

# Northern Minerals Ltd

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## Northern Minerals confirms positive results from initial stages of bench scale test work

Northern Minerals Ltd (ASX:NTU) has confirmed positive results from the initial stages of bench-scale separation test work at K-Tech, the ore sorting project and pilot plant initiatives associated with NTU's Browns Range Pilot Plant Project.

### Separation scoping study

NTU commenced a scoping study in August 2019 to investigate separation technology on intermediate mixed rare earths materials produced at Browns Range.

If adopted, this technology will allow NTU to produce separated rare earth oxides, including dysprosium oxide and terbium oxide, for sale directly to permanent magnet makers globally, rather than a mixed heavy rare earth carbonate.

The bench-scale separation test work commenced in September 2019 at K-Tech's Florida laboratory and preliminary results indicate the Stage 1 continuous ion exchange (CIX) has been successful.

### Test work continues to optimise the separation

The rare earths (RE) load in preference to the non-RE on the resin.

Regeneration was successful and the composition of the regeneration solution showed that final non-RE/RE ratio is in the range that would allow for the regeneration solution to be used as the feed for the Stage 2 continuous ion chromatography (CIC) step, where initial separation of the rare earths by group begins.

Stage 2 bench testing simulating the first phase of the CIC has also been successful, as regeneration solution from Stage 1 has been introduced to the CIC test columns and demonstrate that group separations of RE's have occurred.

Test work will continue to optimise this stage of the separation and collect sufficient group RE samples to proceed to Stage 3: Individual RE separation and purification.

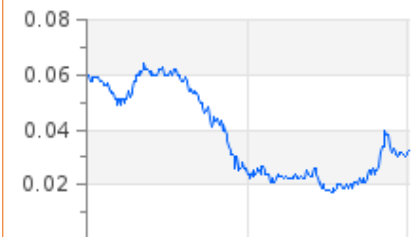
### Aiming to supply separated products to a wide customer base

The bench scale test work will continue through the December quarter and into Q1 2020, with the scoping study to follow on completion of the test work.

**Price:** 0.0325

**Market Cap:** \$144.18 m

#### 1 Year Share Price Graph



September 2019 March 2020 September 2020

#### Share Information

**Code:** NTU

**Listing:** ASX

**52 week High Low**  
0.064 0.017

**Sector:** Rare earths & specialist minerals

**Website:**

#### Company Synopsis:

Northern Minerals Ltd (ASX:NTU) is listed on the Australian Securities Exchange.

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If the bench scale test work and scoping study is successful, NTU intends to undertake a pilot test work program and install the technology as part of the current Pilot Plant Project at Browns Range to assess the saleability of this differentiated product to an end user customer base.

Northern Minerals managing director and CEO George Bauk said: "It's exciting to see positive results from the first stages of bench scale test work being undertaken at K-Tech.

"If successful, we would have a clear pathway to advance downstream in the supply chain to supply separated products to a much wider customer base."

## **Ore sorting project**

The ore sorting project announced by NTU in July 2019 is progressing on schedule.

The front-end engineering design (FEED) for the ore sorter system is complete and detailed engineering is nearing completion.

NTU has selected and paid a deposit on a Steinert ore sorter machine and the procurement of the balance of plant is on schedule with most of the equipment packages issued for enquiry.

Concrete works are scheduled to commence during November and are expected to be completed before the onset of the wet season.

## **Potential to double mill feed grade**

The findings from initial test work and studies indicate that the inclusion of ore sorting at Browns Range has the potential to double the mill feed grade, potentially leading to an increased production rate of heavy rare earth carbonate and a potential lowering of operating costs.

NTU is currently working with stakeholders and regulators on obtaining the approvals required for the installation of the ore sorter at Browns Range and is aiming to have the ore sorter system installed and commissioned by mid-2020, subject to receiving these approvals in a timely manner.

Bauk added: "We have moved quickly to advance the ore sorter project, identified as a potential game changer for the project.

"Higher grades going into the plant would result in higher production rates and lower operating costs, a double win in terms of improving the economics of the Browns Range Project.

## **Pilot plant initiatives**

Majority of pilot plant initiatives to improve recovery, availability and throughput have been completed and are being commissioned.

These initiatives were completed during a planned shutdown in September/October, which includes significant changes to the kiln comprising:

seals, feed system, materials of construction changes, and mechanical devices designed to limit scaling in the kiln to improve availability and throughput.

Additional initiatives and modifications in various sections of the beneficiation and hydrometallurgical circuits to enhance recovery, availability and throughput have also been completed and are currently being commissioned.

Bauk said: "It's also very pleasing to see the initiatives identified by our operations team being implemented safely on site and which we expect will start to flow through into improved operational performance in the coming months."

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