

ASX Release

24 August 2023

Rare Earth Element (REE) clay metallurgical leach testwork update

Highlights

High magnet REE (MREE) recoveries achieved using simple hydrochloric (HCL) acid leach of clay samples from Neo prospect, Paddys Well project (MREE = Nd, Pr, Dy, Tb).

- Average MREE recoveries of 91% (100 g/L HCL) and 49% (25 g/L HCL) across four (4) samples with a maximum extraction of 96% (100 g/L HCL).
- Preliminary metallurgical recoveries compare favourably to other known REE clay projects in Western Australia¹.
- As previously reported², Neo clays are highly amenable to upstream beneficiation implying likely reduced OPEX & equipment requirements for a full-scale REE process plant.
- Work carried out to date indicates a potential **primary carbonatite source of REE mineralisation at Neo**.
- Airborne geophysical survey now completed at Paddys Well – processed data expected to be received before the end of August and an update provided to the market soon thereafter.
- Primary carbonatite exploration (targeting REEs & niobium) will be carried out at Paddys Well including field reconnaissance, soil surveys and rock chip sampling.

Voltaic Strategic Resources Limited (ASX:VSR) (Voltaic or the Company) has received the diagnostic metallurgical leach test results for the REE-enriched clays from the Neo prospect, and the results are in line with the majority of known REE clay projects in Western Australia.

Voltaic Chief Executive Officer Michael Walshe said: “The “first pass” drilling completed earlier this year at Neo identified significant mineralised clay intercepts (~80m widths) from surface³, and the subsequent diagnostic metallurgical work has demonstrated that the valuable magnet REEs can be recovered from the clay by leaching in hydrochloric acid at room temperature and pressure.

“The leaching tests undertaken, and prior scanning electron microscope (SEM) analysis², indicate that the REEs are present as ultrafine (<20µm) primary, relict monazite or secondary rhabdophane (hydrous REE phosphate) particles. Our focus at Neo will now be to find the primary “hard rock” source of the mineralisation, which is interpreted to be of carbonatite origin” he said.

“The Company notes the success that other exploration companies in the region have achieved, including Hastings Technology Metals (ASX: HAS) and Dreadnought Resources (ASX: DRE), in

¹ See ASX:OD6 announcement 03 April 2023 ‘Very High Metallurgical Recoveries’ & ASX:WC1 announcement 24 July 2023 ‘Excellent REE Metallurgical Recoveries at Salazar’.

² See ASX:VSR announcement 20 June 2023 ‘Excellent Initial Metallurgical Results for Rare Earth Element Clays from Neo’.

³ See ASX:VSR announcement 15 June 2023 ‘Significant Rare Earths system confirmed at Neo’.

identifying carbonatite hosted REE’s which have been shown to have a high proportion of the valuable MREEs neodymium and praseodymium in the TREO matrix, and favourable metallurgical characteristics for economic extraction” Mr Walshe said.

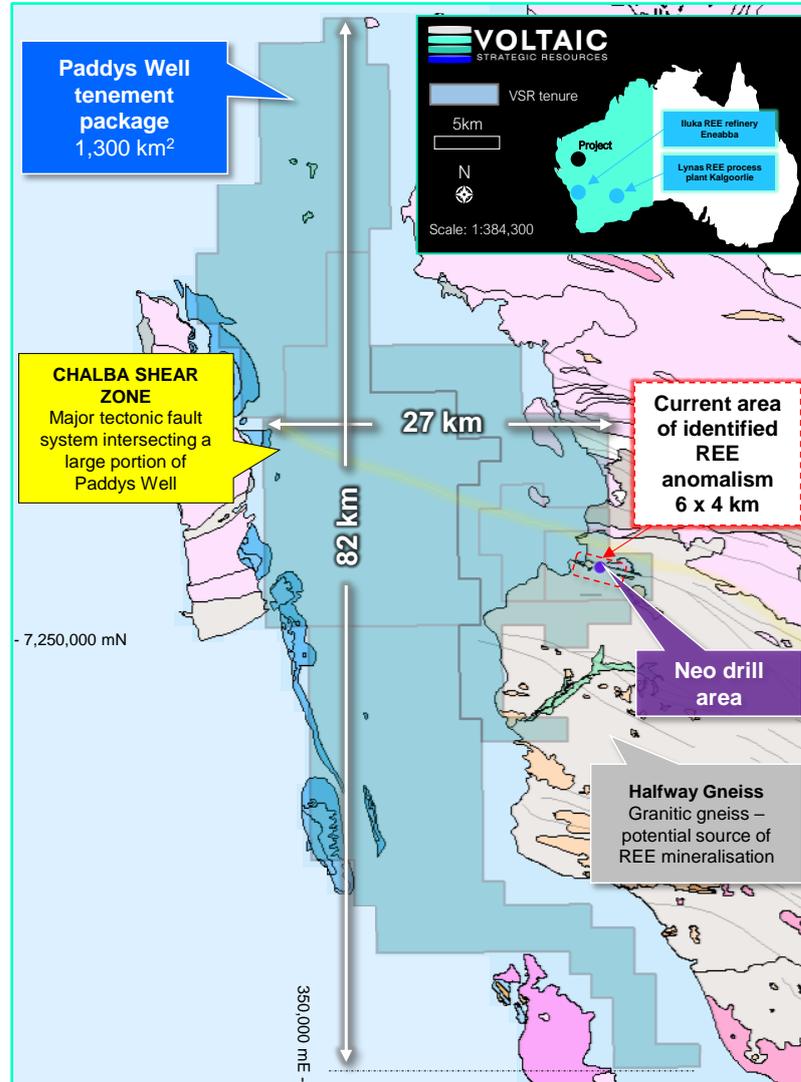


Figure 1. 1,300 km² Paddys Well project map with 2.5M bedrock geology.

“The leach recoveries reported herein are preliminary non-optimised only, and there remains considerable potential for improvement in recovery and acid consumption. Planning for a second phase of metallurgical work is underway to outline preliminary economic parameters such as optimisation of the acid consumption rate, leach response from various sample depths & locations, impurity removal metrics and selection of a preliminary flowsheet.

“Concurrently, we are awaiting the processed results from the recently flown aerial magnetic and radiometric surveys which we anticipate will assist in identifying our next generation of primary carbonatite targets that we are aiming to drill test as soon as possible” Mr Walshe said.

“Only a small fraction of the extensive 1,300km² tenement package at Paddys Well has been explored and the “Critical Minerals” prospectivity is very high due to the attractive geology. The next phase of target generation is currently underway ahead of the next drill campaign where our focus is on primary REEs and niobium (carbonatites), and also copper & nickel sulphides”.

DIAGNOSTIC METALLURGICAL TESTWORK PROGRAM OVERVIEW

The test work program involved undertaking industry-standard leach tests under different reagent schemes to:

- I. Identify the REE distribution by particle size;
- II. Beneficiate the clay to remove gangue (unmineralized) particles;
- III. Characterise the REEs by host phase (ion exchange, colloidal, or mineral); and
- IV. Determine the REE recoveries;

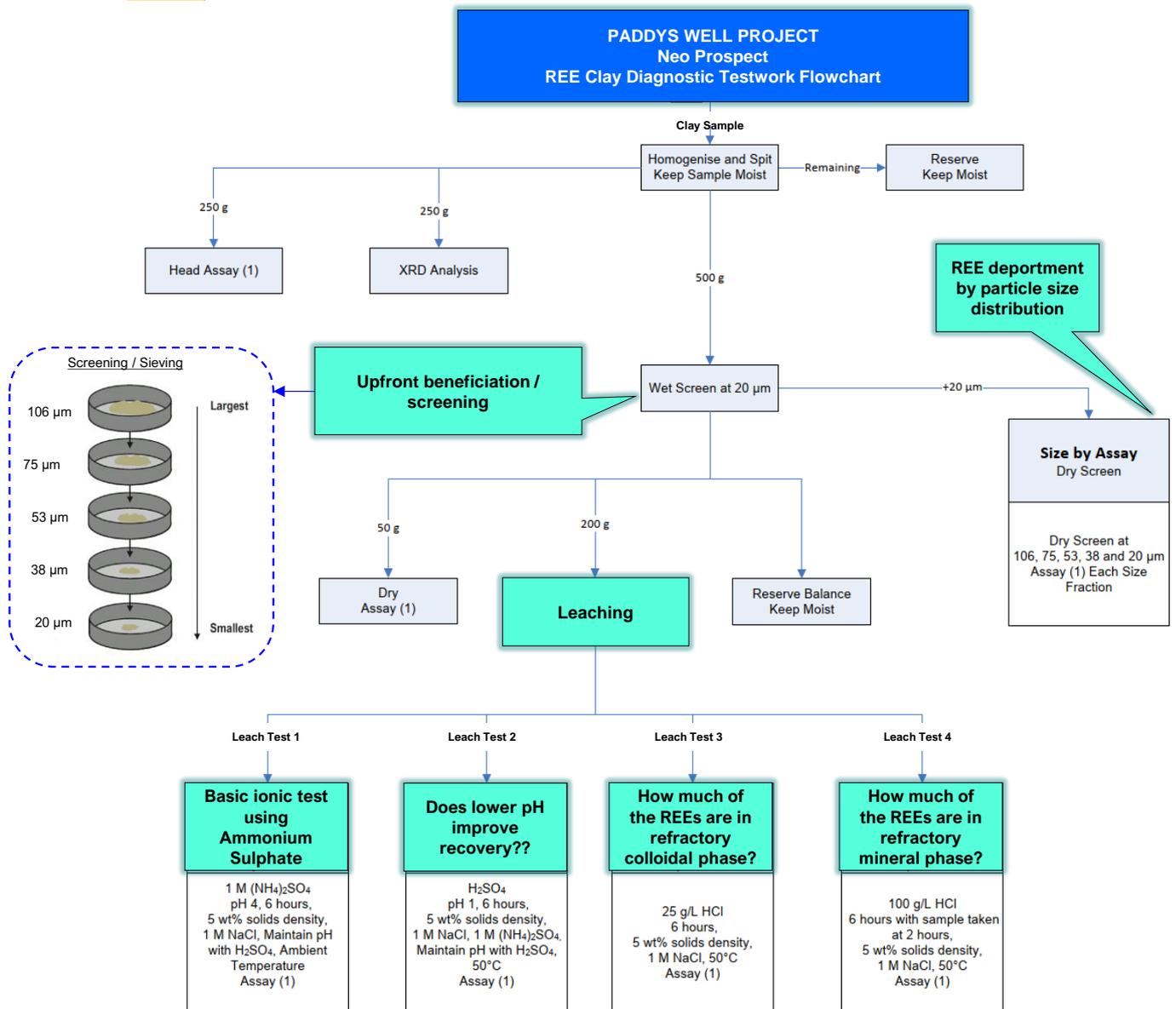


Figure 2. Metallurgical Testwork Flowchart for Rare Earth Clay Characterisation

SUMMARY OF DIAGNOSTIC LEACH METALLURGICAL TESTWORK RESULTS

Four separate leaching regimes were tested for each of the four composite samples (see Fig. 2). A summary of the magnetic REE (Nd, Pr, Dy, Tb) recoveries across all tests and samples is given in Figure 3 / Table 1 below:

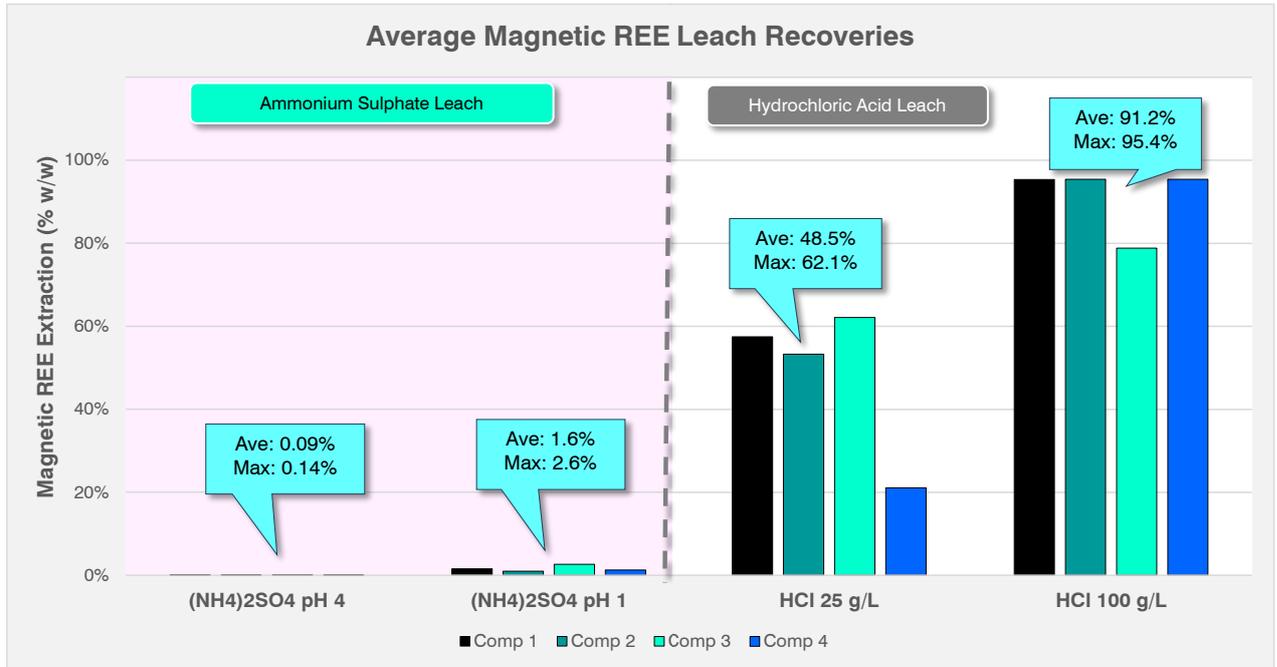


Figure 3. Summary of MREE recovery using different reagent schemes for 4 different composite samples

Table 1. Summary of MREE recovery using different reagent schemes for 4 different composite samples

Element Recovery to leach solution	Composite 1				Composite 2			
	Amm. Sulphate pH 4	Amm. Sulphate pH 1	HCl 25 g/L	HCl 100 g/L	Amm. Sulphate pH 4	Amm. Sulphate pH 1	HCl 25 g/L	HCl 100 g/L
Nd	0.1%	1.3%	56.7%	96.4%	0.0%	0.6%	47.4%	96.0%
Pr	0.1%	1.2%	57.2%	96.6%	0.0%	0.5%	51.2%	96.2%
Dy	0.2%	2.1%	59.7%	93.1%	0.1%	1.6%	59.9%	94.0%
Tb	0.2%	1.7%	56.4%	95.4%	0.1%	1.1%	54.6%	95.5%
Other REEs (AVE)	0.3%	1.8%	59.1%	92.4%	0.1%	1.5%	56.9%	93.7%

Element Recovery to leach solution	Composite 3				Composite 4			
	Amm. Sulphate pH 4	Amm. Sulphate pH 1	HCl 25 g/L	HCl 100 g/L	Amm. Sulphate pH 4	Amm. Sulphate pH 1	HCl 25 g/L	HCl 100 g/L
Nd	0.1%	2.6%	65.4%	83.1%	0.0%	0.8%	19.4%	95.6%
Pr	0.1%	2.5%	65.1%	82.7%	0.0%	0.8%	20.3%	95.5%
Dy	0.2%	2.8%	55.0%	72.8%	0.1%	2.0%	23.6%	94.8%
Tb	0.1%	2.5%	63.0%	76.7%	0.0%	1.4%	21.0%	95.8%
Other REEs (AVE)	0.2%	3.4%	60.2%	78.0%	0.1%	2.1%	23.6%	94.4%

Table 2. Summary of leaching test regimes

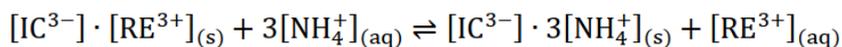
Test	Purpose	Reagents (Lixiviant)	Reagents (Acid)	pH	Temp. (°C)	Time (h)	Overall Test Result
1	Any REE Ionic Exchangeable Phase present? (see note below)	1.0M (NH ₄) ₂ SO ₄	H ₂ SO ₄ to maintain pH at ~4	4	ambient	6	No appreciable recovery
2	Does higher temp. & lower pH improve recoveries of the REE Ion Exchange Phase?	1.0M (NH ₄) ₂ SO ₄	H ₂ SO ₄ to maintain pH at ~1	1	50	6	Minor improvement in recovery
3	Are REEs within the Colloid phase (insoluble oxides or hydroxides) leachable?	1.0M NaCl	25g/L HCl	<1	50	6	High recoveries (>50%) for most samples
4	Are REEs within the Mineral phase (insoluble oxides or hydroxides) leachable?	1.0M NaCl	100 g/L HCl	<1	50	6	Very high recoveries (>90%) for most samples

NOTE: (NH₄)₂SO₄ = ammonium sulphate; H₂SO₄ = sulphuric acid; HCL = hydrochloric acid; NaCl = sodium chloride

Note on REE Ionic Adsorption Clays

The term ionic adsorption clay (IAC) is ubiquitously used to describe REE deposits that easily recovered via an ion exchange mechanism during mildly acidic leaching with inorganic monovalent salt solutions (such as ammonium sulphate). IACs tend to be associated with lateritic weathering that has liberated and mobilised the REEs from REE-enriched granitic sources and are often dominated by the alumina-rich clay minerals kaolinite and halloysite⁴.

The ion exchange mechanism with ammonium sulphate ((NH₄)₂SO₄) is illustrated in equation 1 below where [IC³⁻] represents a charged clay mineral surface and [REE³⁺] the REE ion that is physically adsorbed on clay mineral surface which undergoes an ion swap with the ammonium ion [NH₄⁺] which attaches to clay.



Equation 1: Ionically bound REEs will “desorb” using a suitable ion like ammonium (NH₄⁺)

⁴ Borst A, Smith M, Finch A, Estrade G, Villanova-de-Benavent C, Nason P, Marquis E, Horsburgh N, Goodenough K, Xu C, Kynický J & Geraki K, 2020, 'Adsorption of rare earth elements in regolith-hosted clay deposits', *Nature Communications*, vol. 11, issue 4386, <https://doi.org/10.1038/s41467-020-17801-5>.

Upcoming Milestones at Paddys Well Project

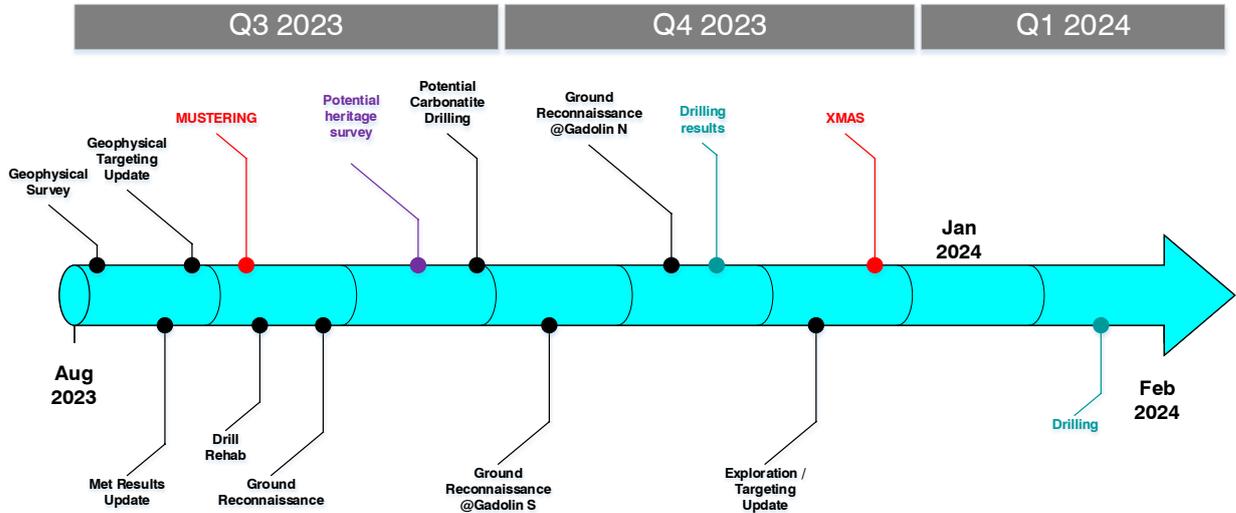


Figure 4. Three (3) quarter lookahead at Paddys Well

Release authorised by the Board of Voltaic Strategic Resources Ltd.

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COMPETENT PERSON STATEMENT

The information in this announcement related to Exploration Results is based on and fairly represents information compiled by Mr Claudio Sheriff-Zegers. Mr Sheriff-Zegers is employed as an Exploration Manager for Voltaic Strategic Resources Ltd and is a member of the Australasian Institute of Mining and Metallurgy. He has sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. He consents to the inclusion in this announcement of the matters based on information in the form and context in which they appear.

The information in this document that relates to metallurgical test work and flowsheet development is based on, and fairly represents, information and supporting documentation reviewed by Mr Michael Walshe. Mr Walshe is engaged as Chief Executive Officer for Voltaic Strategic Resources Ltd. He holds a Bachelor of Chemical and Process Engineering (Hons.) and a Master of Business Administration (Finance). He is a chartered engineer with both Engineers Australia & the Institution of Chemical Engineers (IChemE), and is a member of the Australasian Institute of Mining & Metallurgy (AusIMM). He has over 15 years of experience in process engineering and metallurgy across a wide range of commodities including rare earths, and has approved and consented to the inclusion in this document of the matters based on his information in the form and context in which it appears.

FORWARD-LOOKING STATEMENTS

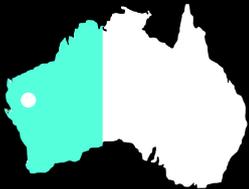
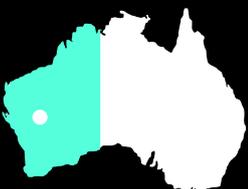
This announcement may contain forward-looking statements involving several risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions or strategies regarding the future and assumptions based on currently available information. Should one or more of the risks or uncertainties materialise, or underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this announcement. No obligation is assumed to update statements if these beliefs, opinions, and estimates should change or to reflect other future development. Furthermore, this announcement contains forward-looking statements which may be identified by words such as "potential", "believes", "estimates", "expects", "intends", "may", "will", "would", "could", or "should" and other similar words that involve risks and uncertainties. These statements are based on a number of assumptions regarding future events and actions that, as at the date of this announcement, are expected to take place. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, the Directors and management of the Company. These and other factors could cause actual results to differ materially from those expressed in any forward-looking statements. The Company cannot and does not give assurances that the results, performance, or achievements expressed or implied in the forward-looking statements contained in this announcement will actually occur and investors are cautioned not to place undue reliance on these forward-looking statements.

ABOUT VOLTAIC STRATEGIC RESOURCES

Voltaic Strategic Resources Limited explore for the next generation of mines that will produce the metals required for a cleaner, more sustainable future where transport is fully electrified, and renewable energy represents a greater share of the global energy mix.

The company has a strategically located critical metals portfolio led by lithium, rare earths, base metals, and gold across two of the world’s most established mining jurisdictions: Western Australia & Nevada, USA.

Voltaic is led by an accomplished corporate and technical team with extensive experience in REEs, lithium and other critical minerals, and a strong skillset in both geology and processing / metallurgy.

 <p>Gascoyne Region Western Australia</p> <ul style="list-style-type: none"> • Emerging critical minerals province (REE, Li, Ni-Cu-Co-PGE). • Active neighbours in the region. 	 <p>Meekatharra Region Western Australia</p> <ul style="list-style-type: none"> • Established gold district with two vanadium development projects. • Active neighbours in the region. 	 <p>Stillwater Range Nevada, USA</p> <ul style="list-style-type: none"> • Ni-Cu-Co project containing formerly producing Co mine. • Global Energy Metals adjacent. 
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Appendix: Leaching results by individual REE element

Table 3. Summary of leaching test regimes by individual REE element

Element Recovery to leach solution	Composite 1				Composite 2				Composite 3				Composite 4			
	Amm. Sulphate pH 4	Amm. Sulphate pH 1	HCl 25 g/L	HCl 100 g/L	Amm. Sulphate pH 4	Amm. Sulphate pH 1	HCl 25 g/L	HCl 100 g/L	Amm. Sulphate pH 4	Amm. Sulphate pH 1	HCl 25 g/L	HCl 100 g/L	Amm. Sulphate pH 4	Amm. Sulphate pH 1	HCl 25 g/L	HCl 100 g/L
Dy	0.2%	2.1%	59.7%	93.1%	0.1%	1.6%	59.9%	94.0%	0.2%	2.8%	55.0%	72.8%	0.1%	2.0%	23.6%	94.8%
Er	0.3%	2.4%	60.7%	90.6%	0.1%	2.0%	65.8%	92.6%	0.2%	3.6%	51.9%	71.7%	0.1%	3.1%	27.0%	92.2%
Ho	0.3%	2.3%	61.0%	92.4%	0.1%	1.9%	63.7%	94.2%	0.2%	3.5%	62.6%	80.5%	0.1%	2.6%	26.4%	94.1%
Lu	0.5%	1.8%	57.9%	80.3%	0.2%	2.4%	68.1%	91.1%	0.0%	4.7%	62.8%	78.6%	0.2%	3.2%	24.8%	98.1%
Tb	0.2%	1.7%	56.4%	95.4%	0.1%	1.1%	54.6%	95.5%	0.1%	2.5%	63.0%	76.7%	0.0%	1.4%	21.0%	95.8%
Tm	0.3%	2.0%	57.7%	97.8%	0.1%	1.8%	36.2%	90.4%	0.2%	1.8%	62.5%	77.4%	0.2%	3.0%	25.1%	94.4%
Y	0.5%	2.0%	68.5%	92.1%	0.2%	1.9%	70.4%	94.5%	0.4%	4.5%	62.0%	78.1%	0.2%	3.8%	30.3%	93.1%
Yb	0.5%	2.0%	60.3%	82.7%	0.2%	2.5%	69.0%	89.2%	0.2%	7.1%	51.8%	68.6%	0.2%	3.2%	27.1%	87.7%
Ce	0.1%	1.2%	59.1%	96.4%	0.0%	1.1%	50.8%	96.0%	0.1%	2.2%	65.3%	82.0%	0.0%	0.8%	19.5%	95.5%
Eu	0.1%	1.7%	48.7%	95.7%	0.0%	0.8%	47.4%	95.9%	0.2%	3.0%	55.8%	82.4%	0.0%	0.9%	16.1%	95.9%
Gd	0.1%	1.7%	57.4%	95.6%	0.0%	0.9%	53.3%	95.6%	0.1%	2.6%	61.1%	79.4%	0.0%	1.3%	20.7%	96.0%
La	0.1%	1.2%	63.0%	96.5%	0.0%	0.5%	52.8%	96.1%	0.1%	2.1%	63.2%	77.6%	0.0%	0.8%	23.8%	96.0%
Nd	0.1%	1.3%	56.7%	96.4%	0.0%	0.6%	47.4%	96.0%	0.1%	2.6%	65.4%	83.1%	0.0%	0.8%	19.4%	95.6%
Pr	0.1%	1.2%	57.2%	96.6%	0.0%	0.5%	51.2%	96.2%	0.1%	2.5%	65.1%	82.7%	0.0%	0.8%	20.3%	95.5%
Sm	0.1%	1.4%	55.4%	95.9%	0.0%	0.7%	48.2%	95.6%	0.1%	2.7%	63.4%	81.9%	0.0%	0.9%	18.6%	95.8%

Appendix: Supplementary Data

Table 4. Neo phase 1B drilling summary

Hole ID	Easting GDA_94	Northing GDA_94	RL	Mag Azimuth	Dip	Depth (m)	Prospect	Drill Type
NEORC001	374497	7257528	341	010	-60	40	Neo	RC
NEORB002	374497	7257528	341	0	-90	78	Neo	RB
NEORB003	374496	7257494	341	0	-90	78	Neo	RB
NEORB004	374505	7257572	341	0	-90	78	Neo	RB
NEORB005	374412	7257538	341	0	-90	35	Neo	RB
NEORB006	374420	7257578	341	0	-90	65	Neo	RB
NEORB007	374580	7257507	341	0	-90	63	Neo	RB
NEORB008	374589	7257547	341	0	-90	75	Neo	RB
NEORB009	374591	7257594	341	0	-90	15	Neo	RB
NEORB010	374682	7257537	341	0	-90	11	Neo	RB
NEORB011	374681	7257566	341	0	-90	17	Neo	RB
NEORB012	374489	7257442	341	0	-90	32	Neo	RB
NEORB013	374457	7257508	341	0	-90	63	Neo	RB
NEORB014	374458	7257551	341	0	-90	60	Neo	RB

Table 5. Metallurgical composite samples make-up

	HOLE ID	Interval (From)	Interval (To)	Met Sample ID
COMP 1	NEORB002	50.00	51.00	NEO MS 021
	NEORB002	51.00	52.00	NEO MS 022
	NEORB002	52.00	53.00	NEO MS 023
	NEORB002	53.00	54.00	NEO MS 024
COMP 2	NEORB002	54.00	55.00	NEO MS 025
	NEORB002	55.00	56.00	NEO MS 026
	NEORB002	56.00	57.00	NEO MS 027
	NEORB002	57.00	58.00	NEO MS 028
COMP 3	NEORB004	30.00	31.00	NEO MS 035
	NEORB004	31.00	32.00	NEO MS 036
COMP 4	NEORB005	30.00	31.00	NEO MS 037
	NEORB005	31.00	32.00	NEO MS 038

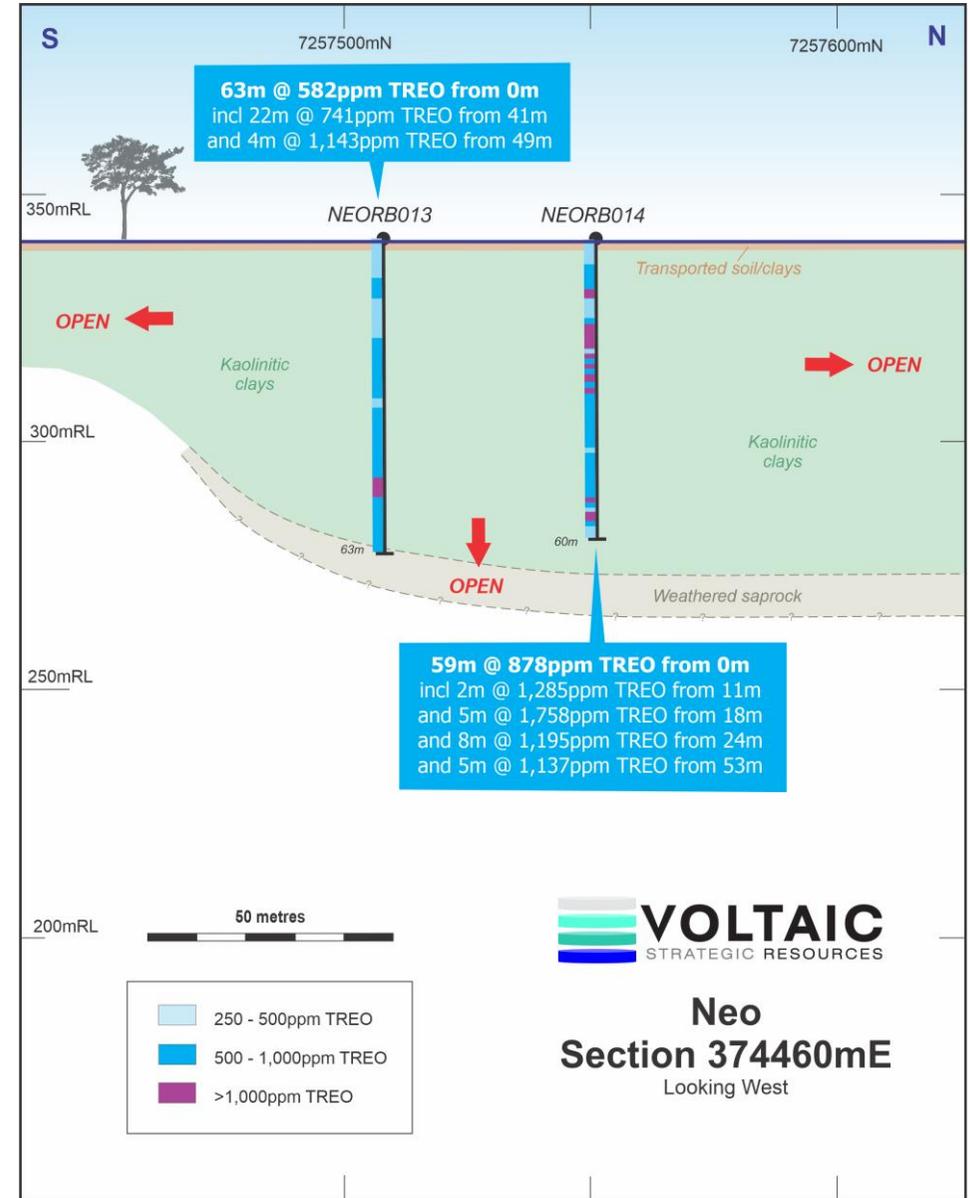
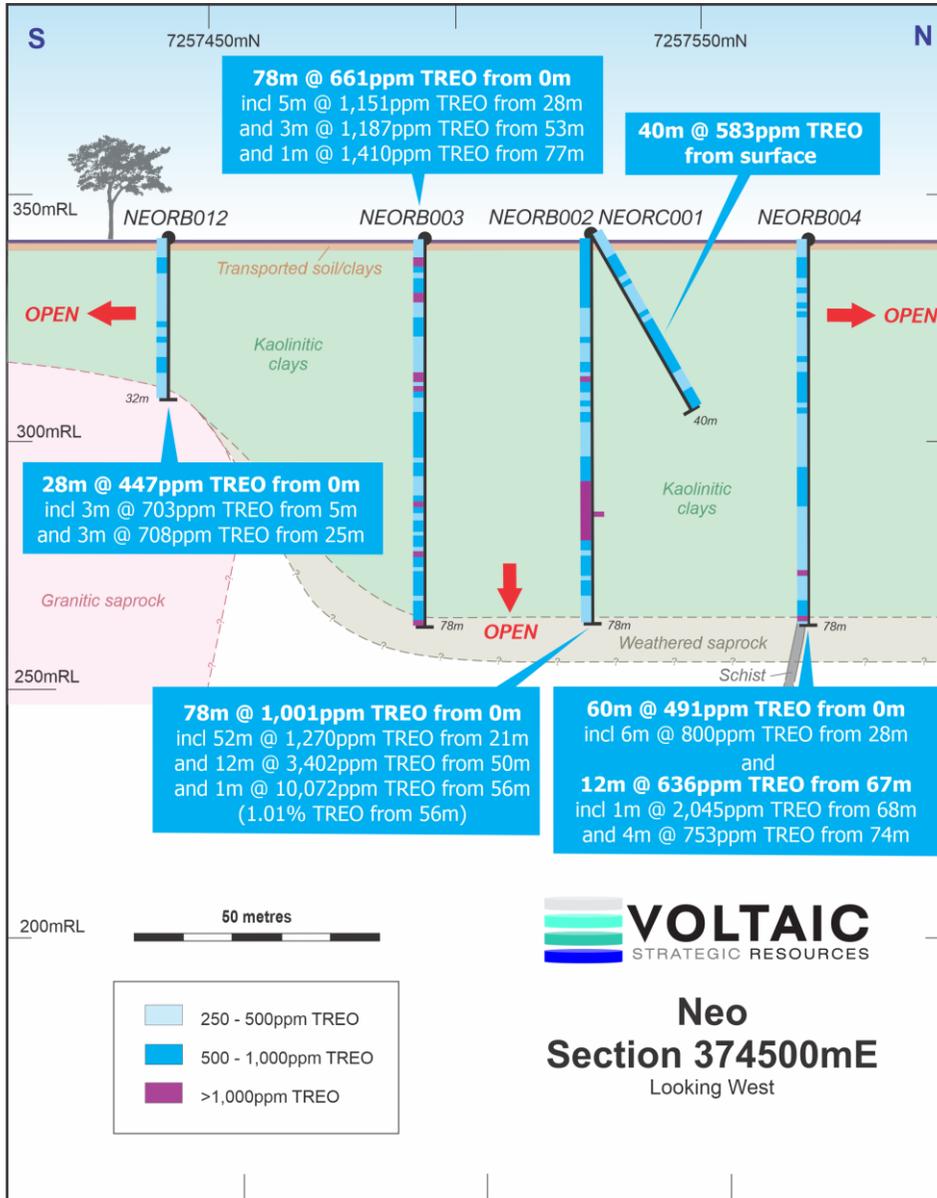


Figure 4. (L) Neo section 374500E - cross section significant intercepts; (R) Neo 374460E cross section significant intercepts

Appendix: JORC Tables

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information. 	<ul style="list-style-type: none"> Historical and recent AC/RB/RC drill samples were collected at 1m intervals and composited to 4m lengths for analysis. The 4m composite or 1m sample (where submitted) were crushed and a sub-fraction obtained for pulverisation. Rock chip samples were taken as individual rocks representing an outcrop (or grab samples). Surface rock samples can be biased towards higher grade mineralisation. Historical drillcore sampling was completed throughout drillholes by compositing variable widths (predominantly 5m) with a representative 5cm half core sample, representing each respective drill meter. Drillholes were located using hand-held GPS. Sampling was carried out under Voltaic Strategic Resources Ltd protocols and QAQC procedures as per current industry practice. RC drilling was used to obtain 1m samples collected through a splitter into buckets and placed in bags as 1m samples, in rows of 20. Sample quality was supervised with any sample loss or moisture recorded. Composite samples were collected with a scoop to generate composite samples. Samples were analysed by LabWest laboratories in Perth. All samples were analysed using Microwave digest (MD), Inductively Coupled Plasma Mass Spectrometry and Inductively Coupled Plasma (ICP) Mass Spectrometry (MS) and Optical Emission Spectrometry (OES) to finish. 62 element analysis including REEs by ICP-MS/OES. Composite samples for Metallurgical testing were collated as per Table 5 in ~ 10kg lots. Composite samples were homogenised and split prior to assay analysis. Screening and desliming/filtration were undertaken to split out samples into various size fractions and metallurgical leaching tests were undertaken on the 'ultrafines' (-20 micron fraction).
Drilling techniques	<ul style="list-style-type: none"> Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc). 	<ul style="list-style-type: none"> Historical AC/RC drilling was completed by PNC Exploration/ESSO/Cameco utilising AC/RC drill methods. Historical drilling by Cameco used Wallis Drilling to undertake diamond drilling using a UDR-1000 drill rig. The drilling was completed using HQ (63.5mm) & NQ (47.6mm) from surface for the collection of drill core samples. Current RB drilling was carried out utilising a slimline AC rig combining RC drill rod string with a blade from surface to basement. Prior Auger Vacuum (AV) drilling was carried out with an auger mounted tractor Cameco reported drill recoveries as being close to 100% for the historical drilling. Historical drill core sample bias has occurred given only 5cm of respective 1m core sample interval run was submitted through composite sampling. A review is being undertaken to assess the potential to re-submit entire mineralised intervals where drill core has been found & identified, & interval runs remain complete. No relationship is identified between sample recovery and grade, nor is bias deemed to be an issue as all metallurgical samples were screened to -20miron prior to leaching
Drill sample recovery	<ul style="list-style-type: none"> Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery & grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. 	<ul style="list-style-type: none"> A review is being undertaken to assess the potential to re-submit entire mineralised intervals where drill core has been found & identified, & interval runs remain complete. No relationship is identified between sample recovery and grade, nor is bias deemed to be an issue as all metallurgical samples were screened to -20miron prior to leaching
Logging	<ul style="list-style-type: none"> Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. 	<ul style="list-style-type: none"> Current drilling is being logged to industry standard capturing recoveries, regolith logging, mineralisation, pXRF and CPS (radiation) monitoring historical Cameco logged drill holes for geology, mineralisation, structure, and alteration. The geological and geotechnical logging is consistent with industry standards.
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. 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. 	<ul style="list-style-type: none"> Current sampling includes comprehensive and industry standard QAQC inclusive of split and duplicate samples, and applicable and representative REE standards. Reported assay grades were used to determine the samples chosen for metallurgical testwork Company procedures are followed to ensure sampling effectiveness and consistency are being maintained. Composite samples for Metallurgical testing were collated as per Table 6 in ~ 10kg lots. Composite samples were homogenised and split prior to assay analysis <p><u>pXRF Analysis</u></p> <ul style="list-style-type: none"> pXRF analysis of AV/RB/RC sample piles is deemed fit for purpose as a preliminary exploration technique. pXRF provides a spot reading on sample piles with variable grain sizes and states of homogenisation. High grade results were repeated at multiple locations to confirm repeatability. The competent person considers this acceptable within the context of reporting preliminary exploration results.

Criteria	JORC Code explanation	Commentary								
<p>Quality of assay data and laboratory tests</p>	<ul style="list-style-type: none"> The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. 	<ul style="list-style-type: none"> Recent drill samples were analysed by Labwest Minerals Analysis Pty Ltd in Perth. The sample analysis uses multi-acid microwave digest with an Inductively Coupled Plasma Mass Spectrometry and Inductively Coupled Plasma (ICP) Mass Spectrometry (MS) and Optical Emission Spectrometry (OES) finish. Current sampling includes comprehensive and industry standard QAQC inclusive of split and duplicate samples, and applicable and representative standards for Rare Earths. Historical Cameco drill core samples were analysed by Chemnorth using four assay methods, ICP-OES, ICP-MS, AAS and gravity to analyse 32-53 elements. pXRF screening of samples and soil points preliminary analysis is obtained with an Olympus Vanta portable XRF <ul style="list-style-type: none"> NOTE 1: pXRF (portable x-ray fluorescence) assay results are semi-quantitative only. NOTE 2: pXRF – Only 5 elements analysed with pXRF analyser: Ce, La, Nd, Pr, Y Scanning electron microscope (SEM) analysis was undertaken by RSC Consulting Limited at their West Perth office using a Hitachi SU-3900 instrument which is capable of delivering automated mineralogy using the Advanced Mineral Identification and Characterisation System (AMICS). The instrument has detectors for analysing energy dispersive spectrometry (EDS), backscatter electron (BSE), secondary electron (SE) and can run on ultra-variable pressure (UVD). RSC undertook an initial characterisation study of eleven (11) smear clay, three (3) epoxy resin embedded clay and two (2) basement rock samples of historical drillcore (GAD0004 hole) from the company's Paddys Well REE project to investigate the mineralogical distribution of REE within the mineralised clay and vein horizons. RSC used their optical microscope and SEM for this work. Microcharacterisation of the samples provide an understanding of REE distribution and the potential implications for eventual metallurgical performance. <p><u>Leach Testwork</u></p> <ul style="list-style-type: none"> Metallurgical testing was undertaken by IMO Pty Ltd. The objective is to provide preliminary leaching data for REE-enriched clay samples to determine the characteristics of the REE mineralisation and if it bears characteristics typical of Ionic Adsorption REE Clay deposits. Sample preparation included homogenisation & splitting prior to head assay analysis followed by a bulk deslime at 20µm, and dry screening of the +20µm size fractions at 106, 75, 53, 38 and 20 µm. Following this, assay analysis was undertaken on all size fractions and leaching tests conducted on the ultrafines (- 20 µm fraction). Following the various leach tests utilising different reaction conditions, assay analysis was undertaken on the leach solids and leach solutions, in addition to specific gravity appraisal. The leaching testing conditions were as follows: <table border="1" data-bbox="1211 943 1805 1114"> <thead> <tr> <th data-bbox="1211 943 1330 1007">(NH₄)₂SO₄ Leach Testwork 1 x 50 g</th> <th data-bbox="1370 943 1489 1007">H₂SO₄ Leach Testwork 1 x 50 g</th> <th data-bbox="1525 943 1644 1007">HCL Leach Testwork 1 x 50 g</th> <th data-bbox="1684 943 1805 1007">HCl Leach Testwork 1 x 50 g</th> </tr> </thead> <tbody> <tr> <td data-bbox="1211 1015 1330 1114">1 M (NH₄)₂SO₄ pH 4, 6 hours, 5 wt% solids density, 1 M NaCl, Maintain pH with H₂SO₄, Ambient Temperature Assay (1)</td> <td data-bbox="1370 1015 1489 1114">H₂SO₄ pH 1, 6 hours, 5 wt% solids density, 1 M NaCl, 1 M (NH₄)₂SO₄, Maintain pH with H₂SO₄, 50°C Assay (1)</td> <td data-bbox="1525 1015 1644 1114">25 g/L HCl 6 hours, 5 wt% solids density, 1 M NaCl, 50°C Assay (1)</td> <td data-bbox="1684 1015 1805 1114">100 g/L HCl 6 hours with sample taken at 2 hours, 5 wt% solids density, 1 M NaCl, 50°C Assay (1)</td> </tr> </tbody> </table> <ul style="list-style-type: none"> Final analysis of the solids, including head analyses was carried out at LabWest (see above for details). The calculation for 'Recovery' (percentage extraction) of the individual REE elements recovered using standard industry conventions Recovery results compare well with check assays of the head grade less the tail assay grades. 	(NH₄)₂SO₄ Leach Testwork 1 x 50 g	H₂SO₄ Leach Testwork 1 x 50 g	HCL Leach Testwork 1 x 50 g	HCl Leach Testwork 1 x 50 g	1 M (NH ₄) ₂ SO ₄ pH 4, 6 hours, 5 wt% solids density, 1 M NaCl, Maintain pH with H ₂ SO ₄ , Ambient Temperature Assay (1)	H ₂ SO ₄ pH 1, 6 hours, 5 wt% solids density, 1 M NaCl, 1 M (NH ₄) ₂ SO ₄ , Maintain pH with H ₂ SO ₄ , 50°C Assay (1)	25 g/L HCl 6 hours, 5 wt% solids density, 1 M NaCl, 50°C Assay (1)	100 g/L HCl 6 hours with sample taken at 2 hours, 5 wt% solids density, 1 M NaCl, 50°C Assay (1)
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Verification of sampling and assaying	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Analytical QC is monitored by the laboratory using standards and repeat assays. Independent standards were submitted by the Company at a rate of 1:25 samples. Independent field duplicates were not conducted for and were not considered necessary for this early stage of exploration. The procedures used for verification of historical Cameco sampling and assaying are not known. Rare earth element analyses were reported in elemental form for leaching assays. Rare earth element analyses were originally reported in elemental form for drilling assays (previously reported) and converted to relevant oxide concentrations as per industry standards: <ul style="list-style-type: none"> TREO = La₂O₃ + CeO₂ + Pr₆O₁₁ + Nd₂O₃ + Sm₂O₃ + Eu₂O₃ + Gd₂O₃ + Tb₄O₇ + Dy₂O₃ + Ho₂O₃ + Er₂O₃ + Tm₂O₃ + Yb₂O₃ + Lu₂O₃ + Y₂O₃ MREO = Pr₆O₁₁ + Nd₂O₃ + Dy₂O₃ + Tb₄O₇ <p>Conversion factors used to convert from element to oxide:</p> <table border="1"> <thead> <tr> <th>Element</th> <th>Oxide Conversion Factor</th> <th>Equivalent Oxide</th> </tr> </thead> <tbody> <tr><td>Ce</td><td>1.2284</td><td>CeO₂</td></tr> <tr><td>Dy</td><td>1.1477</td><td>Dy₂O₃</td></tr> <tr><td>Er</td><td>1.1435</td><td>Er₂O₃</td></tr> <tr><td>Eu</td><td>1.1579</td><td>Eu₂O₃</td></tr> <tr><td>Gd</td><td>1.1526</td><td>Gd₂O₃</td></tr> <tr><td>Ho</td><td>1.1455</td><td>Ho₂O₃</td></tr> <tr><td>La</td><td>1.1728</td><td>La₂O₃</td></tr> <tr><td>Lu</td><td>1.1371</td><td>Lu₂O₃</td></tr> <tr><td>Nd</td><td>1.1664</td><td>Nd₂O₃</td></tr> <tr><td>Pr</td><td>1.2082</td><td>Pr₆O₁₁</td></tr> <tr><td>Sc</td><td>1.5338</td><td>Sc₂O₃</td></tr> <tr><td>Sm</td><td>1.1596</td><td>Sm₂O₃</td></tr> <tr><td>Tb</td><td>1.1762</td><td>Tb₄O₇</td></tr> <tr><td>Tm</td><td>1.1421</td><td>Tm₂O₃</td></tr> <tr><td>Y</td><td>1.2699</td><td>Y₂O₃</td></tr> <tr><td>Yb</td><td>1.1387</td><td>Yb₂O₃</td></tr> </tbody> </table>	Element	Oxide Conversion Factor	Equivalent Oxide	Ce	1.2284	CeO ₂	Dy	1.1477	Dy ₂ O ₃	Er	1.1435	Er ₂ O ₃	Eu	1.1579	Eu ₂ O ₃	Gd	1.1526	Gd ₂ O ₃	Ho	1.1455	Ho ₂ O ₃	La	1.1728	La ₂ O ₃	Lu	1.1371	Lu ₂ O ₃	Nd	1.1664	Nd ₂ O ₃	Pr	1.2082	Pr ₆ O ₁₁	Sc	1.5338	Sc ₂ O ₃	Sm	1.1596	Sm ₂ O ₃	Tb	1.1762	Tb ₄ O ₇	Tm	1.1421	Tm ₂ O ₃	Y	1.2699	Y ₂ O ₃	Yb	1.1387	Yb ₂ O ₃
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Location of data points	<ul style="list-style-type: none"> Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control. 	<ul style="list-style-type: none"> The Cameco holes were surveyed using the UTM coordinate system. The survey method and accuracy were not reported. Downhole surveys were completed using an Eastman downhole survey tool. Recent drilling is captured via GPS on GDA Z50 coordinates 																																																			
Data spacing and distribution	<ul style="list-style-type: none"> Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied. 	<ul style="list-style-type: none"> Cameco early-stage exploration was completed to verify previous explorers interpretation and pursue lateral extents of uranium mineralisation. Neo drill spacing was undertaken on an initial 80x40m Regional soil pXRF survey was undertaken on a wide space 200 x 80m 																																																			
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material. 	<ul style="list-style-type: none"> The drilling that has been completed to date has not been structurally reviewed or validated to confirm the orientation of interpreted mineralisation Rock chip samples were selected to target specific geology, alteration and mineralisation. The samples were collected to assist historical explorers develop their understanding of the geology and exploration potential of historical tenure. Drill orientations have targeted interpreted mineralised horizons and lithological boundaries, as perpendicular as possible. Oxide regolith drilling is vertical 																																																			
Sample security	<ul style="list-style-type: none"> The measures taken to ensure sample security. 	<ul style="list-style-type: none"> Sample security was not reported by Cameco. Samples were given individual samples numbers for tracking. Recent drilling and surface sample security and integrity is in place to industry standards 																																																			
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of sampling techniques and data. 	<ul style="list-style-type: none"> The sampling techniques and analytical data are monitored by the Company's geologists. 																																																			

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area. 	<ul style="list-style-type: none"> The project area is located approximately 60km northeast of the Gascoyne Junction and 220km east of Carnarvon. The Paddys Well project comprises one granted Exploration Licence, E09/2414 (where all of the current reported activities too place) and four Exploration Licence Applications E 09/2663, E 09/2669, E 09/2774, E 09/2744, E 09/2773. The tenements lie within Native Title Determined Areas of the Yinggarda, Baiyungu and Thalanyji People and Gnulli People. All the tenements are in good standing with no known impediments.
Exploration done by other parties	<ul style="list-style-type: none"> Acknowledgment and appraisal of exploration by other parties. 	<ul style="list-style-type: none"> Numerous exploration campaigns have been completed in the general area since the early 1970's focusing predominantly on uranium and diamonds, however work within tenement area E09/2414 has been limited and there is no documented exploration targeting rare earth elements or lithium. From 1974-1983 companies including Uranerz, Agip Nucleare, AFMECO, ESSO Minerals and Urangesellschaft explored the Gascoyne Region for uranium with little success. Most anomalies identified were limited to secondary uranium occurrences in basement metamorphic sequences (including some occurrences associated with pegmatites) and surficial groundwater calcrete sheets (WAMEX REPORT A 87808). Subsequently from 1992 – 1996, PNC Exploration explored the southern Gascoyne area actively targeting basement-hosted uranium mineralisation within the Morrissey Metamorphics (WAMEX REPORT A 46584). The exploration focussed on determining the source of U anomalies and their association with EM conductors. This led PNC to undertake nearly 100-line km of a Questem airborne EM survey as a follow-up to five regional traverses across regional geological trends. Additional EM was flown, as well as detailed airborne radiometrics, which identified several anomalies (WAMEX REPORT A 49947). Eleven (11) shallow percussion holes (average depth of ~60m) intersected strongly chloritised and graphitic metasedimentary rocks within a broader marble-calc-silicate gneiss sequence. The RC drilling program returned numerous +100 ppm U intercepts, including: <ul style="list-style-type: none"> GA9514: 22-28m (6m) at 653 ppm U, including 1m at 1400 ppm U (22-23m). GA9515: 16-25m (9m) at 335 ppm U, including 2m at 730 ppm U (16-18m). GA9520: 19-28m (9m) at 633 ppm U, including 0.5m at 3900 ppm U (25.25m – 25.75m) and 0.25m at 1000 ppm U (26.50 – 26.75m). Test work determined that both secondary and primary (uraninite) mineralisation is present, and that the chemical signature of the chlorite alteration is similar to that at Jabiluka. A follow-up program of RC drilling in 1996 (17 holes/1217m) returned several well mineralised intercepts at the main anomaly: <ul style="list-style-type: none"> GAR9630: 41-49m (8m) at 860 ppm U, including 1m at 3700 ppm U, and 53-58m (5m) at 568 ppm U from 53m, incl. 1m at 1200 ppm U). GAR9625: 22-26m (4m) at 585 ppm U, including 1m at 1800 ppm U. GAR9626: 20-29m (9m) at 275 ppm U. In 1999 Cameco completed a programme of two diamond holes for a total of 411 m, followed by another four diamond drill holes for a total of 863.3m in 2000. The drilling programme aimed to test depth and lateral extensions to the mineralisation identified in the percussion holes; however, it failed to return intercepts of economic uranium grades. Cameco concluded that the strong structural disruption, radiometric response (peaked at 58 ppm U) and presence of graphite appear to be favourable for uranium mineralisation but went on to say that the minor remobilisation of radiogenic lead sourced from the decay of uranium downgrades the U potential of the area. Core samples were systematically analysed with a Portable Infrared Mineral Analyser (PIMA) and sent for petrophysical and petrographic characterisation as well as for Pb isotopes studies (WAMEX REPORT A 61566). Despite the presence of some marked hydrothermal alteration along brittle small scale structures, it failed to identify potential indicators of significant uranium mineralisation. U308 Limited reviewed the area from 2006-2010, and carried out an airborne magnetic and radiometric surveys, as well as reconnaissance field work with grab sampling for geochemical and petrographic studies. A total of nineteen (19) samples were sent for geochemical analysis to ALS-Chemex in Perth for trace element-

Criteria	JORC Code explanation	Commentary
		and whole-rock characterisation. The presence of coincidentally elevated U, V, Zn, and Sr values in sample 471 is consistent with a strongly weathered black shale (WAMEX REPORT A 84272).
Geology	<ul style="list-style-type: none"> Deposit type, geological setting and style of mineralisation. 	<ul style="list-style-type: none"> The project area has historically been considered prospective for unconformity vein style uranium, although it equally considered prospective for rare earth element (REE) mineralisation hosted in iron-rich carbonatite dykes or intrusions, or lithium-caesium-tantalum (LCT) pegmatites. The project area encompasses a portion of the Gascoyne Province of the Capricorn Orogen. This geological belt is positioned between the Archaean Yilgarn Craton to the south, and the Archaean Pilbara Craton to the north, and largely consists of a suite of Archaean to Proterozoic gneisses, granitic and metasedimentary rocks. REE discoveries in the Gascoyne area, such as Yangibana, are associated with ironstone (weathered ferrocarbonatite) host rocks whereby weathering has enriched the REEs in situ. Yangibana is approximately 100km NE from the Paddys Well/West Wel project area and contains widespread occurrence of ironstone dykes that are spatially associated with the ferrocarbonatite intrusions. The deposit overlays the Gifford Creek Ferrocarbonatite Complex, which is located in the Neoproterozoic–Palaeoproterozoic Gascoyne Province, and comprises sills, dykes, and veins of ferrocarbonatite intruding the Pimbyana Granite and Yangibana Granite of the Durlacher Supersuite and metasedimentary rocks of the Pooranoo Metamorphics. The ironstone dykes are commonly surrounded by narrow haloes of fenitic alteration, and locally associated with quartz veining. Fenite is a metasomatic alteration associated particularly with carbonatite intrusions
Drill hole Information	<ul style="list-style-type: none"> A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length. If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. 	<ul style="list-style-type: none"> Drill collar and survey data are provided, along with various respective metadata. Historic drill holes collar and interval data were previously reported by Cameco and are available in open file (WAMEX REPORT A 61566).
Data aggregation methods	<ul style="list-style-type: none"> In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregations should be stated and some typical examples of such aggregations should be shown in detail. The assumptions used for any reporting of metal equivalent values should be clearly stated. 	<ul style="list-style-type: none"> Drilling intervals that comprise more than one sample have been reported using length-weighted averages. A cut-off grade of 250ppm TREO (with a maximum 2m of internal waste) has been used for the reported drill intercepts.
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known'). 	<ul style="list-style-type: none"> The orientation of the mineralisation is interpreted and yet to be structurally validated. All reported intervals, therefore intercepts, are down hole lengths.

Criteria	JORC Code explanation	Commentary
Diagrams	<ul style="list-style-type: none"> Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views. 	<ul style="list-style-type: none"> Historical map plan figures were registered utilising 2-D software and respective coordinate datums. Hole drill collar ground truthing is expected to fine-tune actual collar positions. Workspaces of current and historical exploration have been constructed utilising 2&3D GIS software.
Balanced reporting	<ul style="list-style-type: none"> Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results. 	<ul style="list-style-type: none"> No inference to economic mineralisation has been stated. A cut-off of 250ppm TREO was used in reporting of exploration results, to aid dismissing interpreted unrealistic anomalous mineralised sub-zones. Metallurgical Recoveries are reported in the Table in this report
Other substantive exploration data	<ul style="list-style-type: none"> Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances. 	<ul style="list-style-type: none"> All of the relevant historical exploration data has been included in this report. All historical exploration information is available via WAMEX.
Further work	<ul style="list-style-type: none"> The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. 	<ul style="list-style-type: none"> On-going field reconnaissance exploration in the area continues and is a high priority for the Company. Exploration is likely to include further lithological and structural mapping; rockchip sampling; acquisition of high-resolution geophysical radiometric and magnetic data to assist geological interpretation, target identification; as well as auger and percussion drilling of ranked drill targets. For the metallurgical testwork program, leaching was undertaken next utilising a stirred beaker where pH, reagents and temperature were variables.