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Harena Resources Plc

("Harena" or the **"Company")**

Ampasindava Confirms High Recoveries of Critical Magnet Metals via Low-Impact Heap Leach Processing

Harena (LSE:HREE) is pleased to report metallurgical test results from its 75% owned Ampasindava Rare Earths Project in Madagascar. The work confirms that ionic clay-hosted rare earth elements (REEs) from Ampasindava - including the strategically critical magnet metals Neodymium (Nd), Praseodymium (Pr), Dysprosium (Dy) and Terbium (Tb) - can be recovered efficiently using low-impact heap leach processes such as salt water or standard ammonium sulphate solutions.

This result supports the Company's goal of developing a technically robust, environmentally responsible, and geopolitically independent supply of magnet metals essential to the global defence, energy, and technology sectors.

Highlights:

- **REEs at Ampasindava are readily recoverable through simple ion desorption,** with high extraction rates achieved using a ammonium sulphate leach in low-acid conditions.
- **Main extractions were approximately 88% Nd, 73% Dy, 67% Y, 86% La,** with low levels of gangue, thorium (Th) and uranium (U) supporting a clean environmental profile.
- **SGS Lakefield testwork using a pH 5 ammonium sulphate solution delivered strong results,** including 87% Nd, 88% Pr, 71% Dy, 75% Tb and 63% Y
- **Encouragingly optimal column heap leach test, over 218 hours,** demonstrated recoveries of 88% Nd, 86% Pr, 73% Dy, 79% Tb and 67% Y using Ammonium Sulphate at a pH of 4.
- **Low value/high bulk Cerium demonstrated minimal recovery,** a significant benefit in production of a high-grade magnet metal concentrates or carbonates.

Joe Belladonna, Managing Director, commented:

"While early days in the programme the high rare earth recovery results achieved in the SGS Lakefield test work are very encouraging. This demonstrates that the process to be employed at Ampasindava will be environmentally and ecologically friendly. Furthermore, the low-risk process, simple reagents utilised and no requirement for a tailing storage facility should benefit the economic and technical viability of Ampasindava."

"With the current geopolitical environment, the race to secure heavy rare earth feed stocks for defence and new energy applications is accelerating. Projects that can demonstrate both technical viability and alignment with Western supply chain priorities are increasingly in focus. Ampasindava's combination of critical magnet metals, clean extraction, and independence from Chinese processing gives us a timely opportunity to contribute to a more resilient global supply chain."

Summary of Key Technical Information

Metallurgical test work was carried out on 54 bulk and discrete samples of the regolith clays over several campaigns by the University of Toronto (UoT), Outotec and SGS Lakefield. The SGS Lakefield samples were sourced from test pits and were taken between 1m and 10m below surface and weighed between 6kg and 35kg each. Some were used separately and others amalgamated into several representative bulk samples including a Master Clay Composite.

The testing culminated in 12 optimum eluant tests and follow on column tests for the use of salt water or ammonium sulphate as primary leaching agent. Column tests simulate heap leaching conditions.

Importantly, the results of these tests determined that Ampasindava ionic clay hosted rare earth elements are released from their adsorption bond liberally with a low intensity pH4 to pH5 and a residence time of around 10 days.

Column Tests

At SGS Lakefield, after the series of shaking tests were finalised two column (heap) leach tests were designed. The goals were to study the physical behaviour of the column (irrigation, compaction and to confirm the results from the shaking tests. Based on the Optimum Eluant Tests results Column 1 was run using 1M ammonium sulphate solution adjusted to pH 4 as eluant while Column 2 used 1M sodium chloride solution adjusted to pH4. Standard test conditions included:

- Feed consisting of Master Clay Composite;
- Irrigation rate of 15 L/h/m2 (equivalent to 0.5 mL/min);
- Room temperature;
- Running time of 218 hours;
- DI water washing at 60 L/h/m2 for 24 hours.

Before charging to the column, the feed for each column was agglomerated using their respective eluant solution as binding agent. This was achieved by spraying eluant onto the feed and rolling the sprayed clay on a plastic sheet in doses until the feed began to form agglomerates of material that were not immediately broken by physical force. Once sufficiently wet, the feed was allowed to air dry.

Once agglomerated, the feed was slowly added to the columns to avoid breaking the agglomerates; columns were tapped during this process to ensure uniform packing of the column. Each column was weighed before and after adding the feed as well as at the end of the test. Eluant addition was started immediately, considered as time zero. Discharge was not controlled, i.e. it was not pumped out of the columns.

Overall average feed and discharge rates were calculated using the mass differences on the weighed containers. The average eluant feed rate was slightly lower than target at 14.1 L/h/m2 and 12.8 L/h/m2 for Column 1 and Column 2 average eluant feed rate was slightly lower than target at 14.1 L/h/m2 and 12.8 L/h/m2 for Column 1 and Column 2, respectively. This is due to the drift inherent in any pump calibration curve, exacerbated by the very slow flowrate required.

The average discharge rate (taken from the time of first discharge onwards) was calculated to be 13.6 L/h/m2 and 12.8 L/h/m2 for Column 1 and Column 2 respectively, slightly less than the feed rate due to entrainment of eluant within the column.

After 218 hours of running time the addition of eluant was stopped and the columns were allowed to drain. Once they stopped draining the solids were washed with distilled water at an irrigation rate of 60 L/h/m2.

SGS Lakefield Conclusions

Following a series of tests investigating the extraction of rare earth metals from the mineralization (REE Clay) samples from Ampasindava. The main conclusions were are as follows:

- Rare earth metals can be extracted from REE clay by ion desorption using an ammonium sulphate or sodium chloride solution as eluant. Main extractions were around 88% Nd, 73% Dy, 67% Y, 86% La. It was also confirmed that most of the gangue material as well as Th and U remain in the solids and do not follow the REE into solution.

- It was determined that shaking tests with a single contact and three eluant washes was the optimum and most practical method to evaluate REE extraction from REE clay samples. This method of extraction was run for 60 minutes and at room temperature making it very simple and feasible for running a large number of samples.

- A solution of 1 mol/L ammonium sulphate at pH 4.0 produced the maximum REE extractions and still achieved low gangue material extractions. When using sodium chloride, a concentration of 1 mol/L and an adjusted pH of 4.0 were determined as optimum conditions for high REE extractions and low Th and U extractions.

- Different eluant:ore ratios were tested in an extraction isotherm style series of tests. The data showed that despite low eluant:ore ratios, high REE extractions can be obtained. The data shows that a simple counter current desorption process should be capable of producing high grade REE liquors while at the same time producing low residue levels (i.e. high extraction).

- Heap leaching was simulated in a series of small column leach tests. Two columns were operated for 218 hours; Column 1 was run using a solution of 1M ammonium sulphate at pH 4 as eluant while Column 2 ran with a solution of 1M ammonium sulphate at pH 4. The irrigation rates were 14.1 and 12.8 L/h/m2 for Column 1 and 2, respectively. Maximum REE extractions were accomplished in Column 1 using ammonium sulphate (88% Nd, 73% Dy, 67% Y, 86% La). Column 2 (sodium chloride) led to lower extractions of 78% Nd, 68% Dy, 63% Y and 82% La. Not only were the extractions lower in Column 2 they also took more time to achieve those extractions as is shown in Figure 6. Gangue extractions as well as Th and U extractions remained low in Column 1 and Column 2.

Table 1. Heap Leaching (Column Test) Main Parameters

Parameter	Unit	CL1	CL2
Feed Sample	-	Clay composite	Clay composite
Reagent	-	$(NH_4)_2SO_4$	NaCl
Reagent Conc.	mol/L	1.0	1.0
Reagent pH	-	4.0	4.0
Wet Feed	g	3080	3681
Dry Feed	g	2502	2584
Moisture	%wt	19%	30%
Initial height	cm	154	150
Initial Bulk SG	-	0.987	1.211
Run time	h	218	218
Washing time	h	24	24
First discharge*	h	26	2
Eluant added	mL	6672	5882
Discharge collected	mL	5360	5481
Avg. Feed Rate	$L/h/m^2$	14.1	12.8
Avg. Discharge Rate	$L/h/m^2$	13.6	12.8
Wet residue	g	3701	3746
Dry residue	g	2454	2575
Moisture	%wt	34%	31%
Final height	cm	134	150
Final Bulk SG	-	1.363	1.232

Table 2. Column 1 - Ammonium Sulphate Solution - $(NH_4)^2SO_4$ Extraction %

REE extractions were higher in Column 1 (ammonium sulphate) than in Column 2 (sodium chloride); main metal extractions were 88% Nd, 73% Dy, 67% Y, 86% La for Column 1, and 78% Nd, 68% Dy, 63% Y and 82% La for Column 2.

Element	31 h	35 h	38 h	50 h	62 h	74 h	98 h	122 h	146 h	170 h	194 h	218 h
Si	0	0	0	0	0	0	0	0	0	0	0	0
Al	0	0	0	0	0	0	0	0	0	0	0	0
Fe	0	0	0	0	0	0	0	0	0	0	0	0
Mg	0	1	1	3	4	4	4	4	4	4	4	4
Ca	1	2	4	10	12	14	15	15	15	16	16	16
P	0	0	0	1	1	1	2	3	3	4	5	8
Mn	0	0	0	1	2	2	2	2	2	2	2	2
La	5	12	21	57	69	74	79	81	83	83	84	86
Ce	1	2	4	9	11	12	13	13	14	14	14	14
Pr	4	11	21	60	72	76	81	83	84	85	85	86
Nd	5	11	21	82	75	80	83	85	86	86	87	88

Sm	5	12	22	64	76	80	82	83	84	84	85	85
Eu	5	13	23	66	78	82	84	85	86	86	86	87
Gd	5	13	24	67	79	82	84	85	85	85	86	86
Tb	5	12	22	61	72	75	77	77	78	78	78	79
Dy	4	11	20	58	68	70	72	73	73	73	73	73
Ho	4	9	18	52	61	64	65	66	66	66	67	67
Y	4	9	18	53	62	64	66	66	66	66	67	67
Er	3	8	16	48	57	59	60	61	61	61	61	62
Tm	3	7	13	42	50	52	53	54	54	54	55	57
Yb	2	6	12	41	49	51	52	53	53	53	53	54
Lu	2	6	11	37	45	47	48	48	49	49	49	51
Sc	0	0	0	0	0	0	0	0	0	1	1	1
Th	0	0	0	0	0	0	0	0	0	0	0	0
U	0	0	0	1	1	2	2	2	2	2	2	3

Table 3. Column 2 - Sodium Chloride Solution - NaCl Extraction %

Element	6 h	10 h	14 h	26 h	38 h	50 h	74 h	98 h	122 h	146 h	170 h	194 h	218 h
Si	0	0	0	0	0	0	0	0	0	0	0	0	0
Al	0	0	0	0	0	0	0	0	0	0	0	0	0
Fe	0	0	0	0	0	0	0	0	0	0	0	0	0
Mg	0	0	0	1	2	2	4	4	4	4	4	4	4
Ca	0	1	1	2	6	11	16	19	20	20	20	21	21
P	0	0	0	0	1	1	2	2	3	3	4	4	7
Mn	0	0	0	0	1	1	1	1	1	1	1	1	2
La	0	0	0	1	7	18	40	55	65	71	75	78	82
Ce	0	0	0	0	1	2	6	8	9	10	11	11	12
Pr	0	0	0	1	7	16	38	52	61	68	72	75	79
Nd	0	0	0	1	7	16	37	52	61	67	71	75	78
Sm	0	0	0	1	7	16	36	50	58	64	68	71	74
Eu	0	0	0	1	8	18	39	53	62	67	71	74	77
Gd	0	0	0	2	8	19	40	54	62	68	71	74	77
Tb	0	0	0	2	8	18	38	51	59	64	67	69	72
Dy	0	0	0	1	7	17	37	49	56	61	64	66	68
Ho	0	0	0	1	7	16	34	45	52	56	59	61	63
Y	0	0	0	1	7	16	35	46	53	57	60	62	63
Er	0	0	0	1	7	15	32	43	49	53	55	57	59
Tm	0	0	0	1	6	13	28	37	43	46	48	50	53
Yb	0	0	0	1	6	13	27	36	41	45	47	48	50
Lu	0	0	0	1	5	11	25	33	38	41	43	44	46
Sc	0	0	0	0	0	0	0	0	0	0	0	1	1
Th	0	0	0	0	0	0	0	0	0	0	0	0	0
U	0	0	0	0	0	0	0	0	0	0	0	0	1

References:

1. Independent Specialist Report by SGS - Ampasindava Rare Earths Project - August 20 2024

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Notes to Editors

Harena Resources is a rare earths exploration and development company focused on the Ampasindava Ionic Clay Rare

Earth Project in Madagascar (Harena's interest is 75%). The project hosts one of the largest ionic clay rare earth deposits outside of China, with significant concentrations of high-value magnet metals. Harena is committed to low-impact, high-recovery mining, providing a sustainable supply of critical minerals for the global energy transition and military defence industries.

Forward-Looking Statements This announcement contains forward-looking statements that involve risks and uncertainties. Actual results may differ materially from those expressed or implied in such statements.

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