leaching time (h)	Ore grade (ppm)		Metal recovery (%)	
	Au	Pd	Au	Pd
4	0.47	0.94	66.51	5.63
24	0.53	4.39	75.00	26.29
48	0.60	4.28	84.91	25.63
72	0.56	4.66	79.25	27.91
96	0.45	3.79	63.68	22.70
120	0.60	5.26	84.91	31.50
144	0.53	5.82	75.00	34.86



The results show a rapid increase in gold recovery in the first 24 hours and a stabilisation after 48 hours. Palladium shows a rapid increase in the first 24 hours and a slow increase continuing until 144 hours. To improve the palladium reaction kinetics addition of lead nitrate or similar additive will be investigated.

Refer to ASX release below for relevant announcement.

Date	Title
22 Aug 2023	BBX recovers precious metals from hole TED 020

Additional Tenements

The Company has applied for two exploration tenements (Figure 1) 25 km ENE of Apui, with potential for multi-element mineralisation. These areas were strategically selected given their potential for multi-element mineralisation.

The addition of these two tenements to BBX's portfolio follows the announcement of significant REE results obtained from the Apui project. These two are also in a specific sedimentary unit consisting of siltstones,

fine sandstones, and claystone which shares similar ternary radiometric signature and geological, climatic, and topographic characteristics with the Makuutu iREE project in Uganda.

Refer to ASX releases below for relevant announcement.

Date	Title
07 Aug 2023	New Rare Earth Elements Discovery in Apui Region
17 Aug 2023	Significant REEs identified in reconnaissance auger holes

Safety

41,652-man hours were worked in Exploration, and 2696-man hours were worked at Catalão without a lost time accident (table 4).

Table 4 – Total hours worked in the Exploration Department and Catalão Laboratory

Month	Employees	Staff	Total Hours Worked
July	21	5	12,496
August	26	5	15,354
September	28	5	16,498
TOTAL Q1			44,348

Corporate

On 23 August 2023, the Company announced the resignation of Mr Andre Douchane as a director of the Company, who remain as Chief Executive Officer.

On 25 August 2023, the Company announced the appointment of Mr Jeremy Robinson as a non-executive director.

On 28 August 2023, Mr Karl Page stepped down as a non-executive director.

Financial

On 4 September 2023, the Company issued 5,483,871 shares under a financing agreement announced 31 March 023.

On 20 September 2023, the Company announced the completion of a \$6m placement to sophisticated investors to raise capital to fund an aggressive REE exploration program. Tranche 2 of the placement is subject to shareholder approval in November 2023.

For the purpose of Section 6 of the Appendix 5B, all payments made to related parties have been paid in relation to director fees.

Additional Information required by Listing Rule 5.3.3

Tenements held at the end of the quarter	Area (Ha)	Percentage ownership
DNPM Permit Number 880.107/08 Location Brazil (Ema)	9,839.91	100% Exploration Licence
DNPM Permit 880.184/16 Location Brazil (Ema East)	9,034.00	100% Exploration Licence

DNPM Permit Number 880.090.08 Location Brazil (Três Estados)	8,172.25	100% Exploration Licence
DNPM Permit Number 880.025/2023 Location Brazil (Apuí iREE)	2,417.00	100% Exploration Licence
DNPM Permit Number 880.026/2023 Location Brazil (Apuí iREE)	6,591.90	100% Exploration Licence
DNPM Permit Number 880.027/2023 Location Brazil (Apuí iREE)	5,856.00	100% Exploration Licence
DNPM Permit Number 880.259/2020 Location Brazil (Apuí iREE) Acquired from : COOPERATIVA EXTRATIVISTA MINERAL DOS GARIMPEIROS DE APUI Transference lodged	9,092.01	100% Exploration Licence
DNPM Permit Number 880.149/2017 Location Brazil (Apuí iREE) Acquired from: COOPERATIVA EXTRATIVISTA MINERAL DOS GARIMPEIROS DE APUI Transferred lodged	9,815.15	100% Exploration License
Application number 880.076/2023 Location Brazil (Apuí iREE)	8,475.30	100% Exploration application
Application number 880.077/2023 Location Brazil (Apuí iREE)	8,856.84	100% Exploration application

The Activity Report for the September quarter 2023 has been authorized for release by the Board of Directors.

For more information:

André Douchane

Chief Executive Officer

adouchane@bbxminerals.com

Competent Person Statement

The information in this report that relates to exploration results released by the Company to ASX on 17 July 2023, 19 July 2023, 31 July 2023, 07 August 2023, 17 August 2023, 22 August 2023, 13 September and 19 October 2023 is based on information compiled by Mr. Antonio de Castro, BSc (Hons), MAusIMM, CREA, who acts as BBX's Senior Consulting Geologist through the consultancy firm, ADC Geologia Ltda. Mr. de Castro has sufficient experience which is relevant to the type of deposit under consideration and to the reporting of exploration results and analytical and metallurgical test work to qualify as a competent person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Castro consents to the report being issued in the form and context in which it appears. The Company confirms that is not aware of any new information or data that materially affects the information included in the above-mentioned releases.

About BBX Minerals Ltd



BBX Minerals Limited is a unique mineral exploration and mineral processing technology company listed on the Australian Securities Exchange.

Its major exploration focus is Brazil, mainly in the southern Amazon, a region BBX believes is vastly underexplored with high potential for the discovery of world class gold-PGM, base metals and Ionic Adsorbed Clay (IAC) Rare Earth Elements deposits. BBX's key assets are the Três Estados and Ema Gold Projects and the REE projects at Ema, Ema East and Apui. The company has 781 km² of exploration tenements within the Colider Group and adjacent sediments, a prospective geological environment for gold, PGM, base metal and iREE deposits.

BBX is also developing an environment compatible and sustainable beneficiation process that extracts precious metals using a unique bio leach process. This leading-edge process, that extracts precious metals naturally, is being developed initially for the primary purpose of economically extracting Platinum Group metals from the Tres Estados mineral deposit. It is expected that such technology will be transferable and relevant to many other PGM projects. BBX believes that this processing technology is critical in the environmentally timely PGM space and supports a societal need to move toward a carbon neutral economy.