

ASX Announcement

Successful Operation of Nolans Phase 6 Pilot Plant

12 December 2018



- **Phase 6 pilot plant successfully produces NdPr-enriched rare earth chloride**
- **Cerium rejection achieved in Rare Earth Dissolution piloting**
- **Nolans flowsheet including Cerium rejection currently the subject of a patent application**

Arafura Resources Limited (ASX: ARU) (Arafura or the Company) is pleased to provide an update on the flowsheet piloting program for its 100 per cent-owned Nolans Neodymium-Praseodymium (NdPr) project in the Northern Territory.

Phase 6 of the pilot program – Rare Earth Dissolution and Evaporation – targets the removal of low value, high volume Cerium (Ce) from rare earth hydroxide to produce rare earth chloride. This reduces the volume of material that feeds into rare earth separation resulting in a smaller and more efficient Separation Plant that will focus on the production of high-value rare earth products such as NdPr oxide.

This is the second of the Company's Rare Earth Processing pilot plants to operate at ALS Metallurgical Services in Perth in recent weeks. It ran continuously for seven days, processing rare earth hydroxide precipitate from the Phase 5 pilot plant (*refer to ASX announcement 28 November 2018*). The pilot has produced large volumes of in-specification NdPr-enriched rare earth chloride liquor for use in the final phase of flowsheet piloting, Rare Earth Separation.

As noted above, a key feature of the Phase 6 circuit is the removal of Ce from the rare earth chloride feed into rare earth separation, to produce a saleable Ce hydroxide co-product. The Company can confirm that more than 99.5% of the Ce has been rejected from the rare earth chloride during steady state operation of the pilot.

The Ce rejection process represents valuable intellectual property and a significant downstream operational advantage over traditional separation circuits run by other rare earth companies. Arafura's flowsheet for rare earth processing at Nolans, which incorporates Ce rejection, is currently the subject of a patent application.

The Phase 6 pilot plant is now in the final stages of decommissioning.

Arafura Managing Director, Gavin Lockyer, said, *"The successful operation of our Rare Earth Processing pilot plant marks the conclusion of the large-scale validation of our process flowsheet. We*



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have developed and applied a number of process innovations across the flowsheet, including cerium removal prior to rare earth separation.

“Reagent consumption data from this latest phase of piloting are now being used to inform final plant design and costings in the Definitive Feasibility Study. The results of the study are expected by early February.”

- ENDS -

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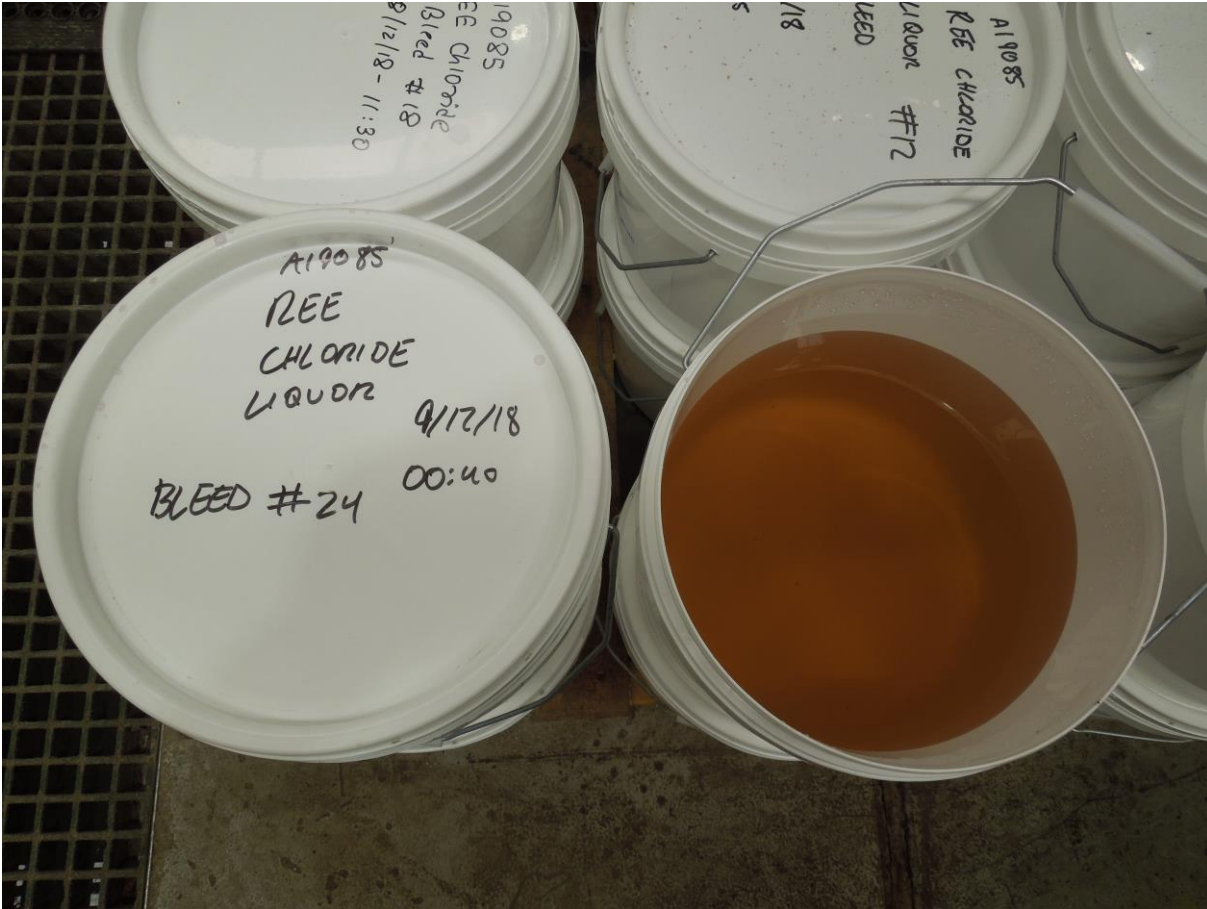
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Phase 6 Pilot Plant: Rare Earth Hydroxide Dissolution Circuit

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NdPr-enriched Rare Earth Chloride Liquor