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***Toro Energy Ltd***

ASX:TOE

*Scoping Study Success  
Based on Back to Basics  
R&D*

*Global Uranium Conference,  
Adelaide, Australia, 15<sup>th</sup> November  
2023*

***Powering a Clean Energy Future***

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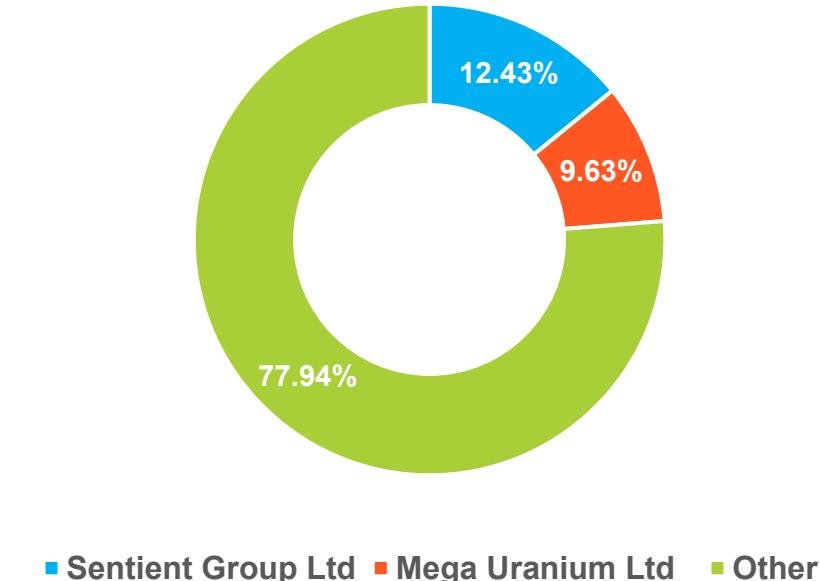
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# CORPORATE SNAPSHOT

## Capital Structure

ASX Code	TOE
Shares on issue	4,781,297,635
ASX Share price (14 Nov 2023)	\$0.01
Cash and Securities (30 September 2023)	\$5.65m
Market Cap	\$48m

## Substantial Shareholders



## Board of Directors

Richard Homsany	Executive Chairman
Michel Marier	Non-Executive Director
Richard Patricio	Non-Executive Director

# WILUNA URANIUM PROJECT

## Resources

- 96% of 62.7Mlb permitted resources is Measured & Indicated supporting long life operations (at 200ppm U<sub>3</sub>O<sub>8</sub> cut-off).

## Approvals

- State and Federal government environmental approvals obtained (require amendment)

## Mining leases

- All granted.

## Mining

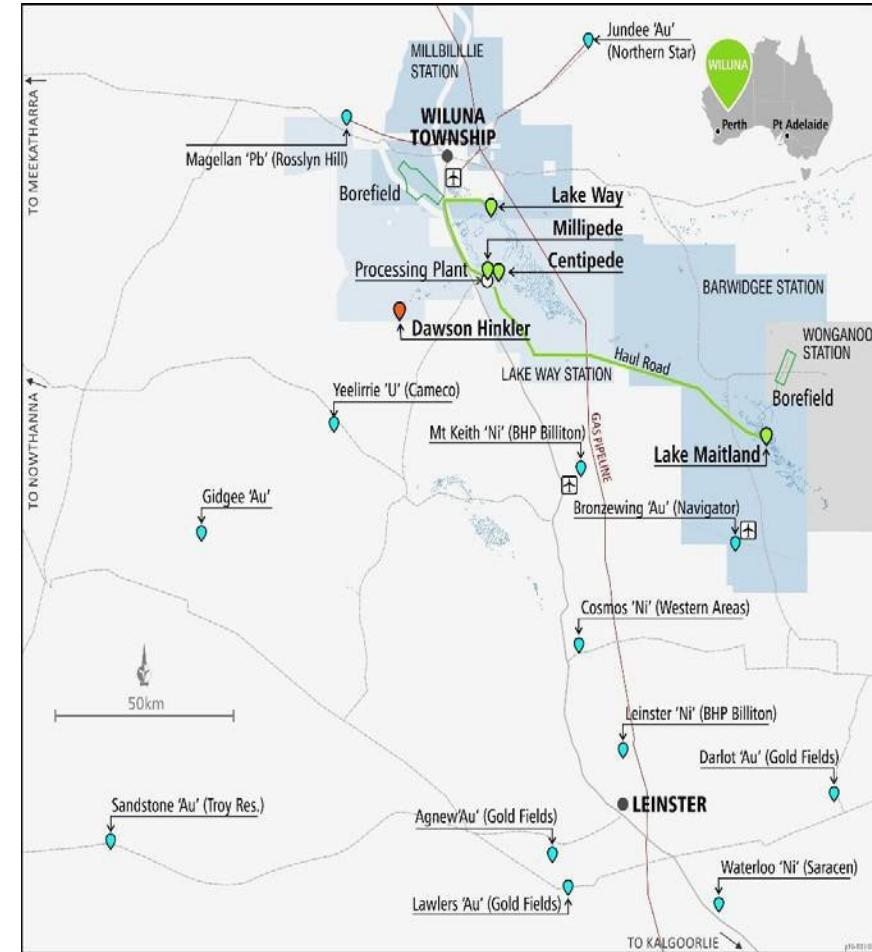
- Simple mining – mineralisation from surface to max of 15m.

## Infrastructure

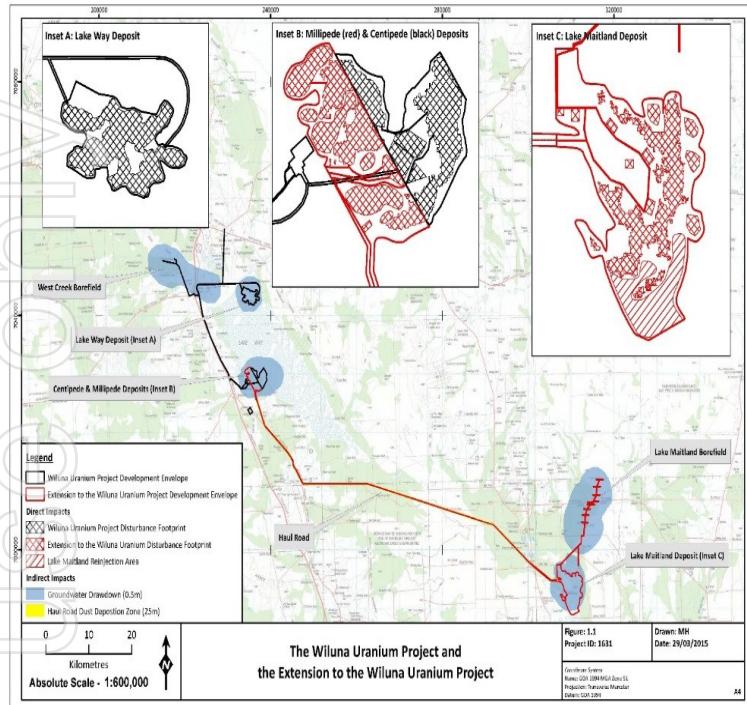
- Established mining centre – access to water, power and services.

# Vanadium Potential

- Vanadium – potential valuable by-product with low marginal production cost - Maiden V<sub>2</sub>O<sub>5</sub> JORC 2012 Resource of 68.3Mlbs.



# LAKE MAITLAND ONLY SCOPING STUDY RESULT

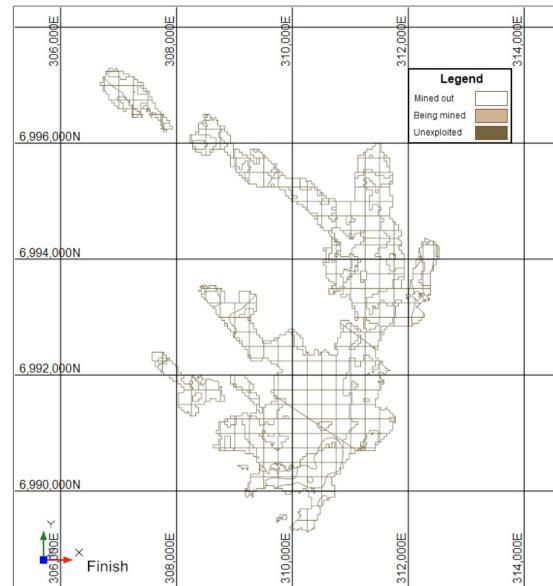


## In 2023

- Single Deposit – Lake Maitland Only
- 17.5 year mine life.
- 35.2Mt of potential ore mined.
- 8 years of high grade.
- 22.8Mlbs of potential  $U_3O_8$  production.
- 11.9Mlbs of potential  $V_2O_5$  production.

## In 2014

- Three deposits – Lake Way, Centipede-Millipede and the newly incorporated Lake Maitland.
- 16 year mine life.
- 20.1Mt of potential ore mined.
- 10 years of high grade.
- 30.2 Mlbs of potential  $U_3O_8$  production.



End of LOM Pit  
2023 SCOPING LEVEL  
ONLY

# LAKE MAITLAND ONLY SCOPING STUDY RESULT PROJECT NPV



	U <sub>3</sub> O <sub>8</sub> US\$Price/lb	A\$:US\$	NPV (Pre-tax)
Scenario 1 (Base Case)	\$70	0.70	\$609.6M
Scenario 2	\$70	0.65	\$676.6M
Scenario 3	\$65	0.70	\$506.5M
Scenario 4	\$65	0.65	\$570.6M
Scenario 5	\$60	0.70	\$423.2M
Scenario 6	\$60	0.65	\$484.9M

*U<sub>3</sub>O<sub>8</sub> Price and exchange rate impacts on Lake Maitland Uranium Project NPV*

# LAKE MAITLAND ONLY SCOPING STUDY RESULT PROCESSING COST ESTIMATE



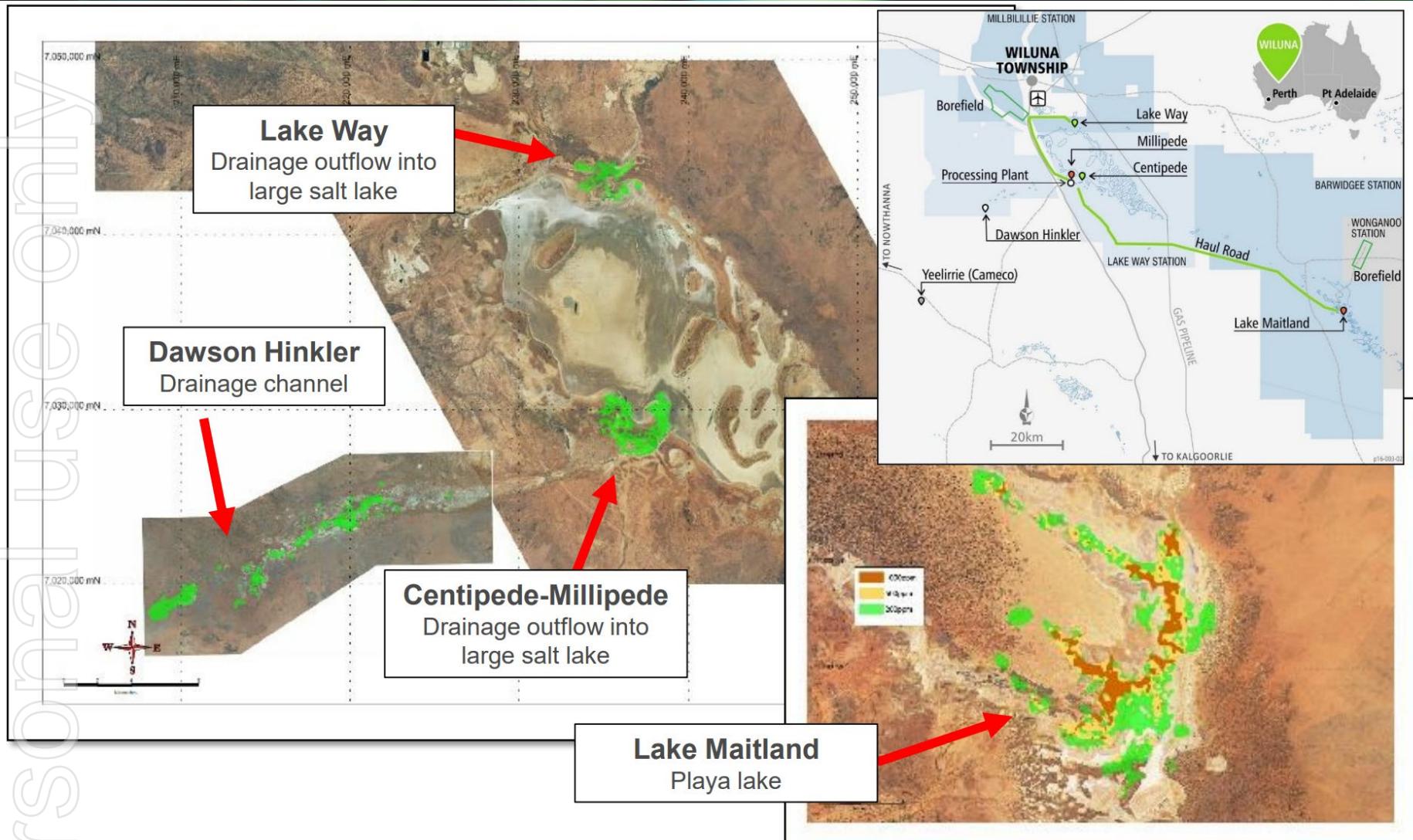
## SCOPING STUDY COSTS

- Operating cost increases from 2018 to 2022 are largely attributed to inflation as well as associated operating costs for the vanadium recovery circuit

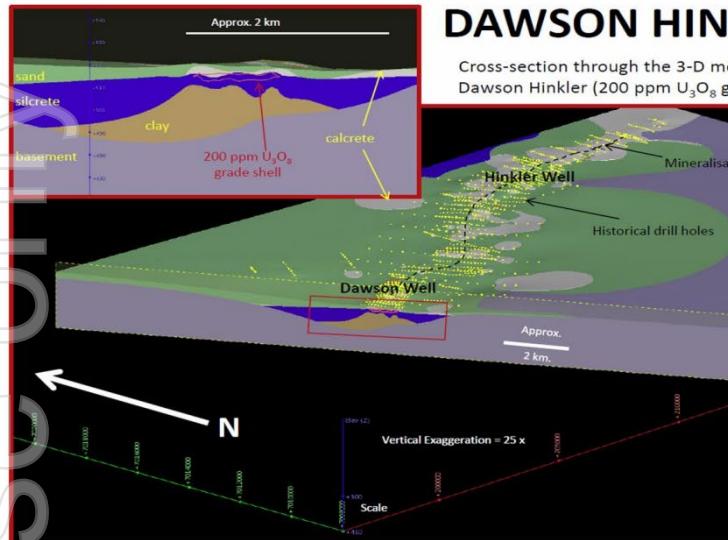
	PROCESSING COST (A\$ / lb U <sub>3</sub> O <sub>8</sub> )		
Description	Historical	Updated Scoping Study (2018)	Updated Scoping Study (2022)
Reagents	14.4	3.45	3.53
Power & Steam	5.85	2.87	3.54
Process Plant Labour	5.42	4.50	5.49
Maintenance & Consumables	3.63	0.85	1.00
General & Administration	2.79	2.92	3.22
<b>TOTAL</b>	<b>A\$32.13</b>	<b>A\$14.59</b>	<b>A\$16.78</b>

Substantial and continuous reduction in costs driven by development work

# GENESIS STUDIES

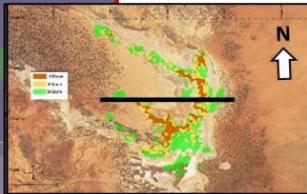


# DETAILED GEOLOGICAL ANALYSIS OF WILUNA DEPOSITS



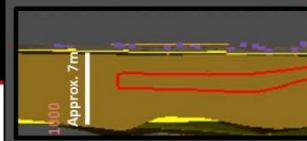
## DAWSON HINKLER

Cross-section through the 3-D model of the Dawson Hinkler (200 ppm  $U_3O_8$  grade shell)

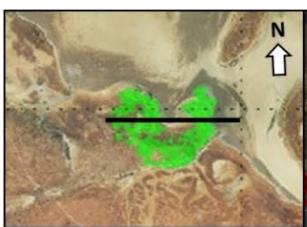


## Lake Maitland – Playa Lake

>500 ppm  $U_3O_8$  mineralisation envelope

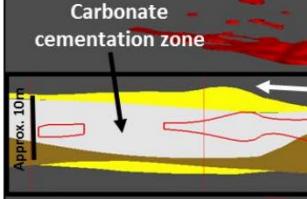


Clay dominated lacustrine sediments



## Centipede-Millipede – Outflow

>500 ppm  $U_3O_8$  mineralisation envelope



Carbonate cementation zone

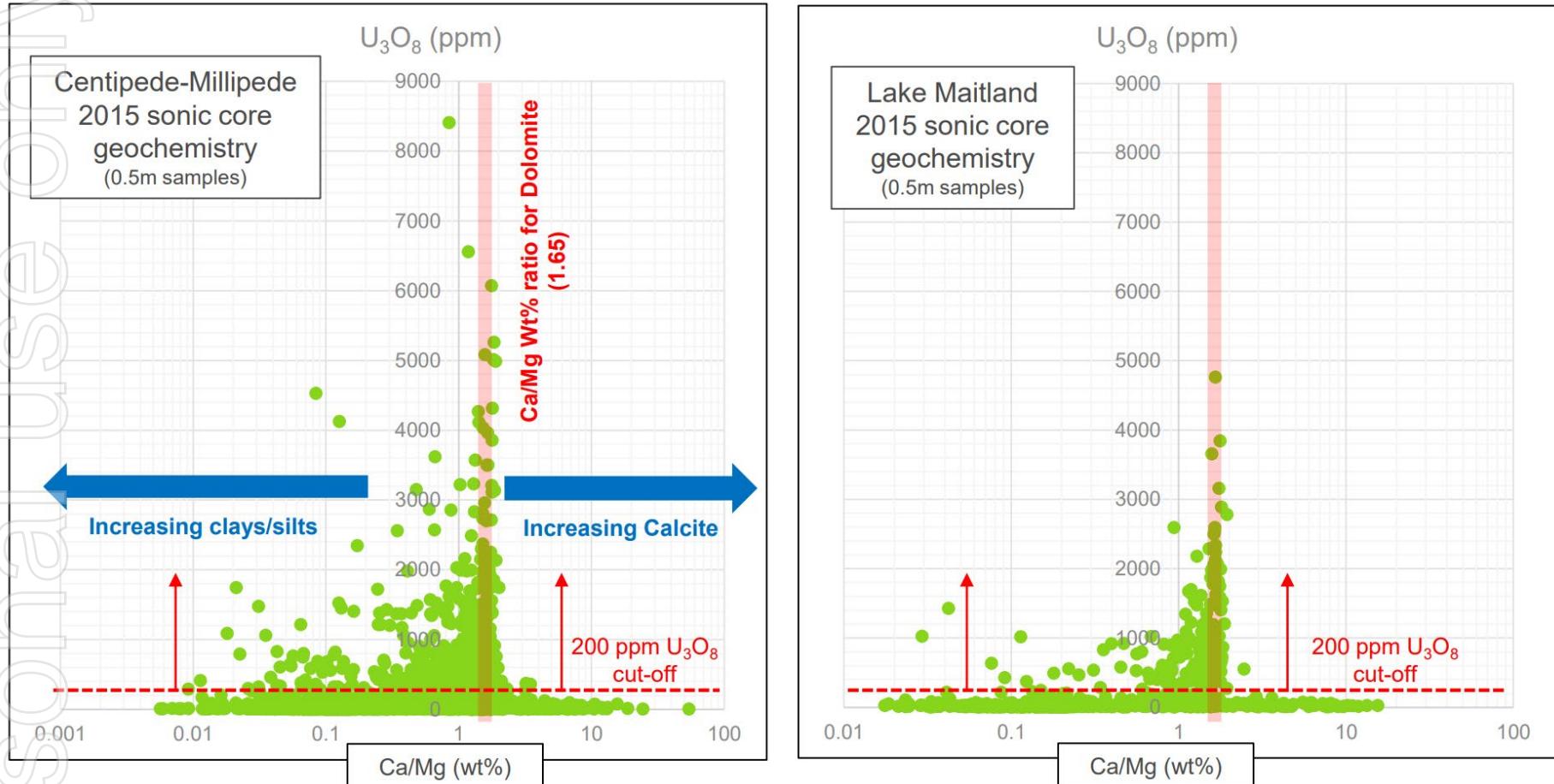
Sands

Clay/silt with inter-fingering sand lenses

Geological models based on lithology logs (after the 2015/16 re-interpretation) show the differences between the deposits hosted in the three different geomorphic positions – silcrete dominant with dolomitic carbonate and clays at Dawson Hinkler – complex semi-consolidated nodular dolomitic carbonate dominant with clays/silts at Centipede-Millipede – clay dominant at Lake Maitland.

# GEOCHEMICAL ANALYSIS

## Dolomite Chemistry v Uranium Mineralisation Shows Significant Mg Enrichment in Many Potential Ore Zones (Mg Clays)



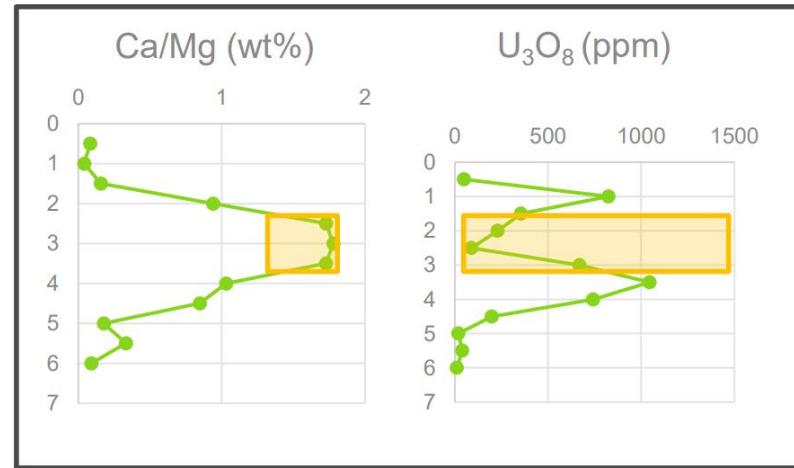
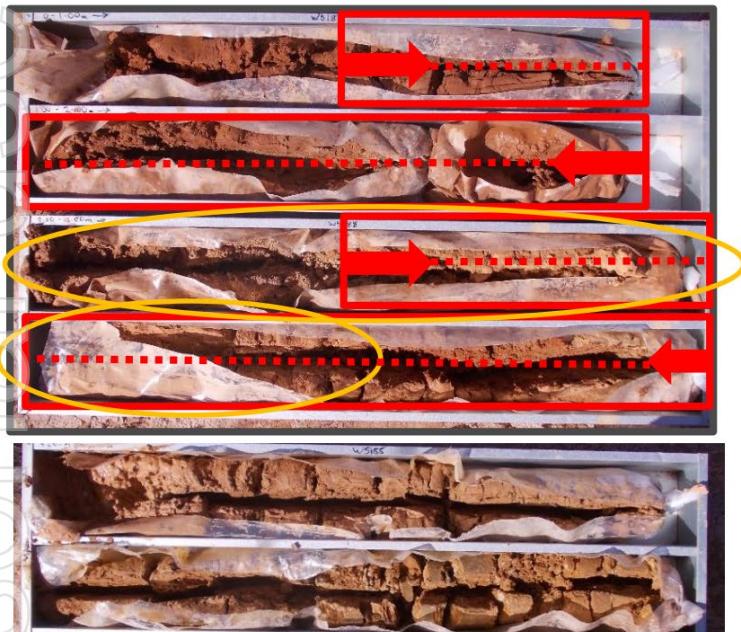
# SONIC CORE GEOLOGICAL ANALYSIS CENTIPEDE-MILLIPEDE

WS188

Two lenses

An upper lens in clay

Lower thicker lens at base of and extending below a layer of semi-consolidated dolocrete nodules with clay



Product	Mass	U	
	%	ppm	%dist
+12.5mm	24.2	908	19.6
+2mm	17.8	1,289	20.5
+500 µm	16.2	994	14.4
+125 µm	10.4	920	8.54
+75 µm	4.59	825	3.39
+38 µm	4.06	994	3.61
-38 µm	22.7	1,474	29.9
Calc. head	100	1,119	100

METS 32

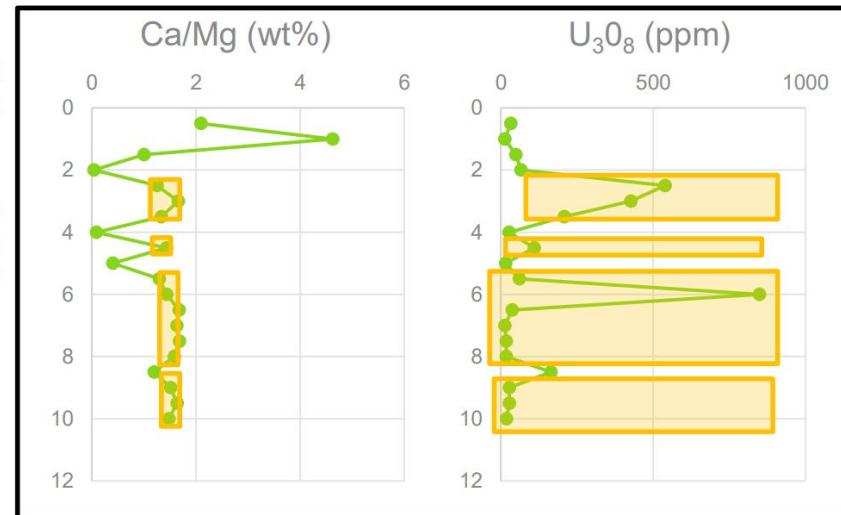
Size fraction analysis of mineralised sample in zone of nodular dolomite from twinned hole shows a relatively bi-modal distribution of U - 40% associated with >2mm size fraction and 30% in the <38 micron size fraction.

# SONIC CORE GEOLOGICAL ANALYSIS LAKE MAITLAND

WS218

The chemistry shows the presence of pedogenic calcite dominated carbonate precipitation at the surface overlying a thick sequence of dolomite precipitation.

Although a whitish colour to the sediments probably reveals the presence of the carbonate, hand specimen identification techniques cannot identify any 'concretion', just clay and some silt.



Product	Mass		%dist
	%	ppm	
+500 $\mu\text{m}$	15.0	94.0	0.79
+125 $\mu\text{m}$	8.45	415	1.97
+75 $\mu\text{m}$	3.34	713	1.34
+38 $\mu\text{m}$	4.64	1,669	4.34
-38 $\mu\text{m}$	68.6	2,380	91.6
Calc. head	<b>100</b>	<b>1,783</b>	<b>100</b>

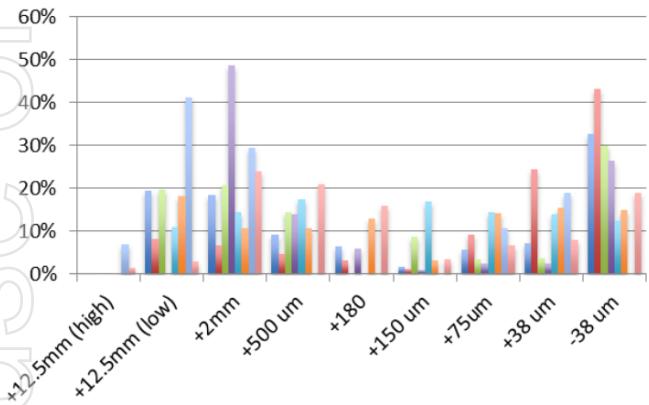
METS 61

Size fraction analysis of a sample from the ore zone shows that some 70% of the material by weight is <38 micron in size and that portion contains over 90% of the uranium.

# SIZE FRACTION ANALYSIS OF URANIUM DISTRIBUTION

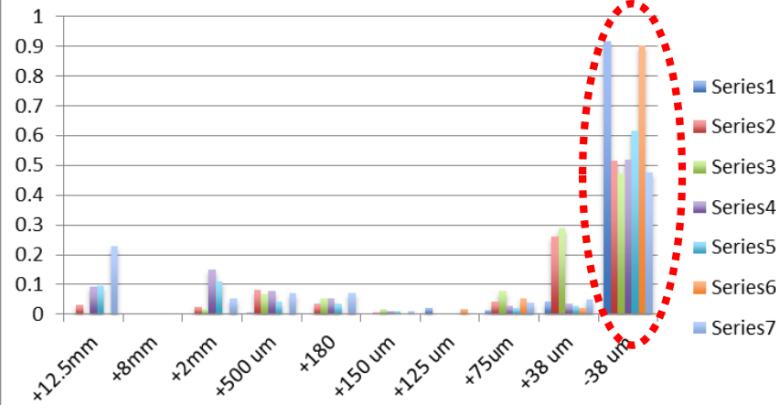
Semi-consolidated Nodular Carbonate (SCN) 'ore type' lithology common at Centipede-Millipede

## SCN Uranium Distribution



Summary of size fraction analysis of samples from Lake Maitland

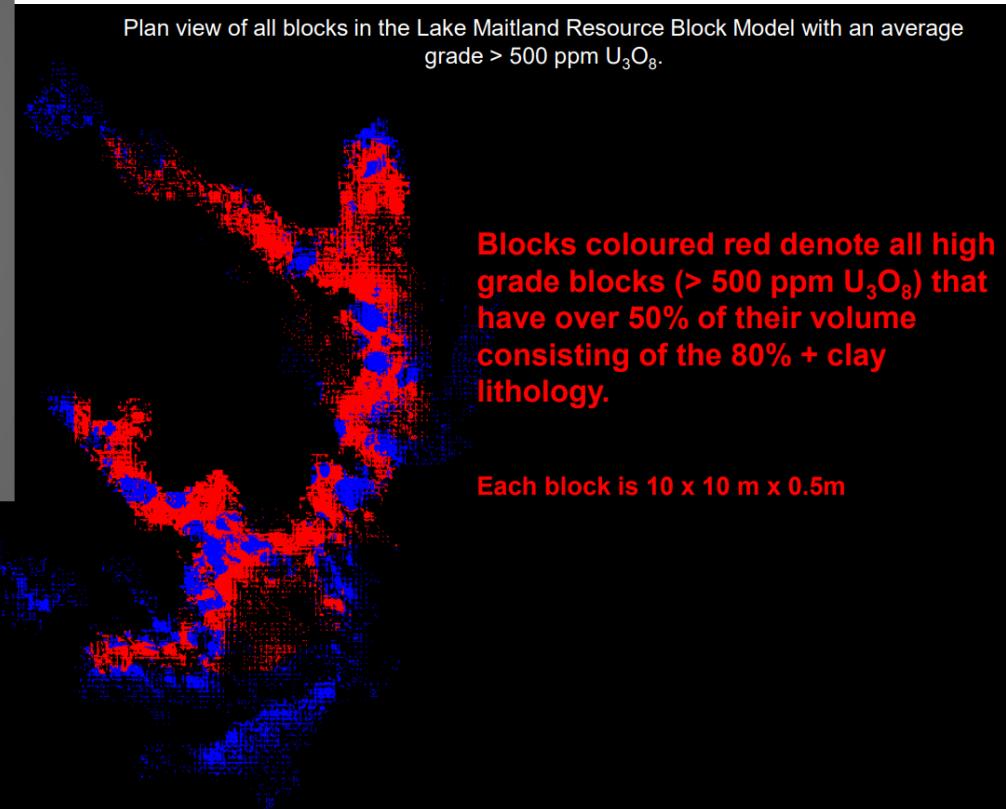
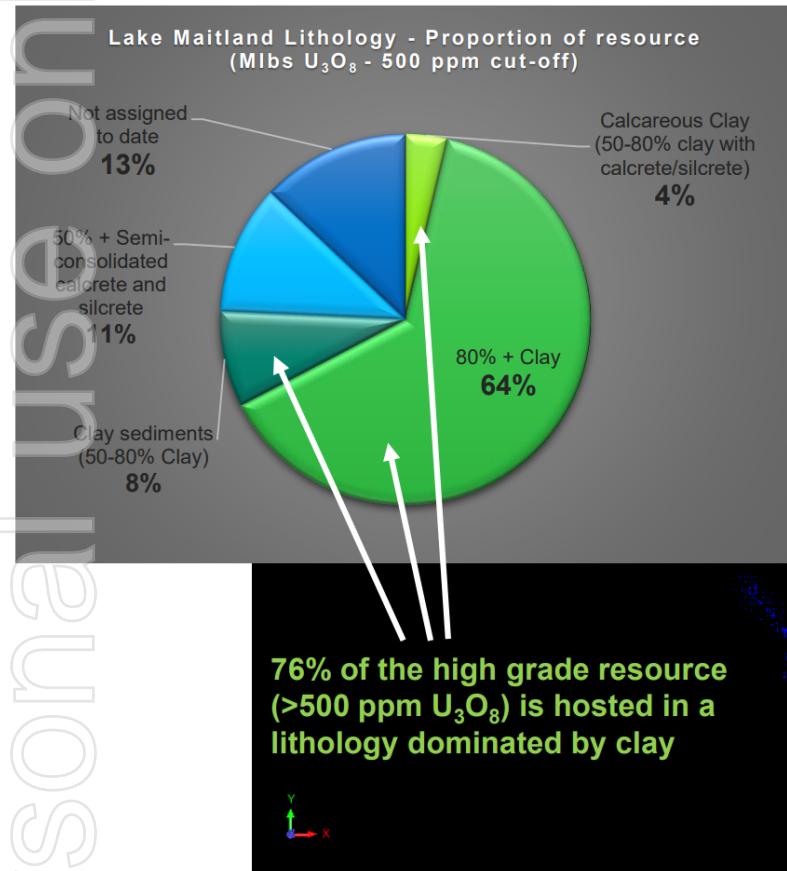
## Uranium Distribution



Size fraction analysis of uranium distribution in samples from Lake Maitland and Centipede-Millipede highlights a major geological difference between the two deposits – the nature of the carbonate precipitation – cementing common at Centipede-Millipede - but not at Lake Maitland where clay dominates.

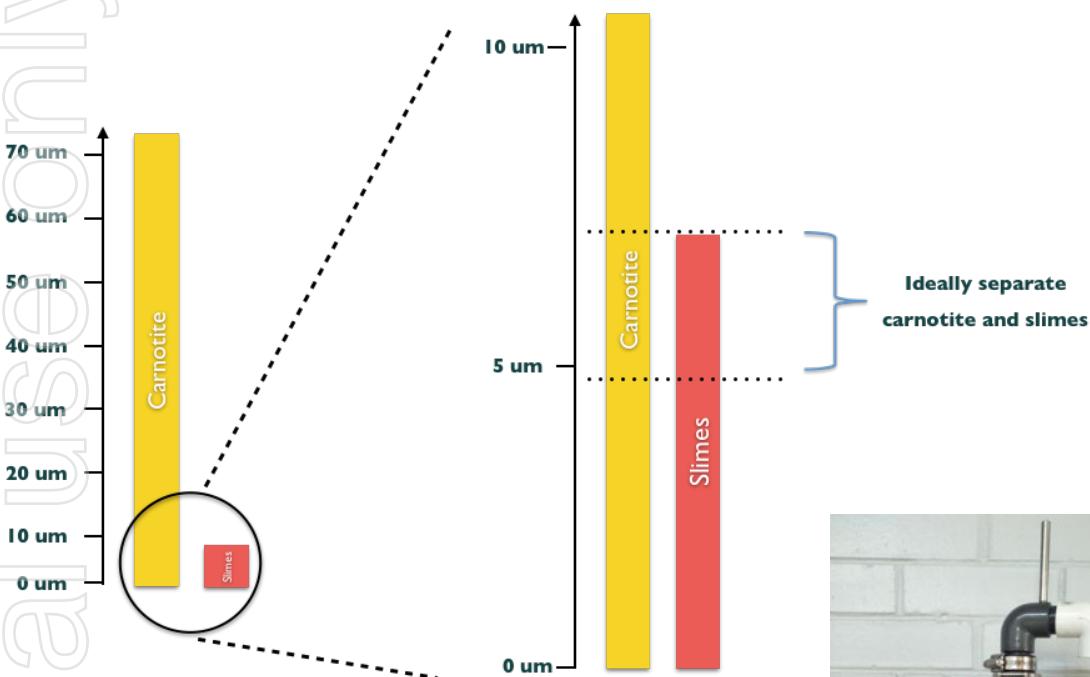
# DOMINANCE OF CLAY AT LAKE MAITLAND

The dominance of clay in the Lake Maitland deposit has provided enough 'ore' of that particular lithology type to consider a processing opportunity that has the potential to deliver significant opportunities in cost reduction, both operationally and in the capital requirement for the build – all because of a better understanding of geology.

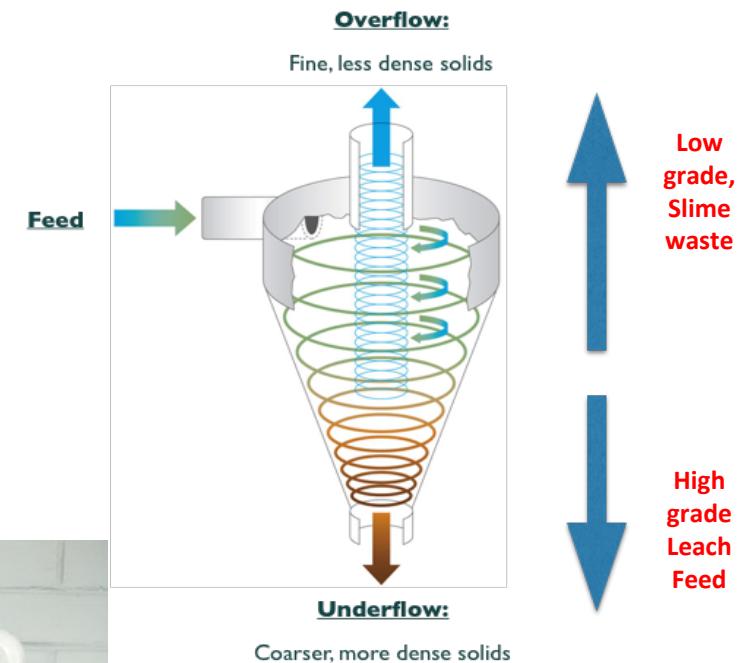


# BENEFICIATION – DESLIME

## ULTRA-FINE “SLIMES” CAN BE SEPARATED FROM COARSER CARNOTITE



## DE-SLIME WITH CONVENTIONAL CYCLONES



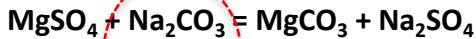
Conventional equipment

# FILTRATION IS CRITICAL

## WHY IS FILTRATION OF THE ORE SO CRITICAL?

Site water is highly saline and needs to be removed before the leach for two reasons:

1. Salts are major reagent consumers
  - $\text{MgSO}_4$ ,  $\text{CaCl}_2$  in high concentrations

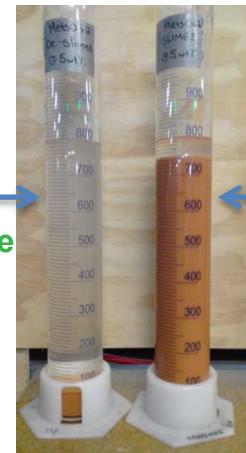


High cost reagent

2. High chloride content makes ion exchange impossible
  - Chloride ions compete with uranium in ion exchange

REMOVING THE “SLIMES” CHANGES THE DEWATERING CHARACTERISTICS AND ALLOWS FOR FILTRATION OF THE BENEFICIATION CONCENTRATE

De-slimed ore:  
Settles well and can be filtered

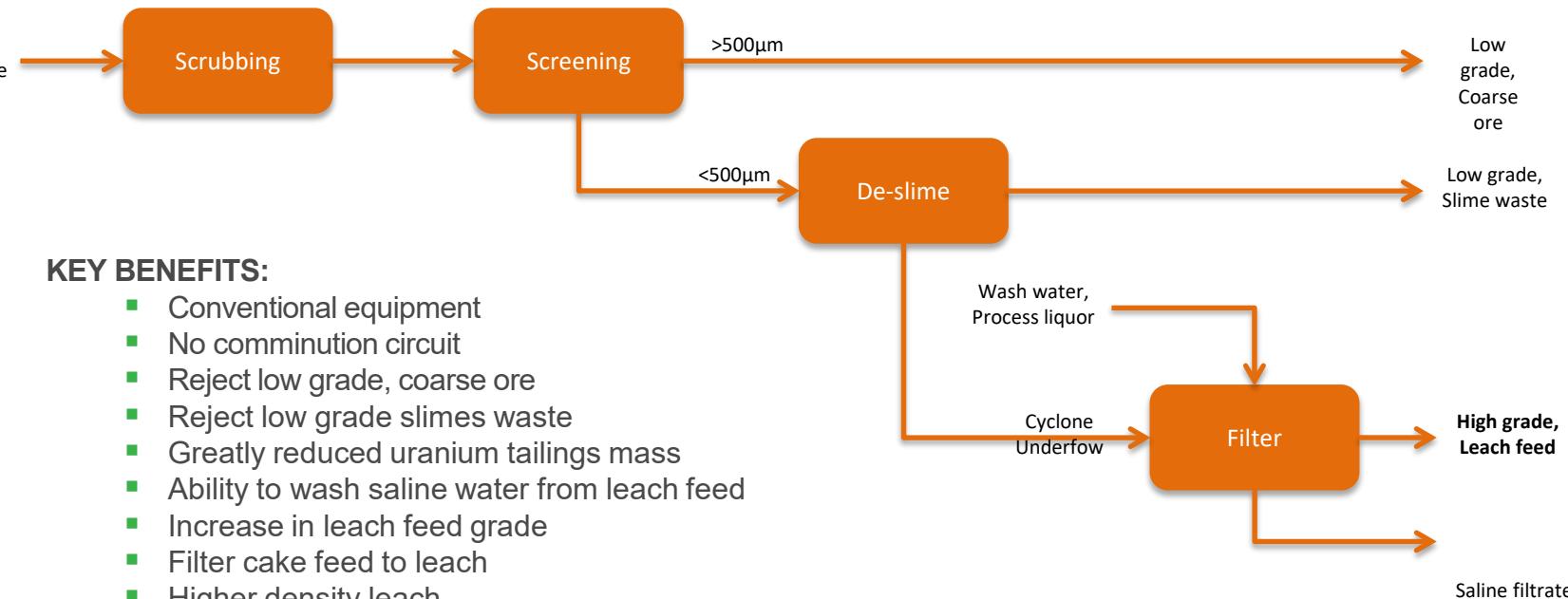


Run of mine ore:  
Poor settling, cannot be filtered

Same mass of solids used in both tests!

# SCOPING STUDY BENEFICIATION CIRCUIT

## BENEFICIATION IS KEY TO NEW PROCESS FLOWSHEET – HIGHLY EFFICIENT ON CLAY ORES



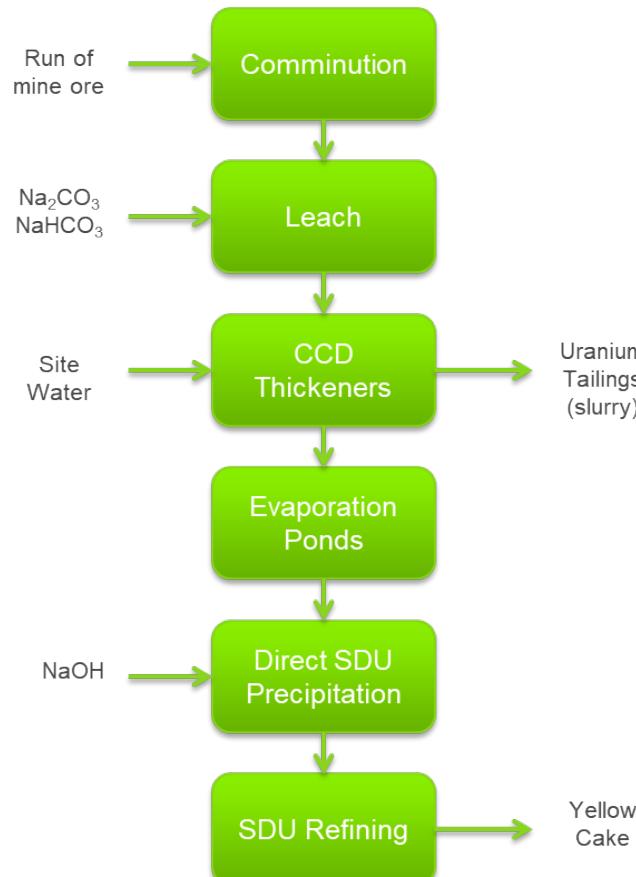
### KEY BENEFITS:

- Conventional equipment
- No comminution circuit
- Reject low grade, coarse ore
- Reject low grade slimes waste
- Greatly reduced uranium tailings mass
- Ability to wash saline water from leach feed
- Increase in leach feed grade
- Filter cake feed to leach
- Higher density leach

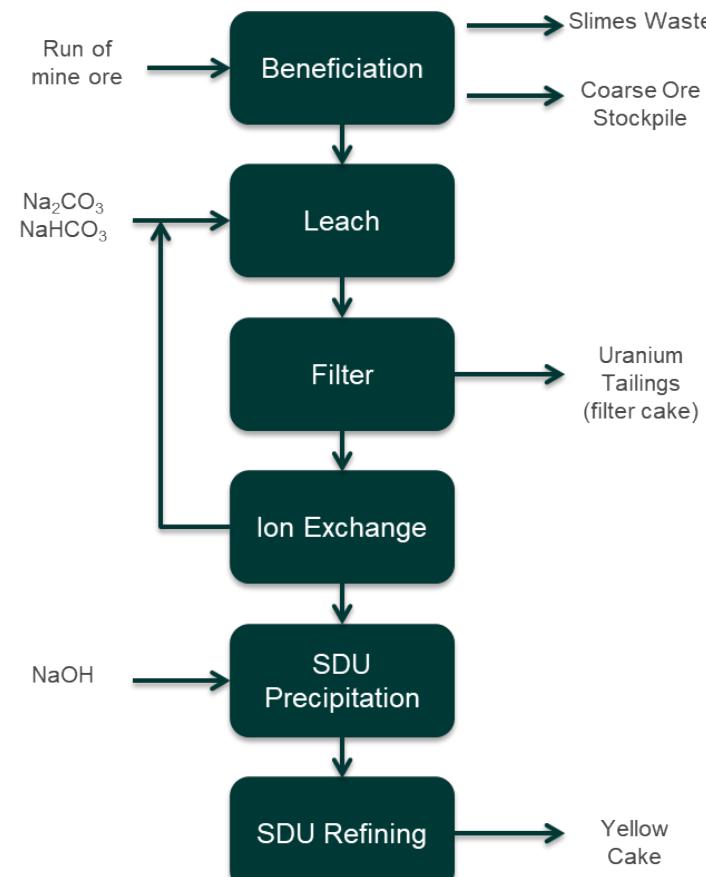
# IMPROVED PROCESSING FLOWSHEET

## *NEW FLOWSHEET BENEFITS FROM BENEFICIATION, FILTRATION AND ION EXCHANGE*

### OLD FLOWSHEET



### NEW FLOWSHEET



# SUMMARY OF PROCESS IMPROVEMENTS

**Significant and continuous improvements to the overall process as a result of:**

## Beneficiation

- Produces high grade concentrate
- Low grade coarse ore available for future processing
- De-slime works on all samples, allows for filtration

**NET RESULT: Lower OpEx and CapEx**

**Less uraniumtailings  
No grinding  
Smaller processing plant**

## Filtration

- Efficient removal of salts by washing
- Drier leach feed cake

**No CCD circuit  
No evaporation ponds  
Easier residuestorage  
Re-use of leach reagents**

## Leaching

- High uranium extraction in 8hrs
- High density in leach (58% solids)
- Vanadium leaching

**Smaller leach circuit  
Lower power consumptions  
Far less reagent consumed**

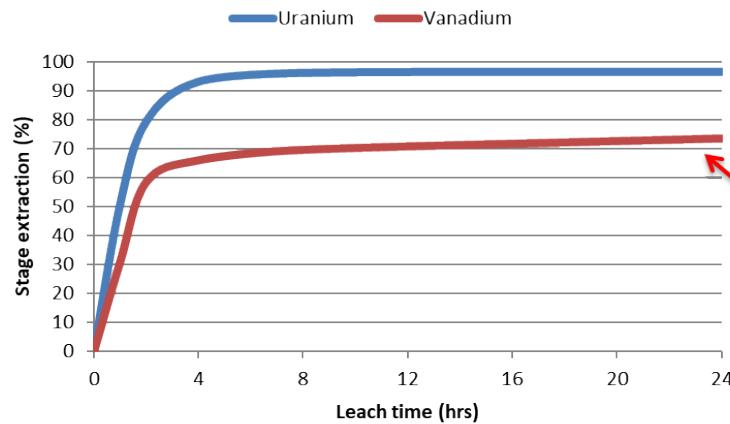
## Ion Exchange

- Proven efficient on actualliquors
- Allows for substantial concentration of uranium
- Potential to separate vanadium and uranium

**Less sodium hydroxide consumed  
Smaller SDU circuit**

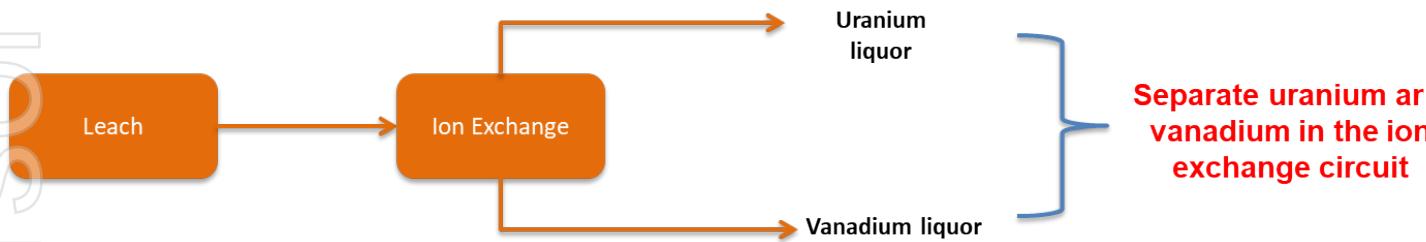
# VANADIUM A POTENTIAL VIABLE BY-PRODUCT

## TESTWORK CONFIRMS THAT VANADIUM LEACHES WITH URANIUM



Conditions to be optimised  
to increase extraction

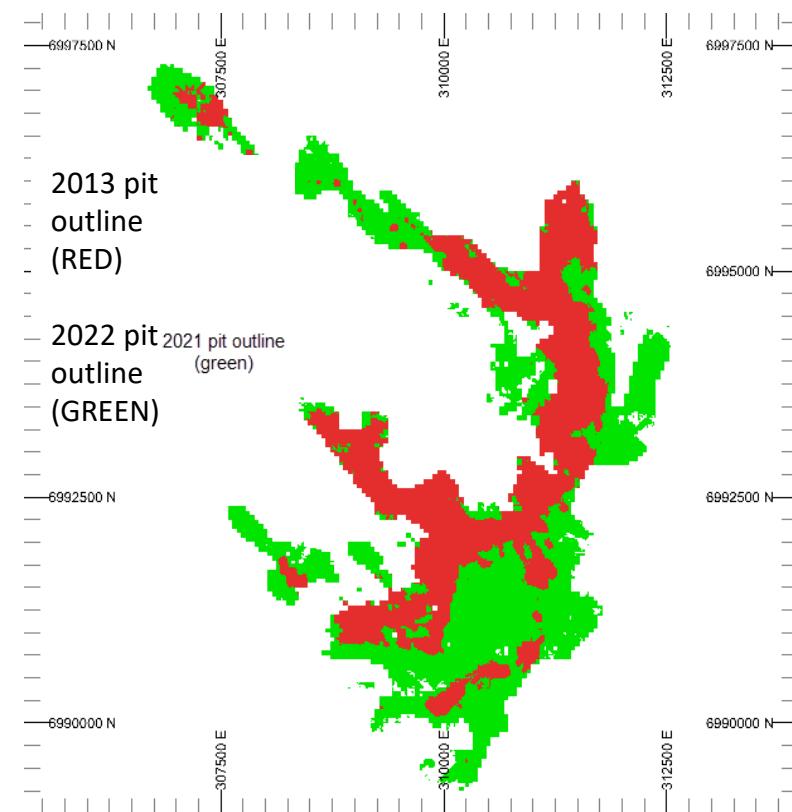
## TESTWORK SHOWS ION EXCHANGE EFFECTIVE FOR VANADIUM RECOVERY



# RESULTS OF 2022 LAKE MAITLAND PIT RE-OPTIMISATION

***Huge expansion of the pit & increase in potential uranium ore from Lake Maitland  
- transformational for the value of Toro's Wiluna assets***

- **New pit shell (revised pit rim cut-off grade of 109ppm  $U_3O_8$ ) stretching beyond bounds of current stated resource at a 200ppm  $U_3O_8$  cut-off. A significant lowering of the  $U_3O_8$  grade for the potential Lake Maitland ore (631ppm to 380ppm  $U_3O_8$ );**
- **Potential ore increasing from 13.2Mt to 35.2Mt (up 167%);**
- **Life of Mine for Lake Maitland increasing from 10.1 to 17.5 years (up 74%);**
- **Potential  $U_3O_8$  production from Lake Maitland increasing from 15.8Mlbs to 22.8Mlbs at assumed price of US\$70/lb  $U_3O_8$ ;**
- **11.9Mlbs of  $V_2O_5$  by-product produced (at assumed price of US\$5.67/lb  $V_2O_5$ ); and**



***Additional US\$560,000 in potential gross product value created***

Scoping Study for a stand-alone Lake Maitland Uranium-Vanadium Operation completed in late October 2022 (SRK Consulting Australasia & Strategic Metallurgy)

Highlights of that study include:

### Excellent financial outcomes

- NPV pre-tax of approximately A\$610M at a discount rate of 8%
- IRR of 41%
- Rapid payback period of **2.5 years**
- Total EBITDA of \$1,768.6M
- Total undiscounted cash flow of A\$1,423M pre-tax
- Average EBITDA of **A\$101M per annum over a 17.5 year mine life**
- Estimates assume a US\$70/lb U<sub>3</sub>O<sub>8</sub>, US\$5.67/lb V<sub>2</sub>O<sub>5</sub> price and a US\$:A\$0.70 exchange rate

### Modest CAPEX

- **US\$189M** (or A\$270M) capital cost estimate including contingency (20%) and EPCM (15%)
- Includes all infrastructure for the proposed stand-alone Lake Maitland operation, including:
  - entire processing facility with beneficiation plant and ability to produce both a uranium and vanadium product; and
  - all mining & administration related infrastructure, access roads, power plant, borefield and a reverse osmosis desalination plant for water supply
- A\$133M processing infrastructure build cost (A\$95.8M excluding contingency and EPCM)
- A\$137M non-processing infrastructure build cost (A\$99.2M excluding contingency and EPCM)
- Total EPCM and Contingencies A\$69.9M

## Highlights (continued)

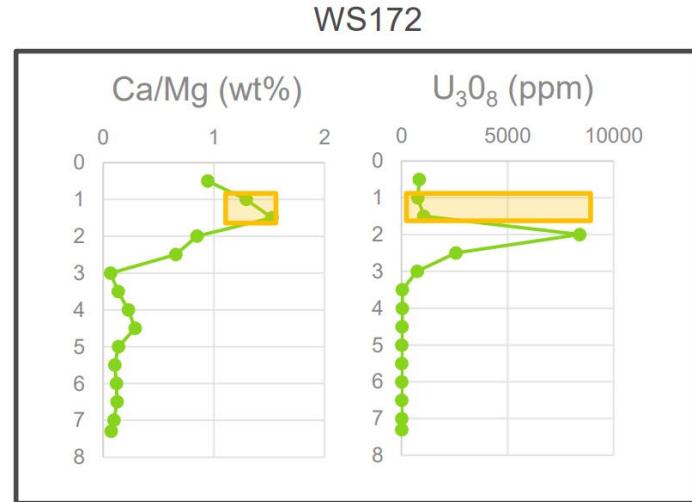
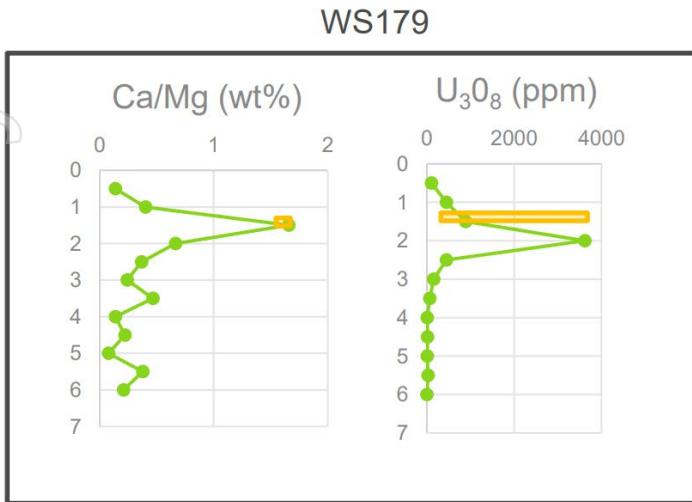
### Low operating cost estimates

- C1 Cash operating cost of US\$15.84/lb U<sub>3</sub>O<sub>8</sub> over the first 7 years
- **C1 Cash operating cost of US\$23.10/lb U<sub>3</sub>O<sub>8</sub> over Life of Mine (LoM)**
- All In Sustaining Cost (**AISC**) of US\$20.32/lb U<sub>3</sub>O<sub>8</sub> over the first 7 years
- **AISC of US\$28.02/lb U<sub>3</sub>O<sub>8</sub> over LoM**
- Robust estimate operating margins
- C1 (US\$15.84) and AISC (US\$20.32) for the first 7 years provides Toro with very strong margins during the initial payback period

### Mining and Production

- Mine life of approximately 17.5 years
- Low average strip ratio of 1.17
- Process approximately 1.94Mt of ore per annum (front of beneficiation plant)
- Annual average production approximately 1.3Mlbs U<sub>3</sub>O<sub>8</sub> (100% Indicated Resource) and 0.7Mlbs V<sub>2</sub>O<sub>5</sub> (100% Inferred Resource)
- Total production approximately 22.8Mlbs of U<sub>3</sub>O<sub>8</sub> and 11.9Mlbs of V<sub>2</sub>O<sub>5</sub>
- Uranium Metallurgical Recovery - 79.5%
- Vanadium Metallurgical Recovery - 60%

# NEXT STEPS – ADDING THE OTHER TWO WULUNA DEPOSITS



Some of the highest grades of uranium mineralisation in single 1-2 m lens around a large clay pan within the dunes that sit at the back of the lunette shaped Millipede orebody.

A thin lens of semi-consolidated dolomitic carbonate is present at the top of the mineralised sequence but the main ore lens sits just beneath this carbonate lens.



16

# RESOURCES

## Wiluna Uranium Project Resources Table (JORC 2012)

At 200ppm cut-offs inside  $U_3O_8$  resource envelopes for each deposit - Proposed Mine Only

		Measured		Indicated		Inferred		Total	
		$U_3O_8$	$V_2O_5$	$U_3O_8$	$V_2O_5$	$U_3O_8$	$V_2O_5$	$U_3O_8$	$V_2O_5$
Centipede / Millipede	Ore Mt	4.9	-	12.1	-	2.7	53.6	<b>19.7</b>	<b>53.6</b>
	Grade ppm	579	-	582	-	382	327	<b>553</b>	<b>327</b>
	Oxide Mlb	6.2	-	15.5	-	2.3	38.6	<b>24</b>	<b>38.6</b>
Lake Maitland	Ore Mt	-	-	22	-	-	27	<b>22</b>	<b>27</b>
	Grade ppm	-	-	545	-	-	303	<b>545</b>	<b>303</b>
	Oxide Mlb	-	-	26.4	-	-	18	<b>26.4</b>	<b>18</b>
Lake Way	Ore Mt	-	-	10.3	-	-	15.7	<b>10.3</b>	<b>15.7</b>
	Grade ppm	-	-	545	-	-	335	<b>545</b>	<b>335</b>
	Oxide Mlb	-	-	12.3	-	-	11.6	<b>12.3</b>	<b>11.6</b>
Total	Ore Mt	4.9	-	44.3	-	2.7	96.3	<b>52</b>	<b>96.3</b>
	Grade ppm	579	-	555	-	382	322	<b>548</b>	<b>322</b>
	Mlb	6.2	-	54.2	-	2.3	68.3	<b>62.7</b>	<b>68.3</b>

## Competent Persons Statement – Geology and Exploration

*The information in this document that relates to geology and exploration was authorised by Dr Greg Shirtliff, who is a full-time employee of Toro Energy Limited. Dr Shirtliff is a Member of the Australian Institute of Mining and Metallurgy and has sufficient experience of relevance to the tasks with which he was employed 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. Dr Shirtliff consents to the inclusion in the report of matters based on information in the form and context in which it appears.*

## Competent Persons' Statement

### Wiluna Project Mineral Resources – 2012 JORC Code Compliant Resource Estimates – $U_3O_8$ and $V_2O_5$ for Centipede-Millipede, Lake Way and Lake Maitland.

*The information presented here that relates to  $U_3O_8$  and  $V_2O_5$  Mineral Resources of the Centipede-Millipede, Lake Way and Lake Maitland deposits is based on information compiled by Dr Greg Shirtliff of Toro Energy Limited and Mr Daniel Guibal of Condor Geostats Services Pty Ltd. Mr Guibal takes overall responsibility for the Resource Estimate, and Dr Shirtliff takes responsibility for the integrity of the data supplied for the estimation. Dr Shirtliff is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM) and Mr Guibal is a Fellow of the AusIMM and they have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012)'. The Competent Persons consent to the inclusion in this release of the matters based on the information in the form and context in which it appears.*



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Level 1, 50 Kings Park Road,  
WEST PERTH 6005  
Western Australia  
Telephone: +61 8 9214 2100

Email: [info@toroenergy.com.au](mailto:info@toroenergy.com.au)  
Website: [www.toroenergy.com.au](http://www.toroenergy.com.au)