

## WORLD-CLASS IONIC RARE EARTHS RECOVERIES AT EMA PROJECT

### Highlights

- Exceptional recoveries, up to 87%, of the in demand rare earth elements neodymium, praseodymium, dysprosium & terbium
- Recoveries achieved using standard, weak ammonium sulphate leaching solution, pH 4, at ambient temperatures over low leach times of only 30 minutes duration
- Leachability response confirms rare earths are present in ionic form and leachable at low operating cost
- Results indicate potential for a very large-scale rare earth system at Ema
- Further metallurgical optimisation work to commence immediately with samples having arrived at ANSTO for testing
- Maiden Ema Mineral Resource Estimate calculation has commenced

### Some of the better recovery intercepts included:

- 13 metres @ 71% Nd, 62% Pr, 45% Dy and 52% Tb from 5m (TR-071)
- 5 metres @ 66% Nd, 66% Pr, 52% Dy and 55% Tb from 12m (TR-059)
- 10 metres @ 65% Nd, 61% Pr, 43% Dy and 50% Tb from 10m (TR-110)

### Jeremy Robinson, Non-Executive Chairman, commented:

*“These results provide further confirmation that the extensive Ema rare earth mineralisation is ionically absorbed clays that can result in high recoveries using low-cost ammonium sulphate.*

*The company is becoming increasingly confident that the >80km<sup>2</sup> of already defined rare earth mineralisation has the potential to be further expanded and developed into one of the largest ionic rare earth projects outside of China.*

*Our immediate focus is to complete the maiden Ema Mineral Resource Estimate with all the data having been handed over to the consultants for processing, whilst at the same time proceeding with further metallurgical optimisation test-work at ANSTO which will commence shortly, with samples having already been delivered.”*

Brazilian Critical Minerals Limited (**ASX: BCM**) (“**BCM**” or the “**Company**”) is pleased to announce the ammonium sulphate extraction assay results for the first batch of auger holes drilled for rare earth elements (REEs) at Ema in the Apuí region of Brazil (Figure 1). The tests were conducted at the SGS laboratory in Brazil.

The first pass leach test results from standard assaying at SGS (ICM655 and ICM694) confirm high recoveries of the four most important rare earth elements, neodymium, praseodymium, dysprosium, and terbium with some individual elements producing recoveries of up to 87% (Table 3).

An established industry standard set of recovery conditions was applied to the Ema mineralisation, being the utilisation of ammonium sulphate for leaching, pH 4, at ambient temperatures with a 30-minute leach duration.

The recoveries received to date indicate a significant proportion of the REE's are present as ionically adsorbed clays, confirming Ema mineralisation, which currently stretches >80km<sup>2</sup> has the potential to become one of the largest ionically clay hosted deposits defined outside of China.

Several drill holes failed to reach the enriched ionic horizon at the base of weathering (see appendix 4), where the highest grades are anticipated, and best recoveries obtained (appendix 3). These holes will require re-drilling with a different drill method in future campaigns.

Metallurgical samples have now been delivered to ANSTO for additional optimisation work. The primary aim is to improve upon the already excellent recoveries obtained to date and to determine the opportunities for grade enhancement of mineralised material prior to leaching. The current high recoveries were achieved at the SGS laboratory by standard leaching using low-cost combined ammonium sulphate (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> and low leach times of 30-minute durations.

*Table 1- Hole EMA-TR-071 with total rare earth head grades and recovered (%) magnetic rare earth oxides (MREO).*

		Head Grades ppm		% REO recovered in ammonium sulphate solution					Leached ppm
From	To	TREO	MREO	Nd <sub>2</sub> O <sub>3</sub>	Pr <sub>6</sub> O <sub>11</sub>	Dy <sub>2</sub> O <sub>3</sub>	Tb <sub>4</sub> O <sub>7</sub>	MREO	MREO
5	6	462	91	58	51	13	20	53	48
6	7	765	194	41	34	13	17	38	73
7	8	769	220	58	50	24	30	54	119
8	9	822	232	75	66	40	48	71	165
9	10	895	298	77	70	46	54	74	221
10	11	990	336	76	67	48	53	73	244
11	12	1018	348	79	68	47	56	75	261
12	13	943	329	83	74	58	67	79	261
13	14	913	311	80	72	64	72	78	242
14	15	935	320	84	74	64	71	80	257
15	16	991	326	59	52	45	50	56	184
16	17	1118	378	84	74	68	74	81	307
17	18	1075	357	64	58	54	59	62	223

Table 2. Hole EMA-TR-059 with total rare earth head grades and recovered (%) magnetic rare earth oxides (MREO).

		Head Grades ppm		% REO recovered in ammonium sulphate solution					Leached ppm
From	To	TREO	MREO	Nd <sub>2</sub> O <sub>3</sub>	Pr <sub>6</sub> O <sub>11</sub>	Dy <sub>2</sub> O <sub>3</sub>	Tb <sub>4</sub> O <sub>7</sub>	MREO	MREO
10	11	683	171	33	27	21	25	30	52
11	12	826	279	52	46	40	43	50	139
12	13	874	265	65	58	46	46	63	166
13	14	1208	426	70	65	51	56	68	289
14	15	1414	510	63	64	44	47	62	317
15	16	1210	454	70	87	74	79	74	334
16	17	884	296	60	56	44	48	58	172

Table 3. Hole EMA-TR-110 with total rare earth head grades and recovered (%) magnetic rare earth oxides (MREO).

		Head Grades ppm		% REO recovered in ammonium sulphate solution					Leached ppm
From	To	TREO	MREO	Nd <sub>2</sub> O <sub>3</sub>	Pr <sub>6</sub> O <sub>11</sub>	Dy <sub>2</sub> O <sub>3</sub>	Tb <sub>4</sub> O <sub>7</sub>	MREO	MREO
10	11	839	274	70	66	30	37	68	185
11	12	953	305	66	63	28	36	64	194
12	13	903	295	58	54	27	33	55	163
13	14	934	289	76	71	38	46	73	211
14	15	1058	336	58	54	34	41	56	188
15	16	1042	327	63	60	39	47	61	200
16	17	1303	409	39	36	31	34	38	155
17	18	1289	368	85	80	69	77	82	303
18	19	1275	327	73	70	69	75	72	236
19	20	928	217	62	58	64	70	62	134

These ammonium sulphate leach results will now enable us to map the distribution of the ionic rare earth elements (iREE) vertically through each hole profile and to estimate the potential gross basket value (revenue) for the desorbed iREE recovered in solution for each mineralised intercept.

The magnetic REO (Nd, Pr, Dy, Tb) basket value in the Ema mineralisation constitutes 88% to 92% of the total basket, with Nd and Pr accounting for 75% to 82% alone.

The exceptional MREO recovery rates from within the enriched zone of up to 87% (Appendix 3, hole TR-108) highlight the attractiveness of the Ema style of mineralisation, developed over felsic volcanics as is seen extensively in parts of China, relative to iREE deposits developed over other rock types.

Test-work conducted at CETEM<sup>5</sup> showed that all the rare earths recovered in the ammonium sulphate solution are fully precipitated as a mixed rare earth carbonate with 98-99% purity, which is easily shippable to downstream customers.

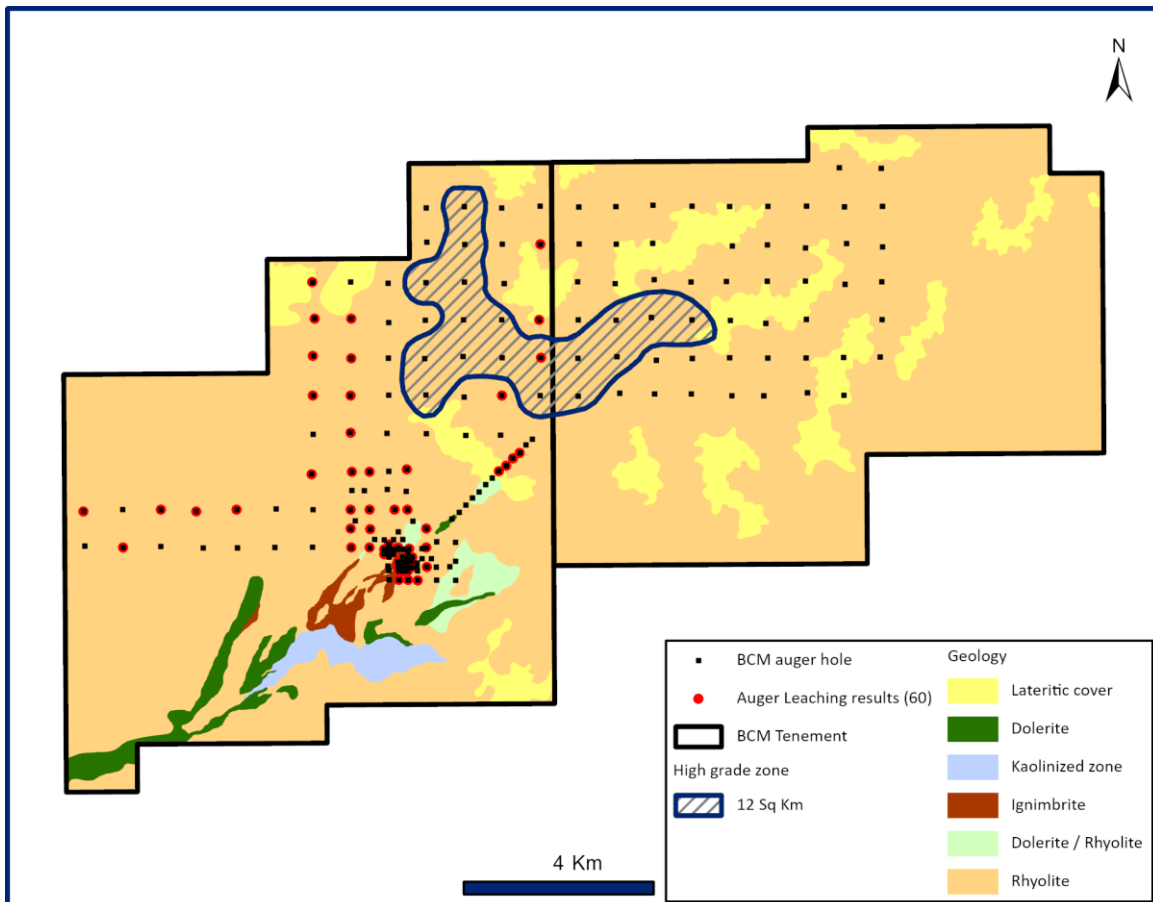


Figure 1. Ema-Ema East REE project location – Auger holes used in ammonium sulphate leaching tests.

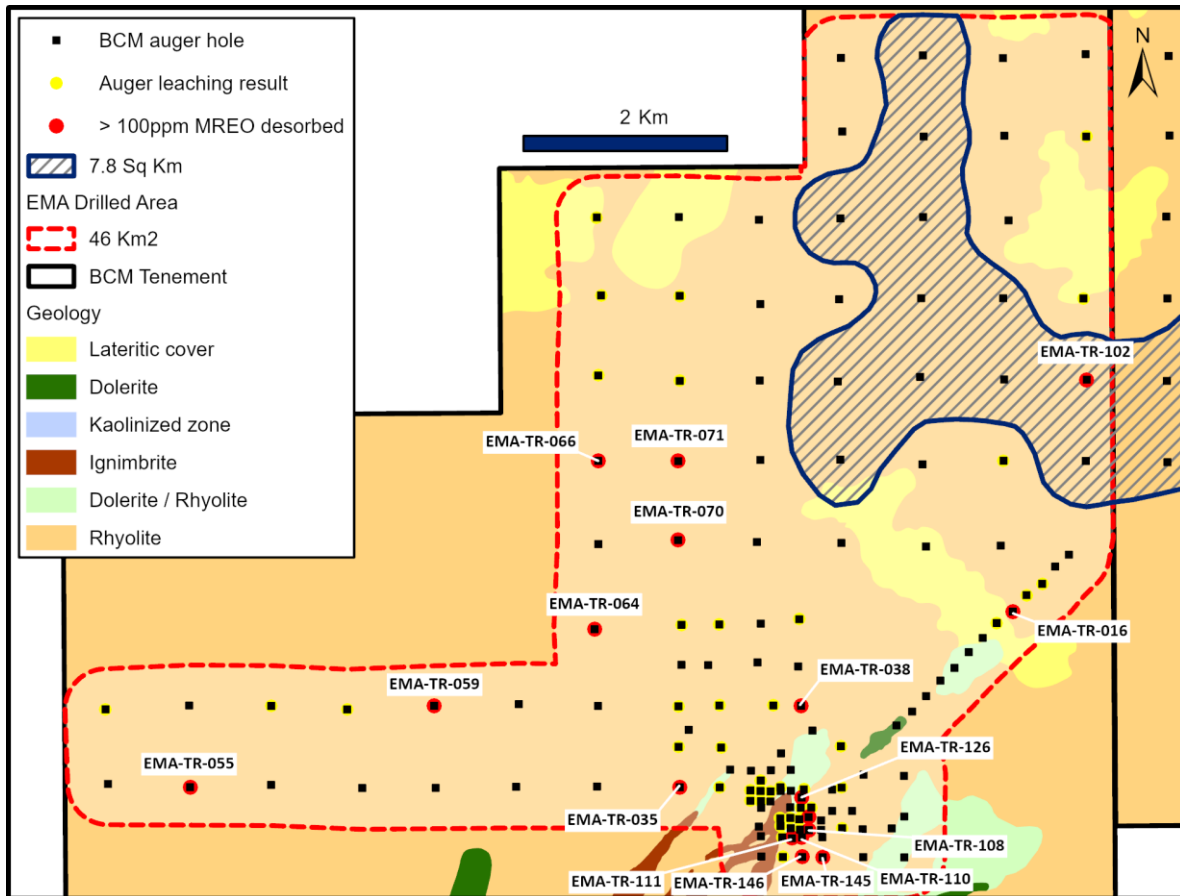


Figure 2. Ema-Ema East detailed location map showing ammonium sulphate leached holes > 100ppm MREO.

The Ema-Ema East iREE project comprises 189 km<sup>2</sup> of felsic volcanics over which 194 auger holes totalling 2,749 metres have been drilled to date, covering approximately 82 km<sup>2</sup> (Figure 1). BCM has received and announced the full assay results for 191 holes of the total of 194 holes drilled to date, utilising a lithium borate fusion assay methodology.

This announcement contains the ammonium sulphate leach results for 60 drill holes with the remainder expected in mid-late March.

## Ema REE Project

The EMA iREE project (Ema and Emá East leases) is unique amongst Brazilian REE projects in that it shares almost identical characteristics with the iREE deposits developed over felsic volcanic rocks in the southwest of China, the world's largest known ionic clay rare earth region.

Ionic clay deposits are low-grade low-cost, high margin operations owing to their simple mining and processing methodology, non-radioactive products and waste, and attractive mineralogy and saleable product composition. See below for a comparison of the key characteristics of ionic and hard rock rare earth deposits.

	Ionic Clay Rare Earths	Hard Rock Rare Earths
Mineralogy & Deposit	<ul style="list-style-type: none"> <li>Soft, friable clay-like material, occurring at or near-surface with low strip ratios</li> <li>Enriched in higher-value heavy rare earths-vast majority of global HREE supply comes from ionic clay deposits</li> <li>Low grade, bulk mining type deposits with simple mineralogy</li> </ul>	<ul style="list-style-type: none"> <li>Hard rock material with complicated mineralogy</li> <li>Can occur at surface or at significant depths</li> <li>Majority light rare earths, little to no heavy rare earth</li> </ul>
Exploration & Mining	<ul style="list-style-type: none"> <li>Rapid exploration programs and easy mining</li> <li>Resources can be defined with wide-spaced, shallow drilling grids</li> <li>No drill &amp; blast required for mining, low unit costs</li> <li>Bulk mining methods, typically only requiring truck and shovel</li> </ul>	<ul style="list-style-type: none"> <li>Slower, more expensive exploration programs</li> <li>Difficult to mine, requiring extensive drilling &amp; blasting</li> <li>Requires more drilling metres to define resource</li> <li>Mining is more selective and higher cost per tonne</li> </ul>
Processing & Metallurgy	<ul style="list-style-type: none"> <li>Simple, low-cost processing, with no comminution circuit</li> <li>Does not typically require extensive use of heavy acid reagents</li> <li>Can be in-situ / closed loop processes with low temperatures</li> </ul>	<ul style="list-style-type: none"> <li>Requires comminution circuits with multiple beneficiation and flotation steps</li> <li>Can require significant acid reagents</li> </ul>
Final Product	<ul style="list-style-type: none"> <li>Mixed rare earth carbonates or oxides, typically grading 90% TREO or higher – product can be fed directly into separation plants</li> <li>High value product, rich in high value MREOs (Nd, Pr, Dy, Tb), low in low value REOs (La, Ce)</li> </ul>	<ul style="list-style-type: none"> <li>Mixed rare earth concentrates, typically grading 20-60% TREO</li> <li>High La and Ce content, little to no heavy enrichment</li> <li>Requires more intensive processing to prepare to separation</li> </ul>
Environmental & Permitting	<ul style="list-style-type: none"> <li>Negligible radioactivity of product and waste</li> <li>Non-toxic, non-radioactive tailings, which can be dry-stacked</li> <li>Processing methods can recycle liquids</li> <li>Simpler permitting due to simple process and mining</li> </ul>	<ul style="list-style-type: none"> <li>Typical produces radioactive tailings</li> <li>Typical requires liquid tailings impoundments and constant monitoring</li> <li>More difficult to permit due to complex reagent-intensive processing and intensive mining operations</li> </ul>

### **Future work at Ema/Ema East**

Completion of the Ema Mineral Resource Estimate, which has commenced with GE21 consultancy.  
Completion of the MRE is estimated for end April to early May.

This announcement has been authorised for release by the Board of Directors.

### **Enquiries**

For more information please contact:

**Jeremy Robinson**

*Non-executive Chairman*

*Brazilian Critical Minerals Limited*

[jeremy.robinson@braziliancriticalminerals.com](mailto:jeremy.robinson@braziliancriticalminerals.com)

### **About Brazilian Critical Minerals Ltd**

Brazilian Critical Minerals Limited (BCM) 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 BCM believes is vastly underexplored with high potential for the discovery of world class gold-PGM, base metal and Ionic Adsorbed Clay (IAC) Rare Earth Element deposits. BCM's key assets are the Três Estados and Ema gold-PGM projects and the iREE projects at Ema, Ema East and Apui. The company has 718km<sup>2</sup> of exploration tenements within the Colider Group and adjacent sediments, a prospective geological environment for gold, PGM, base metal and iREE deposits.

BCM is also developing an environmentally friendly and sustainable beneficiation process to extract 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 Três Estados mineral deposit. It is expected that such technology will be transferable and relevant to many other PGM projects. BCM believes that this processing technology is critical in the environmentally timely PGM space and supports a societal need to move towards a carbon neutral economy.

### **Competent Person Statement**

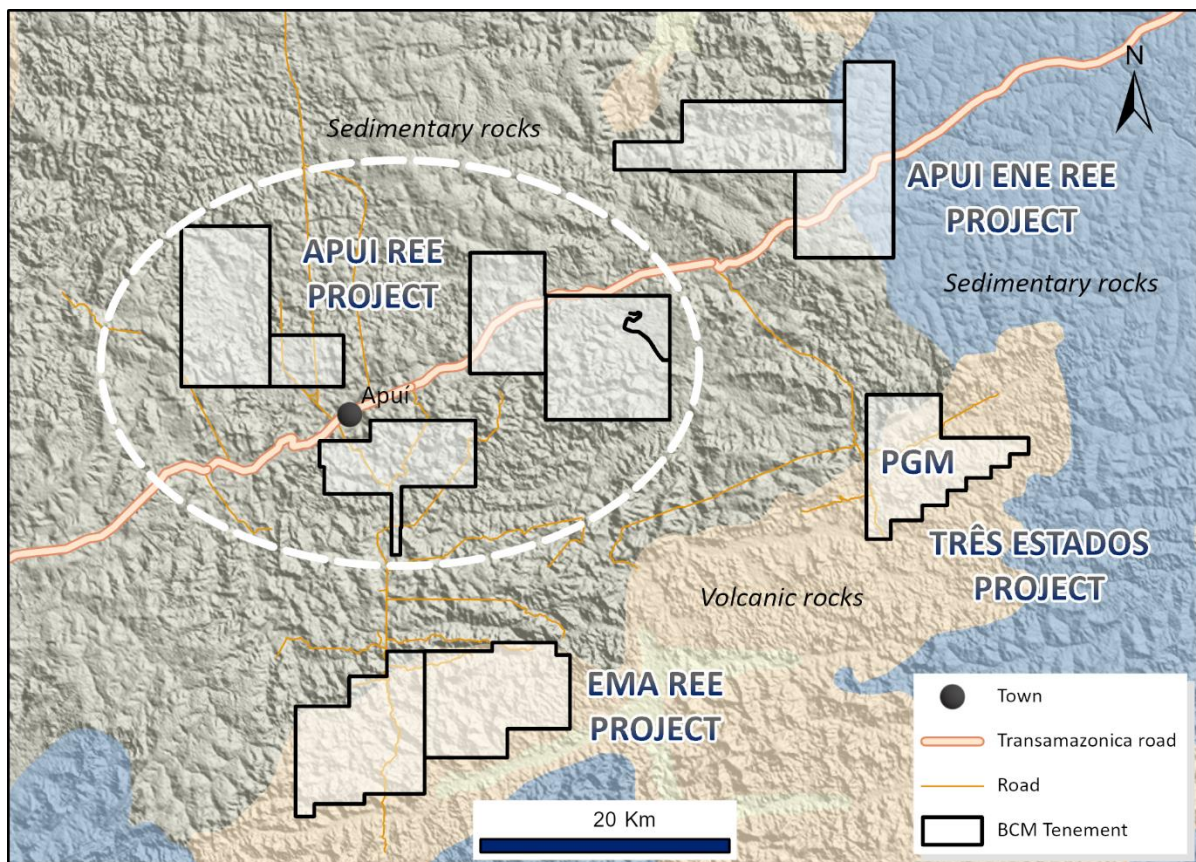
The information in this report that relates to exploration results is based on information compiled by Mr. Antonio de Castro, BSc (Hons), MAusIMM, CREA, who acts as BCM's Senior Consulting Geologist through the consultancy firm, ADC Geologia Ltda. Mr. de Castro has sufficient experience which is relevant 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.

## References

1. BBX Minerals Limited (ASX:BBX) ASX Announcement “Assays by Ammonium Sulphate Leach Confirm Adsorbed Clay REE” on 19.07.23
2. BBX Minerals Limited (ASX:BBX) ASX Announcement “Drilling at Ema continues to deliver positive REE results” on 19.10.23
3. BBX Minerals Limited (ASX:BBX) ASX Announcement “BBX extends rare earth mineralization at Ema to 7km x 6km” on 07.12.23
4. BCM Minerals Limited (ASX:BCM) ASX Announcement “ Extensive Ionic Rare Earth mineralization continues to be defined by drilling at the Ema project” On 06.02.24
5. BCM Minerals Limited (ASX:BCM) ASX Announcement “CETEM Ammonium Sulphate Leach Ionic Adsorbed Clay Ree Test” On 29.01.24
6. BCM Minerals Limited (ASX:BCM) ASX Announcement “High-Grade Ionic Rare Earth Zone at Ema Expands By 54% On 22.02.24

## Appendices

### Appendix 1 – BCM’s rare earth projects





*Appendix 2 – Auger hole with intervals > 100ppm MREO recovered by the ammonium sulphate leach.*

Auger hole	From (m)	Interval (metres)	Head grade		Grade of the rare earth oxides in the leach solution				
			TREO ppm	MREO ppm	Nd <sub>2</sub> O <sub>3</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm	MREO ppm
EMA-TR-016	11	4	816		112	30	4.1	0.7	147
EMA-TR-035	14	2	676		93	25	5.1	0,9	124
EMA-TR-038	14	5	710		82	22	9.5	1.6	115
EMA-TR-055	13	3	776		109	29	5.6	1.2	145
EMA-TR-059	10	7	1018		155	44	9.0	1.7	210
EMA-TR-064	7	3	1116		81	20	6.0	1.1	108
EMA-TR-066	14	11	829		85	22	4.5	0.9	112
EMA-TR-070	11	4	641		112	31	4.5	0.9	148
EMA-TR-071	5	13	904		152	40	7.7	1.5	201
EMA-TR-102	8	6	1084		104	29	4.4	1.0	138
EMA-TR-108	15	6	867		148	42	8.5	1.7	200
EMA-TR-110	10	10	1059		143	41	10.5	2.1	197
EMA-TR-111	6	7	744		106	30	4.7	1.0	142
EMA-TR-126	11	4	1058		108	29	8.5	1.6	147
EMA-TR-145	14	10	743		98	28	3.8	0.8	130
EMA-TR-146	12	3	778		102	28	1.9	0.4	132

*Appendix 3 – Results for holes which intersected the entire enriched ionic rare earth horizon.*

*Total TREO assays analysed by lithium metaborate fusion and MREO recovered in ammonium sulphate solution. Intervals in bold type contain >50ppm MREO in solution.*

Auger hole	From (m)	To (m)	Head grade		Rare earth oxides in the leach solution					
			TREO ppm	MREO ppm	MREO ppm	REC. %	Nd <sub>2</sub> O <sub>3</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm
EMA-TR-016	5	6	333	48	6	13	4	1	0	0
EMA-TR-016	6	7	392	58	11	19	8	2	0	0
EMA-TR-016	7	8	436	66	11	17	8	2	0	0
EMA-TR-016	8	9	421	81	24	30	18	5	1	0
EMA-TR-016	9	10	444	89	30	34	23	6	1	0
EMA-TR-016	10	11	480	109	40	37	31	8	1	0
<b>EMA-TR-016</b>	<b>11</b>	<b>12</b>	627	174	<b>95</b>	<b>55</b>	72	20	2	0
<b>EMA-TR-016</b>	<b>12</b>	<b>13</b>	636	171	<b>93</b>	<b>54</b>	72	19	2	0
<b>EMA-TR-016</b>	<b>13</b>	<b>14</b>	755	246	<b>145</b>	<b>59</b>	111	30	4	1
<b>EMA-TR-016</b>	<b>14</b>	<b>15</b>	1225	427	<b>257</b>	<b>60</b>	194	53	8	2
EMA-TR-023	10	11	398	65	14	22	11	3	0	0
EMA-TR-023	11	12	745	96	24	25	18	5	1	0
EMA-TR-023	12	13	527	118	26	22	20	6	1	0
EMA-TR-023	13	14	576	139	33	24	25	7	1	0
EMA-TR-023	14	15	618	147	41	28	31	9	1	0
<b>EMA-TR-023</b>	<b>15</b>	<b>16</b>	591	<b>151</b>	<b>53</b>	<b>35</b>	40	12	1	0
<b>EMA-TR-023</b>	<b>16</b>	<b>17</b>	625	<b>166</b>	<b>50</b>	<b>30</b>	38	11	1	0
<b>EMA-TR-023</b>	<b>17</b>	<b>18</b>	569	<b>150</b>	<b>56</b>	<b>37</b>	42	12	1	0
<b>EMA-TR-023</b>	<b>18</b>	<b>19</b>	567	<b>152</b>	<b>54</b>	<b>36</b>	41	12	1	0
<b>EMA-TR-023</b>	<b>19</b>	<b>20</b>	667	<b>169</b>	<b>54</b>	<b>32</b>	41	12	1	0
<b>EMA-TR-023</b>	<b>20</b>	<b>21</b>	767	<b>258</b>	<b>67</b>	<b>26</b>	50	14	2	0
<b>EMA-TR-023</b>	<b>21</b>	<b>22</b>	612	<b>163</b>	<b>51</b>	<b>31</b>	38	11	1	0
EMA-TR-024	4	5	607	91	2	2	1	0	0	0

Auger hole	From (m) / To (m)		Head grade		Rare earth oxides in the leach solution					
			TREO ppm	MREO ppm	MREO ppm	REC. %	Nd <sub>2</sub> O <sub>3</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm
EMA-TR-024	5	6	452	76	2	3	1	1	0	0
EMA-TR-024	6	7	561	81	2	2	1	1	0	0
EMA-TR-024	7	8	446	79	5	6	4	1	0	0
EMA-TR-024	8	9	506	96	6	6	5	1	0	0
EMA-TR-024	9	10	566	97	8	8	6	2	0	0
EMA-TR-024	10	11	526	98	8	8	6	2	0	0
EMA-TR-024	11	12	608	111	11	10	8	2	0	0
EMA-TR-024	12	13	587	136	31	23	23	6	1	0
<b>EMA-TR-024</b>	<b>13</b>	<b>14</b>	<b>629</b>	<b>170</b>	<b>60</b>	<b>35</b>	<b>46</b>	<b>13</b>	<b>1</b>	<b>0</b>
<b>EMA-TR-024</b>	<b>14</b>	<b>15</b>	<b>675</b>	<b>195</b>	<b>72</b>	<b>37</b>	<b>55</b>	<b>15</b>	<b>1</b>	<b>0</b>
<b>EMA-TR-024</b>	<b>15</b>	<b>16</b>	<b>619</b>	<b>178</b>	<b>71</b>	<b>40</b>	<b>54</b>	<b>15</b>	<b>1</b>	<b>0</b>
<b>EMA-TR-024</b>	<b>16</b>	<b>17</b>	<b>780</b>	<b>239</b>	<b>98</b>	<b>41</b>	<b>75</b>	<b>21</b>	<b>2</b>	<b>0</b>
<b>EMA-TR-024</b>	<b>17</b>	<b>18</b>	<b>814</b>	<b>252</b>	<b>107</b>	<b>42</b>	<b>82</b>	<b>23</b>	<b>2</b>	<b>0</b>
<b>EMA-TR-024</b>	<b>18</b>	<b>19</b>	<b>822</b>	<b>259</b>	<b>120</b>	<b>46</b>	<b>90</b>	<b>26</b>	<b>3</b>	<b>1</b>
<b>EMA-TR-024</b>	<b>19</b>	<b>20</b>	<b>822</b>	<b>257</b>	<b>128</b>	<b>50</b>	<b>95</b>	<b>27</b>	<b>5</b>	<b>1</b>
<b>EMA-TR-024</b>	<b>20</b>	<b>21</b>	<b>924</b>	<b>281</b>	<b>147</b>	<b>52</b>	<b>106</b>	<b>30</b>	<b>8</b>	<b>2</b>
EMA-TR-028	9	10	524	97	23	24	17	5	1	0
EMA-TR-028	10	11	1147	118	31	26	23	7	2	0
EMA-TR-028	11	12	869	154	46	30	34	9	3	0
<b>EMA-TR-028</b>	<b>12</b>	<b>13</b>	<b>857</b>	<b>175</b>	<b>67</b>	<b>38</b>	<b>49</b>	<b>13</b>	<b>5</b>	<b>1</b>
<b>EMA-TR-028</b>	<b>13</b>	<b>14</b>	<b>821</b>	<b>193</b>	<b>79</b>	<b>41</b>	<b>57</b>	<b>15</b>	<b>6</b>	<b>1</b>
EMA-TR-034	12	13	453	78	18	23	14	4	0	0
EMA-TR-034	13	14	481	91	30	33	22	6	1	0
EMA-TR-034	14	15	665	147	45	31	34	10	1	0
<b>EMA-TR-034</b>	<b>15</b>	<b>16</b>	<b>689</b>	<b>172</b>	<b>66</b>	<b>38</b>	<b>49</b>	<b>14</b>	<b>2</b>	<b>0</b>
<b>EMA-TR-034</b>	<b>16</b>	<b>17</b>	<b>813</b>	<b>217</b>	<b>93</b>	<b>43</b>	<b>70</b>	<b>19</b>	<b>4</b>	<b>1</b>
<b>EMA-TR-034</b>	<b>17</b>	<b>18</b>	<b>784</b>	<b>220</b>	<b>73</b>	<b>33</b>	<b>54</b>	<b>15</b>	<b>3</b>	<b>1</b>
<b>EMA-TR-034</b>	<b>18</b>	<b>19</b>	<b>868</b>	<b>259</b>	<b>108</b>	<b>42</b>	<b>80</b>	<b>22</b>	<b>5</b>	<b>1</b>
<b>EMA-TR-034</b>	<b>19</b>	<b>20</b>	<b>775</b>	<b>215</b>	<b>101</b>	<b>47</b>	<b>74</b>	<b>20</b>	<b>5</b>	<b>1</b>
EMA-TR-035	11	12	651	72	11	15	9	2	0	0
EMA-TR-035	12	13	565	103	25	24	19	5	1	0
EMA-TR-035	13	14	570	110	28	25	21	6	1	0
<b>EMA-TR-035</b>	<b>14</b>	<b>15</b>	<b>717</b>	<b>179</b>	<b>91</b>	<b>51</b>	<b>68</b>	<b>18</b>	<b>3</b>	<b>1</b>
<b>EMA-TR-035</b>	<b>15</b>	<b>16</b>	<b>627</b>	<b>186</b>	<b>158</b>	<b>85</b>	<b>118</b>	<b>31</b>	<b>7</b>	<b>1</b>
EMA-TR-036	8	9	524	63	15	24	11	3	1	0
EMA-TR-036	9	10	847	166	30	18	23	6	1	0
<b>EMA-TR-036</b>	<b>10</b>	<b>11</b>	<b>790</b>	<b>188</b>	<b>84</b>	<b>45</b>	<b>64</b>	<b>16</b>	<b>4</b>	<b>1</b>
<b>EMA-TR-036</b>	<b>11</b>	<b>12</b>	<b>759</b>	<b>228</b>	<b>111</b>	<b>49</b>	<b>84</b>	<b>20</b>	<b>5</b>	<b>1</b>
<b>EMA-TR-038</b>	<b>14</b>	<b>15</b>	<b>522</b>	<b>108</b>	<b>62</b>	<b>57</b>	<b>45</b>	<b>12</b>	<b>5</b>	<b>1</b>
<b>EMA-TR-038</b>	<b>15</b>	<b>16</b>	<b>710</b>	<b>167</b>	<b>85</b>	<b>51</b>	<b>61</b>	<b>16</b>	<b>6</b>	<b>1</b>
<b>EMA-TR-038</b>	<b>16</b>	<b>17</b>	<b>745</b>	<b>200</b>	<b>123</b>	<b>62</b>	<b>88</b>	<b>24</b>	<b>10</b>	<b>2</b>
<b>EMA-TR-038</b>	<b>17</b>	<b>18</b>	<b>752</b>	<b>217</b>	<b>149</b>	<b>69</b>	<b>106</b>	<b>28</b>	<b>13</b>	<b>2</b>
<b>EMA-TR-038</b>	<b>18</b>	<b>19</b>	<b>787</b>	<b>215</b>	<b>154</b>	<b>72</b>	<b>108</b>	<b>29</b>	<b>14</b>	<b>2</b>
<b>EMA-TR-039</b>	<b>8</b>	<b>9</b>	<b>495</b>	<b>86</b>	<b>51</b>	<b>59</b>	<b>37</b>	<b>10</b>	<b>3</b>	<b>1</b>
<b>EMA-TR-039</b>	<b>9</b>	<b>10</b>	<b>555</b>	<b>130</b>	<b>78</b>	<b>60</b>	<b>56</b>	<b>15</b>	<b>5</b>	<b>1</b>
EMA-TR-040	12	13	330	6	45	35	34	10	1	0
<b>EMA-TR-040</b>	<b>13</b>	<b>14</b>	<b>535</b>	<b>126</b>	<b>50</b>	<b>40</b>	<b>38</b>	<b>11</b>	<b>1</b>	<b>0</b>
EMA-TR-040	14	15	545	129	49	38	37	11	1	0
EMA-TR-041	9	10	538	68	28	41	21	6	1	0

Auger hole	Head grade		Rare earth oxides in the leach solution							
	From (m)	To (m)	TREO ppm	MREO ppm	MREO ppm	REC. %	Nd <sub>2</sub> O <sub>3</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm
EMA-TR-041	10	11	546	95	40	42	31	8	1	0
EMA-TR-041	11	12	641	121	58	48	45	12	1	0
EMA-TR-041	12	13	636	126	49	39	37	10	1	0
EMA-TR-041	13	14	757	173	70	40	54	15	1	0
EMA-TR-041	14	15	621	156	62	40	48	13	1	0
EMA-TR-041	15	16	630	167	75	45	58	16	1	0
EMA-TR-041	16	17	616	162	68	42	53	14	1	0
EMA-TR-041	17	18	692	191	91	48	70	19	2	0
EMA-TR-041	18	19	673	191	89	47	68	18	2	0
EMA-TR-041	19	20	651	190	90	47	69	19	2	0
EMA-TR-041	20	21	678	201	100	50	77	20	3	1
EMA-TR-041	21	22	602	173	96	55	73	19	3	1
EMA-TR-041	22	23	647	192	109	57	81	22	5	1
EMA-TR-041	23	24	641	178	89	50	66	18	4	1
EMA-TR-041	24	25	645	185	99	54	73	19	5	1
EMA-TR-046	7	8	402	84	36	43	28	7	1	0
EMA-TR-046	8	9	584	119	44	37	34	9	1	0
EMA-TR-046	9	10	577	150	67	45	51	14	2	0
EMA-TR-049	7	8	508	82	15	18	11	4	0	0
EMA-TR-049	8	9	550	112	28	25	21	7	1	0
EMA-TR-049	9	10	536	120	48	40	36	11	1	0
EMA-TR-049	10	11	546	129	62	48	46	14	2	0
EMA-TR-049	11	12	578	141	59	42	43	13	2	0
EMA-TR-049	12	13	602	147	49	33	36	11	2	0
EMA-TR-055	11	12	428	60	15	25	11	4	0	0
EMA-TR-055	12	13	648	118	20	17	15	5	1	0
EMA-TR-055	13	14	799	209	119	57	90	24	4	1
EMA-TR-055	14	15	716	240	173	72	131	34	7	1
EMA-TR-055	15	16	800	259	143	55	108	28	6	1
EMA-TR-059	1	2	538	91	5	5	3	1	0	0
EMA-TR-059	2	3	632	126	5	4	3	1	0	0
EMA-TR-059	3	4	695	125	2	2	1	1	0	0
EMA-TR-059	4	5	578	114	5	4	3	1	0	0
EMA-TR-059	5	6	618	120	5	4	4	1	0	0
EMA-TR-059	6	7	573	116	6	5	4	1	0	0
EMA-TR-059	7	8	563	115	8	7	5	2	0	0
EMA-TR-059	8	9	423	80	11	14	8	2	0	0
EMA-TR-059	9	10	560	122	14	11	11	3	1	0
EMA-TR-059	10	11	683	171	52	30	39	11	2	0
EMA-TR-059	11	12	826	279	139	50	105	28	5	1
EMA-TR-059	12	13	874	265	166	63	125	33	6	1
EMA-TR-059	13	14	1208	426	289	68	218	58	12	2
EMA-TR-059	14	15	1414	510	317	62	233	67	14	3
EMA-TR-059	15	16	1210	454	334	74	233	81	17	3
EMA-TR-059	16	17	884	296	172	58	129	34	7	1
EMA-TR-061	9	10	521	61	4	7	3	1	0	0
EMA-TR-061	10	11	409	63	7	11	5	1	0	0
EMA-TR-061	11	12	478	84	2	2	1	1	0	0
EMA-TR-061	12	13	514	75	10	13	7	2	0	0

Auger hole	Head grade		Rare earth oxides in the leach solution							
	From (m)	To (m)	TREO ppm	MREO ppm	MREO ppm	REC. %	Nd <sub>2</sub> O <sub>3</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm
EMA-TR-061	13	14	564	77	22	29	17	5	0	0
EMA-TR-061	14	15	642	91	26	29	20	6	0	0
EMA-TR-061	15	16	490	96	26	27	20	6	0	0
EMA-TR-061	16	17	585	137	34	25	25	8	1	0
EMA-TR-061	17	18	606	141	46	33	35	11	1	0
<b>EMA-TR-061</b>	<b>18</b>	<b>19</b>	597	<b>141</b>	<b>57</b>	<b>40</b>	43	13	1	0
<b>EMA-TR-061</b>	<b>19</b>	<b>20</b>	596	<b>144</b>	<b>82</b>	<b>57</b>	61	19	1	0
<b>EMA-TR-061</b>	<b>20</b>	<b>21</b>	721	<b>168</b>	<b>106</b>	<b>63</b>	80	24	2	0
<b>EMA-TR-061</b>	<b>21</b>	<b>22</b>	681	<b>183</b>	<b>94</b>	<b>51</b>	71	21	2	0
EMA-TR-064	5	6	439	64	8	13	6	2	0	0
EMA-TR-064	6	7	544	63	10	16	8	2	0	0
<b>EMA-TR-064</b>	<b>7</b>	<b>8</b>	965	<b>180</b>	<b>84</b>	<b>47</b>	63	17	4	1
<b>EMA-TR-064</b>	<b>8</b>	<b>9</b>	1716	<b>484</b>	<b>130</b>	<b>27</b>	98	24	7	1
<b>EMA-TR-064</b>	<b>9</b>	<b>10</b>	649	<b>183</b>	<b>110</b>	<b>60</b>	82	19	7	1
EMA-TR-066	8	9	409	41	10	24	7	2	0	0
EMA-TR-066	9	10	706	51	12	24	9	3	0	0
EMA-TR-066	10	11	543	79	15	19	12	3	0	0
EMA-TR-066	11	12	516	61	21	34	16	4	0	0
EMA-TR-066	12	13	431	72	27	38	20	6	1	0
EMA-TR-066	13	14	477	86	34	40	26	7	1	0
EMA-TR-066	14	15	532	111	47	42	36	10	1	0
<b>EMA-TR-066</b>	<b>15</b>	<b>16</b>	554	<b>130</b>	<b>57</b>	<b>44</b>	44	12	1	0
<b>EMA-TR-066</b>	<b>16</b>	<b>17</b>	578	<b>152</b>	<b>72</b>	<b>47</b>	56	15	1	0
<b>EMA-TR-066</b>	<b>17</b>	<b>18</b>	618	<b>162</b>	<b>73</b>	<b>45</b>	56	15	2	0
<b>EMA-TR-066</b>	<b>18</b>	<b>19</b>	637	<b>178</b>	<b>103</b>	<b>58</b>	79	21	3	1
<b>EMA-TR-066</b>	<b>19</b>	<b>20</b>	808	<b>244</b>	<b>117</b>	<b>48</b>	90	24	3	1
<b>EMA-TR-066</b>	<b>20</b>	<b>21</b>	891	<b>276</b>	<b>121</b>	<b>44</b>	92	24	4	1
<b>EMA-TR-066</b>	<b>21</b>	<b>22</b>	1000	<b>317</b>	<b>101</b>	<b>32</b>	76	20	4	1
<b>EMA-TR-066</b>	<b>22</b>	<b>23</b>	1013	<b>339</b>	<b>184</b>	<b>54</b>	138	36	9	2
<b>EMA-TR-066</b>	<b>23</b>	<b>24</b>	1094	<b>359</b>	<b>194</b>	<b>54</b>	144	38	11	2
<b>EMA-TR-066</b>	<b>24</b>	<b>25</b>	1341	<b>450</b>	<b>164</b>	<b>36</b>	120	31	10	2
EMA-TR-067	7	8	463	58	12	21	9	3	0	0
EMA-TR-067	8	9	638	77	18	23	14	4	0	0
EMA-TR-067	9	10	523	102	29	28	22	6	0	0
EMA-TR-067	10	11	485	106	45	42	35	10	1	0
<b>EMA-TR-067</b>	<b>11</b>	<b>12</b>	518	110	<b>54</b>	<b>49</b>	41	12	1	0
<b>EMA-TR-067</b>	<b>12</b>	<b>13</b>	638	144	<b>65</b>	<b>45</b>	49	14	1	0
<b>EMA-TR-067</b>	<b>13</b>	<b>14</b>	577	134	<b>72</b>	<b>54</b>	56	15	1	0
<b>EMA-TR-067</b>	<b>14</b>	<b>15</b>	649	154	<b>87</b>	<b>56</b>	66	18	2	0
<b>EMA-TR-067</b>	<b>15</b>	<b>16</b>	637	173	<b>116</b>	<b>67</b>	87	24	4	1
<b>EMA-TR-067</b>	<b>16</b>	<b>17</b>	626	172	<b>126</b>	<b>73</b>	95	26	5	1
<b>EMA-TR-067</b>	<b>17</b>	<b>18</b>	591	158	<b>84</b>	<b>53</b>	63	17	4	1
EMA-TR-068	12	13	410	61	17	28	13	4	0	0
EMA-TR-068	13	14	692	56	17	30	13	4	0	0
EMA-TR-068	14	15	1074	69	25	36	19	6	0	0
EMA-TR-068	15	16	625	79	22	28	16	5	0	0
EMA-TR-068	16	17	766	91	37	41	28	8	1	0
EMA-TR-068	17	18	881	102	44	43	33	10	1	0
<b>EMA-TR-068</b>	<b>18</b>	<b>19</b>	648	<b>138</b>	<b>62</b>	<b>45</b>	47	14	1	0

Auger hole	Head grade		Rare earth oxides in the leach solution							
	From (m)	To (m)	TREO ppm	MREO ppm	MREO ppm	REC. %	Nd <sub>2</sub> O <sub>3</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm
EMA-TR-070	11	12	395	104	85	82	65	18	2	0
EMA-TR-070	12	13	597	178	137	77	104	29	4	1
EMA-TR-070	13	14	759	227	165	73	125	34	5	1
EMA-TR-070	14	15	801	253	204	81	154	42	7	1
EMA-TR-071	2	3	646	42	2	5	1	1	0	0
EMA-TR-071	3	4	667	82	7	9	5	2	0	0
EMA-TR-071	4	5	512	74	17	23	13	4	0	0
EMA-TR-071	5	6	462	91	48	53	37	11	1	0
EMA-TR-071	6	7	765	194	73	38	56	16	1	0
EMA-TR-071	7	8	769	220	119	54	91	25	2	0
EMA-TR-071	8	9	822	232	165	71	127	35	3	1
EMA-TR-071	9	10	895	298	221	74	169	46	5	1
EMA-TR-071	10	11	990	336	244	73	187	49	7	1
EMA-TR-071	11	12	1018	348	261	75	199	51	8	2
EMA-TR-071	12	13	943	329	261	79	199	52	9	2
EMA-TR-071	13	14	913	311	242	78	182	48	10	2
EMA-TR-071	14	15	935	320	257	80	193	49	12	2
EMA-TR-071	15	16	991	326	184	56	138	35	9	2
EMA-TR-071	16	17	1118	378	307	81	229	57	18	3
EMA-TR-071	17	18	1075	357	223	62	165	42	13	2
EMA-TR-072	3	4	488	64	12	19	9	3	0	0
EMA-TR-072	4	5	704	80	14	18	11	3	0	0
EMA-TR-072	5	6	663	88	12	14	9	3	0	0
EMA-TR-072	6	7	1087	118	26	22	20	5	1	0
EMA-TR-072	7	8	608	162	52	32	40	11	1	0
EMA-TR-072	8	9	616	190	100	53	76	20	3	1
EMA-TR-072	9	10	682	210	119	57	90	24	4	1
EMA-TR-072	10	11	778	234	109	47	82	22	4	1
EMA-TR-072	11	12	709	209	100	48	75	20	4	1
EMA-TR-072	12	13	739	208	103	50	76	20	6	1
EMA-TR-072	13	14	603	155	72	46	52	14	5	1
EMA-TR-072	14	15	556	133	37	28	27	7	3	1
EMA-TR-072	15	16	575	118	30	25	22	6	2	0
EMA-TR-102	7	8	761	79	31	39	24	7	1	0
EMA-TR-102	8	9	1024	99	45	45	34	10	1	0
EMA-TR-102	9	10	1287	194	118	61	89	25	3	1
EMA-TR-102	10	11	1090	281	143	51	108	30	4	1
EMA-TR-102	11	12	1029	303	181	60	137	37	6	1
EMA-TR-102	12	13	1150	341	217	64	163	44	8	2
EMA-TR-102	13	14	893	288	124	43	93	25	5	1
EMA-TR-103	9	10	513	56	5	9	4	1	0	0
EMA-TR-103	14	15	502	111	49	44	37	10	1	0
EMA-TR-103	15	16	594	152	82	54	62	17	2	0
EMA-TR-103	16	17	644	151	67	44	51	14	2	0
EMA-TR-103	17	18	807	236	139	59	105	29	5	1
EMA-TR-103	18	19	985	315	205	65	153	43	8	2
EMA-TR-104	4	5	661	74	6	8	4	1	0	0
EMA-TR-104	5	6	614	112	25	22	19	5	1	0
EMA-TR-104	6	7	926	266	179	67	133	36	7	1

Auger hole	Head grade		Rare earth oxides in the leach solution							
	From (m)	To (m)	TREO ppm	MREO ppm	MREO ppm	REC. %	Nd <sub>2</sub> O <sub>3</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm
EMA-TR-106	11	12	507	115	46	40	35	10	1	0
EMA-TR-106	12	13	540	128	52	41	40	11	1	0
EMA-TR-106	13	14	587	148	41	28	31	9	1	0
EMA-TR-106	14	15	664	183	90	49	69	19	1	0
EMA-TR-106	15	16	1521	272	159	58	121	34	3	1
EMA-TR-106	16	17	832	232	115	50	87	25	2	1
EMA-TR-106	17	18	610	170	86	51	65	19	2	0
EMA-TR-106	18	19	632	177	96	54	73	21	2	0
EMA-TR-108	15	16	543	145	99	68	75	21	2	0
EMA-TR-108	16	17	715	219	145	66	110	31	4	1
EMA-TR-108	17	18	912	302	205	68	154	44	7	1
EMA-TR-108	18	19	987	314	257	82	189	55	10	2
EMA-TR-108	19	20	1039	333	253	76	184	53	13	3
EMA-TR-108	20	21	973	280	244	87	175	50	16	3
EMA-TR-110	10	11	839	274	185	68	141	40	3	1
EMA-TR-110	11	12	953	305	194	64	147	43	3	1
EMA-TR-110	12	13	903	295	163	55	124	35	3	1
EMA-TR-110	13	14	934	289	211	73	159	46	5	1
EMA-TR-110	14	15	1058	336	188	56	142	40	5	1
EMA-TR-110	15	16	1042	327	200	61	148	43	7	2
EMA-TR-110	16	17	1303	409	155	38	113	32	8	2
EMA-TR-110	17	18	1289	368	303	82	214	62	23	5
EMA-TR-110	18	19	1275	327	236	72	156	46	28	5
EMA-TR-110	19	20	928	217	134	62	85	24	20	4
EMA-TR-111	6	7	567	155	103	66	79	22	2	0
EMA-TR-111	7	8	707	225	149	66	115	30	3	1
EMA-TR-111	8	9	895	285	180	63	134	38	6	1
EMA-TR-111	9	10	943	312	195	63	145	41	7	1
EMA-TR-111	10	11	784	256	179	70	133	38	7	1
EMA-TR-111	11	12	685	201	122	61	90	26	6	1
EMA-TR-111	12	13	595	156	64	41	47	13	3	1
EMA-TR-112	7	8	529	88	5	6	4	1	0	0
EMA-TR-112	8	9	545	67	15	22	11	3	0	0
EMA-TR-112	9	10	632	72	32	44	24	7	1	0
EMA-TR-112	10	11	636	95	30	32	23	7	1	0
EMA-TR-112	11	12	741	175	26	15	20	6	1	0
EMA-TR-112	12	13	769	178	29	16	22	6	1	0
EMA-TR-112	13	14	693	178	81	46	62	17	1	0
EMA-TR-114	6	7	563	75	2	3	1	1	0	0
EMA-TR-114	7	8	646	105	6	6	4	1	0	0
EMA-TR-114	8	9	613	112	14	13	10	3	1	0
EMA-TR-114	9	10	686	183	81	44	62	16	3	1
EMA-TR-118	2	3	643	126	19	15	13	5	1	0
EMA-TR-118	3	4	848	170	27	16	20	5	1	0
EMA-TR-118	4	5	816	173	57	33	42	11	4	1
EMA-TR-118	5	6	747	192	100	52	73	17	8	1
EMA-TR-118	6	7	826	219	125	57	88	20	15	2
EMA-TR-118	7	8	672	170	87	51	60	13	12	2
EMA-TR-119	10	11	533	121	44	36	32	9	2	0

Auger hole	From (m)		Head grade		Rare earth oxides in the leach solution					
	To (m)	TREO ppm	MREO ppm	MREO ppm	REC. %	Nd <sub>2</sub> O <sub>3</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm	
EMA-TR-119	11	12	611	152	71	47	52	15	4	1
EMA-TR-119	12	13	666	164	85	52	63	17	4	1
EMA-TR-119	13	14	603	147	66	45	48	13	4	1
EMA-TR-119	14	15	639	170	87	51	63	17	6	1
EMA-TR-119	15	16	678	184	114	62	82	22	8	1
EMA-TR-119	16	17	737	196	105	54	75	20	8	1
EMA-TR-119	17	18	794	206	136	66	96	26	12	2
EMA-TR-119	18	19	719	191	125	65	88	23	11	2
EMA-TR-120	6	7	545	74	11	15	8	2	1	0
EMA-TR-120	7	8	587	109	31	28	23	6	1	0
EMA-TR-120	8	9	498	92	42	46	31	9	2	0
EMA-TR-120	9	10	568	121	42	35	31	8	2	0
EMA-TR-120	10	11	864	142	70	49	52	14	4	1
EMA-TR-120	11	12	929	230	130	57	96	25	8	1
EMA-TR-120	12	13	523	142	78	55	56	15	6	1
EMA-TR-120	13	14	813	232	143	62	104	27	10	2
EMA-TR-124	16	17	533	107	22	21	17	5	1	0
EMA-TR-124	17	18	528	114	29	25	22	6	1	0
EMA-TR-124	18	19	680	143	50	35	38	11	1	0
EMA-TR-124	19	20	853	172	75	44	57	16	2	0
EMA-TR-124	20	21	824	190	81	43	61	17	2	0
EMA-TR-126	8	9	501	86	20	23	15	4	1	0
EMA-TR-126	9	10	612	89	22	25	16	5	1	0
EMA-TR-126	10	11	586	113	29	26	21	6	1	0
EMA-TR-126	11	12	642	152	55	36	41	11	3	0
EMA-TR-126	12	13	738	190	115	61	85	23	6	1
EMA-TR-126	13	14	1012	280	171	61	125	33	10	2
EMA-TR-126	14	15	1815	380	247	65	181	48	15	3
EMA-TR-145	14	15	764	232	112	48	86	24	2	0
EMA-TR-145	15	16	775	237	113	48	86	24	2	0
EMA-TR-145	16	17	607	197	123	62	93	26	2	1
EMA-TR-145	17	18	615	199	114	57	87	25	3	1
EMA-TR-145	18	19	774	236	142	60	107	30	4	1
EMA-TR-145	19	20	672	198	125	63	94	27	4	1
EMA-TR-145	20	21	861	269	136	51	102	28	5	1
EMA-TR-145	21	22	842	257	163	63	122	34	6	1
EMA-TR-145	22	23	713	224	137	61	102	29	5	1
EMA-TR-145	23	24	772	239	135	56	100	28	5	1
EMA-TR-146	9	10	589	100	26	26	20	6	0	0
EMA-TR-146	10	11	575	105	38	36	30	8	1	0
EMA-TR-146	11	12	535	129	39	30	30	8	1	0
EMA-TR-146	12	13	580	158	71	45	55	15	1	0
EMA-TR-146	13	14	796	240	175	73	135	37	3	1
EMA-TR-146	14	15	949	282	150	53	116	32	2	0
EMA-TR-147	4	5	734	178	53	30	40	11	1	0
EMA-TR-147	5	6	817	228	124	54	94	26	3	1
EMA-TR-147	6	7	950	251	151	60	114	32	4	1

*Appendix 4 – Results for holes which failed to reach the enriched ionic rare earth horizon.  
 Total TREO assays analysed by lithium metaborate fusion and MREO recovered in ammonium sulphate solution.*

Auger hole	From (m)	To (m)	Head grade		Rare earth oxides in the leach solution					
			TREO ppm	MREO ppm	MREO ppm	REC. %	Nd <sub>2</sub> O <sub>3</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm
EMA-TR-015	10	11	368	60	7	12	5	2	0	0
EMA-TR-015	11	12	407	72	9	13	7	2	0	0
EMA-TR-015	12	13	402	73	12	16	9	2	0	0
EMA-TR-015	13	14	529	83	14	17	11	3	0	0
EMA-TR-015	14	15	568	83	16	19	12	3	0	0
EMA-TR-015	15	16	503	92	20	22	16	4	1	0
EMA-TR-015	16	17	535	98	27	28	20	6	1	0
EMA-TR-015	17	18	498	100	24	24	18	5	1	0
EMA-TR-017	5	6	493	60	17	28	13	4	0	0
EMA-TR-017	6	7	821	134	69	51	51	16	2	0
EMA-TR-017	7	8	878	135	56	41	42	12	2	0
EMA-TR-017	8	9	491	99	33	33	25	7	1	0
EMA-TR-017	9	10	494	97	29	30	22	6	1	0
EMA-TR-018	8	9	385	47	14	30	11	3	0	0
EMA-TR-018	9	10	401	72	21	29	16	5	0	0
EMA-TR-018	10	11	424	84	22	26	17	5	0	0
EMA-TR-018	11	12	525	116	44	38	33	10	1	0
EMA-TR-018	12	13	488	100	37	37	28	8	1	0
EMA-TR-018	13	14	409	76	24	32	18	5	0	0
EMA-TR-018	14	15	485	99	27	27	20	6	1	0
EMA-TR-018	15	16	555	121	36	30	27	8	1	0
EMA-TR-018	16	17	672	161	48	30	36	10	1	0
EMA-TR-018	17	18	708	172	47	27	36	10	1	0
EMA-TR-021	10	11	452	71	14	20	10	3	1	0
EMA-TR-021	11	12	535	95	13	14	10	3	1	0
EMA-TR-022	3	4	563	89	12	13	9	3	0	0
EMA-TR-022	4	5	1354	258	44	17	32	10	2	0
EMA-TR-022	5	6	171	32	2	6	1	1	0	0
EMA-TR-022	6	7	207	41	10	24	7	2	0	0
EMA-TR-022	7	8	338	69	10	14	7	2	0	0
EMA-TR-022	8	9	480	94	12	13	9	3	0	0
EMA-TR-022	9	10	695	82	23	28	17	5	1	0
EMA-TR-022	10	11	1089	112	22	20	17	5	1	0
EMA-TR-022	11	12	787	136	37	27	27	8	2	0
EMA-TR-025	7	8	507	106	2	2	1	0	0	0
EMA-TR-025	8	9	319	27	2	7	1	0	0	0
EMA-TR-025	9	10	405	61	2	3	1	1	0	0
EMA-TR-025	10	11	851	54	5	9	4	1	0	0
EMA-TR-025	11	12	640	79	8	10	6	2	0	0
EMA-TR-025	12	13	831	112	11	10	8	2	0	0
EMA-TR-025	13	14	572	98	16	16	12	3	0	0
EMA-TR-025	14	15	638	135	19	14	15	4	0	0
EMA-TR-025	15	16	664	129	14	11	11	3	0	0
EMA-TR-030	2	3	600	55	2	4	1	0	0	0
EMA-TR-031	8	9	570	120	19	16	13	4	1	0
EMA-TR-031	9	10	501	104	19	18	14	4	1	0



Auger hole	Head grade		Rare earth oxides in the leach solution							
	From (m)	To (m)	TREO ppm	MREO ppm	MREO ppm	REC. %	Nd <sub>2</sub> O <sub>3</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm
EMA-TR-032	5	6	914	31	2	6	1	0	0	0
EMA-TR-032	6	7	554	20	2	10	1	1	0	0
EMA-TR-032	7	8	887	21	3	14	1	1	0	0
EMA-TR-032	8	9	616	24	3	13	1	1	0	0
EMA-TR-032	9	10	1440	47	3	6	1	2	0	0
EMA-TR-032	10	11	867	52	6	12	4	2	0	0
EMA-TR-032	11	12	916	78	9	12	6	2	0	0
EMA-TR-032	12	13	721	90	11	12	8	3	0	0
EMA-TR-032	13	14	1082	88	17	19	13	4	1	0
EMA-TR-032	14	15	650	101	23	23	17	5	1	0
EMA-TR-037	8	9	468	84	28	33	20	6	1	0
EMA-TR-037	9	10	641	106	32	30	24	6	2	0
EMA-TR-037	10	11	657	136	49	36	36	10	3	1
EMA-TR-048	10	11	624	99	11	11	8	3	0	0
EMA-TR-048	11	12	618	117	22	19	16	5	0	0
EMA-TR-048	12	13	733	102	28	27	21	6	0	0
EMA-TR-048	13	14	548	115	28	24	21	6	0	0
EMA-TR-048	14	15	610	125	36	29	27	8	1	0
EMA-TR-060	6	7	361	26	2	8	1	1	0	0
EMA-TR-060	7	8	499	49	2	4	1	1	0	0
EMA-TR-060	8	9	460	46	2	4	1	1	0	0
EMA-TR-060	9	10	530	59	2	3	1	0	0	0
EMA-TR-060	10	11	468	66	2	3	1	1	0	0
EMA-TR-063	3	4	446	26	2	8	1	0	0	0
EMA-TR-063	4	5	836	65	2	3	1	0	0	0
EMA-TR-063	5	6	769	95	2	2	1	0	0	0
EMA-TR-063	6	7	613	80	2	3	1	1	0	0
EMA-TR-063	7	8	586	68	5	7	3	1	0	0
EMA-TR-063	8	9	709	52	6	12	4	1	0	0
EMA-TR-063	9	10	710	92	6	7	4	2	0	0
EMA-TR-063	10	11	759	81	8	10	6	2	0	0
EMA-TR-063	11	12	496	65	7	11	5	2	0	0
EMA-TR-063	12	13	430	63	7	11	5	2	0	0
EMA-TR-063	13	14	803	89	15	17	11	3	0	0
EMA-TR-063	14	15	782	113	5	4	4	1	0	0
EMA-TR-063	15	16	693	106	20	19	15	4	1	0
EMA-TR-069	11	12	1764	495	2	0	1	0	0	0
EMA-TR-069	12	13	435	84	2	2	1	0	0	0
EMA-TR-069	13	14	361	63	2	3	1	0	0	0
EMA-TR-069	14	15	391	73	2	3	1	1	0	0
EMA-TR-069	15	16	406	77	6	8	4	1	0	0
EMA-TR-069	16	17	442	94	19	20	15	4	1	0
EMA-TR-069	17	18	517	115	23	20	18	5	1	0
EMA-TR-073	4	5	479	116	5	4	4	1	0	0
EMA-TR-073	5	6	552	121	7	6	6	1	0	0
EMA-TR-073	6	7	629	170	14	8	11	3	0	0
EMA-TR-073	7	8	678	176	24	14	19	5	1	0
EMA-TR-073	8	9	589	149	20	13	15	4	0	0
EMA-TR-073	9	10	624	174	24	14	18	5	1	0

Auger hole	Head grade		Rare earth oxides in the leach solution							
	From (m)	To (m)	TREO ppm	MREO ppm	MREO ppm	REC. %	Nd <sub>2</sub> O <sub>3</sub> ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm
EMA-TR-073	10	11	554	153	53	35	41	10	2	0
EMA-TR-073	11	12	822	193	28	15	21	5	1	0
EMA-TR-073	12	13	780	194	34	18	25	7	2	0
EMA-TR-095	10	11	524	76	19	25	14	4	1	0
EMA-TR-095	11	12	508	79	33	42	24	7	1	0
EMA-TR-115	8	9	526	83	2	2	1	1	0	0
EMA-TR-115	9	10	602	110	2	2	1	1	0	0
EMA-TR-115	14	15	682	91	16	18	12	4	0	0
EMA-TR-115	15	16	680	94	24	26	18	5	1	0
EMA-TR-115	16	17	647	118	26	22	20	6	1	0
EMA-TR-115	17	18	657	159	37	23	28	8	1	0
EMA-TR-116	11	12	520	107	30	28	23	6	1	0
EMA-TR-116	12	13	722	138	34	25	25	7	2	0
EMA-TR-116	13	14	1012	103	30	29	23	6	1	0
EMA-TR-117	14	15	518	99	38	38	28	7	2	0
EMA-TR-117	15	16	507	108	34	31	25	7	2	0
EMA-TR-117	16	17	533	118	29	25	21	6	2	0

#### Appendix 5: Auger drill-hole locations.

Hole ID	East	North	RL (m)	Depth	Azimuth	Dip	Tenement
EMA-TR-015	186731.54	9178409.15	208.53	18	0	-90	880.107/2008
EMA-TR-016	186888.45	9178522.38	179.28	15	0	-90	880.107/2008
EMA-TR-017	187024.11	9178683.36	162.09	10	0	-90	880.107/2008
EMA-TR-018	187177.87	9178794.7	143.09	18	0	-90	880.107/2008
EMA-TR-021	184606.82	9176795.11	125.91	12	0	-90	880.107/2008
EMA-TR-022	184837	9176775.57	122.77	12	0	-90	880.107/2008
EMA-TR-023	184807.29	9176594.69	135.83	22	0	-90	880.107/2008
EMA-TR-024	184798.65	9176379.43	138.75	21	0	-90	880.107/2008
EMA-TR-025	184607.03	9176415.04	140.97	16	0	-90	880.107/2008
EMA-TR-028	184410.57	9176758.63	126.17	14	0	-90	880.107/2008
EMA-TR-030	185201.26	9177198.48	158.12	4	0	-90	880.107/2008
EMA-TR-031	185207.7	9176793.11	118.44	10	0	-90	880.107/2008
EMA-TR-032	185213.32	9176392.66	125.92	15	0	-90	880.107/2008
EMA-TR-034	184011.86	9176794.06	131.63	20	0	-90	880.107/2008
EMA-TR-035	183618.85	9176796.19	146.88	16	0	-90	880.107/2008
EMA-TR-036	183607.08	9177193.44	125.82	12	0	-90	880.107/2008
EMA-TR-037	184024.62	9177185.3	122.13	11	0	-90	880.107/2008
EMA-TR-038	184809.77	9177596.38	136.71	19	0	-90	880.107/2008
EMA-TR-039	184536.82	9177599.38	122.83	10	0	-90	880.107/2008
EMA-TR-040	184006.83	9177599.11	130.93	15	0	-90	880.107/2008
EMA-TR-041	183604.8	9177591.88	162.69	25	0	-90	880.107/2008
EMA-TR-046	184791.4	9178446.68	179.92	10	0	-90	880.107/2008
EMA-TR-048	184006.58	9178394.08	130.46	15	0	-90	880.107/2008
EMA-TR-049	183635.42	9178391.84	124.06	13	0	-90	880.107/2008
EMA-TR-055	178809.1	9176796.66	180.81	16	0	-90	880.107/2008
EMA-TR-059	181206.2	9177596.59	188.79	17	0	-90	880.107/2008
EMA-TR-060	180351.97	9177560.74	188.42	11	0	-90	880.107/2008
EMA-TR-061	179606.07	9177593.92	204.52	22	0	-90	880.107/2008

Hole ID	East	North	RL (m)	Depth	Azimuth	Dip	Tenement
EMA-TR-063	177978.86	9177561.12	195.28	16	0	-90	880.107/2008
EMA-TR-064	182781.52	9178348.41	135.73	10	0	-90	880.107/2008
EMA-TR-066	182816.43	9180002.25	157.66	25	0	-90	880.107/2008
EMA-TR-067	182816.35	9180841.2	177.04	18	0	-90	880.107/2008
EMA-TR-068	182845.26	9181627.58	176.12	19	0	-90	880.107/2008
EMA-TR-069	182803.35	9182392.88	207.62	18	0	-90	880.107/2008
EMA-TR-070	183601.54	9179223.38	143.12	15	0	-90	880.107/2008
EMA-TR-071	183603.2	9179999.76	156.55	18	0	-90	880.107/2008
EMA-TR-072	183618.79	9180787.59	179.39	17	0	-90	880.107/2008
EMA-TR-073	183617.52	9181622.86	194.53	13	0	-90	880.107/2008
EMA-TR-095	186797.54	9180003.66	137.68	12	0	-90	880.107/2008
EMA-TR-102	187615.76	9180798.82	147.98	14	0	-90	880.107/2008
EMA-TR-103	187582.69	9181598.22	155.54	19	0	-90	880.107/2008
EMA-TR-104	187610.78	9183187.74	157.11	7	0	-90	880.107/2008
EMA-TR-106	184792.59	9176481.24	134.34	19	0	-90	880.107/2008
EMA-TR-108	184884.88	9176375.46	133.9	21	0	-90	880.107/2008
EMA-TR-110	184818.03	9176304.31	153.06	20	0	-90	880.107/2008
EMA-TR-111	184718.89	9176295.33	172.34	16	0	-90	880.107/2008
EMA-TR-112	184624.18	9176304.05	152.76	14	0	-90	880.107/2008
EMA-TR-114	184704.73	9176495.62	147.89	10	0	-90	880.107/2008
EMA-TR-115	184604.56	9176490.83	143.57	18	0	-90	880.107/2008
EMA-TR-116	184413.89	9176862.22	124.73	14	0	-90	880.107/2008
EMA-TR-117	184509.79	9176755.81	129.76	17	0	-90	880.107/2008
EMA-TR-118	184312.15	9176764.14	122.54	8	0	-90	880.107/2008
EMA-TR-119	184415.54	9176659.74	132.96	19	0	-90	880.107/2008
EMA-TR-120	184312.37	9176662.55	134.54	14	0	-90	880.107/2008
EMA-TR-124	184909.48	9176596.73	133.84	21	0	-90	880.107/2008
EMA-TR-126	184815.63	9176695.51	127.55	15	0	-90	880.107/2008
EMA-TR-145	185022.35	9176108.71	164.71	24	0	-90	880.107/2008
EMA-TR-146	184820.8	9176111.93	183.63	15	0	-90	880.107/2008
EMA-TR-147	184629.75	9176111.66	168.25	7	0	-90	880.107/2008

## Appendix 6

The following Table and Sections are provided to ensure compliance with JORC Code (2012 Edition).

**JORC (2012) Table 1 – Section 1: Sampling Techniques and Data for auger hole drilling**

Item	JORC code explanation	Comments
<b>Sampling Techniques</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representativity 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 (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 gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg</li> </ul>	<ul style="list-style-type: none"> <li>Exploration results are based on auger drilling conducted by BCM’s exploration team.</li> <li>The data presented is based on the assay of soils and saprolite by auger drilling at 1m sample intervals.</li> <li>Sampling was supervised by a BCM geologist or field assistants.</li> <li>Every 1-metre sample was collected in a raffia bag in the field and transported to the exploration shed to be dried in the sun, prior to homogenisation.</li> <li>Samples were homogenised and subsequently riffle split with about 1 kg sent to SGS for preparation and analysis and a similar amount stored on site.</li> <li>Blanks, standard samples and duplicates were not utilised for the ammonium sulphate leach assays</li> </ul>

Item	JORC code explanation	Comments
	<p>submarine nodules) may warrant disclosure of detailed information.</p>	
<b>Drilling Techniques</b>	<ul style="list-style-type: none"> <li>• 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).</li> </ul>	<ul style="list-style-type: none"> <li>• Auger drilling was completed by a hand held-mechanical auger with a 3" auger bit. The drilling is an open hole, meaning there is a significant chance of contamination from surface and other parts of the auger hole. Holes are vertical and not oriented.</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>• No recoveries are recorded.</li> <li>• The operator observes the volume of each metre and notes any discrepancy.</li> <li>• No relationship is believed to exist between recovery and grade.</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 logged by BCM 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. Logging was done to a level that would support a Mineral Resource Estimate.</li> <li>• Qualitative logging with systematic photography of the stored box.</li> <li>• The entire auger hole is logged.</li> </ul>

Item	JORC code explanation	Comments																																																																
<b>Sub-Sampling Techniques and Sampling Procedures</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representativity 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>Auger sampling procedure is completed in the exploration shed in Apui.</li> <li>The entire one metre sample is bagged on site, in a raffia bag which is transported to the exploration shed, where it is naturally dried prior to homogenisation, then quartered to about 1kg to go to SGS and another 1kg to store on site.</li> <li>Sample preparation for the auger samples was conducted at SGS Vespasiano (greater Belo Horizonte) comprising oven drying, crushing of entire sample to 75% &lt; 3mm followed by rotary splitting and pulverisation of 250 to 300 grams at 95% minus 150#</li> <li>The &lt;3mm rejects and the 250-300 grams pulverised sample were returned to BCM for storage, after all assays were reported.</li> <li>Samples used for the ammonium sulphate leach processes ICM655 and ICM694 were taken from the &lt;3mm rejects and used directly without any additional preparation.</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> </ul>	<ul style="list-style-type: none"> <li>The assay technique used for iREE was a 2% ammonium sulphate leach with ICPOES/MS reading (SGS code ICM655) and the leach with ammonium sulphate 0.5 mil/L with ICPOES/MS reading (SGS code ICM694). This is a recognised industry standard analysis technique for ionic REE suite and associated elements amenable to be leached. Elements analysed at ppm levels:</li> </ul> <table border="1" data-bbox="758 1675 1412 1973"> <tbody> <tr><td>Ag</td><td>Al</td><td>As</td><td>Au</td><td>B</td><td>Ba</td><td>Be</td><td>Bi</td></tr> <tr><td>Ca</td><td>Cd</td><td>Ce</td><td>Co</td><td>Cr</td><td>Cs</td><td>Cu</td><td>Dy</td></tr> <tr><td>Er</td><td>Eu</td><td>Fe</td><td>Ga</td><td>Gd</td><td>Ge</td><td>Hf</td><td>Hg</td></tr> <tr><td>Ho</td><td>In</td><td>K</td><td>La</td><td>Li</td><td>Lu</td><td>Mg</td><td>Mn</td></tr> <tr><td>Mo</td><td>Na</td><td>Nb</td><td>Ni</td><td>P</td><td>Pb</td><td>Pd</td><td>Pr</td></tr> <tr><td>Pt</td><td>Rb</td><td>Re</td><td>S</td><td>Sb</td><td>Sc</td><td>Se</td><td>Si</td></tr> <tr><td>Sm</td><td>Sn</td><td>Sr</td><td>Ta</td><td>Tb</td><td>Te</td><td>Th</td><td>Ti</td></tr> <tr><td>Tm</td><td>U</td><td>V</td><td>W</td><td>Y</td><td>Yb</td><td>Zn</td><td>Zr</td></tr> </tbody> </table>	Ag	Al	As	Au	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	Ni	P	Pb	Pd	Pr	Pt	Rb	Re	S	Sb	Sc	Se	Si	Sm	Sn	Sr	Ta	Tb	Te	Th	Ti	Tm	U	V	W	Y	Yb	Zn	Zr
Ag	Al	As	Au	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	Ni	P	Pb	Pd	Pr																																																											
Pt	Rb	Re	S	Sb	Sc	Se	Si																																																											
Sm	Sn	Sr	Ta	Tb	Te	Th	Ti																																																											
Tm	U	V	W	Y	Yb	Zn	Zr																																																											

Item	JORC code explanation	Comments
	<ul style="list-style-type: none"> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established</li> </ul>	<p>The sample, comprising dominantly clay minerals, was assayed without pulverization, for the ICM655, 50 grams are mixed with 80 ml of 2% ammonium sulphate 2% during 20 minutes. The ICM694 is with 40 grams leach at ambient temperature with 160ml solution of ammonium sulphate 0.5 mol/L during 30 minutes.</p> <p>The ICM694 has the upper detection limit higher than the ICM655.</p> <p>The pulp is filtered and the reject washed with distilled water.</p> <p>An aliquot of the solution is extracted and diluted 25 times with HNO3 2%. The solution is analysed by ICP-MS.</p> <p>The sample preparation and assay techniques used are industry standard and provide partial analysis; total analysis is achieved with the lithium metaborate fusion.</p> <ul style="list-style-type: none"> <li>The SGS laboratory used for the RRE assays is ISO 9001 and 14001 and 17025 accredited.</li> <li>Analytical Standards for iREE</li> </ul> <p>There were no standards inserted by BCM for this specific analytical procedure.</p> <ul style="list-style-type: none"> <li>Blanks</li> </ul> <p>There were no blanks inserted by BCM for this specific analytical procedure.</p> <ul style="list-style-type: none"> <li>Duplicates</li> </ul> <p>There were no duplicates inserted by BCM for this specific analytical procedure.</p> <p>Laboratory did not insert standards and blanks, only duplicates for this analytical procedure which were analysed as per industry standard practice. There is no evidence of bias from these results.</p>
<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</li> </ul>	<ul style="list-style-type: none"> <li>No independent or alternative verification of sampling and assaying procedures was carried out.</li> <li>Analytical results for REE were supplied digitally, directly from the SGS laboratory in Vespasiano to BCM's Exploration Manager in Rio de Janeiro.</li> <li>No twinned holes were used.</li> <li>Geological data was logged onto paper and transferred to Excel spreadsheets at end of the day and then transferred into the drill hole database. Microsoft Access is used for database storage and management</li> </ul>

Item	JORC code explanation	Comments																																																
	(physical and electronic) protocols. <ul style="list-style-type: none"> <li>Discuss any adjustment to assay data.</li> </ul>	and incorporates numerous data validation and data integrity checks. All assay data is imported directly into the Microsoft Access database. <ul style="list-style-type: none"> <li>No adjustments were made to the data.</li> <li>All REE assay data received from the laboratory in element form is unadjusted for data entry.</li> <li>Conversion of elements analysis (REE) to stoichiometric oxide (REO) was undertaken by spreadsheet using defined conversion factors. (Source:<a href="https://www.jcu.edu.au/advanced-analytical-centre/resources/element-to-stoichiometric-oxide-conversion-factors">https://www.jcu.edu.au/advanced-analytical-centre/resources/element-to-stoichiometric-oxide-conversion-factors</a>).</li> </ul> <table border="1" data-bbox="759 779 1412 1406"> <thead> <tr> <th>Element ppm</th> <th>Conversion Factor</th> <th>Oxide Form</th> </tr> </thead> <tbody> <tr><td>Ce</td><td>1.2284</td><td>CeO<sub>2</sub></td></tr> <tr><td>Dy</td><td>1.1477</td><td>Dy<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Er</td><td>1.1435</td><td>Er<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Eu</td><td>1.1579</td><td>Eu<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Gd</td><td>1.1526</td><td>Gd<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Ho</td><td>1.1455</td><td>Ho<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>La</td><td>1.1728</td><td>La<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Lu</td><td>1.1371</td><td>Lu<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Nd</td><td>1.1664</td><td>Nd<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Pr</td><td>1.2082</td><td>Pr<sub>6</sub>O<sub>11</sub></td></tr> <tr><td>Sm</td><td>1.1596</td><td>Sm<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Tb</td><td>1.1762</td><td>Tb<sub>4</sub>O<sub>7</sub></td></tr> <tr><td>Tm</td><td>1.1421</td><td>Tm<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Y</td><td>1.2699</td><td>Y<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Yb</td><td>1.1387</td><td>Yb<sub>2</sub>O<sub>3</sub></td></tr> </tbody> </table> <p>Rare earth oxide is the industry accepted form for reporting rare earths. The following calculations are used for compiling REO into their reporting and evaluation groups:</p> <p>TREO (Total Rare Earth Oxide) = La<sub>2</sub>O<sub>3</sub> + CeO<sub>2</sub> + Pr<sub>6</sub>O<sub>11</sub> + Nd<sub>2</sub>O<sub>3</sub> + Sm<sub>2</sub>O<sub>3</sub> + Eu<sub>2</sub>O<sub>3</sub> + Gd<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub> + Ho<sub>2</sub>O<sub>3</sub> + Er<sub>2</sub>O<sub>3</sub> + Tm<sub>2</sub>O<sub>3</sub> + Yb<sub>2</sub>O<sub>3</sub> + Y<sub>2</sub>O<sub>3</sub> + Lu<sub>2</sub>O<sub>3</sub></p> <p>LREO (Light Rare Earth Oxide) = La<sub>2</sub>O<sub>3</sub> + CeO<sub>2</sub> + Pr<sub>6</sub>O<sub>11</sub> + Nd<sub>2</sub>O<sub>3</sub></p> <p>HREO (Heavy Rare Earth Oxide) = Sm<sub>2</sub>O<sub>3</sub> + Eu<sub>2</sub>O<sub>3</sub> + Gd<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub> + Ho<sub>2</sub>O<sub>3</sub> + Er<sub>2</sub>O<sub>3</sub> + Tm<sub>2</sub>O<sub>3</sub> + Yb<sub>2</sub>O<sub>3</sub> + Y<sub>2</sub>O<sub>3</sub> + Lu<sub>2</sub>O<sub>3</sub></p> <p>CREO (Critical Rare Earth Oxide) = Nd<sub>2</sub>O<sub>3</sub> + Eu<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub> + Y<sub>2</sub>O<sub>3</sub></p>	Element ppm	Conversion Factor	Oxide Form	Ce	1.2284	CeO <sub>2</sub>	Dy	1.1477	Dy <sub>2</sub> O <sub>3</sub>	Er	1.1435	Er <sub>2</sub> O <sub>3</sub>	Eu	1.1579	Eu <sub>2</sub> O <sub>3</sub>	Gd	1.1526	Gd <sub>2</sub> O <sub>3</sub>	Ho	1.1455	Ho <sub>2</sub> O <sub>3</sub>	La	1.1728	La <sub>2</sub> O <sub>3</sub>	Lu	1.1371	Lu <sub>2</sub> O <sub>3</sub>	Nd	1.1664	Nd <sub>2</sub> O <sub>3</sub>	Pr	1.2082	Pr <sub>6</sub> O <sub>11</sub>	Sm	1.1596	Sm <sub>2</sub> O <sub>3</sub>	Tb	1.1762	Tb <sub>4</sub> O <sub>7</sub>	Tm	1.1421	Tm <sub>2</sub> O <sub>3</sub>	Y	1.2699	Y <sub>2</sub> O <sub>3</sub>	Yb	1.1387	Yb <sub>2</sub> O <sub>3</sub>
Element ppm	Conversion Factor	Oxide Form																																																
Ce	1.2284	CeO <sub>2</sub>																																																
Dy	1.1477	Dy <sub>2</sub> O <sub>3</sub>																																																
Er	1.1435	Er <sub>2</sub> O <sub>3</sub>																																																
Eu	1.1579	Eu <sub>2</sub> O <sub>3</sub>																																																
Gd	1.1526	Gd <sub>2</sub> O <sub>3</sub>																																																
Ho	1.1455	Ho <sub>2</sub> O <sub>3</sub>																																																
La	1.1728	La <sub>2</sub> O <sub>3</sub>																																																
Lu	1.1371	Lu <sub>2</sub> O <sub>3</sub>																																																
Nd	1.1664	Nd <sub>2</sub> O <sub>3</sub>																																																
Pr	1.2082	Pr <sub>6</sub> O <sub>11</sub>																																																
Sm	1.1596	Sm <sub>2</sub> O <sub>3</sub>																																																
Tb	1.1762	Tb <sub>4</sub> O <sub>7</sub>																																																
Tm	1.1421	Tm <sub>2</sub> O <sub>3</sub>																																																
Y	1.2699	Y <sub>2</sub> O <sub>3</sub>																																																
Yb	1.1387	Yb <sub>2</sub> O <sub>3</sub>																																																



Item	JORC code explanation	Comments
		<p>(From U.S. Department of Energy, Critical Material Strategy, December 2011)</p> <p>MREO (Magnetic Rare Earth Oxide) = Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub></p> <p>NdPr = Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub></p> <p>DyTb = Dy<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub></p> <p>In elemental from the classifications are:</p> <p>TREE: La+Ce+Pr+Nd+Sm+Eu+Gd+Tb+Dy+Ho+Er+Tm+Tb+Lu+Y</p> <p>HREE: Sm+Eu+Gd+Tb+Dy+Ho+Er+Tm+Tb+Lu+Y</p> <p>CREE: Nd+Eu+Tb+Dy+Y</p> <p>LREE: La+Ce+Pr+Nd</p>
<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>The UTM WGS84 zone 21S grid datum is used for current reporting. The drill holes collar coordinates for the holes reported are currently controlled by hand-held GPS.</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>Auger holes were over 200m to 800m apart, designed for testing iREE mineralisation over the mapped felsic volcanics.</li> <li>The data spacing and distribution is sufficient to establish the level of REE elements present in the target area and its continuity along the regolith profile appropriate for a Mineral Resource.</li> <li>No sample composition was applied.</li> </ul>
<b>Orientation of Data in relation to</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,</li> </ul>	<ul style="list-style-type: none"> <li>The location and depth of the sampling is appropriate for the deposit type.</li> <li>Relevant REE values are compatible with the exploration model for ionic REEs.</li> </ul>

Item	JORC code explanation	Comments
<b>Geological Structure</b>	considering the deposit type. <ul style="list-style-type: none"> <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>No relationship between mineralisation and drilling orientation is known at this stage.</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 auger samples in sealed plastic bags were sent directly to SGS by bus and then airfreight. The Company has no reason to believe that sample security poses a material risk to the integrity of the assay data.</li> </ul>
<b>Audit 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 sampling techniques and data have been reviewed by the Competent Person and are found to be of industry standard.</li> </ul>

**JORC (2012) Table 1 - Section 2: Reporting of Exploration Result**

Criteria	JORC code explanation	Commentary
<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 Ema and Ema East leases are 100% owned by BCM with no issues in respect to native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>• The company is not aware of any impediment to obtain a licence to operate in the area.</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>• No exploration by other parties has been conducted in the region.</li> </ul>
<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 REE mineralisation at Ema is contained within the tropical lateritic weathering profile developed on top of felsic rocks (rhyolites), as per the Chinese deposits.</li> <li>• The REE mineralisation is concentrated in the weathered profile where it has dissolved from the primary mineral, such as monazite and xenotime, then adsorbed on to the neo-forming fine particles of aluminosilicate clays (e.g. kaolinite, illite, smectite).</li> <li>• This adsorbed iREE is the target for extraction and production of REO.</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> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Auger hole locations and diagrams are presented in this announcement.</li> <li>• Details are tabulated in the announcement.</li> </ul>

Criteria	JORC code explanation	Commentary
	<ul style="list-style-type: none"> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	
<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 (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>Weighted averages were calculated for all intercepts.</li> <li>No metal equivalent values reported.</li> </ul>
<b>Relationship between mineralisation widths and intercepted 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 (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>Significant values of desorbed REE were reported for the auger samples.</li> <li>Mineralisation orientation is not known at this stage, although assumed to be flat.</li> <li>The downhole depths are reported, true widths are not known at this stage.</li> </ul>

Criteria	JORC code explanation	Commentary
<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>Maps and tables of the auger hole location and target location are inserted.</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 to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>All desorbed MREO (magnetic rare earth oxides) contained in the ammonium sulphate solution are reported</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>No other significant exploration data has been acquired by the Company.</li> </ul>
<b>Further Work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg 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>Process all data acquired aiming to complete an MRE in the coming months.</li> <li>Additional metallurgical test work by ammonium sulphate leach is planned in ANSTO – Sydney.</li> </ul>