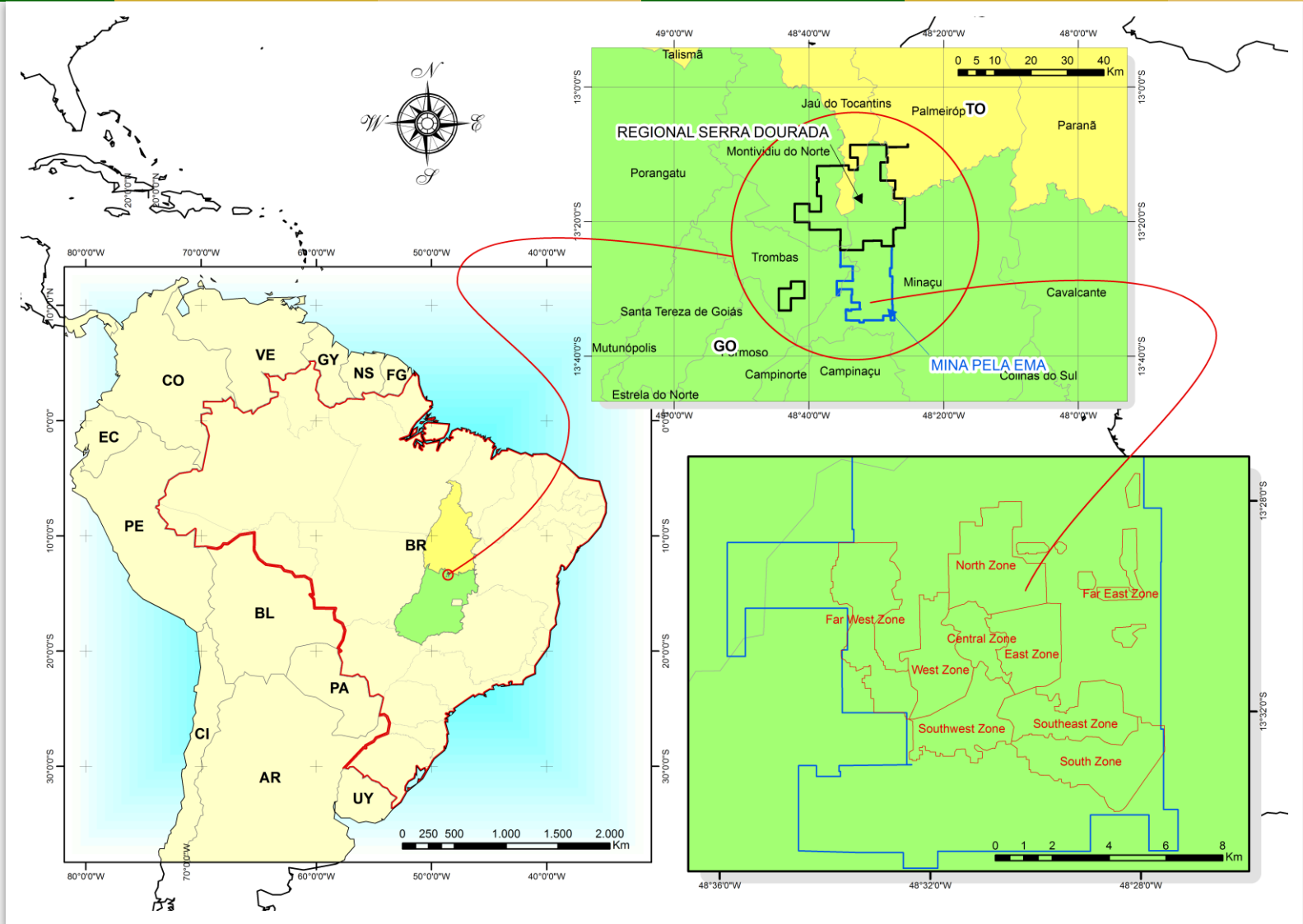




Serra Verde Rare Earth Project Geology

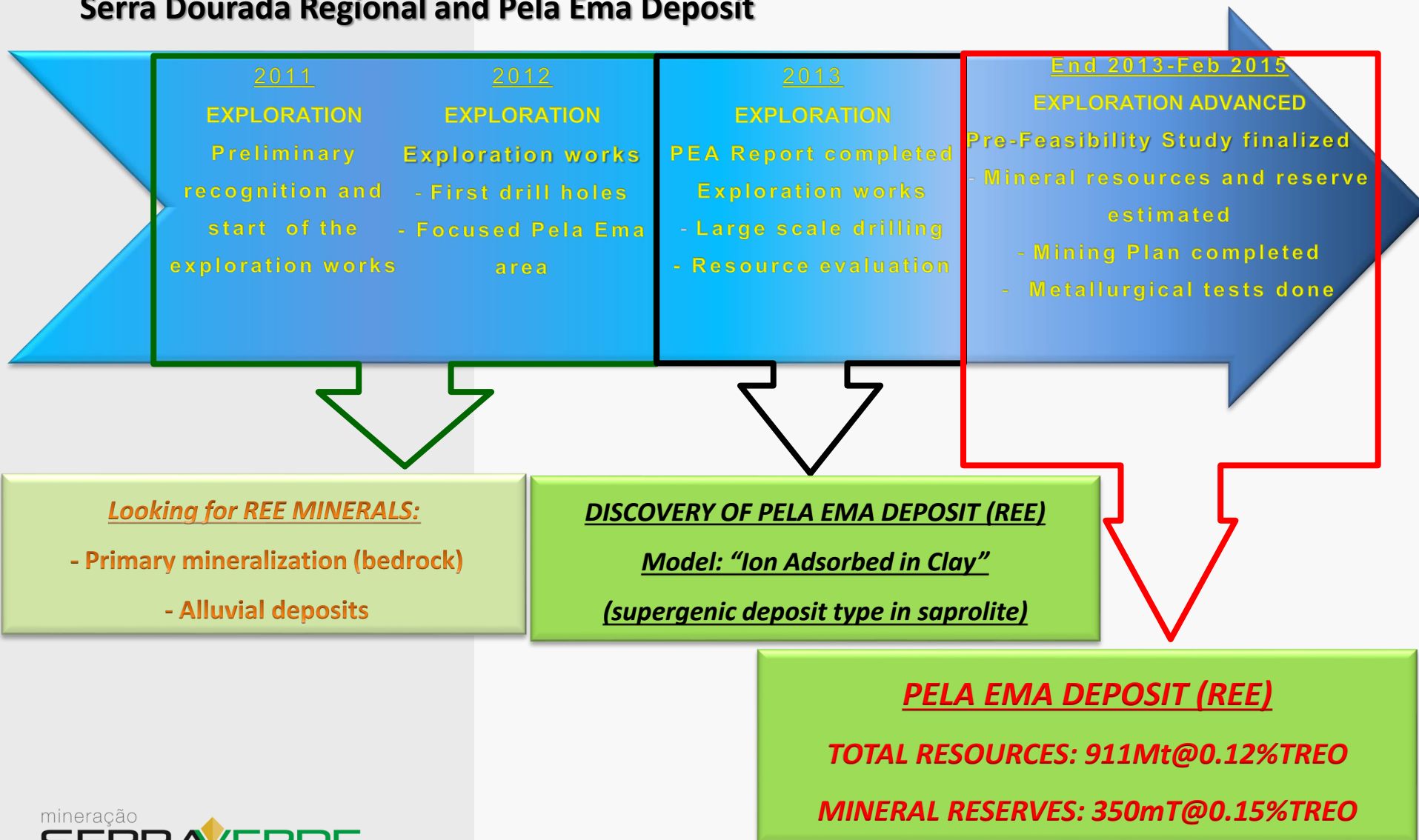
August, 2016

Serra Verde Project - Location



Serra Verde Project - Exploration Works - Timeline

Serra Dourada Regional and Pela Ema Deposit



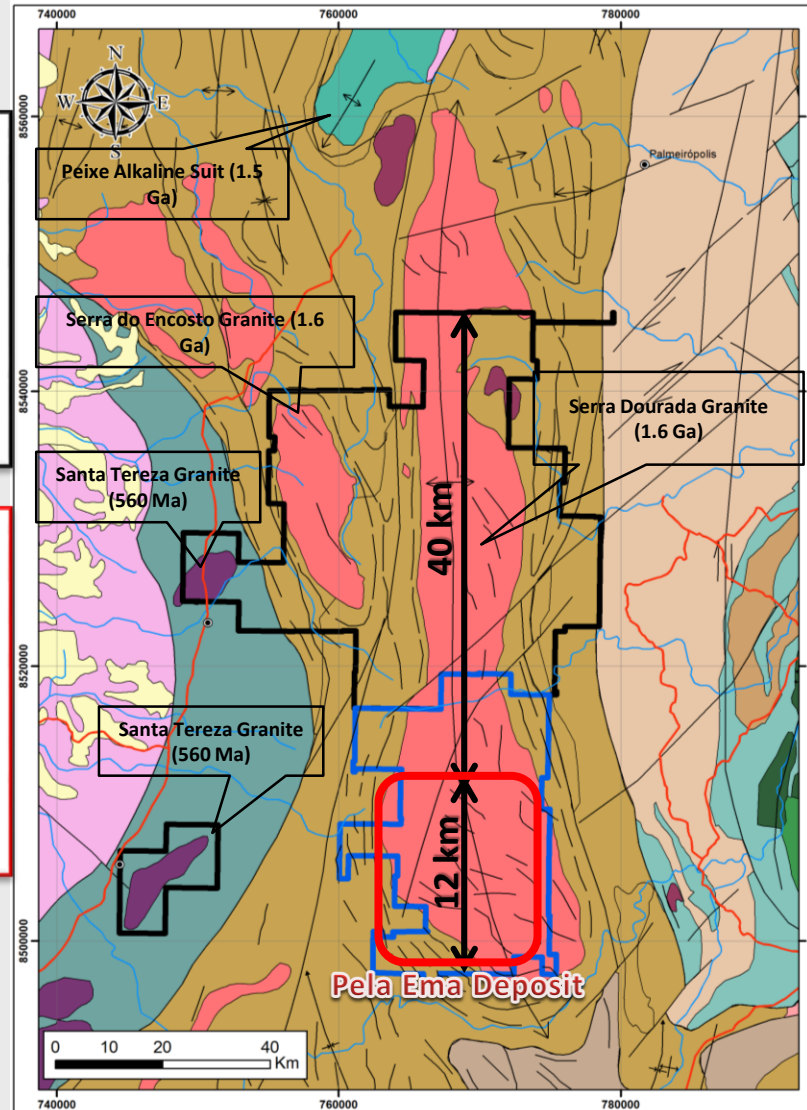
Serra Verde Project - Regional Geological Settings

REGIONAL TARGET

- Granitic Batholiths - other portions - approx. 400Km²
- Size potential: **3 Billion tons** of Saprolitic Ore - approx. 80% of the total area is little explored
- TREO grade: 0.08 up to 0.4%

PELA EMA DEPOSIT

- Size: "World Class Deposit"
- Resources: **911 Mt** of Saprolitic Ore (approx. 20% of the total area)
- TREO grade: 0.12% (HREO=0.04%)
- Actual Ore Reserves: 350 Mt
- Additional Potential: approx. 250 Mt



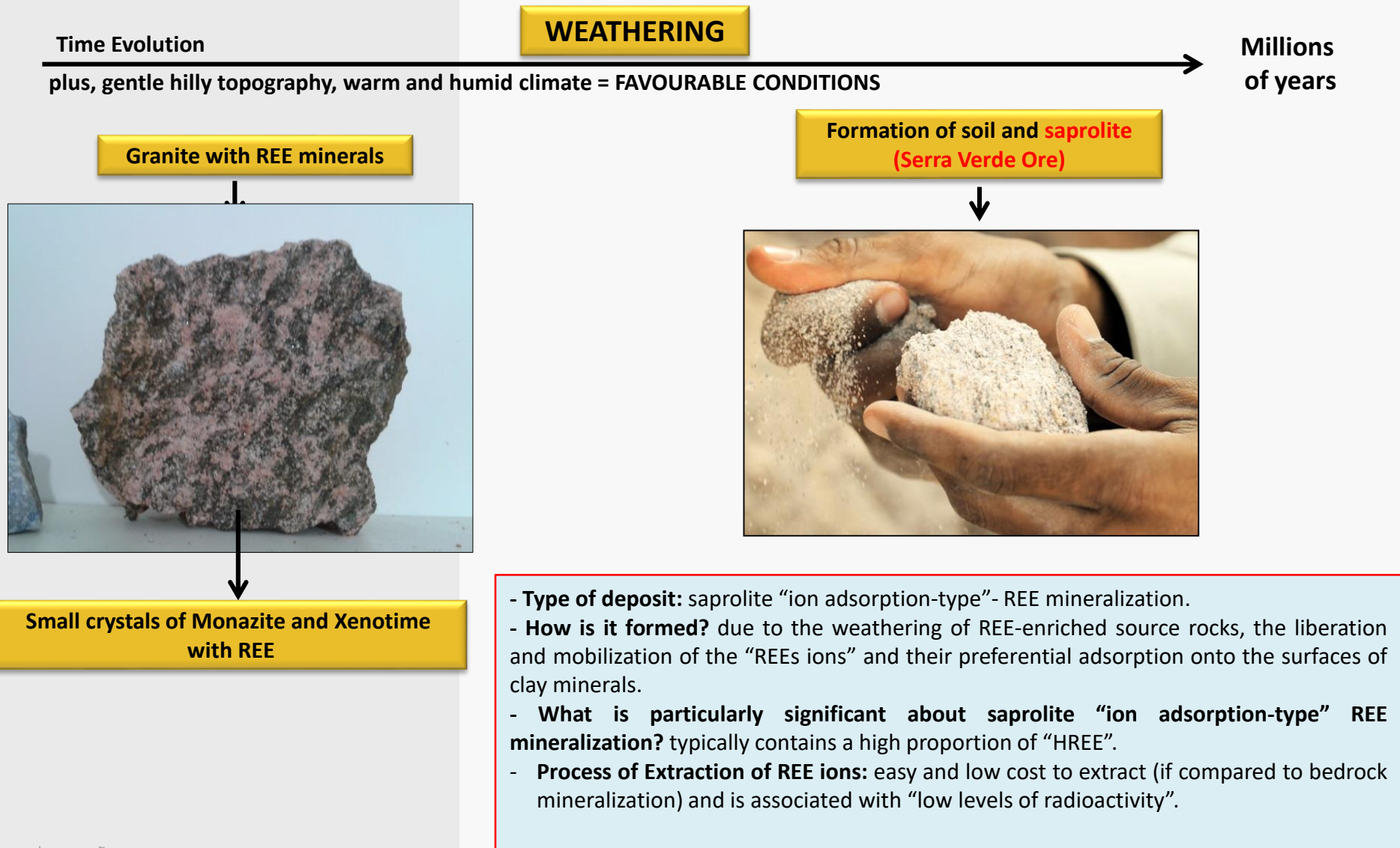
LEGEND

- CITIES
- ROADS
- ▭ PELA EMA TARGET
- ▭ REGIONAL TARGETS

GEOLOGY

- | | |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cenozoic | <ul style="list-style-type: none"> ALLUVIAL DEPOSITS LATERITIC DETRITS COVER |
| Neoproterozoic | <ul style="list-style-type: none"> MATA AZUL GRANITE SANTA TEREZA SUITE LAJESCO SUITE CANA BRAVA LAYERED MAFIC-ULTRAMAFIC COMPLEX <ul style="list-style-type: none"> LOWER MAFIC ZONE UPPER MAFIC ZONE MARA ROSA METAVOLCANOSEDIMENTS <ul style="list-style-type: none"> GARNET-CHLORITE-QUARTZ SCHIST MARFIC METAVOLCANIC WEST GUIAS ORTHOGNEISS |
| Mesoproterozoic | <ul style="list-style-type: none"> PARANOÁ GROUP <ul style="list-style-type: none"> CARBONATIC-PELITE RHYTHMITE QUARTZITE RHYTHMITE SILT-SHALE UNIT MORRO SOLTO GRANITE PALMEIROPOLIS METAVOLCANOSEDIMENTARY UNIT <ul style="list-style-type: none"> GARNET-MUSCOVITE-QUARTZ SCHIST GARNETE-BIOTITE-MUSCOVITE-QUARTZ-FELDSPAR SCHIST AMPHIBOLITE PEIXE ALKALINE SUITE (NEPHELINE SYENITE) TOCANTINS SUBPROVINCE GRANITES (SERRA DOURADA, SERRO DO ENCOSTO, SERRA DA MESA, SERRA BRANCA, FLORENCIO) |
| Paleoproterozoic | <ul style="list-style-type: none"> SERRA DA MESA GROUP <ul style="list-style-type: none"> BIOTITE-MUSCOVITE SHIST (QUARTZITE, META LIMESTONE) MICA QUARTZITE ARAI GROUP <ul style="list-style-type: none"> ARRAIA FORMATION (META-CONGLOMERATE) TRAIRAS FORMATION (META-SILTSTONE) TICUNZAL FORMATION (PARAGNEISS) RIO MARANHÃO COMPLEX PAU DE MEL GRANITE ALMAS-CAVALCANTE COMPLEX <ul style="list-style-type: none"> GRANITIC ORTHOGNEISS MIGMATITIC ORTHOGNEISS |

Serra Verde Project - Saprolite formation, REE concentration & extraction



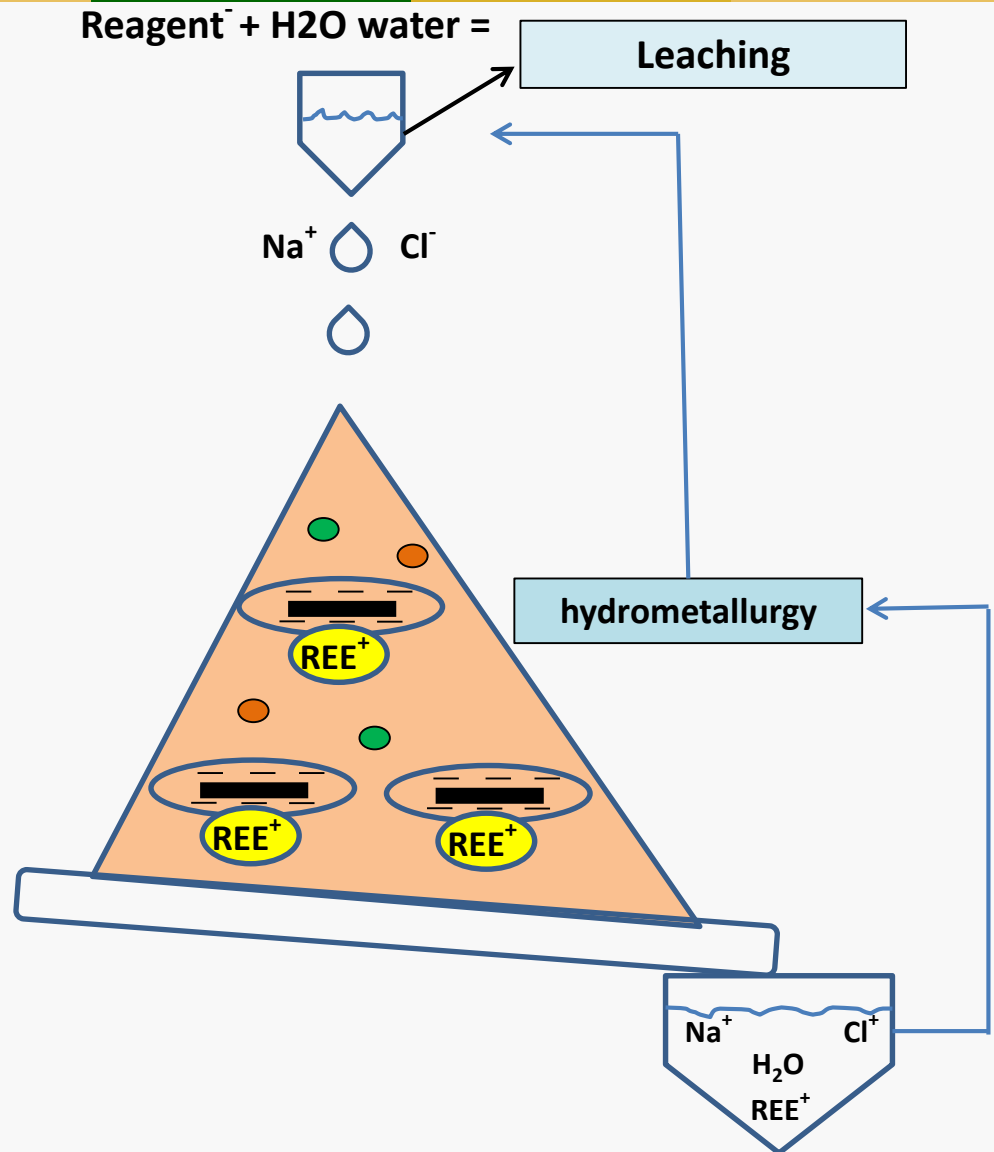
Serra Verde Project - Process extraction/leaching

How is the extraction of REE without extract uranium and thorium?

- Leaching agent (AS or SC).
- It doesn't "extract" the radioactive material, but select the REE ions through an ion exchange, which will replace the REE ions adsorbed (adhered to the surface) in the clays.

THE PROCESS DOESN'T GENERATE RADIOACTIVE WASTE.

VERY LOW COST OF "REE" EXTRACTION!



Serra Verde Project - Pela Ema Deposit - Ion-adsorption type (Ionic clays)

Chemical by grain sizes

PROJECT - SERRA VERDE				
Saprolite - MET001				
SAMPLES: DDH, natural humidity			DATA: 23/08/2013	
INICIAL WEIGHT (g):			8067,60	
Mesh		Weight (g)	% Retained	% AC
#	(mm)			
1/4"	6,35	117,70	1,5%	1,5%
10	2,00	1843,10	23,8%	25,3%
18	1,00	1390,40	17,9%	43,2%
20	0,850	82,60	1,1%	44,3%
35	0,500	719,50	9,3%	53,6%
70	0,212	817,80	10,5%	64,1%
100	0,150	269,00	3,5%	67,6%
150	0,106	349,20	4,5%	72,1%
200	0,075	125,60	1,6%	73,7%
325	0,045	172,60	2,2%	75,9%
400	0,038	109,55	1,4%	77,3%
- 400	- 0,038	1758,80	22,7%	100,00
TOTAL		7755,85		
% of loss:		3,864		

TREO Total Calculated
(ppm)

2872

TREO distribution percentage
by grain size

0,42%

4,14%

4,34%

0,33%

5,22%

9,54%

4,48%

7,54%

3,03%

4,25%

2,68%

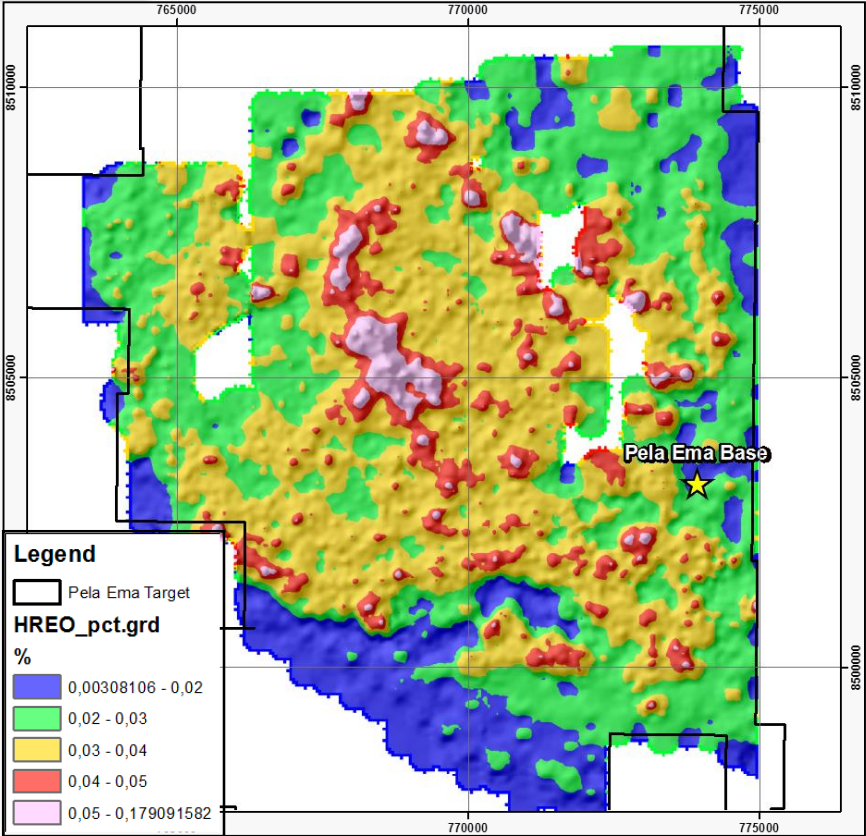
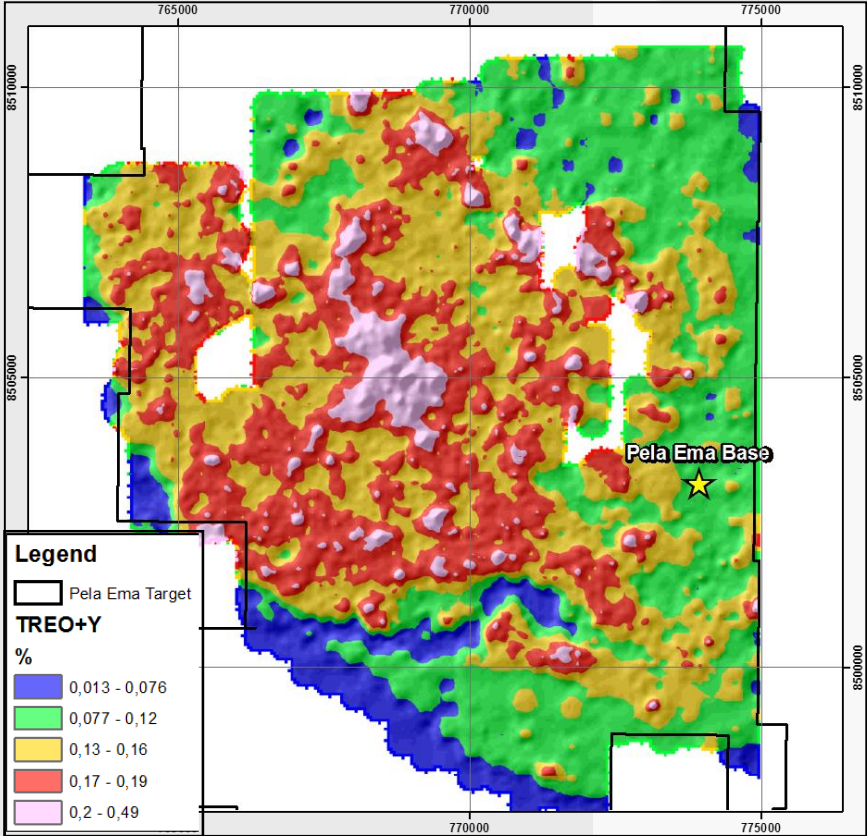
54,03%

Serra Verde Project - Pela Ema Deposit - Drilling data

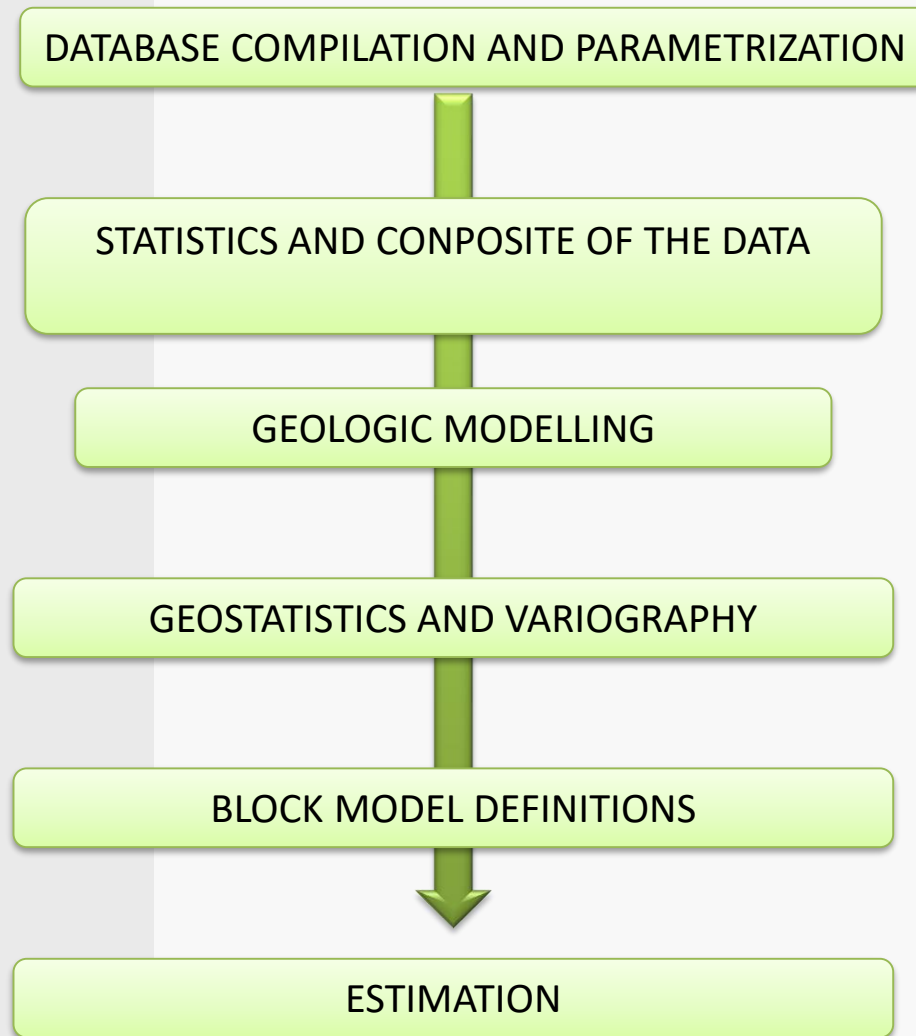
DRILL TYPE	TOTAL	
	HOLES	METERS
<i>Auger Drilling (AUG)</i>	10,415	46,521.03
<i>Diamond Drilling (DDH)</i>	288	5,832.45
<i>Reverse Circulation Drilling (RCD)</i>	270	4,063.15
<i>Metallurgical Drilling (MET)</i>	126	1,354.98
GRAND TOTAL	11,099	57,771.61

Serra Verde Project - Pela Ema Deposit - TREO & HREO map in the saprolitic ore

HREO/TREO ~27%



Serra Verde Project - Pela Ema Deposit - Geological Modelling Methodology



Serra Verde Project - Mineral Resources & Mineral Reserves Estimated

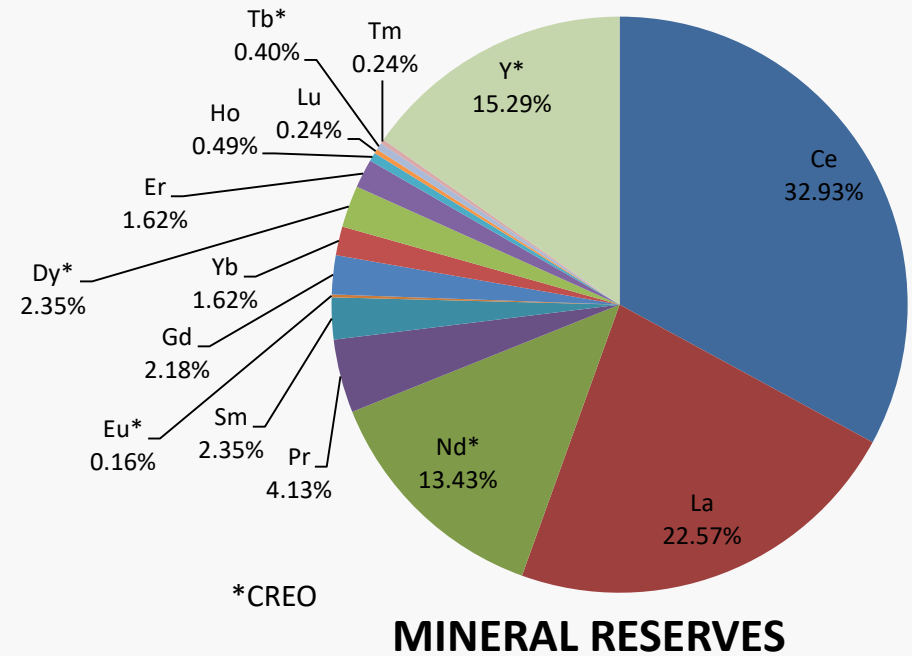
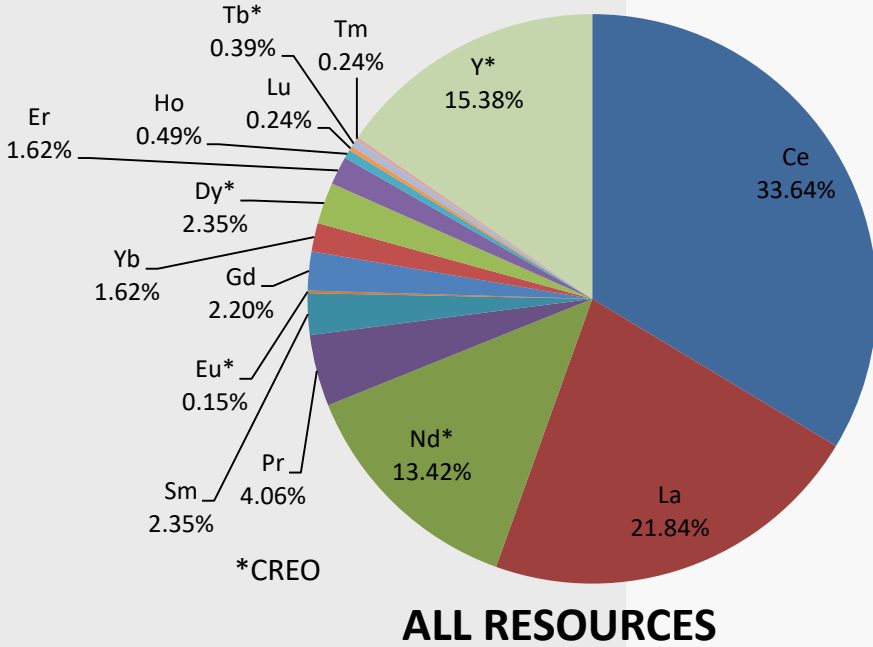
Saprolite	Resource Classification	Tonnes	LREO	HREO	TREO	ZrO ₂	ThO ₂	U ₃ O ₈
		Mt	%	%	%	ppm	ppm	ppm
	Measured	22	0.15	0.06	0.21	844	93	14
	Indicated	368	0.11	0.04	0.15	711	106	14
	Inferred	521	0.07	0.02	0.10	564	78	11
Total	M+IND	390	0.11	0.04	0.15	718	106	14
	Inferred	521	0.07	0.02	0.10	564	78	11

Notes:

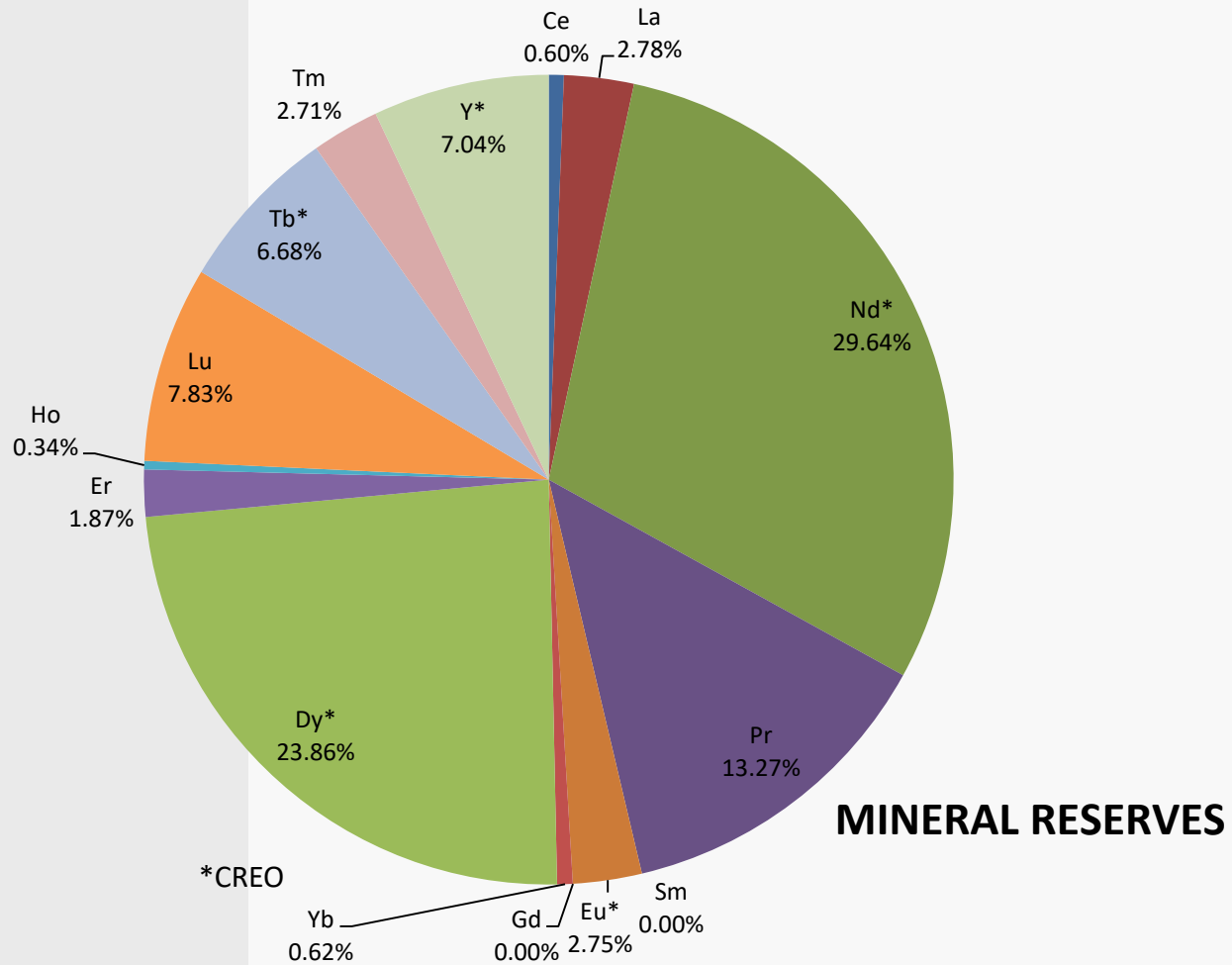
source: RPA - Feb,2015

- 1) CIM definitions were followed for Mineral Resources.
- 2) Mineral Resources are estimated for all the blocks within the saprolite wireframe.
- 3) The date of this estimate represents drilling up to November 27, 2014.
- 4) A bulk density of 1.8 t/m³ was used.
- 5) LREO = CeO₂+ La₂O₃+ Nd₂O₃+ Pr₆O₁₁+ Sm₂O₃.
- 6) HREO = Eu₂O₃+ Gd₂O₃+ Yb₂O₃+ Dy₂O₃+ Er₂O₃+ Ho₂O₃+ Lu₂O₃+ Tb₄O₇+ Tm₂O₃+ Y₂O₃.
- 7) TREO = LREO+ HREO.

Serra Verde Project - REE weight distribution

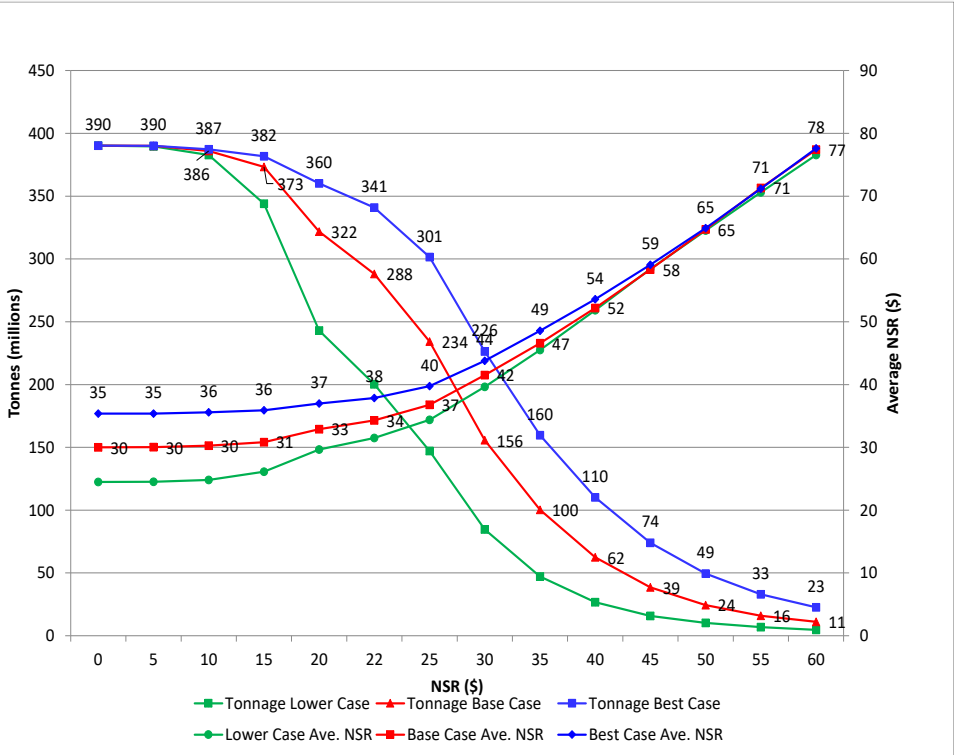


Serra Verde Project - REE value (NSR) distribution - sales & potential revenues



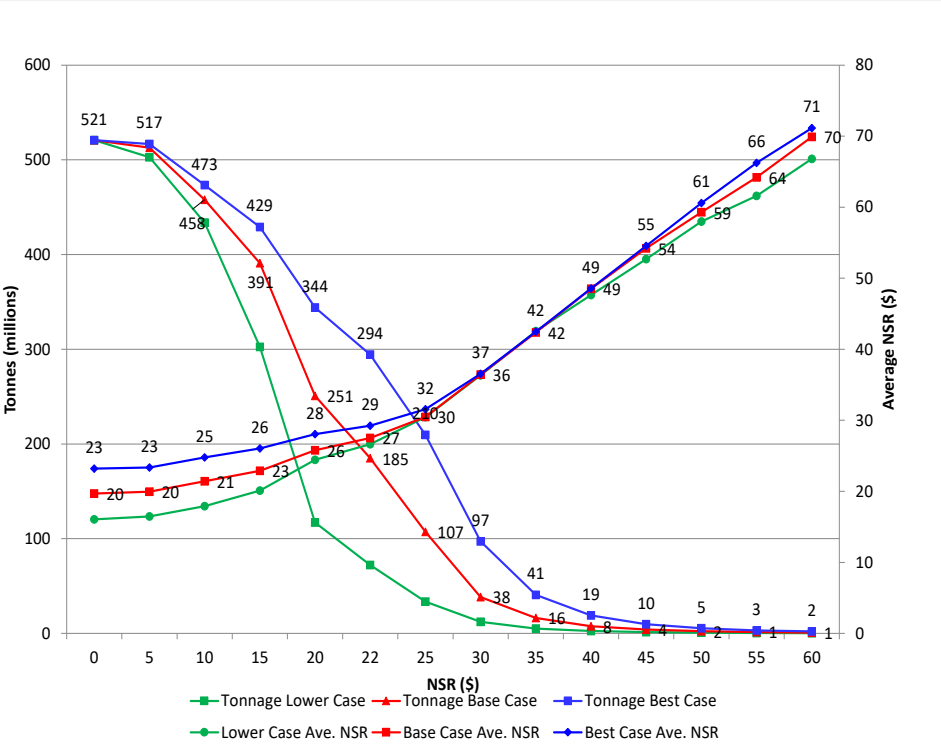
Serra Verde Project - Sensitivity to cut-off grade - Measured and Indicated Resources

Pela Ema Measured and indicated mineralization tonnage grade curve data						
Cut-Off grade	Best Case Scenario		Base Case Scenario		Lower Case Scenario	
	Block Model	Block Model	Block Model	Block Model	Block Model	Block Model
COG	Tonnes	Grade	Tonnes	Grade	Tonnes	Grade
(/t NSR)	(Mt)	(/t NSR)	(Mt)	(/t NSR)	(Mt)	(/t NSR)
0	390	35	390	30	390	24
5	390	35	390	30	390	25
10	387	36	386	30	383	25
15	382	36	373	31	344	26
20	360	37	322	33	243	30
25	341	38	288	34	200	31
30	301	40	234	37	147	34
35	226	44	156	42	85	40
40	160	49	100	47	47	45
45	110	54	62	52	27	52
50	74	59	39	58	16	58
55	49	65	24	65	10	65
60	33	71	16	71	7	71



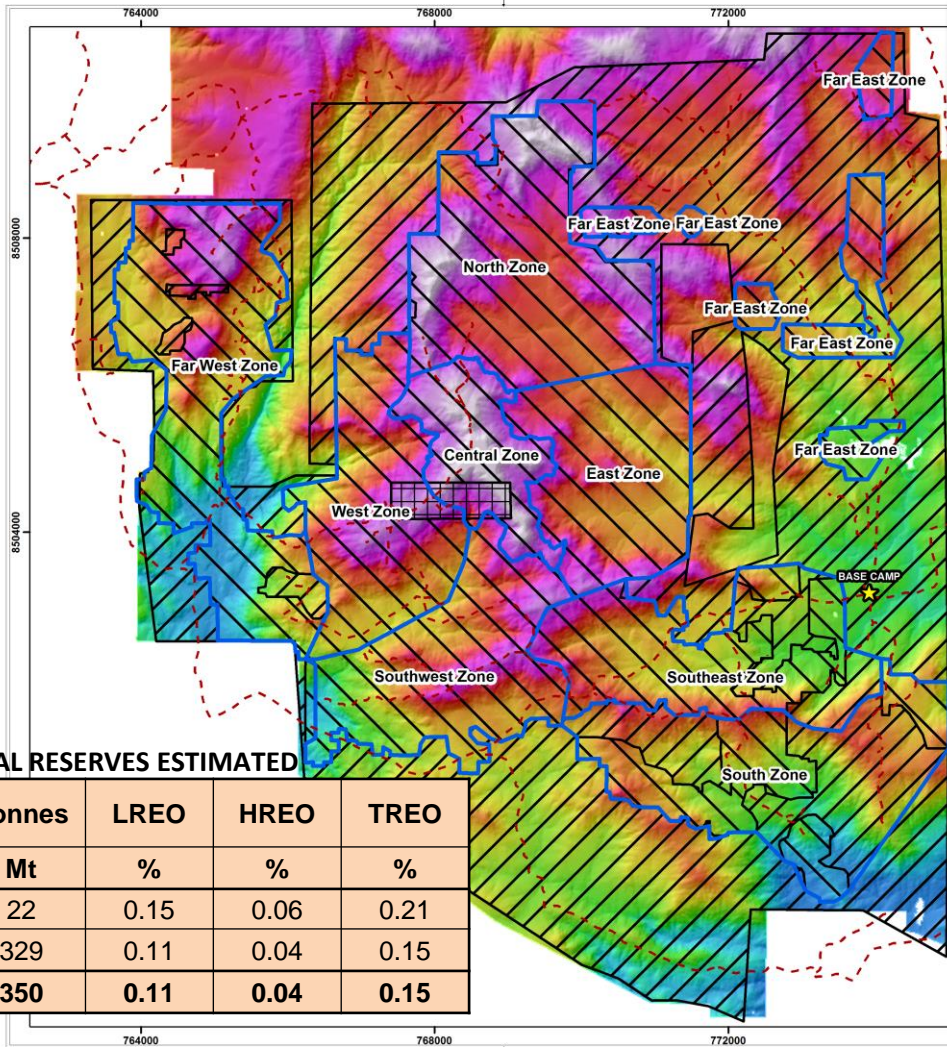
Serra Verde Project - Sensitivity to cut-off grade – Inferred Resources

Pela Ema Inferred mineralization tonnage grade curve data						
Cut-Off grade	Best Case Scenario		Base Case Scenario		Lower Case Scenario	
	Block Model	Block Model	Block Model	Block Model	Block Model	Block Model
COG	Tonnes	Grade	Tonnes	Grade	Tonnes	Grade
(/t NSR)	(Mt)	(/t NSR)	(Mt)	(/t NSR)	(Mt)	(/t NSR)
0	521	23	521	20	521	16
5	517	23	513	20	503	16
10	473	25	458	21	434	18
15	429	26	391	23	302	20
20	344	28	251	26	117	24
25	210	32	107	30	33	30
30	97	37	38	36	12	36
35	41	42	16	42	5	43
40	19	49	8	49	3	48
45	10	55	4	54	1	53
50	5	61	2	59	1	58
55	3	66	1	64	0	62
60	2	71	1	70	0	67



Source: RPA-Feb 2015

Serra Verde Project - Pela Ema deposit - Mineral Reserves (Mining)



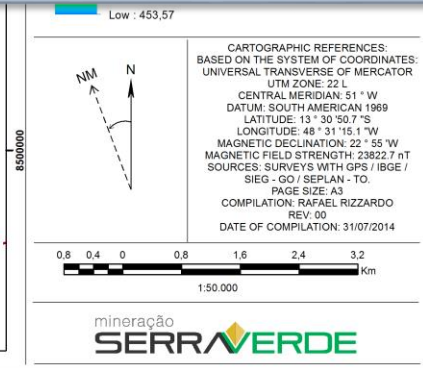
Highlights:

- 9 Mining areas: dimensions of 10X12km
- The Mineral Reserves estimated is based on all the Measured and Indicated Resources (390Mt@0.15%TREO)
- Approx. 40Mt of Mineral Resources were excluded from the Mineral Reserves
- Ore reserves: 350Mt@0.15% TREO & (0.04% HREO)
- Ore type: saprolite (soft material); 4.65m thickness average (included DDH, RCD and Auger data); starts from surface; very low stripping ratio
- Mining rates: LOM/schedule 6Mtpa (years 1- 4) and 20 Mtpa (years 5-22)
- TREO production (LOM)= 5,000 Kt/a TREO (years 1-4); 10,000Kt/a TREO (years 5-22) = **189Kt TREO**

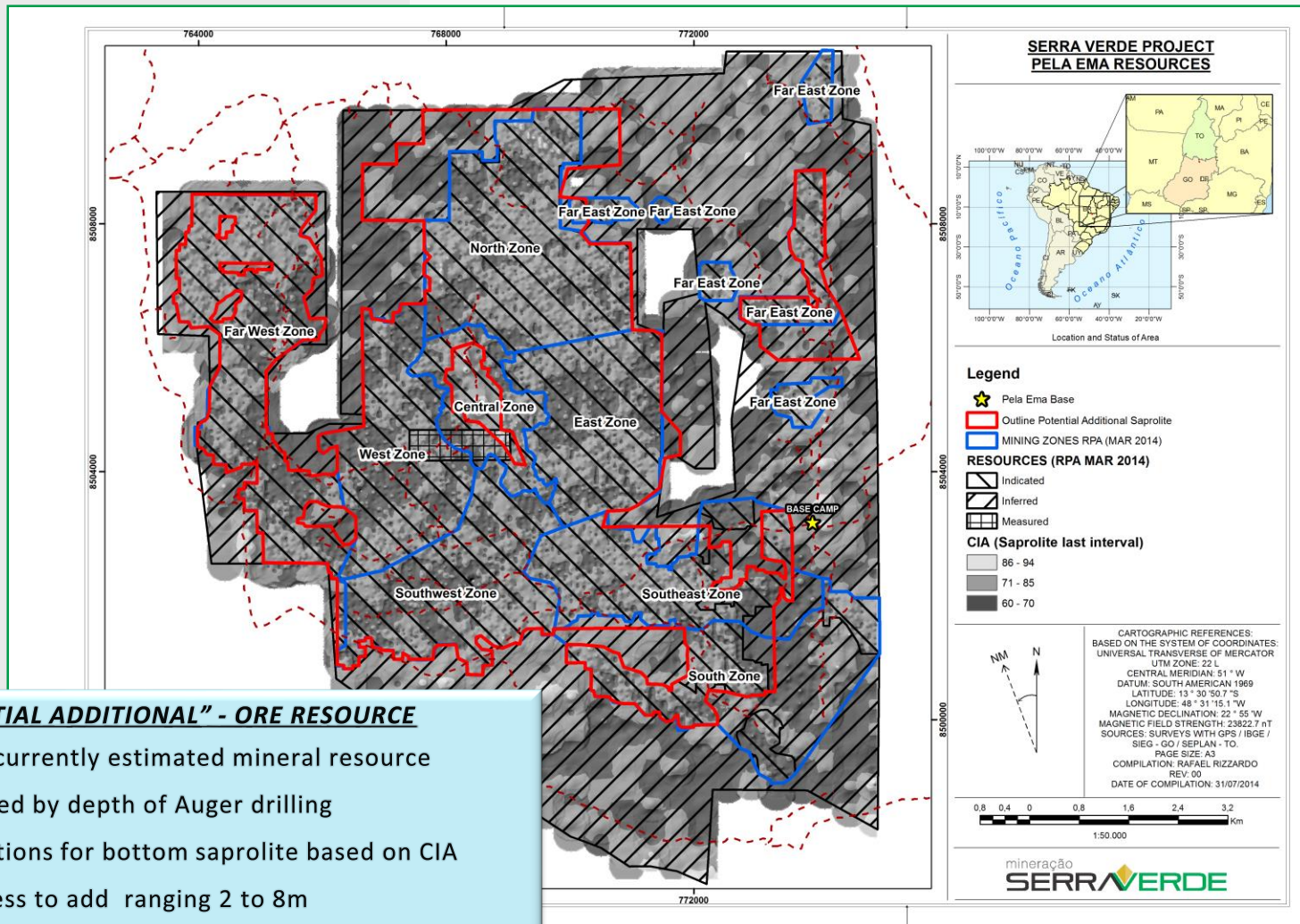
Source: RPA (Feb, 2015)

PELA EMA - MINERAL RESERVES ESTIMATED

Reserve Classification	Tonnes	LREO	HREO	TREO
	Mt	%	%	%
Proven	22	0.15	0.06	0.21
Probable	329	0.11	0.04	0.15
Total P&P	350	0.11	0.04	0.15



Serra Verde Project - Pela Ema deposit - Additional Potential over the current Resources & Reserves Parameters



"POTENTIAL ADDITIONAL" - ORE RESOURCE

- Under currently estimated mineral resource
- Limited by depth of Auger drilling
- Projections for bottom saprolite based on CIA
- Thickness to add ranging 2 to 8m
- Estimated additional tonnage from 242 to 298 Mt

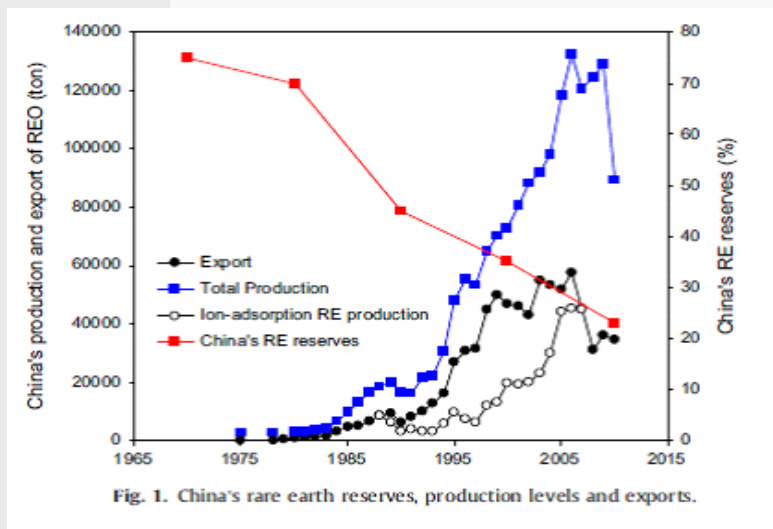
Source: by RPA (May & July, 2014)

Serra Verde Project X World Competitors - Advantages & similarities

Comparative - Serra Verde Project versus Competitors			
Details	Serra Verde/Pela Ema Deposit (Ion adsorbed in Clays)	Southern China deposits (Ion adsorbed in Clays)	Tantalus Project - Madagascar/Africa (Ion adsorbed in Clays)
Intrusive Rocks - form of occurrence	Granites/Batholith >100 km ² *	Granites/Stocks <100 Km ²	Syenites & Granites/Stocks <100 Km ²
Mineralized bodies	Continuous	Discontinuous	Discontinuous
Granite (bedrock) - TREO grade (%)	0.12 - 0.16%	0.025 - 0.04%	0.08%
Saprolite - TREO grade (%)	0.1 – 1.0%	0.03 - 0.3%	0.08%
Saprolite - HREO/TREO ratio	25 - 60%	25 - 50%	19%
Mining method	strip mining - no blasting	strip mining - no blasting/in situ leach.	strip mining - no blasting
TREO - Extraction	Sodium Chloride	Ammonium sulphate	Sodium Chloride & ammonium sulphate

*Serra Dourada Granite > 500 km²

* Serra do Encosto Granite > 100 km²



- **SOUTHERN CHINA:** HREE Reserves are 550,000 tonnes; production ~40,000 t/year - more 14 years production;
- **PELA EMA DEPOSIT:** actual HREE Resources around 227,000 ton; It has potential for 3X more in whole project.

Serra Verde Project X World Competitors - comparisons - Concentrate

LOCATION	SERRA VERDE		XINFENG		XUNWU		LONGNAN	
	BRAZIL		CHINA		CHINA		CHINA	
DEPOSIT TYPE	Ion Adsorbed in Clay		Ion Adsorbed in Clay		Ion Adsorbed in Clay		Ion Adsorbed in Clay	
TREO AVERAGE GRADE (%)	0,15		0,05		0,05		0,05	
REE IN CONCENTRATE	%	ppm	%	ppm	%	ppm	%	ppm
La	32,1%	481,41	26,2%	131,00	43,4%	217,00	1,8%	9,10
Ce	4,2%	63,53	1,9%	9,50	2,4%	12,00	0,4%	2,00
Pr	5,9%	88,77	6,0%	30,00	9,0%	45,00	0,7%	3,50
Nd	19,3%	289,74	21,1%	105,50	29,7%	148,50	3,0%	15,00
Sm	3,3%	49,50	4,5%	22,50	3,9%	19,50	2,8%	14,00
Eu	0,2%	2,39	0,7%	3,55	0,5%	2,55	0,1%	0,50
Gd	3,2%	47,94	4,8%	24,00	3,0%	15,00	6,9%	34,50
Tb	0,5%	7,70	0,8%	3,85	TRACE	TRACE	1,3%	6,50
Dy	3,2%	47,90	4,1%	20,50	TRACE	TRACE	6,7%	33,50
Ho	0,7%	10,27	0,8%	4,00	TRACE	TRACE	1,6%	8,00
Er	2,0%	30,45	2,0%	10,00	TRACE	TRACE	4,9%	24,50
Tm	0,3%	4,47	TRACE	TRACE	TRACE	TRACE	0,7%	3,50
Yb	1,8%	27,09	1,6%	8,00	0,3%	1,50	2,5%	12,50
Lu	0,3%	3,95	0,2%	1,00	0,1%	0,50	0,4%	2,00
Y	23,0%	344,89	25,1%	125,50	8,0%	40,00	65,0%	325,00
TOTAL	100,0%		99,8%		100,3%		98,8%	