

## Projects

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Permits (</projects/permits.phtml>)

Karoo Projects, South Africa ([/projects/karoo\\_projects\\_\\_south\\_africa.phtml](/projects/karoo_projects__south_africa.phtml))

Raki Raki Gold Project, Fiji (Peninsula Energ 50%) ([/projects/raki\\_raki\\_gold\\_project\\_\\_fiji\\_\\_peninsula\\_energ\\_50\\_\\_.phtml](/projects/raki_raki_gold_project__fiji__peninsula_energ_50__.phtml))

## WYOMING, USA – LANCE ISR URANIUM PROJECTS

(Peninsula Energy 100%)

### INTRODUCTION

The Lance Projects are located on the North-East flank of the Powder River Basin in Wyoming. The original NuBeth Joint Venture between Nuclear Dynamics Inc, Bethlehem Steel Corporation and later Pacific Power and Hydro (NuBeth JV), discovered thirteen substantial zones of uranium mineralisation associated with an extensive system of roll fronts confirmed by drilling between 1970 and 1979. As part of this exploration program, the NuBeth JV drilled more than 5,000 exploration and development holes, totalling in excess of 912,000 meters. A proprietary database of the historic drilling and pilot plant data was acquired by Peninsula in 2007, defining a then relatively unknown uranium district of which Peninsula is now the dominant mineral rights holder.

The Company has explored only part of this area in the last five years and has successfully delineated over 53.7mlbs U308 JORC compliant resource.

The Lance Projects have 305 line kilometres of identified roll fronts and an exploration target of 104-163mlbs U308, which is in addition to the JORC-compliant resource. These roll fronts stretch over 50 kilometres north-south and are open to the north, south and west.

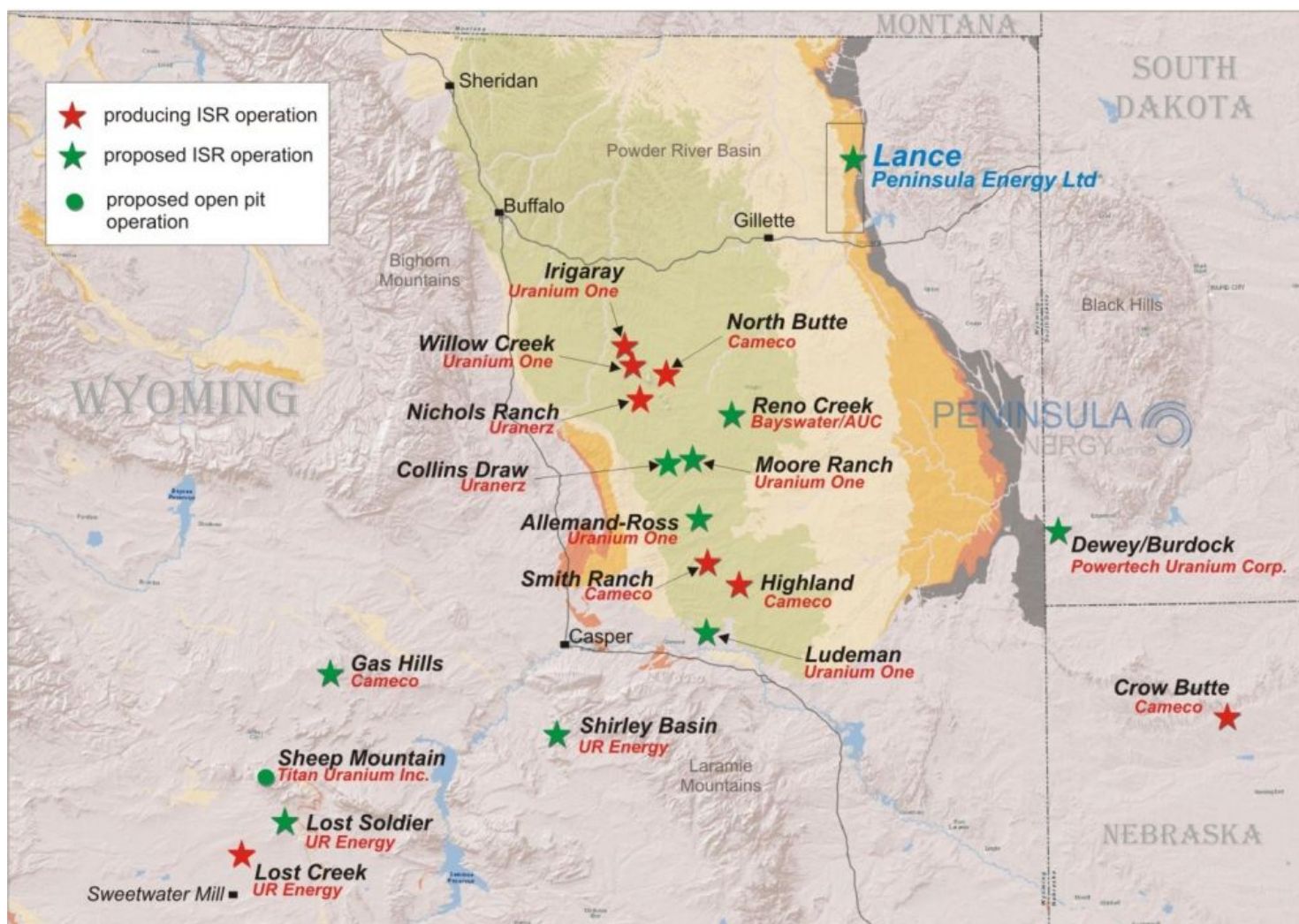


Figure 1: Lance Projects Location, Wyoming, USA

## SCALABLE PLANT DEVELOPMENT

In October 2014 Peninsula announced adoption of a staged and scalable development plan for the Lance Projects.

The scalable production development plan comprises a three (3) stage ramp up strategy:

- Stage 1 – production rate of between 500,000 and 700,000 lbs U3O8 per annum;
- Stage 2 – production rate of 1,200,000 lbs U3O8 per annum; and
- Stage 3 – production rate of 2,300,000 lbs U3O8 per annum.

The scalable production development plan significantly reduces the initial funding required to initiate sustainable production at the Lance Projects, decreases the volume of uranium needed to be contracted in stage 1 and allows the Company to defer most of the planned uranium sales contracts until such time as the uranium price is more attractive.

Furthermore, commissioning of the processing facility and wellfield operations in stage 1 significantly de-risks stage 2 and stage 3 upgrades.

Whilst some product needs to be contracted over the next five years the existing contract Peninsula has in place at a weighted average price (WAP) of \$73-\$75 per pound allows an acceptable return on investment and preserves the majority of the existing in-ground uranium for contracting at a later date.

There are a number of benefits for Peninsula in electing to proceed with the scalable production plan and a three stage ramp-up.

Initial capital expenditure required to reach positive cashflow at the Lance Projects is substantially reduced.

A lower proportion of the resource will be sold between 2015 and 2018 reducing the Company's need to contract in a reduced price environment.

The existing term contract, with a weighted average delivery price of US\$73-75/lb between 2015 and 2020, will now represent 34-50% of annual sales during the initial years of operation thereby resulting in an achieved higher average sale price.

Commencing production at the new initial rate will reduce the production risk considerably and should make the future debt funding of stages 2 & 3 both more achievable and less costly.

## PERMITTING STATUS & CONSTRUCTION

There are 3 key licenses required in order to commence production at the Lance Projects

1. Deep Disposal Well License
2. Permit to Mine
3. Source Materials License

### DEEP DISPOSAL WELL (DDW) PERMIT

In April 2011 Strata received approval from the Wyoming Department of Environmental Quality (WDEQ) for the construction, testing, and operation of Underground Injection Control (UIC) Class 1 wells at the Lance Projects.

This deep disposal well (DDW) permit allows Strata to construct and test up to five such wells in the Ross Permit area. The DDWs will be used to inject low-level wastes into an isolated rock formation at a depth in excess of 8,000 feet below the surface. It is anticipated that these DDWs will meet the water management requirements of an ISR operation at Ross.

The issuance of the Class I UIC permit followed a review by the WDEQ and United States Environmental Protection Agency (USEPA) as well as a public notification and comment period, and is the culmination of 30 months of detailed environmental, geological and hydrological data gathering and analysis by Strata.

## PERMIT TO MINE

In November 2012 the WDEQ granted Peninsula's wholly owned subsidiary Strata Energy Inc. (Strata) a Permit to Mine (PTM) for the Ross permit area, the first planned production unit at the Lance Projects. The completion of this licensing action concluded a major milestone in advancing the Ross ISR project towards production.

The PTM is the second of three key licenses required for advancement of the Ross ISR project. The first license was the Deep Disposal Well (DDW) permit granted in April 2011, as detailed above. The final license required before commencement of production is the Combined Source and 11e.(2) Byproduct Material License (SML) issued by the US Nuclear Regulatory Commission (NRC). As detailed further below, Strata received the draft SML for the Ross ISR project in early November 2012.

## SOURCE MATERIAL LICENSE

In late April 2014 the NRC issued Peninsula the final SML. Issuance of the SML concluded the licensing process for the three million pound per annum capacity CPP and the Ross Project. Peninsula now has the capacity to produce uranium from the largest 2012 JORC-Compliant in-situ recovery resource in the USA (54 million pounds U3O8). The SML was the culmination of a four-year permitting process involving multiple local, state and federal regulatory agencies.

In November 2012 the NRC issued the draft SML to Peninsula. The NRC's on-schedule issuance of the draft SML demonstrated that the project is technically sound and that the approaches to public and environmental safety outlined in the application were robust.

The issuance of the draft SML in less than two years after application submission reflected a significantly accelerated schedule over the applications of others in the industry, which have averaged 3 years or more in receiving draft licenses. Achieving this milestone on schedule and ahead of industry standard is indicative of the completeness of Strata's application, experience of the Strata management team and the efficiency of the streamlined regulatory approval process.

To receive NRC approval, an application must complete three review processes: acceptance review (completed in June 2011); safety review, resulting in a Safety Evaluation Report (SER) (completed in March 2013 as detailed below); and concurrent environmental review, resulting in a Supplemental Environmental Impact Statement (SEIS) (completed in March 2014 as detailed below).

## SAFETY EVALUATION REPORT

In March 2013 the NRC issued to Strata the SER for the Central Processing Plant and Ross Permit Area. The SER document acknowledges compliance of the Ross license application technical report with US regulations surrounding the receipt, possession and use of uranium byproduct and source materials.

The SER represents the conclusion of NRC technical review of the safety aspects of the application including:

- Site characterization

- Facility and process design
- Effluent controls and waste management
- Radiation safety plans and programs
- Groundwater protection
- Facility decommissioning and reclamation
- Accident analysis

## SEIS

In March 2014 the NRC issued the final SEIS for the Central Processing Plant and Ross Permit Area.

The SEIS is a comprehensive review of the project-specific environmental aspects and mitigation measures of the CPP and RPA as required under the National Environmental Policy Act (NEPA). It analyses the environmental effects of the proposed action at the RPA, the environmental impacts of alternatives to the proposed action, and mitigation measures to either reduce or avoid adverse effects of the proposed action. Impacts assessed include land use; historical and cultural resources; visual and scenic resources; climatology, meteorology and air quality; geology, minerals and soils; water resources; ecological resources; socioeconomics; environmental justice; noise; traffic and transportation; public and occupational health and safety; and waste management. Issuance of the final SEIS formalises NRC's determination that no major environmental impacts preclude the completion of licensing.

## CONSTRUCTION PROGRAMME

### *Earthworks and Construction*

In October 2013 Peninsula began site preparation for the CPP, fabrication of long lead time plant & equipment and the construction of access roads and other infrastructure. All site civil works have been completed in preparation for pouring of the concrete pad for the CPP, including site drainage works to divert surface water around the CPP and associated support services buildings. Fabrication of the long lead pressure vessels (i.e. ion exchange columns and elution tanks) is now complete.

### *Monitor Wells*

Peninsula has completed a total of 271 mine planning drill holes during the period from 1 January to 26 November 2013 for a total of 137,165 feet at the Lance Projects.

The drilling included 31 ore zone (OZ) baseline water quality wells and monitoring wells, 234 delineation holes and 6 core holes all of which are located within and around Mine Units 1 and 2 (MU1 and MU2) at the RPA.

The monitoring well program, which began in January 2013 is being conducted to provide correlations and baseline studies of the MU1 water quality and will further refine site-specific geological and hydrological parameters. These parameters are enhancing Peninsula's overall understanding of the ore body and extraction rates. Delineation drilling is also being conducted to optimise the well field patterns and

perimeter monitor well locations within MU1 and MU2. Core drilling is continuing in order to provide additional representative samples for ongoing leach testing and metallurgical studies that will assist in the selection of the most appropriate leach chemistry and ion exchange resin.

Several of the drillholes have intersected significant mineralisation, some of which is outside of the existing resource boundaries. The highlights of these include delineation holes RMR2716 which intersected 8ft @ 1030ppm U3O8 Grade Thickness (GT) .82, RMR2646 which intersected 6.5ft @ 520ppm U3O8 (GT .34), RMR2645 which intersected 4.5ft @ 740ppm U3O8 (GT .33), RMR2541 which intersected 4ft @ 550ppm U3O8 (GT .22), RMR2740 which intersected 9.5ft @ 270ppm (GT .25), and RMR2597 which intersected 4ft @ 520ppm (GT .21).

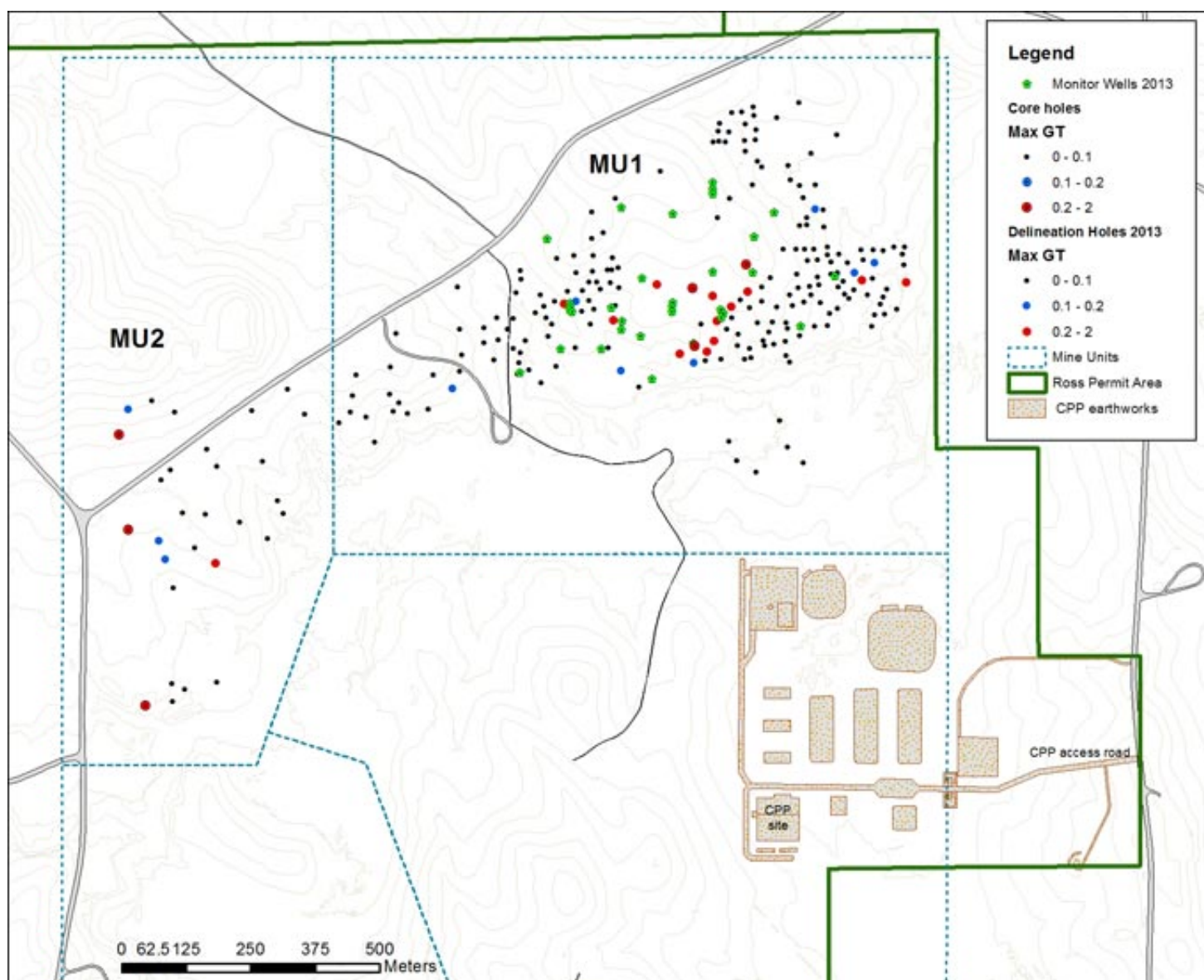


Figure 2: Map of Central Processing Plant area and Mine Units 1 and 2 at Ross Permit Area

URANIUM SALES AGREEMENTS

In February 2011 Peninsula signed a long term sale agreement to supply of uranium oxide ( $U_3O_8$ ) from the Lance Projects. Peninsula is currently engaged in negotiations with several key utility and end user groups in the nuclear power industry with the aim of securing further long term sale agreements.

The existing sales agreement was secured at an escalated fixed price, quantity and term. The weighted average contract pricing over the term of the contract is US\$73-75/lb which compares very favourably with existing uranium contract prices. The terms of the sale agreement will see Peninsula supply 1,050,000 lbs  $U_3O_8$  over a period of 6 years, commencing in the second half of 2015.

## JORC CODE - COMPLIANT RESOURCE

On 24 January 2013 Peninsula announced a further upgrade to the JORC-compliant Resource Estimate for the Lance Projects. This upgrade was achieved by the completion of an additional 676 rotary mud drill holes completed in the seven months subsequent to the March 2012 resource estimate.

The resource has been calculated by applying a combined constraint of a GT of 0.2 contour and 200ppm eU308. These cut offs are considered to be appropriate for both calculating and reporting of in-situ recovery (ISR) resources at the Lance Projects.

The measured, indicated and inferred resources are located in host sandstones that have demonstrated positive uranium recovery from test-work. Geological modelling of the extensive down-hole geophysical data has accurately defined the impermeable shale and mudstone horizons that form the confining horizons to the mineralised sandstones.

*Table 1: Lance Projects, Wyoming USA - Classified Resource Summary ( $U_3O_8$ )*

Total	Tonnes Ore (M)	$U_3 O_8$ kg (M)	$U_3 O_8$ lbs (M)	Grade (ppm $U_3 O_8$ )
Measured	4.1	2.1	4.5	495
Indicated	11.6	5.7	12.7	497
Inferred	35.5	16.6	36.5	467
Total	51.2	24.4	53.7	476

(The JORC resource is reported above a lower grade cut-off of 200ppm and a GT of 0.2).

At Ross there is a combined measured, indicated and inferred resource of 11.2Mlbs U308 with an average grade of 518ppm and an average GT of 0.47.

At Kendrick the combined measured and indicated resource totals 4.82Mlbs U3O8 at an average grade of 497ppm and an average GT of 0.47.

At Barber the combined measured and indicated resource totals 2.41Mlbs U3O8 at an average grade of 421ppm and an average GT of 0.42.

*Table 2: Lance Projects Classified Resource by Resource Unit (U<sub>3</sub>O<sub>8</sub>)*

Ross	Tonnes	Grade (ppm U <sub>3</sub> O <sub>8</sub> )	U <sub>3</sub> O <sub>8</sub> lbs	Average Thickness (ft)	Average GT
Measured	2,824,571	500	3,112,029	10.0	0.50
Indicated	5,823,143	531	6,818,822	8.4	0.45
Inferred	1,145,377	497	1,253,762	10.5	0.52
<b>Total</b>	<b>9,793,091</b>	<b>518</b>	<b>11,184,612</b>	<b>9.0</b>	<b>0.47</b>

Kendrick	Tonnes	Grade (ppm U <sub>3</sub> O <sub>8</sub> )	U <sub>3</sub> O <sub>8</sub> lbs	Average Thickness (ft)	Average GT
Measured	682,078	506	761,086	9.3	0.47
Indicated	3,706,808	496	4,056,866	9.4	0.47
Inferred	23,834,082	472	24,799,068	10.0	0.47
<b>Total</b>	<b>28,222,968</b>	<b>476</b>	<b>29,617,020</b>	<b>9.9</b>	<b>0.47</b>

Barber	Tonnes	Grade (ppm U <sub>3</sub> O <sub>8</sub> )	U <sub>3</sub> O <sub>8</sub> lbs	Average Thickness (ft)	Average GT
Measured	636,302	461	647,045	9.5	0.44
Indicated	2,002,184	400	1,765,263	9.8	0.39
Inferred	10,498,574	452	10,460,284	9.7	0.44

<b>Total</b>	<b>13,137,060</b>	<b>444</b>	<b>12,872,592</b>	<b>9.5</b>	<b>0.42</b>
Total	Tonnes	Grade (ppm U <sub>3</sub> O <sub>8</sub> )	U <sub>3</sub> O <sub>8</sub> lbs	Average Thickness (ft)	Average GT
Measured	4,142,951	495	4,520,159	9.8	0.49
Indicated	11,532,135	497	12,640,951	9.0	0.45
Inferred	35,478,033	467	36,513,114	9.79	0.46
<b>Total</b>	<b>51,153,119</b>	<b>476</b>	<b>53,674,224</b>	<b>9.7</b>	<b>0.46</b>

## EXPLORATION TARGET

The Lance Projects covers an area of over 120km<sup>2</sup> within which there is a combined total of 305 line kilometres (190 miles) of known stacked roll fronts. Of this total, only a small percentage has been explored, with over 90% of the drilling concentrated within the more advanced Ross, Kendrick and Barber areas. Based on the historic conversion rate from roll front length to a drill-defined resource, the exploration target of the Lance Project, which is in addition to the JORC-compliant resource, is assessed at between 104 and 163 Mlbs U<sub>3</sub>O<sub>8</sub>. The exploration target is based on an anticipated grade range of 426ppm to 530ppm U<sub>3</sub>O<sub>8</sub>. This grade range approximates the minimum and maximum modelled grades respectively.

*Table 3: Lance Projects Exploration Target*

Exploration Areas	Tonnes (M)		Grade (ppm U <sub>3</sub> O <sub>8</sub> )		eU <sub>3</sub> O <sub>8</sub> (Mlbs)	
	From	To	From	To	From	To
Total	168.9	185.9	426	530	157.7	217

(Totals include existing JORC Resource)

*Please note that in accordance with Clause 17 of the JORC (2012) Code, the potential quantity and grade of the "Exploration Target" 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.*

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