ACN 080 933 455

ARAFURA RESOURCES LIMITED (ASX : ARU)

DEMONSTRATED POTENTIAL FOR GRAVITY SEPARATION

NOLANS RARE EARTH / PHOSPHATE / URANIUM PROJECT
NORTHERN TERRITORY : 100% ARU

18 JULY, 2007

Summary

- Test work undertaken by Bateman Litwin in Israel has determined that it is possible to upgrade the mineralisation at Nolans by heavy media separation.

- On average, the upgrade represents a 30% mass rejection of waste materials at an average recovery of 95% for rare earths and phosphate and uranium.

- The process has the impact of increasing the average grade of the feed to a processing plant by about 30% for rare earths, uranium and phosphate.

- This upgrading will significantly decrease the operating costs for transport of the Nolans mined product.

- In operational terms, the effects of any dilution during mining can be managed before downstream processing costs are incurred.

- The decrease in waste materials in downstream processing will reduce the size and capital costs of the plant.

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Background

The Nolans rare earths, phosphate, uranium deposit is situated within Substitute Exploration Licence 23671 (SEL 23671: Arafura 100%) near Aileron, about 130 kilometres NNW of Alice Springs. Arafura has been exploring the prospect since discovering it in 1999. In early 2007 Arafura engaged the services of Bateman Litwin to investigate the potential for gangue removal from the resource. It had previously been identified during the hydrometallurgical program at ANSTO that improved performance in various unit operations could be obtained if lower levels of gangue impurities could be kept out of the process streams.

Heavy Media Separation

Heavy media separation is a processing tool that is used when different minerals in the ore have different specific gravity (SG). By separating those minerals a commercial benefit can be obtained at a cost that is offset by downstream process costs. This technology is common throughout Australia. For example it is used in coal washing to reduce ash; in the separation of high alumina gangue from low grade iron ores (Pilbara) and the reduction of silica from low grade manganiferous ores (Groote Island). However upgrading of a rare earth / phosphate mineral like the Nolans deposit is a new use for the technique.

Simplistically, the process uses a slurry that has a density between the valuable component (rare earths and phosphate) and the waste (called gangue). The test work demonstrated that for the Nolans mineralisation, a slurry made from of an iron-silicon alloy powder with a density (SG) of 2.8 can be used. The waste material (with a SG of less than 2.5) floats while the rare earths and phosphate bearing rock (with a SG of greater than 2.8) sinks.

To be commercially viable the recovery of the valuable component must be high and the weight rejection of the gangue must also be high. The operating cost of the process and recovery loss is assessed against the financial benefits of the higher grade of concentrate and the cost of treating a lower volume of material.

The results for the test work at Nolans clearly indicate that heavy media processing is a processing technique that can be used at the mine site to reduce waste material that is present within the mineral bands.

Heavy Media Separation - Results

Results of test work to date are tabulated as attachments.

The results can be summarised as follows;

In the sizing range from less than 5.6mm to greater than 2.8mm it is possible to achieve a rare earths and phosphate separation from the gangue fractions range at high recovery of REO and phosphate with significant mass rejection of waste.

- At a heavy media density of 2.84, the rare earths grade increases from 3.15% to 4.2% with a recovery of 96%, P_2O_5 increases from 13.6% to 18.4% with a recovery of 97% with a mass rejection of waste of 28%.

In the sizing range from less than 2.8mm to greater than 1mm it is possible to achieve a rare earths and phosphate separation from the fractions at high rare earths recovery with significant mass rejection of waste:

- At a heavy media density of 2.84, the rare earths grade increases from 3.15% to 4.22% with a recovery of 94%, P_2O_5 increases from 23.6% to 32.5% with a recovery of 96% with a mass rejection of waste of 30%.

In the sizing of less than 300 microns it is possible to achieve a rare earths and phosphate separation from the gangue at high rare earths recovery with significant mass rejection of waste:

- At a heavy media density of 2.86, the rare earths grade increases from 2.67% to 3.94% with a recovery of 94%, P_2O_5 increases from 22.1% to 30.6% with a recovery of 94% with a mass rejection of waste of 32%.

The test work demonstrates that heavy media separation is effectively rejecting waste material across all size fractions.

Arafura's Managing Director, Alistair Stephens said "this is an excellent result that will reduce operating and capital costs.

All further enquiries should be directed to:

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Size Fraction -5.6mm +2.8mm

Stream Grades				Calculated Feed Grade		Recovery of Valuables	
SG	Mass	P2O5	Ce+La*	P2O5	Ce+La*	P2O5	Ce+La*
	%	%	%	%	%	%	%
<2.66	26.21	0.95	0.24	13.64	2.687	1.83	2.34
>2.66	73.79	18.15	3.56			98.17	97.66
<2.72	26.68	0.98	0.26	13.64	2.69	1.92	2.53
>2.72	73.32	18.25	3.57			98.08	97.47
<2.84	27.93	1.44	0.36	13.64	2.69	2.94	3.73
>2.84	72.07	18.37	3.59			97.06	96.27
<2.92	31.39	3.02	0.74	13.64	2.69	6.95	8.59
>2.92	68.61	18.50	3.58			93.05	91.41

Size Fraction -2.8mm +1.0mm

Stream Grades				Calculated Feed Grade		Recovery of Valuables	
SG	Mass	P2O5	Ce+La*	P2O5	Ce+La*	P2O5	Ce+La*
	%	%	%	%	%	%	%
<2.66	26.88	1.30	0.33	23.59	2.693	1.48	3.29
>2.66	73.12	31.79	3.56			98.52	96.71
<2.72	28.10	1.77	0.40	23.59	2.69	2.11	4.13
>2.72	71.90	32.13	3.59			97.89	95.87
<2.84	30.24	3.01	0.57	23.59	2.69	3.86	6.37
>2.84	69.76	32.52	3.61			96.14	93.63
<2.92	33.16	4.84	0.80	23.59	2.69	6.80	9.89
>2.92	66.84	32.90	3.63			93.20	90.11

Size Fraction -0.300mm +0.02mm

Stream Grades				Calculated Feed Grade		Recovery of Valuables	
SG	Mass	P2O5	Ce+La*	P2O5	Ce+La*	P2O5	Ce+L*a
	%	%	%	%	%	%	%
<2.65	17.83	0.78	0.25	21.94	2.55	0.63	1.74
>2.65	82.17	26.54	3.05			99.37	98.26
<2.7	23.85	0.83	0.25	21.51	2.44	0.92	2.41
>2.7	76.15	27.99	3.13			99.08	97.59
<2.83	26.94	2.19	0.44	21.69	2.45	2.72	4.85
>2.83	73.06	28.88	3.19			97.28	95.15
<2.86	31.99	3.89	0.58	22.06	2.48	5.64	7.50
>2.86	68.01	30.61	3.37			94.36	92.50
<2.91	32.89	3.35	0.58	20.89	2.35	5.28	8.16
>2.91	67.11	29.48	3.21			94.72	91.84

Analysis of only Ce and La is considered to provide a reliable assessment of the performance of the entire rare earth suite at Nolans. Uranium recovery is expected to mirror the Ce+La recovery as it is contained in the same minerals as the REE elements.