Column Leach Tests Confirm Rare Earths Heap Leach Potential

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Preliminary column leach results from ANSTO on 26 kg bulk samples demonstrate very high extraction of high-value heavy rare earths

Results support the technical feasibility of heap leaching for the Deep Leads ionic adsorption clay rare earth project

Final column leach performance to be confirmed following column unloading in early January

ABx Group Limited (ASX: ABX) (**ABx** or the **Company**) is pleased to report outstanding preliminary results from two rare earth column leach tests conducted on 26 kg bulk samples by the Australian Nuclear Science and Technology Organisation (ANSTO), as part of ongoing metallurgical studies at the Deep Leads rare earth project in northern Tasmania.

After 17 days, the first column test has achieved 81% extraction of rare earths, including 76% extraction of dysprosium (Dy) and 79% extraction of terbium (Tb), which are two of the highest value rare earths. The second column test is nearing completion.

ABx has previously reported results from a series of short-duration leaching tests on sub-samples from a bulk sample taken from the Deep Leads resource and consistently achieved 65-75% extraction.[1] This record high 81% extraction from the column leach test is the best results achieved in large scale tests from any Australian clay-hosted rare earth deposit and shows that ABx's ionic clay rare earths are especially suited to low cost heap leaching.

The maiden mixed rare earth carbonate (MREC) product that was recently produced from a similar bulk sample was twice as enriched in Dy and Tb compared to any peer MREC, and had a basket price 17% to 51% higher than all peer MRECs.[2]

ABx Group Managing Director and CEO Dr Mark Cooksey said:

"These preliminary column leach results are extremely encouraging. Achieving very high extractions of the most valuable and important heavy rare earths such as dysprosium and terbium, while maintaining very low impurities, strongly supports the potential for heap leaching at Deep Leads.

"Heap leaching potentially offers a compelling pathway to lower capital intensity, consistent with the ABx strategy to commence commercial production as soon as possible."

[1] ASX Announcement, 17 September 2025
[2] ASX Announcement, 2 December 2025

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Figure 1: Column leach tests in progress at ANSTO on 26 kg samples from the ABx Deep Leads deposit

Bulk Sample Material

The source material for the column leach tests was a bulk sample from trial pit DLP002 from the Deep Leads resource (**Error! Reference source not found.**1).[3] A fresh 100kg (wet) sub-sample was obtained by homogenisation and fractional shovelling on a tarp followed by light disaggregation and hand-screening at 10mm. Manually identified clasts (<5% of sample) were removed by hand.

Purpose of Column Leach Tests

[3] ASX Announcement, 6 August 2025

In tank leaching, the clay ore is added to tanks containing an ammonium sulfate solution. The tanks are stirred to produce a slurry, which ensures good contact between the ore and the ammonium sulfate. The rare earths are desorbed from the clay into the sulfate solution.

Heap leaching involves forming a heap of clay ore on an impermeable, gently sloping pad and irrigating from above with leachate. The leachate percolates downward through the heap and extracts rare earths into solution. The enriched solution is collected at the base. Heap leaching is potentially lower capital cost than tank leaching, because less capital equipment is required.

Column leach tests are a good simulation of a heap leach. The column leach tests reported here are to determine whether the leaching performance in column tests is any different to that previously obtained in tank leaching tests, and they indicate the likely heap leaching performance.

Column Leach Test Details

- Ore was homogenised and screened at 10 mm, followed by agglomeration to a 10 mm feed to consolidate fines and ensure suitable bed structure and permeability
- Two identical columns, each 2.4 metres high and 150 mm in diameter (Figure 1)
- Approximately 26 kg of ore per column to a 'bed height' of 2m
- Two ammonium sulfate leachate concentrations:
    - Test 1: 0.30 M ammonium sulfate
    - Test 2: 0.15 M ammonium sulfate
- Irrigation rate of ore with leachate: 5.0 L/m^2/hour (approximately 2.12 L / day)
- Ambient temperature (~21°C)
- Target pH: 4.0 (actual feed pH ~3.8)

Importantly, both columns demonstrated very low impurity dissolution, including minimal aluminium, reinforcing previous findings that Deep Leads mineralisation can deliver high-purity rare earth solutions using benign chemistry. Additionally, both columns exhibited excellent physical characteristics of bed stability and percolation.

Next Steps

The column leach tests will complete as planned before the end of December and be unloaded in early January. The solid residues and remaining solutions will be analysed to determine final rare earth recoveries, impurity levels and assess leaching kinetics.

Final results from the column leach program will be reported once analysis is complete.

Given the strong customer interest in MRECs from the Deep Leads resource, ABx is considering engaging ANSTO to produce another MREC sample from the rare earth rich solution produced from these column leach tests.

This announcement is approved for release by the board of ABx Group Limited.

Go to the ABx Investor Hub to watch a video of this announcement and ask any questions of management.

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About ABx Group Limited

ABx Group Limited (ABx) is a uniquely positioned Australian company delivering materials for a cleaner future.

The three priority projects are:

- **Heavy rare earths**: Supplying light and heavy rare earths from Tasmania into Western supply chains
  - Maiden mixed rare earth carbonate produced
  - Processing Options Analysis conducted in partnership with external experts
- **Clean fluorine chemical production**: Producing industrial chemicals from aluminium smelter by-product (ALCORE)
  - Continuous pilot plant under construction in Bell Bay, Tasmania
- **Near-term bauxite production**: Mining bauxite resources for the aluminium, cement and fertiliser industries
  - Agreements executed with Good Importing International for bauxite projects in Queensland and New South Wales, and $2.7 million initial payment has been received
  - Approvals well advanced for DL130 bauxite project in northern Tasmania

ABx endorses best practices on agricultural land and strives to leave land and environment better than we find it. We only operate where welcomed.

Disclaimer Regarding Forward Looking Statements

This ASX announcement (Announcement) contains various forward-looking statements. All statements other than statements of historical fact are forward-looking statements. Forward-looking statements are inherently subject to uncertainties in that they may be affected by a variety of known and unknown risks, variables and factors which could cause actual values or results, performance, or achievements to differ materially from the expectations described in such forward-looking statements.

ABx does not give any assurance that the anticipated results, performance, or achievements expressed or implied in those forward-looking statements will be achieved.

Competent Persons Statement

The information in this report that relate to Exploration Information and Mineral Resources are based on information compiled by Ian Levy who is a member of The Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr Levy is a qualified geologist and a director of ABx Group Limited.

Mr Levy has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity, which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of exploration Results, Mineral Resources and Ore Reserves. Mr Levy has consented in writing to the inclusion in this report of the Exploration Information in the form and context in which it appears.

Table 1 - Summary of sampling information referred to above, in accordance with LR 5.8.1

Geology and geological interpretation	REE mineralisation occurs in clay layers that overlie a Jurassic age dolerite basement in a district with some residual weathered Tertiary age alkali basalt.
Sampling and sub-sampling techniques	Pit sampling was done at 1 metre intervals using a large excavator with an 8 metre boom. Subsampling of ~100kg was performed by fractional shovelling. This sample was lightly disaggregated and hand-screened at 10mm without drying.
Drilling techniques	Not applicable (N.A.). Bulk pit sampling by excavator
Criteria used for resource classification, drill & data spacing & distribution.	N.A.
Sample analytical method	Assay samples are analysed by standard NATA-approved induction coupled plasma analytical methods for rare earth elements at ALS labs in Brisbane (method ME-MS81). Interlab comparisons were satisfactory.
Estimation methodology, cut-off grade, mining, metallurgy & other modifying factors	All N.A.

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling* • *Include reference to measures taken to ensure sample representivity* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *Industry standard work:*	• Bulk pit dug by excavator • Samples taken at 1 metre intervals by cleaning pit at the metre interval, then taking full 1 metre slice for the samples. • Subsampling the metre samples done as per ISO bauxite sampling processes
Drilling techniques	• *Drill type*	• Not applicable to bulk pits excavated by excavator with 8 metre boom

Criteria	JORC Code explanation	Commentary
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• Not applicable to bulk pits
Logging	• *Whether samples have been geologically and geotechnically logged to an appropriate level for metallurgical studies.* • *Whether sampling is qualitative or quantitative.* • *Total length & percentage of the relevant intersections logged.*	• Pits sampled, assayed, logged, photographed & stored to ISO standards. See below • All 8 metres was logged and sampled • Depth 5m to 6m selected – see below
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn, quarter, half or all core.* • *If non-core, sample method, whether sampled wet or dry.* • *Nature, quality & appropriateness of the sample preparation.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Depth 5m to 6m selected for the sample to be used to produce a mixed carbonate rare earth carbonate (MREC) • 100kg sub-sample obtained by homogenisation and fractional shovelling on a tarp followed by light disaggregation and hand-screening at 10mm. Manually identified clasts (<5% of sample) were removed by hand.Separate subsamples assayed the same
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *Geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis* • *Nature of quality control procedures adopted.*	• Assaying done by NATA-registered ALS laboratories, Brisbane • N.A. Assays are by ALS which is a major mineral laboratory • ALS is industry-standard and publishes its QA/QC protocols and results on its website
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Pit sampling supervised by 4 ABx senior staff – see Competent Person & Expert Statement for details. • Repeated subsampling assayed the same. • Metal assays from ALS converted to oxides as per industry standards for reporting
Location of data points	• *Accuracy & quality of surveys used to locate drill holes & pits.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Location by GPS • Pit DLP002 location: 477720E , 5410126N (WGS 84 56S grid). RL 287.675m by LiDAR.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient.* • *Whether sample compositing has been applied.*	• Bulk pit sampling at 1m intervals considered appropriate and sufficient
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *Does the drilling orientation introduce a sampling bias*	• Vertical bulk pit sampling is appropriate for the horizontal layers of REE mineralisation
Sample security	• *The measures taken to ensure sample security.*	• Chain of custody protocols were applied to secure the bulk bag samples.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Two bulk samples taken simultaneously assayed the same