UNLOCKING THE FULL POTENTIAL

Corporate Presentation | Wyoming | August 2018







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Please note that in accordance with Clause 17 of the JORC (2012) Code, the potential quantity and grade of the "Exploration Target" in this presentation must be considered conceptual in nature as there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.

Please note that Production Targets within this presentation are based on a proportion of inferred resources. There is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resource or that the production target itself will be realised.

Competent Person Statement

The information in this presentation that relates to Exploration Results, Mineral Resources or Ore Reserves at Peninsula's Lance Projects is based on information compiled by Mr. Jim Guilinger. Mr. Guilinger is a Member of a Recognised Overseas Professional Organisation included in a list promulgated by the ASX (Member of Mining and Metallurgy Society of America and SME Registered Member of the Society of Mining, Metallurgy and Exploration Inc). Mr. Guilinger is Principal of independent consultants World Industrial Minerals. Mr. Guilinger has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking 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. Guilinger consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.

Peninsula Energy's Defining Strengths



World Class Management

- Experienced technical, financial and commercial team
- Building for the future today

Large Scale Project

- Long-life Lance Project in USA
- Lance contains resources of 53.5M lbs of U3O8²

Scalable Production

- 'Game Changing' low pH lixiviant initiative
- Lance is licensed to produce 3M lbs of U3O8 per annum

Financial Strength

- Robust cash position with long-term revenue generation
- Spending discipline

Valuable Contract Book

- Long-Term sales contracts underpin Peninsula's business
- Annual product sales scheduled through 2030

Corporate Overview



Capital Structure	
Shares on issue*	234m
Share price (1-Aug-18)	A\$0.330
Market capitalisation (1-Aug-18)	A\$77m
Enterprise Value (1-Aug-18)	A\$83m
Available Cash (30-Jun-18)	US\$12.1m

Shareholding*	Holding (%)
RESOURCE CAPITAL FUNDS _®	22.5%
PALA	11.3%
APAC RESOURCES	3.0%
COLLINS ST	2.6%
orano 💮	2.5%
Top 20 Shareholders	59.5%

Share Price & Volume History	Ticker: ASX:PEN
onale i lice & volume mator	TICKEL AGAIL EN



Research Coverage	
BMO Capital Markets	Alex Pearce
Numis	Justin Chan
VIII Capital	Dave Talbot
H.C. Wainwright & Co.	Heiko Ihle
Roth Capital Partners	Joe Reagor

*Undiluted as at 1 August 2018

Strategy – Realizing the Inherent Value



 Develop and operate long-life, low-cost production assets underpinned by long-term product sales contracts

Sales & Marketing

- Valuable long term sales contracts provide financial foundation
 - Source of current/ongoing cash revenues

Core Assets

Optimize current alkaline ISR production operations at Lance

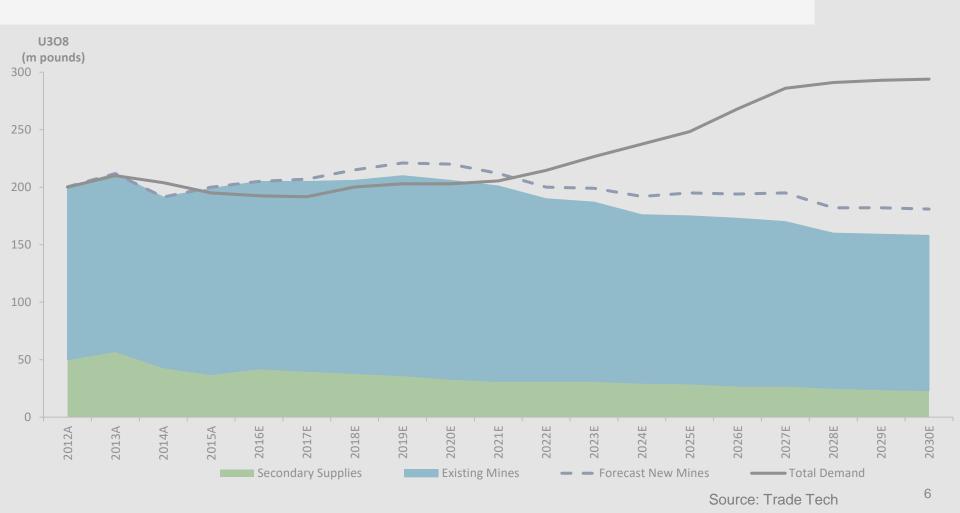
Step Change for Lance

- Convert Lance to low pH ISR operations in 2019/2020
- License amendments submitted in early April 2018

Other Assets

- Karoo project divestment
- Evaluate synergistic growth opportunities
- 2020 Vision: Peninsula capitalizing on uranium market rebound with 1st quartile cost base at Lance ISR Project

The Uranium Market



Uranium Market Overview



The uranium market may have reached its tipping point



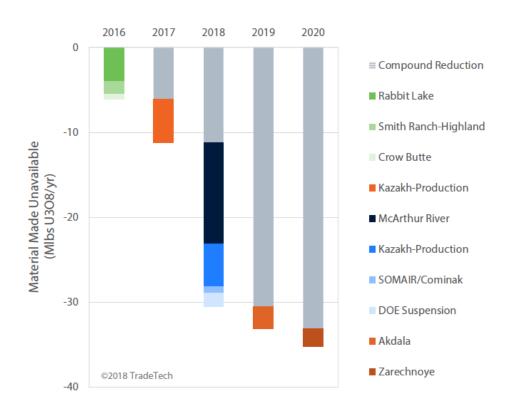
- Uranium is sold in spot & term markets
- Utilities have been buying from spot for several years
- Spot market supply depth is being tested by producer/investor buying
- Term market opening up
- Both markets are still well below industry's average cost of production

Source: The Ux Consulting Company, LLC

Market Rebalancing is Occurring Now



Both supply and demand factors point to rising prices



Source: TradeTech

- Excludes Langer Heinrich C&M announced by Paladin on 25 May 2018

Supply: Global supply restraint

- The miners keep reducing production target levels – now off 30 M lbs U₃O₈/yr
- 2018 production estimated at 135M lbs
- Available inventory stockpiles are decreasing

Demand: New demand is driving the market up

- Primary producers are buying big spot volumes
- New investment funds are buying and holding physical uranium inventories
- Forecasts continue to show demand growth for nuclear power generation well beyond 2030

Nuclear Fuel Geopolitical Themes



- Increasing political activity involving nuclear fuel trade
 - 1. Section 232 of the US Trade Expansion Act Petition
 - US Dept. of Commerce (DOC) commenced investigation on 18 July 2018
 - DOC has 9 months to complete investigation and make any recommendations
 - US President has a further 3 months to implement DOC recommendations (or implement any other actions)
 - Potential remedies could bolster price for US based production
 - 2. US Dept of Energy suspension of excess uranium barters/sales
 - For remainder of 2018 Fiscal Year
 - Support for permanent suspension
 - 3. Review of the Russian Suspension Agreement



Lance - Our Flagship Project



Exceptional Asset

- Active uranium production centre in premier jurisdiction
- 53.5M lbs U3O8 JORC (2012) compliant resource base² offers long mine life

Redefining Success

- 'Game Changing' low pH lixiviant initiative
- Potential to transform Lance performance and cost profile using low pH ISR process

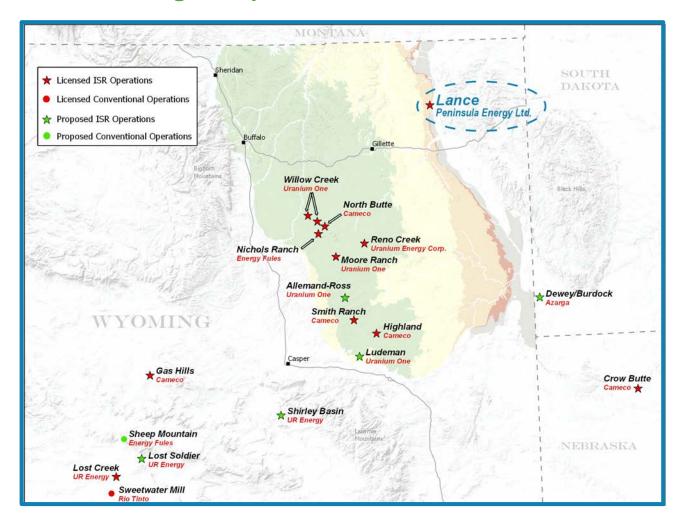
Scalable Production

- Lance has the largest defined US uranium resource currently in production
- Lance is licensed to produce 3M lbs U3O8 per annum

Premier US Uranium Jurisdiction



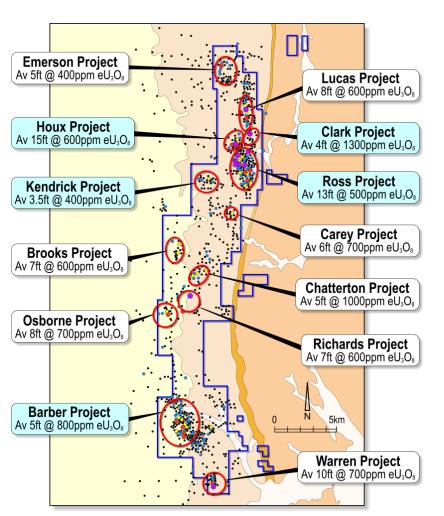
 Wyoming is a premier US uranium extraction jurisdiction, hosting multiple licensed facilities



District Scale Mineral Rights Holdings



- Large JORC defined resource with substantial upside potential
- Rights held for over 24 mile long N-S trend in known uranium district





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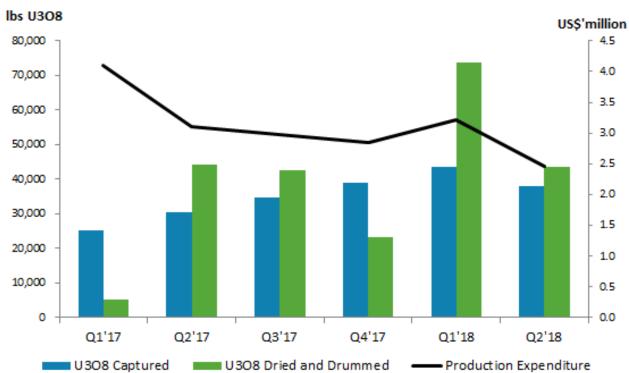
Lance - Steady Production Results



Consistent quarterly production rates

- 38,001 lbs produced; 43,553 lbs dried & drummed in 2Q18
- Production in Mine Unit 1 significantly cutback to preserve more "pounds in the ground" for low pH operations
- Tightly controlled production expenditures

Quarterly Production and Expenditure



Unlocking the Full Potential of Lance



Low pH ISR transformation initiative is being actively advanced

High Potential

- Potential to transform the performance and cost profile
- Feasibility Study expected in September Quarter 2018

Short Timeline

- Permit and licence amendments submitted to regulator and under review, expected mid-CY2019
- Plant and wellfield modifications can be implemented while production from alkaline ISR operations continues

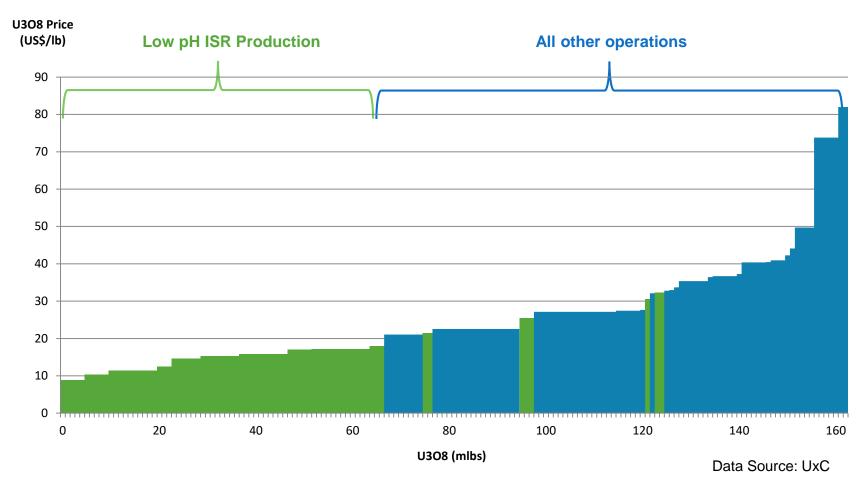
Low Capital Cost

- Low CAPEX required for process equipment modifications
- Initial low pH operations will occur in existing wellfields

Why Change Now?

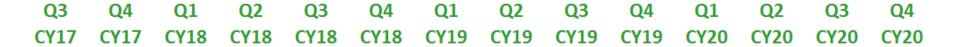


- All 1st quartile uranium operations globally are in-situ recovery (ISR) facilities that utilize a low pH lixiviant
- Low pH ISR leads the way



Timeline for Low pH ISR Transformation





Alkaline ISR Operations

Ongoing Laboratory Testwork

Feasibility Study

Regulatory Approval Process

Low pH Transition CAPEX

Low pH Operations

- Low pH Transition CAPEX in MU1 and process plant to be carried out parallel to regulatory approval process
- Low pH Transition CAPEX in MU2 can be carried out while low pH operations in MU1 are ramping up

Low Cost Transformation



1. CAPEX and OPEX

- Feasibility Study to outline Lance life-of-mine economics nearing completion
- Changing process chemistry, not the underlying processes
 - Only minor facility modifications are required with minimal capital spend needed to change the process chemistry

2. Ongoing production operations and sales revenue

- 10 operational header houses support ongoing production operations
- Product sales agreements generate cash inflow during the transition period
- Reducing sustaining capital spending for the short-term

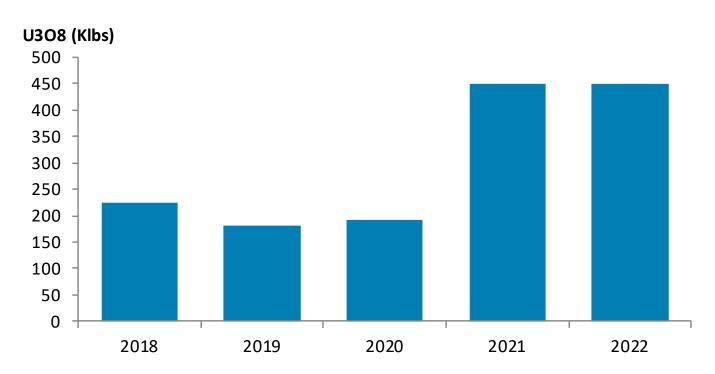


Substantial Long Term Sales Contracts



- Long term sales contracts underpin Peninsula's business
- CY2018 forecast deliveries of 225,000 lbs of U3O8





(*) Committed deliveries only and excludes optional delivery quantities that customers may elect from 2021 onwards.

Flexible Sales Strategy

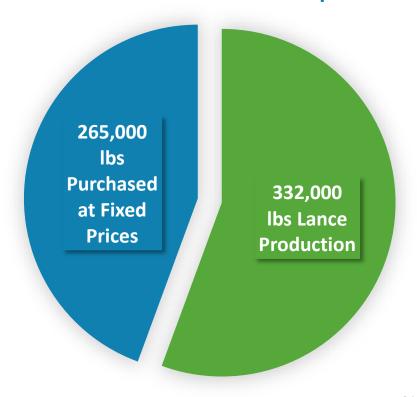


- Maximizing returns by blending production with spot purchases
 - 2017 deliveries were filled by Lance production and purchases
- Remaining deliveries for 2018 through 2020 have flexible origin clauses allowing seller optionality

2017 Sales Composition

190,000 193,000 lbs **lbs Lance Purchased** Production

2018-2020 Planned Sales Composition



Unlocking the Value of the Contracts



- US\$19 million (net) generated through contract transaction
 - Advanced cash receipts from future dates to present
 - Reduced delivery obligations during Lance transition process
- Significant contract portfolio carries through year 2030
 - Up to 6.5 million pounds U₃O₈ remaining under contract through 2030
 - 4.6 million pounds U₃O₈ committed deliveries through 2030
 - Up to 1.9 million pounds U₃O₈ optional at customer election between 2021 and 2026
 - Term contracts weighted price between US\$51-53/lb U₃O₈
 - Next scheduled sale: First week of October 2018



Peninsula Energy Take-Away Points



U.S. Domestic Producer

Peninsula brought Lance, WY project into production in Dec-15

Long Life Project

- Lance has the largest defined US uranium resource currently in production
- Low pH transformation is actively being advanced

Valuable Contract Book

- Up to 6.5M lbs sales contracted through 2030
- Term contracts weighted price between US\$51-53/lb U₃O₈

Financial Strength

• Robust cash position with reliable income generation

Unlocking Value

Clearly defined strategy to enhance shareholder value



Appendix 1 - Board and Management



Board

John Harrison, Non-Executive Chairman Capital Markets

Wayne Heili, Managing Director & CEO Exec. Leadership & Technical

David Coyne, Finance Director & CFO Finance & Risk Management

Harrison (Hink) Barker, Non-Executive Director Nuclear Fuel Markets

Mark Wheatley, Non-Executive Director Mining CEO & ISR Technical

Evgenij Iorich, Non-Executive Director Buy Side Capital Markets

World Class Management Team

Ralph Knode CEO USA

David Hofeling CFO USA

Mike Brost VP Geology USA

Jay Douthit VP Operations USA

Mike Griffin VP Permitting, Regulatory & Environment USA

Willie Bezuidenhout CEO South Africa

Appendix 2 - Lance JORC Resource



Classification	Tonnes (million)	U3O8(kg)	Grade (ppm U3O8)	U3O8(lbs)
Measured	3.7	2.0	489	4.3
Indicated	10.0	5.1	466	12.7
Inferred	37	17.5	463	36.5
Total	50.7	24.6	473	53.5

²JORC Table 1 included in an announcement to the ASX released on 27th March 2014:"Company Presentation – Mines and Money Hong Kong". Peninsula confirms that it is not aware of any new information or data that materially affects the information included in this announcement and that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Appendix 3 - Lance Exploration Target Additional Disclosure



Exploration Target

The Lance Projects cover a significant proportion of the Powder River Basin Basin Cretaceous sandstones of Wyoming, which are believed to represent an Exploration Target of between 158 and 217mlbs U₃O₈ which includes 54mlbs of existing JORC (2012) Code compliant resource.

Lance Projects Exploration Target (including the existing JORC (2012) Code Compliant Resource)

Exploration Target	Ton (mill	nes ion)	Grade (ppm eU ₃ O ₈)		eU ₃ O ₈ (mlbs)	
Range	From	То	From	То	From	То
Total	169	196	426	530	158	217

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Basis of Exploration Target

Exploration Target is based on a combination of Exploration Results and on proposed exploration programs.

Exploration Results

Approximately 7,500 drillholes, of which over 2,500 have been drilled and PFN logged since 2009. The data from these holes has been used to determine a JORC (2012) Code compliant resource and to extrapolate between areas of limited drilling but still within the mineralised trends.

Proposed Exploration Programs

The Company has minerals rights and surface access rights to 122.2 square kilometres and 107.8 square kilometres respectively. This package covers the most prospective mineralised redox /roll front trends that have a cumulative strike length of over 300km. The Company intends to continue exploration over this ground with drilling in order to validate the exploration target and convert to resources.

Appendix 3 - Lance Exploration Target Additional Disclosure



Basis of Grade and Tonnage Range Determination

With a database of approximately 7,500 drillholes together with several decades of geological research the level of exploration activity on which the Exploration Target is based, is considered to be high.

The known Lance resources are located in the upper Lance Formation and in the lower Fox Hills horizons in which roll fronts have been identified over a cumulative length of over 300kms. These horizons have only been partially explored and towards the south (Barber area) the lower unit of the Fox Hills has not been systematically tested. Along these channels JORC-compliant resources have been estimated in localised areas in which reliable drilling data is available. The zones between the JORC (2012) Code compliant resource areas form the Exploration Target because of the following:

- Continuity of the prospective sandstone established by geological mapping and regional drilling
- · Historic estimates of mineralisation based on drilling which has not yet been validated by Peninsula

The Exploration Target is based on a combination of:

- A tonnage calculation that incorporates the total cumulative prospective strike length of the identified redox fronts multiplied by the average width, thicknesses as determined in the resource estimate,
- The grade range represents the lowest resource area grades and highest resource area grades

Summary of the Relevant Exploration Data Available and the Nature of the Results

For a comprehensive description of drilling information readers are referred to JORC Table 1 at the end of this presentation.

Proposed Exploration Activities Designed To Test Validity of the Exploration Target

Over the life of mine ongoing exploration drilling is proposed to expand the JORC (2012) Code compliant resource within the Exploration Target areas. This initial program will be focussed on the Kendrick area. Exploration activities will mostly comprise geophysical logging of additional drillholes.

Lance Projects Competent Person Statement

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