

## Background Information Document for the Social and Environmental Impact Assessment for the *Proposed Mining of the Z20 Uranium Deposit*

### INTRODUCTION

Uranium was discovered in the Namib Desert in 1928, but it was not until intensive exploration in the late 1950s that much interest was shown in the area. Rio Tinto secured the rights to the low-grade Rössing deposits in 1966. Ten years later, Rössing Uranium, Namibia's first commercial uranium mine, began operating. The mine has a nameplate capacity of 4 500 tonnes of uranium per year and, by the end of 2011, had supplied a total of 120 754 tonnes of uranium oxide to the world.

The mine is located 12 km from the town of Arandis, 70 km inland from the coastal town of Swakopmund in Namibia's Erongo Region. Walvis Bay, Namibia's only deepwater harbour, is located 30 km south of Swakopmund.

The existing mining operational activities of the Rössing Uranium Mine by Rio Tinto's Rössing Uranium Limited (Rössing Uranium) are situated north of the Khan River, Namibia. The mining operations include the Rössing open pit (blast, load and haul operation), waste rock disposal, ore processing, tailings disposal and ancillary activities.

After successful exploration, Rössing Uranium is now considering mining the Z20 ore body located south of the Khan River, where Rössing Uranium's mining license area ML28 and the Namib Naukluft Park overlap. In order to access the Z20 ore body, an infrastructure corridor would need to be established linking the Z20 site to the existing Rössing Uranium Mine. This infrastructure corridor would facilitate the transport of crushed ore generated at the Z20 site to the existing Rössing Uranium facilities.

The Z20 ore deposit is a substantial find of the recent exploration activities Rössing has conducted in its ML28 Mining Licence Area reaching to the South across the Khan River. The Z20 resource is similar in size to that of Husab's Zone 1 or 2 and will constitute a significant addition to the economic value of Rössing Uranium's ore inventory.

### PRIMARY ENVIRONMENTAL APPROVALS

Prior to commencing the proposed project, two applications (one for the overland conveyor and one for the rest of the project components) will be submitted to the Ministry of Environment and Tourism (MET) for a decision in terms of the Environmental Management Act, 7 of 2007.

The related SEIA process will include: an initiation / screening phase; a scoping phase (which includes an assessment of the overland conveyor and an EMP), assessment phase and EMP for the rest of the project components.

AURECON Namibia (Pty) Ltd (AURECON) and SLR Environmental Consulting (Namibia) (Pty) Ltd (SLR) are two independent firms of environmental consultants based in Namibia and have jointly been appointed by Rössing Uranium to manage the SEIA process.

### PURPOSE OF THIS DOCUMENT

The purpose of this Background Information Document (BID) is to provide stakeholders with the opportunity to register as interested and affected parties (IAPs) in the Social Environmental Impact Assessment (SEIA) process and to obtain their initial comments on the proposed mining of the Z20 uranium deposit.

The purpose of the SEIA process is to identify and evaluate feasible alternatives and potential impacts, and to identify potential measures to avoid or reduce negative impacts and enhance positive impacts.



## DESCRIPTION OF THE PROPOSED PROJECT

Rössing Uranium is considering mining the Z20 ore body located to the south of the Khan River and is investigating related infrastructure requirements. The proposed project includes the following activities (all of which will be assessed in the SEIA):

- Mining of the Z20 ore body including disposal of waste rock;
- An infrastructure corridor across the Khan River;
- Production of sulphuric acid at Rössing;
- Processing plant modifications;
- Changes to the present Tailings Storage Facility; and
- Establishment of a new High Density Tailings Storage Facility on the Rössing Dome.

Each of these activities is described in more detail below.

### **Mining the Z20 Ore Body**

The Z20 ore body is situated within the Rössing Formation and contains uranium bearing alaskite rocks similar to the ore found in the present Rössing open pit. Recent exploration drilling has found intersections of good uranium grade and mineralisation. Mining would be feasible when ore is transported across the Khan River to the existing processing plant. A maximum of 600 million tonnes of waste rock would have to be disposed close to the Z20 pit. It is envisaged that the Z20 ore body would be mined as a satellite open pit, utilising the same methodology (conventional blast, load and haul) as is used currently in the main Rössing Uranium Mine SJ pit. Suitable waste rock dump areas will be identified in the vicinity of the Z20 pit.

### **Infrastructure Corridor**

The proposed infrastructure corridor will facilitate the transfer of ore between the Z20 ore body and Rössing Uranium Mine. The infrastructure will house a product transport system in form of a conveyor, an access road and other services, such as a power line and water and diesel supply pipelines. The infrastructure corridor is identified by the yellow highlighted area on Figure 1.

#### *Product transport*

At present the RopeCon© overland conveying (OLC) system is the favoured product transportation system.

The proposed conveyor system consists of 2 sections and is of continuous conveying type with containing side walls at the belt carrying the ore.

Section 1 stretches from Z20 in a north westerly direction towards the Rössing Uranium complex for a distance of 10km to a transfer point. Section 2 is a RopeCon© system with a length of approximately 3km transferring ore from the transfer point to the coarse ore stockpile close to a new milling circuit located on the Rössing processing plant premises.

The system is designed to transport ore over a total length of approximately 13km at speeds of up to 4.65m/s with a capacity in one direction of 2,250t/h.

#### *Road*

The proposed access road will have a 12m wide road prism with 7.2m wide asphalt surfacing. The proposed route starts at Rössing Uranium Mine, continues on an existing track to the south of the tailings dam and then follows a dry river bed from the north. The Khan River is then crossed via a reinforced concrete bridge, after which it traverses a valley through mountainous terrain to the end point at the Z20 ore body. The total length of the road is approximately 16km. The road will have a 2.4m wide shoulder in both directions.

#### *Water and diesel supply*

The proposed water supply pipeline alignment for the supply of water will follow the proposed access road alignment. The fuel pipeline will be attached to the conveyor structure.

#### *Power distribution and supply*

An overhead line will be established within the infrastructure corridor to the Z20 area, to provide electricity to the proposed mining operations.

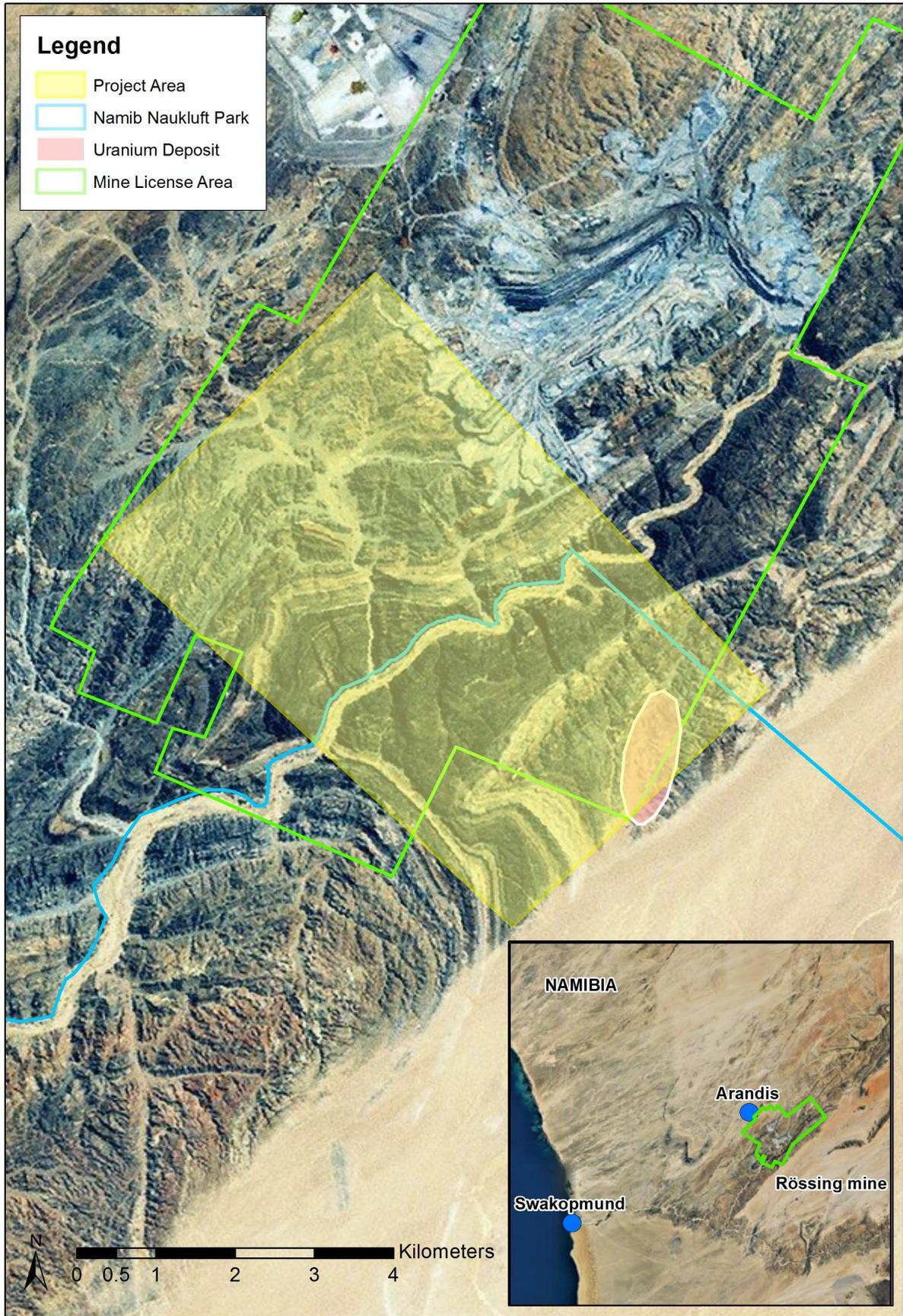


Figure 1: Overview of the project site including infrastructure corridor for road and conveyor

## Acid plant

Environmental Clearance Certificates authorising the construction of a sulphur burning acid plant with the associated sulphur storage and handling facilities were issued between 2008 and 2010. In order to process the additional ore generated from the Z20 ore body, the planned production capacity of the acid plant would need to be increased and the original assessment reviewed.

## Processing Plant Modifications

The Rössing processing plant modifications include a number of new installations as well as upgrades to the existing plant. A second coarse ore stockpile and a new milling area are new designs and are additions in the area.

The upgrades include modifications to the existing thickener circuit to handle the increased ore throughput. Tailings from the thickener circuit will initially be pumped to the existing tailings storage facility and once exhausted will be pumped to the new tailings area at the Dome area.

Changes would be made to the milling circuit. The existing Rössing leach circuit would be modified to allow for the processing of the additional ore. The modification to the leach circuit includes the construction of a new train of leach tanks. The new leach train would be identical to the existing two trains. A new slurry transfer pipeline will be constructed. The existing thickener circuit will be upgraded. The modifications to the piping and pumps will not require any additional land to be used.



Figure 2: Disposal sites at Rössing consist of the existing TSF and new disposal sites to be established on the Dome

## Changes to tailings storage facility and establishment of a new High Density tailings storage facility on the Rössing Dome

Sufficient tailings disposal capacity is available on the existing tailings storage facility and the high density tailings storage facility to be established on the Rössing Dome. An Environmental Clearance Certificate authorising the establishment of a mineral waste site on the Rössing Dome was issued in July 2012. However, the Environmental Clearance Certificate was given to dispose of Heap Leach spend ore (ripios) and not for tailings material.

Z20 tailings will be pumped to a central distribution point. A thickening plant to produce high density tailings is proposed for construction at the Dome storage facility.

## POTENTIAL ENVIRONMENTAL ISSUES

A number of potential positive and negative impacts on the socio-economic and biophysical environment, which could result from the proposed project, have been identified. These include:

Environmental Aspect & potential impact on the socio-economic and biophysical and environment	Mining of the Z20 ore body and waste disposal	Infrastructure corridor across the Khan River housing an overland conveyor, road and other services	Acid Plant; Processing plant modifications	Changes to the present Tailings Storage Facility (TSF)	Establishment of a new High Density TSF on the Rössing Dome
<b>Socio-Economic</b>					
• Economic impact	✓				
• In-migration and Health/safety and security related impacts	✓				
<b>Visual</b>					
• (Increased) visual impact	✓	✓	✓	✓	✓
<b>Biodiversity</b>					
• Impact/loss of fauna and flora	✓	✓		✓	✓
<b>Archaeology</b>					
• Impact/loss of archaeological resources	✓	✓			✓
<b>Noise</b>					
• Increase in noise impacts	✓	✓	✓	✓	✓
<b>Geohydrology</b>					
• Dewatering of mine pit and water supply impacts	✓				
• Impact on groundwater quality	✓		✓	✓	✓
<b>Surface Water</b>					
• Impact on surface water quality	✓	✓	✓	✓	✓
• Altering drainage patterns	✓	✓		✓	✓
<b>Air quality</b>					
• Increase in air pollution	✓	✓	✓	✓	✓
<b>Radiation</b>					
• Increase in radiological impacts	✓	✓		✓	✓
<b>Traffic</b>					
• Increased traffic impact on the B2 Arandis intersection	✓				

## PLANNED TIMING OF PROPOSED PROJECTS

Providing that the project is approved and economic conditions are favourable the entire project would be commissioned in 2015. Construction of the infrastructure corridor would commence prior to the establishment of mining infrastructure across the Khan River.

## THE SOCIAL AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The SEIA process provides information on the proposed project and the environment in which it will be situated; it identifies, in consultation with IAPs and relevant authorities, the potential negative as well as positive impacts on the environment; and reports on management and mitigation measures required to mitigate such impacts to an acceptable level.

IAPs and other stakeholders will receive notification of meetings and report review periods in advance. The likely process steps and time frames are provided below:

<b>Steps in the SEIA process</b>
<b>Phase 1 – Project initiation/screening (August to October 2012)</b>
<ul style="list-style-type: none"> <li>• Internal screening and appointment of independent environmental consultants</li> <li>• Meeting with Ministry of Environmental and Tourism (MET) and Ministry of Mines and Energy (MME)</li> <li>• Submit two applications for environmental clearance certificates to MET – one for the overland conveyor and one for all other project components</li> </ul>
<b>Phase 2 – Scoping/assessment of overland conveyer (October to December 2012)</b>
<ul style="list-style-type: none"> <li>• Notify IAPs and other regulatory authorities of the proposed project (via newspaper advertisements, this document, letters, e-mails)</li> <li>• Public scoping meetings and open day</li> <li>• Key stakeholder meetings</li> <li>• Assess the impacts of the proposed overland conveyor</li> <li>• Define outstanding issues and terms of reference for further investigations relating to all other project components</li> <li>• Compile Scoping Report (including assessment findings and environmental management plan (EMP) for overland conveyor)</li> <li>• Make reports available for comment by regulatory authorities and other IAPs.</li> <li>• Submit a final Scoping Report, EMP (for overland conveyor) and Issues and Response Report to MET</li> </ul>
<b>Phase 3 – SEIA/EMP (all other project components) (January to May 2013)</b>
<ul style="list-style-type: none"> <li>• Commission outstanding specialist investigations</li> <li>• Assess impacts of proposed project and compile SEIA/EMP report</li> <li>• Make the report available to regulatory authorities and other IAPs for review</li> <li>• Submit final SEIA/EMP report and Issues and Response Report to MET</li> <li>• Circulate notification of record of decision to IAPs</li> </ul>

### *Notice of public scoping meetings & open day*

Two public scoping meetings have been arranged for the proposed project/process. The meeting details are as follows:

	<b>Meeting in Arandis</b>	<b>Meeting and Open Day in Swakopmund</b>
<b>Date:</b>	23 October 2012	24 October 2012
<b>Venue:</b>	Arandis Town Hall	Rossmund Conference Centre
<b>Time:</b>	17:30	Open day starts at 13:00 Meeting starts at 18:00

### **PARTIES INVOLVED IN THE PROCESS**

#### **PROJECT PROPONENT**

- Rio Tinto's Rössing Uranium Limited (Rössing Uranium)

#### **PROJECT TEAM**

- SLR
- Aurecon

#### **IAPs**

- The tourism industry
- Members of the public
- Surrounding industries / mines
- Landowners
- Non-government organisations and associations
- Media

#### **REGULATORY AUTHORITIES**

- Ministry of Environment and Tourism (MET)
  - Directorate Environmental Affairs
  - Directorate Parks and Wildlife
- Ministry of Mines and Energy (MME)
- Ministry of Agriculture, Water and Forestry (MAWF), specifically the Department of Water Affairs (DWA)
- National Heritage Council of Namibia
- Relevant regional and local authorities

**Please let us know if there are any additional parties that should be involved.**

### **YOUR ROLE**

You have been identified as a potential Interested and/ or Affected Party (IAP) for this project, either because you represent an affected organisation or because of your proximity/location to the proposed project. Public participation is a key component of this environmental process and will take place at various stages throughout the project.

**SOCIAL AND ENVIRONMENTAL IMPACT ASSESSMENT  
FOR THE MINING OF THE Z20 URANIUM DEPOSIT**

**HOW TO RESPOND**

Responses to this document can be submitted by means of the attached comments sheet, through communication with the contact person listed below or through input at the public meetings/open day. All SEIA documents will be available on the Aurecon (Pty) Ltd (Aurecon) website ([www.aurecongroup.com](http://www.aurecongroup.com) follow the public participation link).

**If you would like your comments to be addressed in the scoping report please submit them by 31 October 2012.**

**WHO TO CONTACT**

**AURECON**

Contact person: Ilze Rautenbach  
Tel: +264 61 297 7011  
Fax: +264 61 279 7007  
Email: [Ilze.Rautenbach@aurecongroup.com](mailto:Ilze.Rautenbach@aurecongroup.com)

**SLR**

Contact person: Werner Petrick  
Tel: +264 (0) 64 402 317  
Fax: +264 (0) 64 403 327  
E-mail: [wpetrick@slrconsulting.com](mailto:wpetrick@slrconsulting.com)

**Background Information Document**

***Response Form for comment by Interested and Affected Parties***

<b>TITLE</b>		<b>FIRST NAME</b>	
<b>INITIALS</b>		<b>SURNAME</b>	
<b>ORGANISATION</b>		<b>EMAIL</b>	
<b>POSTAL ADDRESS</b>			
		<b>POSTAL CODE</b>	
<b>TEL NO.</b>		<b>FAX NO.</b>	
<b>CELL NO.</b>			

**Please list any colleagues/ friends or organisations that you feel should also be registered as an IAP for this SEIA (with contact details if available):**

<b>NAME AND ORGANISATION</b>	<b>POSTAL/ EMAIL ADDRESS</b>	<b>TEL NO.</b>	<b>FAX NO.</b>

**Please comment on any issues or concerns you may have:**

(Please use a separate sheet if you wish)

.....

.....

.....

.....

.....

.....

.....

.....

.....

Thank you for your comments