



WORKING FOR NAMIBIA

RÖSSING URANIUM MINE EXPANSION PROJECT

Social and Environmental Impact Assessment

Public Information Document

August 2007

Public Participation return address for comments:

Marie Hoadley
Rössing Uranium
Private Bag 5005
Swakopmund
Namibia
Fax: +264 64 520 2286
Phone: 081 328 0409
Phone: +27 (0)83 657 9375
e-mail: mariehoadley@iafrica.com

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1. Introduction

1.1 Purpose of this Document

This project information document describes a number of proposed expansion projects at Rössing Uranium (Rössing) in the Erongo Region of Namibia, which are currently undergoing a Life of Mine Options Analysis (LOMOA) process.

This document will be disseminated to all stakeholders and interested and affected parties to ensure that they are informed of the proposed LOMOA Project and will provide information on the potential impacts that are likely to require investigation and intervention. The intention is to promote participation by stakeholders in the Social and Environmental Impact Assessment (SEIA) process.

The objective of an SEIA process is to identify negative socio-economic and environmental impacts and develop measures for impact avoidance and/or mitigation. The overall intent is to advance sustainable development by contributing to social well-being, economic growth and protection of the natural environment.

Rössing has commissioned a number of independent consultants to assist it in undertaking the SEIA in accordance with the requirements of the Namibian Constitution and relevant legislation, which includes the Minerals Act, no. 33 of 1992, the Environmental Management Bill and the Namibian Environmental Assessment Policy (1995).

Stakeholder consultation and participation are important in this process as it provides a forum for them to raise their concerns and suggest changes to the development. Ongoing information dissemination will give stakeholders the opportunity to view the development of the project and note any changes due to their contributions. The draft SEIA report will be available for comment at a number of venues, on the web and stakeholders will have the opportunity to question the process, suggest changes, raise issues and concerns and ensure that their contributions to the process have been included and evaluated

You can participate directly in the SEIA process by registering as a stakeholder with the Public Participation Manager whose contact details are given on the first page of this document. This is also the channel which you can use to raise issues, concerns and questions about the SEIA process and the proposed developments.

1.2 Rössing Uranium – Brief Background

The Rössing deposit was discovered in 1928, but only actively investigated after 1956. When Rio Tinto became involved in 1966, an intensive programme commenced, delineating a large, low grade uranium deposit that could be mined by means of an open pit. Operations at Rössing commenced in 1976 and have continued unabated for more than 30 years. Employment at Rössing is considerably lower today than at its peak, but the mine currently employs nearly 1100 people, 96% of whom are Namibians, and is an important contributor to the Namibian economy. In addition to the open pit, Rössing operates a mill and sulphuric acid leach plant which enables the mine to produce uranium oxide (U₃O₈) for export via Walvis Bay.

The mine is a significant consumer of water and power. Presently water efficiency gains have enabled the mine to use less than half of its original water volume of the late 1970s. Rössing's power consumption represents about 5% of Namibia's total usage.

Although, Rössing Uranium is majority owned by Rio Tinto (69%), the Government of Namibia, a minority shareholder (3%), has the majority (51%) in voting rights.

Through the Rössing Foundation, the company contributes to community development in the north-central regions of Namibia as well as locally in the Erongo Region.

In December 2005 the mine's operational life was extended to 2016, with potential to extend to 2021. With a growing nuclear power industry recognised worldwide as an efficient carbon-free source of power and with an increase in the demand for uranium resulting in notable long-term market price increases, Rössing is favourably positioned to capture opportunities to increase its market share and to achieve production growth and expansion options for the mine.

In 2006, the mine produced 3,617 tonnes of uranium oxide. With the expansion project, the plan is to increase production over the next few years to full capacity of 4,500 tonnes. This increase will be targeted through technical innovations, opening of new mining pits, establishing new processing facilities with associated waste storage facilities. The expansion includes a new sulphur burning acid plant on site and sulphur storage in the Walvis Bay harbour. The recruitment of additional full-time employees and further training and development of current employees will continue.

1.3 The SEIA Team

Lead SEIA Consultant	Brett Lawson, Ninham Shand
Social Impact Assessment	Marie Hoadley
Public Participation Process	Marie Hoadley
Rössing SEIA Manager	Rainer Schneeweiss, Rössing Uranium
Rio Tinto Environmental Advisor	Svenja Garrard
Risk Assessments	Alistair Forbes – Rio Tinto plc
Specialists:	
Archaeology	Dr John Kinahan - Quaternary Research Services
Hydrogeology	Arnold Bittner, BIWAC and Jon Hall, Aquaterra
Biodiversity	Dr John Pallett, Desert Research Foundation of Namibia
Public Radiation Dose	NECSA (Nuclear Energy Corporation of South Africa)
Landscape impacts	Stephen Stead, Visual Resource Management Africa
Air dispersion	Lucian Burger, Airshed Planning Professionals
Independent reviewer	Dr Peter Tarr (Southern African Institute of Environmental Assessment)

2. The Proposed Project

2.1 Project Overview

A number of uranium occurrences were identified in the early 1970s within Rössing's mining license area but were not economically viable when the mine was commissioned in 1976. With the recent increase in uranium prices, these mineralised areas are now potentially exploitable and are being investigated by Rössing to evaluate the feasibility of mining.

A maximum expansion scenario would involve opening of satellite pits to the current open pit, establishing new rock disposal facilities, as well as potentially establishing new processing plants with tailings facilities. Included in the above is the establishment of a new sulphur burning acid plant at the mine site and sulphur storage and handling facilities at the Walvis Bay harbour. Associated with the expansion would be the employment of additional staff. The evaluation of overall project portfolio is referred to as Life of Mine Expansion Options Analysis (LOMOA).

Rössing therefore proposes to expand its operations beyond 2016, an operational period for which environmental clearance was granted by the Ministry of Environment and Tourism (MET) in 2004.

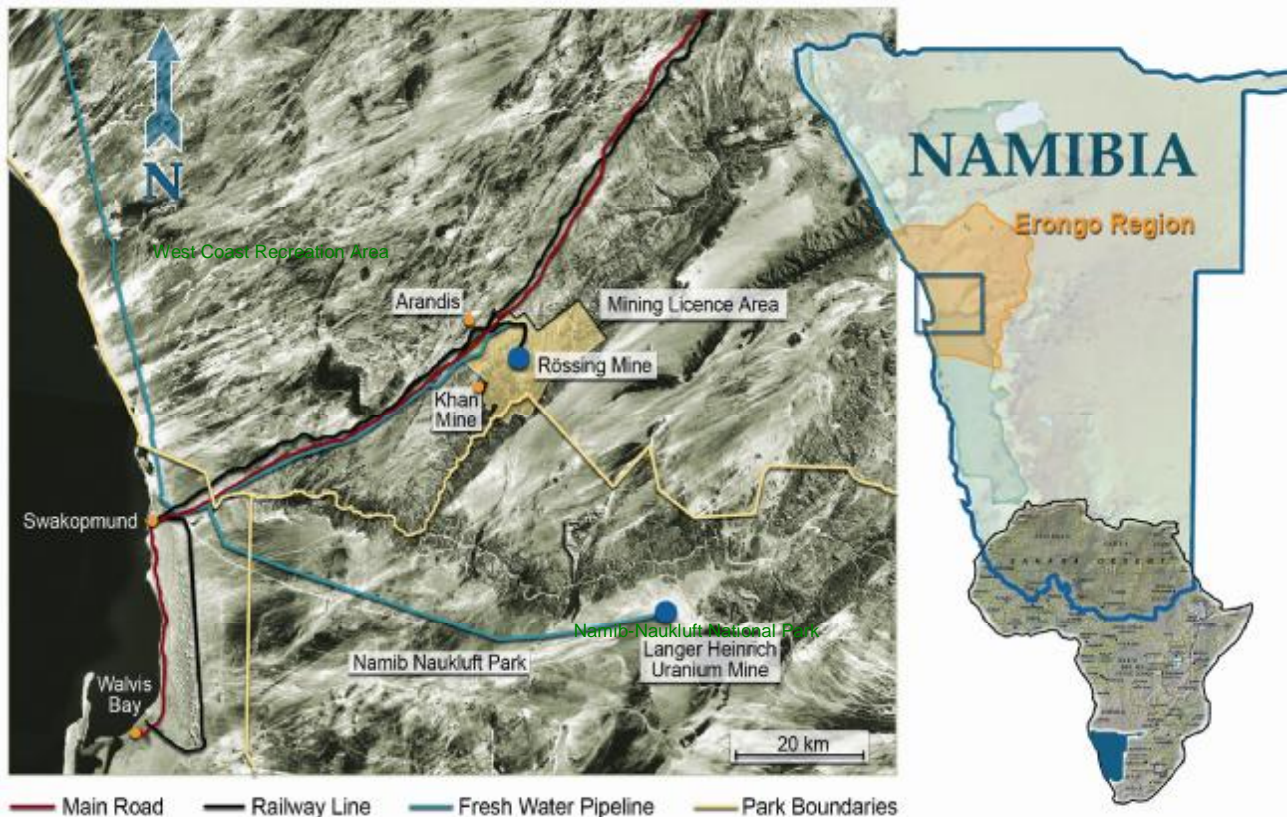


Figure 1. Regional Setting of Rössing Uranium.

The expansion of Rössing's operations will take place over a number of years. During the first phase of the expansion programme, mining will be extended in 2008 into an area known as SK4, a small ore body adjacent to the current open pit. In addition, a sulphuric acid plant on site with associated sulphur storage and transportation by rail between Walvis Bay and Rössing Mine will be developed in 2008. The feasibility of establishing a radiometric ore sorter plant with associated reject rock disposal facilities is also currently being evaluated and needs to undergo an environmental assessment as part of the evaluation.

In a following phase, the potential development of a heap leach treatment process for low grade ore, and the development of satellite open pits in the SH and SK ore bodies next to the current open pit are being considered. Both pit developments might require the establishment of new metallurgical processing plants and potentially new waste rock and tailing disposal areas.

2.2 First Phase

2.2.1 SK4 Pit Extension

Rössing proposes to extend mining activities 1 km to the east of its current operation, into an area known as SK4. This area is adjacent to the current pit (see Figure 2 below) and in the short term is seen as a potential supplementary source of ore to the process rather than an expansion. While this extension will increase the current mining footprint, it will not entail any significant modifications to the current operation with respect to plant capacities, water extraction or tailing and rock waste disposal. Foreseen impacts are related to land use in a currently undisturbed area. Other aspects are similar to those managed in the current operation and would require changes in the environmental management plans of the existing operation.

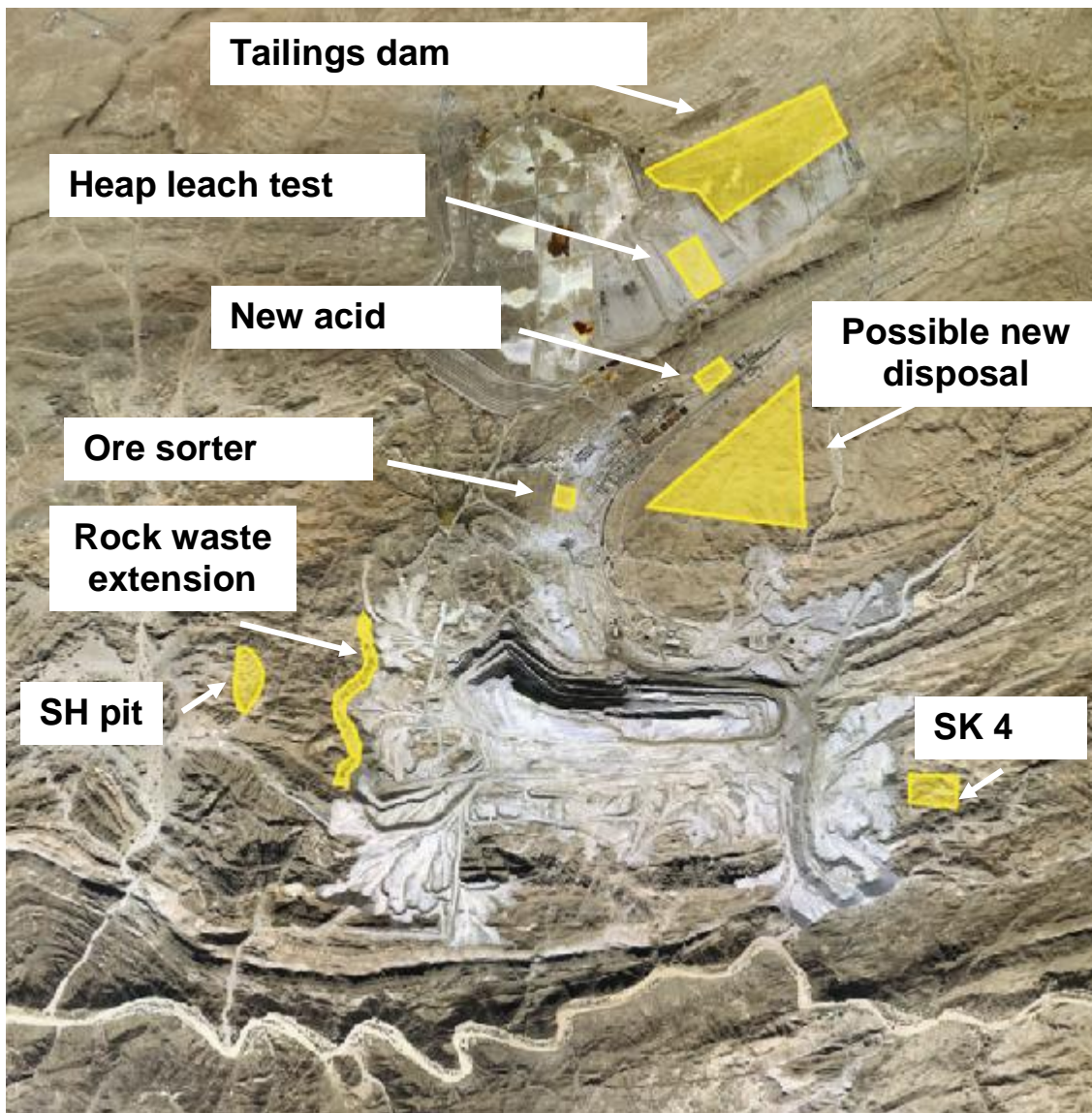


Figure 2 Site Map of Rössing Uranium showing potential project sites

2.2.2 Radiometric Ore Sorting Plant

A change to the ore processing flow is being evaluated to allow for a certain size fraction to be beneficiated using radiometric ore sorting. As part of the project, a new pre-screening plant will replace the existing one, and will draw material from the existing coarse ore stockpile.

Specific size fractions will be scalped off in the pre screening plant and the remaining size fraction will be processed using the radiometric ore sorters to provide an ‘accepts’ stream and a ‘rejects’ stream. The ‘accepts’ stream contains ore above the selected uranium grade and conversely the ‘rejects’ stream contains waste. The existing 500t coarse ore bin will be reconfigured (or replaced) to increase its live capacity and to feed the secondary crushers. The proposed plant is to be positioned within the current operations of the mine.

The engineering work for the project would entail construction of systems for ore reclaiming, the pre screening plant, the production ore sorting plant, waste handling, and tie-in for all equipment into the current operation. It would include provision of various facilities, including on-site utility distribution (water, power etc) and lay-down areas for construction.

The main area of impact foreseen would be a significant increase in the footprint of waste rock dumps, should it not be possible to dispose the reject waste rock onto existing dumps due to volume or economic constraints. A new rock dump would have to be placed on currently undisturbed ground and, among other aspects, might be perceived as visually intrusive.

2.2.3 Sulphuric Acid Plant

Rössing's metallurgical process uses sulphuric acid leaching to extract the uranium from the ore. An on-site pyrite-burning acid plant was commissioned in 1976 but was mothballed in 2000 when prices of imported acid fell below production cost. Since 2000, the mine's acid requirements have been imported via Walvis Bay harbour. Current economic evaluations show that value can be added by establishing a sulphur-burning acid plant at the mine site and to import additional acid, if required.

The mothballed acid plant at the mine site will be demolished, and a new sulphur burning acid plant is planned for the Rössing mine site. The on-site acid storage facilities will be upgraded and utilised to store imported and produced acid. The acid off-loading and rail loading facilities, as well as the tank farm at the harbour, will be maintained, and rail transport of acid to Rössing site will continue.

In order to acquire the sulphur feedstock for the acid plant, it is planned to import sulphur by ship into Walvis Bay and to establish a bulk sulphur handling facility at the harbour. The sulphur would be stored in the bulk terminal and then transported by special rail cars to the mine site. A similar process was in operation in the late 1990s before the operation of the old acid plant at the mine was discontinued. Sulphur is not toxic but is flammable and produces sulphur dioxide when burning. The mine plans to establish world best practice storage and handling facilities in Walvis Bay harbour and the mine.

An acid plant produces sulphur dioxide by burning sulphur and reacts it with water to produce sulphuric acid. Environmental impacts to be managed therefore relate to water consumption and air quality control. However, since burning sulphur to produce sulphur dioxide creates heat, this heat can be used to, for example to generate electricity. Rössing is considering utilising the excess energy to heat the leach tanks for improved uranium extraction and to generate electricity on site.

2.3 Second Phase

During 2008 a number of projects will only be evaluated to feasibility level of cost estimation. However, these projects should be assessed at this stage with respect to their environmental aspects.

2.3.1 Heap Leaching

It is proposed that a heap leach treatment process to treat low grade ore will be developed. Currently the project is in its prefeasibility phase with some pilot work being undertaken.

Heap leaching is a process during which crushed ore is put on a leach pad and a mixture of acid and other chemicals percolate through the pile of ore. Uranium leaches out of the crushed ore and collects at the bottom of the pile from where the solution is pumped to the processing plant for the extraction of uranium. The bottom of the leach pad consists of a double liner (for example layers of plastic sheeting and clay) and a leak detection system.

Environmental aspects to be managed will relate to groundwater protection and closure of the heap. Residual acidity within the used pile will need to be neutralised so that no harmful effluents will be generated after closure of the heap leach operation.

A test heap leach operation will be constructed in the current tailings facility to establish economic viability and environmental characteristics of such an operation.

2.3.2 Satellite Ore Bodies

Additional satellite open pits in the SH and SK ore bodies are being investigated. As the ore type is different to that currently mined, their development will require modified treatment. It is anticipated that a new processing plant will be required with associated new waste rock and tailing disposal areas.

Exploratory drilling and leaching test work are currently being undertaken.

In order to more effectively extract uranium from the rock by leaching, grinding the rock to a finer consistency than currently achieved is being considered. This in turn will have an effect on the resulting tailings material to be disposed of. Finer tailings will initially bind more water before drying out, will require a larger area for disposal and will have to be managed more intensely to prevent dam failure and wind erosion of dust.

Both new pit deployments will take place in currently undisturbed areas and impacts on biodiversity are expected. In the case of the SH ore body, archaeological sites have been found in its vicinity and potential impacts and their management will need to be considered in cooperation with the National Heritage Council.

The SK ore body to the east of the open pit will require the establishment of new rock waste disposal areas, due to the size of the SK pit and its distance from current rock dumps.

3. The Environment

3.1 *Biophysical Setting*

Rössing is located near the inland edge of the hyper-arid Namib desert some 60 kilometres east-north-east of the town of Swakopmund in the Erongo Region of Namibia.

The Rössing uranium deposit lies within the Central Zone of the late Precambrian Damaran orogenic belt that occupies much of northern Namibia. All of the primary uranium mineralisation and the majority of the secondary uranium mineralisation occurs within alaskite, which is an alkaline leuco-granitic rock.

The climate of the region is arid. Precipitation is between 30 and 35mm per annum. Rainfall is highly variable and occurs mainly in late summer and autumn as showers or thunderstorms of high intensity and short duration. Virtually no rain falls in the winter months.

The predominant winds experienced at Rössing are north-easterly and west to south-westerly. A strong north-east to easterly flow, known as a Berg wind, from the escarpment to the coastal areas, occurs approximately 50 times per year, mainly during April to September. These winds can have high velocities, are accompanied by marked increases in maximum temperature and can transport large quantities of dust, sand and fine gravel.

The mine area is situated within relatively hilly terrain along the northern bank of the Khan River, a tributary of the Swakop River. The Khan River is one of the four main river systems of the Namib Desert, draining from the high plateau westwards to join the Swakop River (25km from Rössing) before it flows into the Atlantic Ocean. The rivers are classified as ephemeral or episodic, with their flows only reaching the river mouths after exceptionally heavy rainfalls in the interior. Sub-surface water in the river sands and gravels, however, does exist. Apart from the Khan River, ephemeral and permanent springs are two other important sources of surface water in the area.

The mine is located towards the eastern edge of the Central Namib Desert vegetation zone. A marked east-west vegetation distribution pattern is evident, closely related to the inland distribution of coastal fogs, which can penetrate as far inland as the mine. All plant species found here are considered to be drought tolerant, drought resistant or succulent.

The large mammal species found in the area are considered to be nomadic, moving widely and entering an area when food is plentiful after rains. Avian, rodent, reptilian and amphibian fauna are found at Rössing and the environment is particularly rich in insect fauna.

3.2 Surrounding Communities

3.2.1 Erongo Region

Overall, Erongo Region has the third highest Human Development Index ranking in Namibia, and has the second lowest level of household poverty. Mean per capita income is almost twice the national average. Although industrial activity is limited, the region has good access to the necessary infrastructure for economic development and is well served by transport infrastructure (including three airports at Arandis, Swakopmund and Walvis Bay), police, schools and health services. This is especially true for the coastal towns of Swakopmund and Walvis Bay. The harbour at Walvis Bay is one of the key economic features of the region and is connected to the rest of Southern Africa via the Trans-Caprivi and Trans-Kalahari Highways.

HIV is a serious problem for the region's development and the HIV/AIDS Counselling statistics for 2004 revealed that of 5197 people pre-tested in the region, 33.4% tested positive. Death as a result of AIDS-related illnesses, which may be under-reported, accounted for 2.52% of deaths and the HIV prevalence rate in the youth (up to 29 years) was 25.9%. Regional studies done on pregnant women during 2004 revealed a prevalence rate of 28% in Swakopmund and 25.7% in Walvis Bay. The rate of tuberculosis in the region is high compared to the rest of the country, with most cases reported in Swakopmund and Walvis Bay.

The three communities which are likely to be most impacted, both negatively and beneficially, by Rössing's expansion project are Arandis, Swakopmund and Walvis Bay. A community of small-scale farmers is active in dairy and vegetable farming on smallholdings in the lower Swakop River and the identification of potential impacts on this community will form part of the SIA.

3.2.2 Arandis

Arandis was established in 1976 to meet the accommodation needs of Rössing's workforce. As Rössing wanted a settled workforce, the town was established with amenities which encouraged employees to settle there with their families. It is situated 5 kilometres from the mine. Arandis is currently served by three schools, a number of pre-primary centres, a government clinic, and a private clinic. The prestigious Namibia Institute of Mining and Technology (NIMT) is situated on the outskirts of the town.

In 1992 the town was handed to the Namibian Government and it became a fully fledged local authority in 1994. The alternative economic activities that have developed are insufficient to provide significant employment opportunities and the direct cash input from employee wages, which should benefit the town, is spent mainly in Swakopmund as Arandis offers little to tempt consumers. A period of stagnation in the development of the town started in 1992 and this was reflected in the gradual deterioration of infrastructure, the closing of the hospital which was replaced by a government clinic, ongoing high unemployment and continuing prevalence of unskilled labour.

Arandis has always been dependent on Rössing and this dependency continues. The mood in the town is currently one of optimism, given improved uranium prices and the number of new uranium mines that are opening in the region. The Arandis Town Council anticipates employment opportunities, a increase in demand for housing and industrial business premises to service the mines.

3.2.3 Walvis Bay

Walvis Bay is situated at the end of the TransNamib Railway from Windhoek, approximately 100 kilometres from Rössing. The population of the town is estimated to be 65,000. Social services are provided by two well-equipped hospitals, one of them private, and three clinics. There are twelve schools and a number of pre-primary facilities.

Walvis Bay is the centre of the fishing industry, both catching and processing. Although the fishing industry has been in decline, Government policy on resource management should halt the over-exploitation of fish stocks and the sector is viewed as one of the fastest-growing in Namibia in terms of employment, export earning and contribution to GDP.

The town is the principal port of Namibia, has been granted Export Processing Zone status and is the most industrialised urban centre in the Erongo Region. It is the only natural deep-water port in the country and an important railhead, serving as an import-export facility for, amongst others, processed fish, copper, uranium oxide and sulphuric acid. Rössing has contributed considerably to the economy of the town through its use of these facilities. The port is currently being marketed as an alternative to ports further south and east in South Africa.

Tourism plays a significant role in the economy of the town and it is well-equipped with numerous natural resources, infrastructure and activities to develop this sector. In 2003, Walvis Bay ranked third of the places most visited by tourists to Namibia.

3.2.4 Swakopmund

Swakopmund, located approximately 60 kilometres from the mine, is a thriving tourist centre and Namibia's second-largest town. The population, which is estimated to be 35 000, is served by thirteen schools, two private health facilities, a state hospital and a number of clinics.

A major catalyst for the expansion of the town and the development of its infrastructure was the commencement of mining activities by Rössing in the 1970s. The commercial sector of the economy has expanded and some light manufacturing is undertaken. The town provides logistic support for Rössing. A number of the new uranium companies that have commenced activities in the region have based their head offices in Swakopmund and there is likely to be a demand for both business and residential property, which is not freely available.

The main economic activity in the town is tourism and this sector is growing. The well-preserved historical buildings in the town are a major attraction, particularly for tourists from Germany and the town serves as a centre for extreme sport activities, as well as excursions into the desert by road or air. There is growing concern in the town about the environmental impacts of uncontrolled tourist activities.

4. Aspects to be Addressed as Part of Overall Expansion Project SEIA

The aspects listed below will be addressed as part of the overall Mine Expansion Options Analysis (LOMOA) project.

4.1 Assessment Process

4.1.1 Impact Assessment and Drafting of Management Plans

The Namibian Environmental Assessment Policy requires a Social and Environmental Impact Assessment for mine expansion projects. In addition, the Minerals Act requires the preparation of Environmental Management Plans based on the impact assessment. Rössing has commissioned

Ninham Shand, an internationally renowned engineering and environmental management consultancy to undertake the SEIA for the LOMOA project. In addition, a number of internal and external reviews will be undertaken to ensure that the process follows national and international environmental guidelines.

4.1.2 Independent Review

An independent review of the SEIA will be carried out by the Southern African Institute for Environmental Assessment. The institute will provide key input, review and guidance during the process and a final review prior to submission of the SEIA and environmental management plan documentation to Government.

4.1.3 Sustainable Development Risk Assessment and Scoping

A risk (threats and opportunity) assessment will be carried out early in the overall project development and reviewed on a periodic basis. This will determine what mitigation and opportunity enhancements need to be programmed for project development, implementation and closure phases to ensure that Rössing's sustainable development criteria are met. The results of the exercise will flow directly into the scope for the SEIA. The assessment work will be facilitated by Rössing's parent company, Rio Tinto plc.

4.1.4 Rio Tinto Review

Rio Tinto plc has its own internal rigorous review process to ensure that all projects meet Rio Tinto standards which are based on international best practice. Prior to submission for approval, the results and conclusions from the SEIA process will be documented and undergo an internal review of the Rio Tinto technical evaluation group comprising internal experts.

4.1.5 Legal Review

A formal review of Namibian legislation relating to all relevant aspects of mine expansion projects including closure will be carried out as part of the SEIA.

4.1.6 Stakeholder Engagement

Stakeholder engagement involving Government liaison (including Ministry of Mines and Energy, Ministry of Environment and Tourism, Ministry of Health and Social Services) will be carried out as part of the SEIA for the LOMOA project.

4.1.7 Timing of the SEIA and public participation.

The first public meetings around the process will be held on 20-22 August 2007.

The public is invited to provide feedback on the information provided at these meetings and register as I & APs.

We would prefer to have all comments in by 17 September 2007 so that these can be considered for inclusion in the Scoping Report.

A further public meeting to review the draft SEIA will be held in the first week of December 2007.

4.2 Social Impact Assessment

A social impact assessment (SIA) will focus on future options that enhance prospects for local sustainability and support planning for closure. Implementation of an SIA will be based on a consideration of potential social and community risks relative to the expansion project scale and Namibian regulatory requirements.

A social assessment will be undertaken to determine impacts which might be related to aspects such as contract mining and housing demands for an increased workforce. The employment of

additional staff is likely to require the management of specific impacts, for example employee housing and transportation, the provision of increased municipal and medical services and the shortage of local educational services.

The potential socio-economic issues that will be examined as part of the SIA include the following:

- Creation of employment opportunities, i.e. the use of local labour;
- Increased training requirements to serve the purposes of the expanded operation and a resultant higher level of skills in the region;
- Increased remittances to labour-sending areas,
- Increased demand for housing in surrounding areas. There is no accommodation available in Arandis and a new housing development would have a positive impact on the revenue of the municipality and on property values but it would also lead to continued dependency on Rössing, with negative impacts on future closure;
- Likely positive effect on the commercial life of the surrounding towns as more disposable cash enters the economy. The benefits of this in Arandis will only be realised if developments in the town encourage local spending;
- Social disruption due to the potential existence of possible construction camps close to Arandis which could possibly lead to increased social ills and stresses;
- Increased demand for social services which may not be met by current provisions. Schools are generally full, health facilities are resource-constrained and, in particular, social services in Arandis are not likely to cope with even a moderate increase in demand;
- Opportunities for providing services to the mine and the growth of viable SME's;
- Increased prevalence of informal settlers as job seekers migrate to perceived employment opportunities, and
- Increased traffic as a result of commuter services. Rössing would provide transport for employees living in surrounding towns which would result in an overall increased road transport.

As there has been an increase in uranium mining in the immediate vicinity of the three communities, a significant number of the above potential impacts must be considered as cumulative impacts, with implications for future closure. Arandis is particularly vulnerable to such cumulative impacts.

4.3 Environmental Impact Assessment

A comprehensive, risk-based assessment process will be followed. Specific areas that will be examined include the following:

4.3.1 Water

The increase in production to full capacity will increase the demand for water. Currently water is supplied and abstracted by NamWater under the Omdel water supply scheme from the Omaruru River (under permit from the Department of Water Affairs and Forestry). The water demand for the expansion projects will be determined as part of the assessment process and further water savings measures at the mine will be considered. In addition, the creation of an alternate water supply to industry through seawater desalination is currently being discussed with NamWater.

4.3.2 Biodiversity

Information on flora and bird species currently exists for the mine site. However, more detailed biodiversity information is required given the number of endemic invertebrates occurring in the area and further biodiversity surveys will be commissioned. The findings of these surveys will be collated and represented in a biotope map of the area. Similarly, the findings will be used to assess the impact of the LOMOA project on biodiversity and assist in reducing land use impacts.

4.3.3 Archaeology

An archaeological survey of the mine site has been undertaken. Given the number of sites of archaeological value in various sections of the lease, appropriate mitigation measures will be developed in consultation with government to ensure that the impact of the LOMOA development on these sites will be minimised.

4.3.4 Public Dose Assessment

Increased surface area available for radon emanation due to pit excavation and rock disposal need to be quantified in order to calculate changes in the public radiation dose. This work will involve air dispersion modelling in combination with radiation dose assessments. Models for the mine already exist and will need to be updated for the different development scenarios.

4.3.5 Noise and Vibration

Blasting close to surface creates noise and vibration which can be heard and felt in Arandis. Increased frequency in blasting and related seismic effects on infrastructure need to be understood and awareness created with interested and affected parties. A noise and vibration survey will be commissioned to estimate the impact on local residents and surrounding infrastructure.

4.3.6 Air Quality

A fall out dust survey will be undertaken to understand the cumulative impact of more frequent blasting and mining operations. Similarly, air quality modelling will be undertaken to assess the impact of a sulphur burning plant on air quality.

4.3.7 Land Use Impact Assessment

Mineral waste disposal will have a substantial impact on land use. Hence, the waste disposal strategy for the LOMOA project will be an integral part of the overall waste disposal strategy for the mine. An overall land use plan consistent with the Rio Tinto land use standards is under development.

4.3.8 Visual Impact

The visual impact of the LOMOA projects from public areas, like the main road from Swakopmund to Usakos as well as from access roads to the mine, needs to be determined. A landscape characterisation and visual assessment will be commissioned.

4.3.9 Hydrogeological Study

Hydrogeological work will be carried out to define potential operational and post closure seepage pathways and to identify groundwater control measures which might become necessary in addition to the current control measures. In order to establish the hydrogeological baseline dataset, further monitoring boreholes will be drilled and sampled and further geohydrological modelling of the area will be carried out to predict groundwater flow.

4.3.10 Energy Consumption and General Green House Gas Emissions

Climate change and optimised energy use will be considered, in keeping with Rio Tinto's international commitments to reduce energy consumption and green house gas emissions.

4.3.11 Mineral Waste Standards Compliance

The Rio Tinto Mineral Waste Standard will be incorporated into the project development schedule. This relates mainly to the geochemical and mineralogical characterisation of ore and waste and will need a set of analytical tests to be conducted. Rössing is part of the Excellence in Mineral Waste Management initiative implemented by Rio Tinto.

5. Invitation to Participate

Inclusive and extensive participation in the EIA process will ensure that all relevant issues are considered and addressed. It also ensures that the SEIA is conducted in a transparent and comprehensive manner. Stakeholders are encouraged to contact the SEIA team about any concerns they have regarding the project.

PUBLIC INFORMATION DOCUMENT

SOCIAL AND ENVIRONMENTAL IMPACT ASSESSMENT

SULPHUR HANDLING FACILITY IN THE PORT OF WALVIS BAY

February 2008

THE PURPOSE OF THIS DOCUMENT

The purpose of this Public Information Document is to brief interested and affected parties and stakeholders about a Social and Environmental Impact Assessment being carried out for a proposed sulphur handling facility in the Port of Walvis Bay.

Besides supplying information about the proposed sulphur handling facility, this Public Information Document also provides an opportunity for people to register themselves as interested and affected parties in the public participation process and to submit any initial comments they may have. Such comments will ensure that all the issues of relevance to the proposed development are evaluated in the Social and Environmental Impact Assessment.

BACKGROUND TO THE PROPOSED SULPHUR HANDLING FACILITY

Rössing Uranium has embarked on a Social and Environmental Impact Assessment process that addresses the possible expansion of their mining and processing operations. Due to an increase in uranium prices on the international market, Rössing is able to consider the possible financial benefit from such an expansion. The anticipated closure date of the Rössing mine is thus being re-evaluated, not only from an economic perspective but also in terms of social and environmental considerations. Ninham Shand Consulting Services has been appointed by Rössing to undertake the Social and Environmental Impact Assessment process.

The maximum extent of the envisaged expansion would entail the mining of two new pits, with new disposal areas for waste rock, new or expanded processing plants, additional tailings dam capacity, and an increase in staff numbers and facilities. One of the proposed new processing plants is for the production of sulphuric acid for use in the metallurgical process on the mine. Such a plant requires sulphur for the manufacture of the sulphuric acid. This sulphur would need to be imported in bulk via the Port of Walvis Bay and a sulphur handling facility would thus be required in the port.

THE ASSESSMENT PROCESS BEING UNDERTAKEN

While undertaking the assessment of the acid plant and related sulphur handling during the Social and Environmental Impact Assessment process, it was necessary to exclude the activities related to sulphur handling in the port. This was due to Grindrod, the operators of the bulk handling terminal, already having initiated its



own assessment process for such a facility. However, Rössing has identified three additional locations for sulphur storage that it is considering and it is now necessary to initiate another assessment process for these alternatives. Grindrod will continue with the assessment for a similar facility within its lease area in the Port of Walvis Bay and Alexandra Speiser Environmental Consultants are presently undertaking the required process. Rössing's assessment of an alternative location for sulphur handling will be a parallel process to Grindrod's, since these represent different locations and different proponents. It is not the intention to develop two sulphur handling facilities in the port and the plan is for a single facility that meets the requirements of all stakeholders.

It is therefore intended to subject the additional sulphur handling alternatives in the Port of Walvis Bay to a parallel assessment process. Once input from the public has been received, a Social and Environmental Impact Assessment Report for the sulphur handling facility in the port as an individual component of Rössing's expansion project will be compiled. After public review, it will be submitted to the Directorate of Environmental Affairs at the Ministry of Environment and Tourism for its decision-making according to the regulatory requirements for assessment processes.

A DESCRIPTION OF THE PROPOSED SULPHUR HANDLING FACILITY AND POSSIBLE ENVIRONMENTAL CONCERNS

Bulk sulphur would be unloaded from the ship's hold by a Siwertell Continuous Ship Unloader with a rated capacity of 650 metric tonnes per hour. An installed Siwertell collector conveyor extending the length of the berth, parallel to the quayside, would be configured specifically to receive product transferred from the ship unloader. From the quayside collector conveyor sulphur would be conveyed, preferably a pipe conveyor, to a fully enclosed storage building. The pipe conveyor would discharge onto a shuttle conveyor that would extend throughout the length of a linear storage building above the stockpile. The closed storage shed should have a holding capacity of a minimum of 30 000 and a maximum of 40 000 metric tonnes.

The conveyor systems are envisaged to be of a design to have minimum transfer stations in order to achieve a zero spillage system. Stockpile management inside the storage shed would be done by rubber-tyred front-end loader. Sulphur reclaimed from the storage building would be loaded into railcars for transport to the mine. To maintain the required logistics, the railcar loading system should have the capability to load 25 railcars with 42 tonnes of product in two hours or less. The rail loading system in the storage shed that has been selected comprises of a radial conveyor extending from a feed chute at the pivot point to the railcar loading station. As each railcar is indexed into position, the loading conveyor is started and loading of the rail car commences. As the loading proceeds, the operator moves the discharge chute of the conveyor along the length of the railcar until the required loading is completed. Sulphur is to be loaded into specially designed railcars currently being investigated. A design for an indexing system is required for indexing of railcars during loading operation at the loading station in order not to tie up a locomotive during loading operations.

Although sulphur is essentially non-toxic, dust that may be generated in the handling process would be controlled by the use of fine water sprays. The sprays would be installed at transfer points in the materials handling system, such as in conveyor chutes and bins. As a safety precaution, infra-red monitors would be installed in the storage shed to immediately detect the

start of a potential sulphur fire. The fire fighting system that would be implemented would consist of water reticulation lines, hose reels and fog nozzles located at strategic places and used to extinguish a fire in the sulphur handling process and storage. The necessary environmental bunding, wash down and drainage collection systems would be installed throughout the facility.

The illustrations below show a typical Siwertell ship unloader and a covered storage building as envisaged.



The most important social and environmental concerns about the proposed handling of sulphur in the Port of Walvis Bay are related to dust and it being regarded as a dangerous substance. In the past, sulphur spillages resulted in concerns on the part of people in the area. Rössing is proposing a closed system of sulphur handling that will allow it to strive for zero spillage and the application of management procedures where this is not possible. Attention will specifically be given to issues of human health in the Social and Environmental Impact Assessment for the proposed sulphur handling facility. Other areas of specialisation that will be attended to in the assessment are the noise and visual impacts of the proposed facility.

ALTERNATIVES BEING CONSIDERED

In working towards a closed system of sulphur handling, Rössing would employ best practice in the important areas of health, safety and the environment. Conventional practice would be employed where this is believed to be adequate for the purpose.

However, the location of the sulphur storage building and the alignment of the pipe conveyor from the quayside are being subjected to the consideration of alternatives. Of importance in the selection of a preferred alternative is the need to reduce the number of bends in the conveyor alignment from the covered quayside conveyor to the storage building. The preferred pipe conveyor is unable to negotiate tight bends and if a covered conveyor were to be used instead, the risk of spillage at the transfer points would be greater.

As mentioned previously, Grindrod is assessing a site within its lease area and this may yet prove to serve Rössing's purpose as well (**Option A on the illustration overleaf**). Rössing is nevertheless also assessing three other possibilities (**Options B, C and D on the illustration overleaf**).



PUBLIC PARTICIPATION AND THE WAY FORWARD

This Public Information Document is being made available to identified interested and affected parties and stakeholders. A focus group meeting is to be held at 17:30 on 7 February 2008 at the Pelican Bay Hotel in Walvis Bay. The proposed sulphur handling facility is also described in the Phase 2 draft Scoping Report for Rössing's expansion project due for release early in February 2008. **A comment period until 29 February 2008 is being provided and input from I&APs and stakeholders is encouraged.**

Marie Hoadley is the Public Participation Manager for this SEIA and input would be welcomed. She can be contacted as follows: Email: mariehoadley@iafrica.com;
Post: Private Bag 5005, Swakopmund, Namibia; Fax: 064 520 2286

A Social and Environmental Impact Assessment Report for the proposed facility will be compiled once the comment period closes. This report will include an evaluation of the alternatives mentioned previously, based also on the specialist studies relating to human health, noise and visual impact that will be available then. The report will outline the relevant legal and policy framework, describe the proposed sulphur handling facility and available alternatives, reflect on the public participation process, describe the assessment methodology applied, assess the significance and possible mitigation of potential impacts, and integrate the recommendations made into a management plan.

The Social and Environmental Impact Assessment Report will finally be submitted to the Directorate of Environmental Affairs for their decision on whether or not Rössing's proposed sulphur handling facility in the Port of Walvis Bay is acceptable from a social and environmental perspective.