



The Chamber of Mines of Namibia

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**NAMIBIAN
MINE CLOSURE
FRAMEWORK**

Final Report

May 2010

Foreword from the President

Namibia's long mining history dates back many hundreds of years. Unfortunately, the last decades of the 20th century have seen significant social and environmental impacts due to unplanned mine closures in Namibia. There are over 200 abandoned mines in the country for which the liability for rehabilitation transferred automatically to the State when the mining companies that operated these mines ceased to exist and in many cases vanished without trace. In some instances, substantial environmental damage has been left behind; this will impact negatively on Namibia's natural resources and the health and safety of her people, tarnishing Namibia's reputation as a country promoting responsible mining.

This undesirable situation has been recognised by a number of institutions in Namibia; including the Chamber of Mines of Namibia and in response, several relevant policies and pieces of legislation have emerged to address mine closure, social mitigation, environmental rehabilitation and closure funding. However, no single comprehensive policy or legislation addressing these aspects of mine closure is currently in place.

The mission of the Chamber of Mines is to efficiently promote, encourage, protect, foster and contribute to the growth of responsible exploration and mining in Namibia, to the benefit of the country and all stakeholders. In order to ensure that the past legacy of abrupt mines closures does not repeat itself, and aiming to fulfill this mission, the Chamber has now provided guidance in the form of this Mine Closure Framework. The Framework also provides some solutions to the call by the Minister of Mines and Energy in 2007, "*for the mining industry to establish a social fund to alleviate the social impacts in mining towns /communities once mining comes to an end.*"

The Framework is primarily intended to provide minimum standards for companies developing or operating medium and large scale mines in Namibia. It does not provide guidance for the closure of prospecting and exploration activities, nor for the rehabilitation of existing abandoned mines.

It is our wish that as Members of the Chamber of Mines are bound by the *Chamber's Constitution & Code of Conduct and Ethics*, they and other role players in the mining industry shall adopt this Guidance as a minimum standard, thereby laying the foundations for the development of relevant and practical closure plans, leading to the future benefit of all Namibians, the mining industry and the country as a whole.

This Framework is also intended to help the Government to enact appropriate legislation or Regulations to ensure compliance by all in protecting the environment, the image of the mining industry and indeed the image of the Country as a whole.



Mike Leech
President
Chamber of Mines of Namibia

May, 2010

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1 INTRODUCTION

1.1 Purpose and Use

The purpose of this Namibian Mine Closure Framework (NMCF) is to provide guidance for the Namibian mining industry in how to develop relevant, practical and cost effective closure plans and to lay down minimum requirements for the members of the Chamber of Mines of Namibia (CoM) bound by the Chamber's Code of Conduct and Ethics (COC).

Some older mines have been operating for many years without environmental baseline information, impact studies and resulting closure plans. In contrast, mines established more recently have had to develop an understanding of the conditions under which they operate, and to consider closure issues, as part of the mandatory environmental assessment (EA) process required when applying for a mining licence.

All mines need to go through the process of planning for closure as early as possible in their operational life, so as to incorporate some closure requirements into operational strategies, thus reducing final closure obligations and increasing revenue. The hidden costs of closure, which can affect profits and revenue towards the end of life of mine, and the long term obligations that are normally carried by the state and society, but which may not be apparent initially, should be minimised. Overall project value and real bottom line savings can be increased for example by locating a tailings facility in an area that precludes the need for costly, long-term seepage recovery after closure.

Social and environmental standards regulating the operations of a mine are laid down in a number of relevant Namibian laws. Foreign states, international industry and environmental organisations, alongside mining companies, have developed legislation, standards, guidelines and toolkits for the planning and implementation of mine closure. This overwhelming amount of information is freely available to any mine manager in Namibia faced with the task of effectively planning for closure. However, a comprehensive literature review was not undertaken as part of this framework development; a bibliography relating to mine closure has thus not been provided in this document.

Instead, the NMCF lays down the closure planning and implementation steps to be followed as a minimum requirement when planning for closure. Mine closure planning should follow a simple and structured approach, guided by the basic principles of project planning and implementation management. The guideline was developed in the light of Namibia's legislative setting, which informed it with respect to both social and environmental obligations for licence holders.

The framework addresses the need to:

- conform to current legislative requirements
- consult with a variety of stakeholders to derive a widely acceptable social, economic and environmental closure outcome
- develop an optimal closure strategy based on envisaged and agreed final post-mining social and environmental conditions
- develop a plan of practical closure actions, incorporating the optimal strategy
- provide all the necessary financial, knowledge and skills resources at implementation of the closure plan
- have a formal relinquishment process in place releasing the mining company from future obligations when closure outcomes have been accepted and achieved.

The framework does not address:

- guidelines for planning and resourcing final closure of the many abandoned mines in Namibia
- guidelines for the closure of small scale mines, quarries and sand mines, typically belonging to those operators who are not members of the Chamber of Mines
- specific guidelines for mines already in their different stages of operation. Such guidelines would show ways to enter into the planning cycle presented in this framework with the aim to achieve the most beneficial closure outcome - without having had the opportunity to conceptualise optimal closure during the design stage of the mine
- emergency or sudden closure leading to care and maintenance programs since these are operations specific; and
- specific guidelines for progressive rehabilitation during the operational period, for example for strip mines, since this is seen as part of ongoing operations and having to follow similar principles and achieve similar final outcomes as promoted in this framework.

This guidance document should be read in conjunction with Namibian legislative requirements, the most relevant of which have been highlighted in Section 2 of the framework. In addition, publicly available closure planning literature should be consulted to develop a broader understanding of mine closure issues and challenges.

Section 3 addresses the requirement for stakeholder consultation in developing acceptable closure outcomes. The various planning steps required (strategy development, the setting of objectives, mine-specific closure targets and implementation planning) are contained in Section 4. Preparing and reviewing cost calculations, making financial provisions and building closure funds are discussed in Section 5. Section 6 discusses the implementation of the closure plan, which should lead to the relinquishment process outlined in Section 7.

1.2 The basis for the Namibian Mine Closure Framework (NMCF)

The NMCF was developed by the CoM Rehabilitation and Closure Committee (RCC) based on the Australian Strategic Framework for Mine Closure (*ANZMEC/MCA 2000, Australian and New Zealand Minerals and Energy Council, Canberra, and Minerals Council of Australia, Canberra*).

The composition of the RCC included representation from the Namibian mining industry, the CoM and relevant sector ministries responsible for water, the environment and mining. Some interested associate members of the CoM were also represented on the committee.

In order to meet the Chamber's objective of developing this local guideline framework for its own members, the RCC was established as a working group among CoM members. The group drew on existing mine closure expertise and publicly available documentation, whilst ensuring that the Namibian context and country-specific requirements were addressed.

The Australian/ New Zealand Framework was chosen as the skeleton for the Namibian Framework because of its clear structure and accessible description of the steps required within the closure planning process. The main aim of the RCC was to include those aspects specifically relevant in the Namibian mining context (for example, social closure, including retrenchment, and training and development of retrenched employees).

The main body of the work was completed in 2007, with a final RCC working group review in November 2007. In 2008, the promulgation of the Environmental Management Act No 7 of 2007 and the development of draft regulations in terms of this Act necessitated a further review of the document. There was also a need to cross-check the NMCF against the mine closure toolkit published by the International Council on Mining and Metals (ICMM) in 2008.

The final draft was submitted for editing during the third quarter of 2008 and disseminated to the RCC members and member companies of the CoM for final comments. In 2009 it was approved by the Council of the Chamber of Mines subject to final legal verifications.

This 2010 version of the NMCF is the final version for dissemination. . The document will undergo periodic review, informed by member companies, who will be given an opportunity to comment on the suitability of the guideline framework, tested in their specific circumstances.

2 REGULATORY SETTING

This document, being a guideline and policy framework on mine closure, does not purport to be of any force of law and this document shall not be construed as containing references to all laws in respect of the subject matter hereof or in the case of any law herein that such interpretation is *per se* any authority to follow without ensuring the correctness thereof.

2.1 Policies

The following policies make reference to mine closure:

Minerals Policy of Namibia, 2002

This policy sets out the guiding principles and direction governing the development of the mining sector, in accordance with the values of the Namibian people in this pursuit; it deals with large-, medium- and small-scale prospecting and mining, as well as exploration and mining in the marine environment.

It stipulates that the government will investigate the establishment of mandatory mechanisms for the funding of final mine closure plans (including rehabilitation), and that it will monitor industry compliance with these mechanisms through the use of Environmental Management Plan (EMP) contracts. The government also expects the industry to take the challenge of social responsibility in terms of planning for closure, community involvement and empowerment of formerly disadvantaged people.

Section 2.2.5 Mine Closure / Integrated Mine Use stipulates that mine closure be planned, and form part of an integrated land use strategy involving engagement with communities. Before a mining licence is granted, a final mine closure plan, including a funding mechanism to deal with environmental pollution and infrastructure, should be developed and submitted.

Section 2.2.6 Social Responsibility of Mining Companies stipulates the need for mining companies to engage with communities and address social responsibilities through support programs, training and community participation.

Section 5.3 Environmental Rehabilitation indicates that government will ensure compliance with national policies and guidelines during rehabilitation and, where appropriate and applicable, with global best practice; with relevant stakeholders, it will investigate the established financial mechanisms for environmental rehabilitation and aftercare.

Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation, 1994

This policy provides for the promotion of sustainable development and economic growth, while protecting the environment in the long term, by an active administrative and legislative programme to achieve Integrated Environmental Management (IEM) through, *inter alia*, the execution of environmental assessments (EAs) for certain listed policies, programmes and projects. These include mining and exploration. By conducting EAs, Namibia will seek to ensure

that the environmental consequences of development projects and policies are considered, understood and incorporated into the planning process; the term 'environment' (in the context of IEM and EAs) is broadly interpreted to include biophysical, social, economic, cultural, historical and political components.

Section 5 states that the proponent is required to enter into a binding agreement (based on the procedures and recommendations contained in the EA report) to ensure that the mitigatory and other measures recommended in the EA, and accepted by all parties, are complied with. This agreement should address the construction, operational and decommissioning phases in the mine closure process, as applicable, as well as its monitoring and auditing.

Policy for Prospecting and Mining in Protected Areas and National Monuments, 1999

The aim of this policy is to promote sustainable development in Namibia by permitting prospecting and mining in the country's Protected Areas and National Monuments. However, it stipulates that government must ensure that short- to medium-term mining projects do not jeopardise the potential for long-term sustainable development.

The Mining in Parks Policy does not make specific reference to closure.

General Environmental Assessment Guidelines for Mining (Onshore and Off-shore) Sector of Namibia, 2000

These guidelines were developed by the MET to assist mining developers in preparing environmental assessments. They are presented as checklists of major (exploration, mine and decommissioning) activities, major components of the natural environment, typical impacts and common mitigation measures.

Policy for the Conservation of Biotic Diversity and Habitat Protection, 1994

This Policy aims to ensure adequate protection of all species and subspecies, of ecosystems and of natural life-support processes. The Policy does not make specific reference to mining or mine closure but it does stipulate that all development must be sustainable and must be evaluated at an appropriate level by means of environmental assessment procedures. This includes proposed developments within proclaimed conservation areas.

2.2 Legislation

The following pieces of legislation make reference to mine closure:

The Minerals (Prospecting & Mining) Act, No 33 of 1992

Section 48 Powers of Minister in respect of applications stipulates that the Minister may enter into an agreement with the applicant which is consistent with the provisions of this Act, and contains the terms and conditions on which such mineral licence will be issued. The submission of an environmental management plan is one of the conditions of the licence and, as such, the commitments made in this document become binding. Thus licence holders will be regulated against their EMP.

A licence holder intending to abandon a mining area should do so in terms of *Section 54(1)*, informing the Mining Commissioner (MC) in writing and in the prescribed format, and should return the mineral licence. The MC must then cancel the mineral licence, endorse it in the Register of Mining Licences and notify the licence holder (as well as the landowner where this is a different person) that the mine licence has been cancelled. When the licence holder ends its

mining operations, *Sections 54(2) and 128* of the Minerals Act, 1992 require the licence holder to rehabilitate the land.

Section 54 (3) obliges licence holders, on announcement of abandonment, to demolish accessory works, remove all debris and other objects brought onto the land, and to take the necessary steps to remediate 'to the reasonable satisfaction' of the Minister of Mines any damage to the environment.

Section 57(1) of the Minerals Act requires licence holders to apply 'good mining practices' with respect to environmental protection, natural resource conservation and the removal of accessory works or other goods that were erected, constructed or brought on the land for the mining activities.

Section 91 regulates applications for mining licences. *Section 91(f iii)* requires the application to include the manner in which the applicant intends to: prevent pollution; deal with any waste; safeguard the mineral resources; reclaim and rehabilitate land disturbed by way of the prospecting operations and mining operations; and minimise the effect of such operations on land adjoining the mining area .

Section 99(1) requires that licence holders:

(a) inform the Minister in writing before it intends to reduce or to stop mining:

- 6 months prior to permanent cessation of operations
- 30 days before temporarily cessation of operations
- 7 days before an intended reduction of operations.

(b) in the event of unexpected reduction or cessation of mining operations outside the mine's control, inform the Minister as soon as possible after the event has occurred.

Section 101(2) (2) stipulates that the licence holder must, no later than 180 days after cancellation or expiration of a mining licence, deliver to the MC:

(a) all records kept in terms of the provisions of *subsection (1)(a)*;

(b) all maps and plans referred to in *subsection (1)(b)*;

(c) all reports, photographs, tabulations, tapes and discs prepared by or on behalf of such person in the course of such prospecting operations; and

(d) such other books, documents, records and reports as the commissioner may require by notification, in writing, addressed and delivered to such person.

Section 128 (1) states that if a ML is cancelled or expired, the Minister may, by notification in writing, require:

(a) the demolition of buildings and structures, and removal of debris and objects

(b) the remedying of damage to the surface and the environment.

Although the provision is kept general, its importance and consequence for any mine closure should not be underestimated.

Section 128 (3) stipulates that failure to rehabilitate a mined area properly is an offence carrying a penalty of N\$100 000 or five years imprisonment.

Section 130 relates to pollution control. Licence holders have a general duty of environmental care, and are expected to practice continuous rehabilitation at own cost in that they should immediately clean up a mineral spill or other form of pollution of the environment. If a company fails to do so, the Minister may order the company to comply and, if it still fails to comply, the

Minister may instruct a third party to rehabilitate the area, and claim the cost from the polluter; the ML holder will be liable for spilling, pollution, loss or damage.

The Environmental Management Act, 7 of 2007

The Environmental Management Act (EMA) has three main purposes, namely to ensure that:

- people consider the impacts of activities on the environment carefully and in good time
- all interested and affected parties have a chance to participate in EAs
- Findings of EAs are considered before decisions are made to undertake certain activities.

Activities that are subject to EAs are listed in Section 27, and include resource removal, such as mining.

The EMA does not refer specifically to decommissioning or rehabilitation of a site once an activity ceases to operate. However, the draft regulations (May 2010) provide clear reference regarding the compilation and implementation of rehabilitation and closure plans.

In the regulations the definition of “rehabilitation and closure plan” is a plan which describes the process of rehabilitation of an activity at any stage of that activity up to and including closure.

Section 29(j) stipulates that a scoping report must have a draft rehabilitation and closure plan, containing matters set out in regulation 31.

Section 31 outlines in detail what a rehabilitation or closure plan must contain, namely:

- (a) information on any proposed, management mitigation, protection or remedial measures that will be undertaken to address the environment- impacts that have been identified including environmental impacts or objectives in respect of -
 - (i) the rehabilitation of the environment; and
 - (ii) closure, if applicable;
- (b) details of -
 - (i) the person who prepared the plan; and
 - (ii) the expertise of that person to prepare the plan;
- (c) a detailed description of the aspects of the activity that are covered by the plan;
- (d) information identifying the persons who will be responsible for the implementation of the measures contemplated in paragraph (a);
- (e) information in respect of the mechanisms proposed for monitoring compliance with the and for reporting on the compliance;
- (f) as far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of any listed activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and
- (g) a description of the manner in which it intends to -

(ii) modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;

(ii) remedy the cause of pollution or degradation and migration of pollutants.

(2) The environmental commissioner may accept a rehabilitation and closure plan with or without the changes he or she may require.

(3) If closure begins on a site the proponent must -

(a) notify the environmental commissioner that closure has begun; and

(b) comply with the requirements of the rehabilitation and closure plan.

(4) If a proponent intends to change the method of closure of a project, the proponent must file with the environmental commissioner an amended rehabilitation and closure plan which the commissioner may accept with or without changes.

The Environmental Management Act is not yet in operation (as at May 2010) but shall come into operation by Notice in the Government Gazette by the Minister once the accompanying Regulations are ready for promulgation. Once the Regulations are gazetted, this section of the Framework will be amended accordingly.

Water Act, 54 of 1956

The Water Act does not make specific reference to mine closure. However it does make reference to long-term protection of water resources in the following sections:

Section 21(5a) states that if a user cannot treat effluent to the desired standard or cannot return it to the appropriate public stream an exemption permit must be obtained from the Minister.

Section 23(2) also allows the Minister to recover any costs from the licence holder to prevent the pollution of public or private water (including ground water) that occurs after mine closure as a result of seepage or drainage from mining or industrial activities.

Regulation 21.1 made under *Section 26* of the Water Act requires that areas used as depositing sites for tailings and waste (whether in operation or not) need to be adequately fenced and shall not without the approval of the Permanent Secretary / Minister of Water Affairs be used for any other purpose.

The Atmospheric Pollution Prevention Ordinance, 11 of 1976

For the purposes of mine closure, Licence Holders should, in terms of Section 28 of the ordinance, compile and submit to the Director of Health Services a dust prevention and management plan; thereafter the Director will issue a dust prevention certificate confirming that the licence holder has made adequate provision for dust pollution emanating from those parts of the mine that are due for closure. The licence holder may not commence with mine closure, nor dispose of any of its assets as part thereof, without such a certificate.

Labour Act No. 6 of 1992

The Labour Act makes reference to severance allowances for employees on termination of a contract of employment in certain circumstances.

Chamber members should adhere to the appropriate provisions of the Labour Act.

In addition, if the employer has provided for a gratuity, an insurance policy, a savings or other bank account, or any other investment which is payable, in a lump sum, to the dismissed employee in the event of, or at the time of, the termination, the employer shall, in so far as such provision has been made at the employer's expense, subtract this sum from the amount calculated in terms of severance pay due to the employee.

2.3 Legal mechanisms to be established

The abandonment and forfeiture of mining areas was addressed in the Mines, Works and Minerals Ordinance, 1968 (Ordinance 20 of 1968) (SWA). However, the Minerals (Prospecting and Mining) Act, 1992 (Act 33 of 1992), does not contain any provision empowering the Minister to make Regulations. It therefore does not contain a corresponding provision to enable the transition of Regulations promulgated under Ordinance 20 of 1968.

Currently there is no legislation that provides for relinquishment (formal approval by Organs of State) and transfer of accountabilities from the licence holder back to the State, once agreed-upon mine closure objectives have been realised and accepted. Although Acts make provision for funding and rehabilitation requirements, a mechanism for relinquishment has yet to be established.

There is a need for regulation of the retention of records beyond those that have already been catered for in current legislation. A comprehensive list of the records to be retained should be established, and the appropriate ministry responsible for archiving these records identified.

Until such time as these aspects are reconciled, licence holders should take responsibility for ensuring that relinquishment for their sites is formalised in some way, that an effective record retention strategy is developed and that there is an appropriate archive.

2.4 Chamber of Mines of Namibia (CoM) commitments

The CoM has a Code of Conduct and Ethics (COC) and all members are required to sign a pledge that they will adhere to the requirements of this COC. *Section 2.1* states that members shall, at all times, comply with policies, guidelines, standards and directives that the CoM may issue for its members from time to time. Accordingly, this Mine Closure Framework stipulates minimum requirements with which all CoM members will need to comply in terms of the COC.

3 STAKEHOLDER INVOLVEMENT

Mining companies are expected to conduct their business in a socially and environmentally responsible manner. Defining what is socially and environmentally responsible in a specific situation will require the involvement of all parties affected by proposed mining development and existing mining operations and mines moving towards closure.

Social engagement and environmental management, of which social closure (addressing the needs of employees and dependent communities post closure) and rehabilitation of altered environments are crucial elements, can become more effective (and enhance the public trust in mining) when the community and other stakeholders are fully informed and participate in the closure planning and implementation process (ICMM, 2008, Planning for Integrated Mine Closure: Toolkit). The benefits of a successful stakeholder engagement process include:

- improved planning decisions
- improved cooperation with government
- better closure decisions
- good corporate governance
- improved community receptiveness to future mining proposals.

3.1 Stakeholder identification

Stakeholders are those parties potentially affected by mine closure and influencing the mine closure process and outcomes. Identifying key stakeholders and developing a good relationship with them is fundamental to a successful closure process. Understanding the views and expectations of stakeholders, which may change over time, and formulating with stakeholders a balanced, realistic and achievable closure outcome that can be funded and supported by the relevant parties is a fundamental aspect of closure planning (ICMM, 2008, Planning for Integrated Mine Closure: Toolkit).

Stakeholders include employees, management and shareholders of the company, as well as external parties such as communities (for instance, local business, landholders, NGOs) and government (Ministries, Departments and State Owned Enterprises). During the identification of stakeholders, a distinction should be made between those that are directly affected by mine

closure (social mitigation and post-mining land use) and those that have an interest in the process.

3.2 Effective consultation

Engagement with stakeholders should begin early in the mine's life, preferably during the planning phase, and continue throughout the operational and into the closure and relinquishment phases. To be effective, communication should involve consultation, listening and feedback, as well as disseminating information. Consultation is about both perception and reality, and perceptions can only be gauged by listening to the affected stakeholders and interested parties.

3.3 Targeted communication strategy

A targeted communication strategy should reflect the needs of stakeholder groups and interested parties.

Some stakeholder groups will be affected more significantly by closure than others. Employees will have to find alternative employment and businesses dependent on the operation will have to find new markets. People need to plan for their future livelihoods, and it is desirable that their uncertainty about the future be reduced; it is therefore important that there are no surprises for the stakeholders as closure of the operation approaches. Certainty will help to reduce anxiety and help to retain skilled people during the closure phase of the project.

Closure information distributed to all stakeholders and interested parties should therefore be provided in a timely and coordinated manner. Responses should be requested and a trusted and well respected member of the operation should be available for communication. The media of communication (tools like personal letters or announcements through the local media) need to be adapted to the needs of the different audiences.

Effective consultation is particularly important when employees and associated communities will be affected, infrastructure is being retained for community use, where post-mining land use involves community input, or where the post-mining use of the disturbed area is different from the pre-existing use.

3.4 Adequate human and financial resources

Effective stakeholder relations demand that mining companies and their personnel have the capacity and desire to help affected employees, their families and communities through the difficult transition phases of closure. Proper mine closure is the result of a combination of innovative concepts, long-term commitments, and multi-party cooperation. The objective should be to ensure that the mining company and all stakeholders have the necessary information to cooperate effectively in the closure process. Adequate human and financial resources should be allocated to allow for this objective to be achieved effectively.

3.5 Working with communities

Mine closure always causes significant social concern, particularly in associated communities where a mine may be the major contributor to economic activity (past Namibian examples include the towns of Arandis and Uis). In addition, the extent to which communities can be in denial over mine closure should not be underestimated. There is a significant need to make it clear to stakeholders, as early as possible, that the mine will close on a specified date, even if that firm closure date changes depending on economic circumstances.

To minimise the negative impact on dependent communities it is essential that mining companies work with them to manage such impacts and to realise opportunities. However, to avoid disappointment, mines also need to ensure that expectations are managed and that real opportunities are identified. During the life of the mine, it may be possible to encourage and assist the development of small- and medium-sized enterprises (SMEs), which can persist after closure. Local industries that have a broader focus than the mine could also be supported. Working with communities through community forums will assist in the development of programs to offset the inevitable changes that will occur at closure.

4 PLANNING

Proper planning for closure should take place during the mine's feasibility study and design phase, if an environmental clearance certificate and mineral licence is to be granted to develop a mining project.

However, in the current Namibian mining environment, those operational mines established before the promulgation of the Minerals (Prospecting & Mining) Act, No 33 of 1992 did not develop a closure plan during the feasibility phase. Because of this these companies have probably missed out on certain opportunities to reduce closure risks and realise savings. Not only will they have lost the opportunities associated with early planning but their operational decisions are not guided by a closure vision, they are faced with a requirement to build up a closure provision over a shorter period of time, and their progressive rehabilitation programme can only start later in the operation phase. It is important that these companies assess their risks and opportunities regarding closure and develop strategies and plans to ensure that remaining opportunities are not missed.

As an initial guidance, the Namibian Mine Closure Framework provides an outline from which to design future mine closure strategies and detailed closure plans. The strategy and plan should be developed during the feasibility stage. The plan should be continuously updated and made more detailed as time passes. More frequent revisions should be undertaken as closure comes closer. Closure should be integral to the whole life of the mine plan, and should include the management of social as well as environmental issues.

4.1 Objectives

The objectives of closure planning are to:

- prepare for changes in employment conditions at closure, which could result in negative social effects on people dependent on a mine
- understand closure risks and prepare to mitigate impacts on associated communities and dependent businesses
- protect public health and safety and the environment by using safe and responsible closure practices
- reduce or eliminate adverse environmental effects once the mine ceases operations
- establish conditions which are consistent with the predetermined end use objectives
- reduce the need for long-term monitoring and maintenance by establishing effective physical, chemical and ecological stability of disturbed areas.

4.1.1 Social stability

In order to prevent the recurrence of situations experienced in Namibia in the past, a strategy for working towards social stability during the closure transition and post closure need to be developed and agreed with key stakeholders, including employees, businesses and dependent communities. This should be done as early in the mine development process as possible, since it can prevent significant socio-economic tragedies once the mine has closed. Early planning provides the opportunity to implement mitigation programs and prepare communities; it creates supporting environments during the operational phase, long before closure becomes imminent.

4.1.2 Post closure use of disturbed areas

It is imperative to understand how the disturbed area will be used in the future in order to plan the appropriate interventions with respect to rehabilitation. Thus rehabilitation is not just about making an area neat but about setting a disturbed ecosystem on a trajectory back to recovery so that it can be sustainably used in the future. Where sufficiently detailed land use or coastal management plans are not available, the compilation of a land use or coastal management plan may need to precede the development of a closure plan. Land use or coastal management planning needs to consider the overall social closure strategy to realise existing opportunities.

4.2 Mine closure strategy

In order to achieve mine closure objectives in an integrated manner acceptable to all parties, a post closure vision, incorporating goals and high level objectives, needs to be developed many years before closure, in consultation with stakeholders, and periodically reviewed particularly when there are changes to mine planning and operations. This will provide high level guidance and foundation on which the mine closure strategy should be built. As much thought should go into this process as is dedicated to the design and development proposal.

The Mine closure strategy should be developed during the feasibility and detailed design stage of project planning.

Planning components	Content
Closure strategy	<ul style="list-style-type: none">• key objectives (for instance, housing, community integration, future use of disturbed areas)• main closure aspects and associated components• closure risks analysis• stakeholder expectations• evaluation of alternatives• identification of preferred alternatives

4.3 Closure plan development

Mine closure planning, if it is to be successful, should not be an 'end of mine life' process, but rather an integral part of the life cycle of a mine. Currently many mines submit conceptual plans and commit to developing more detailed ones during the life of the mine. Lessons have shown that this approach often does not work – mines have a tendency to postpone detailed mine closure planning to the following year; thus many years into operation, they are still unsure what

their closure implications will be. Mines should therefore develop detailed closure plans at the feasibility phase of an operation, based on a thoroughly developed closure strategy, which should be reviewed and improved throughout the life cycle of the mine. It might be appropriate to do these reviews and improvements as part of the annual operational planning process. In this way, future constraints on, and costs of, mine closure can be minimised; post-mining land or coastal use opportunities can be maximised; and innovative strategies have the greatest chance of being realised. Specifically, an early decision on employee housing and recruitment is essential to prevent severe community impacts at the end of operations.

Planning components	Content
Closure plan	<ul style="list-style-type: none"> • social plan (employees and communities) • progressive rehabilitation plan • decommissioning plan • final rehabilitation plan • monitoring plan • detailed closure costing

4.4 Aspects to be considered

Namibia's history of mine abandonment and social disruption calls for the consideration of the following aspects during planning:

Workforce

- retrenchment
- relocation
- re-training
- seed funding for alternative economic activities

Sustainability of associated communities

- social transition process of communities, where communities receive support for transition to new economic activities
- social exit from communities, which is the process by which mines cease to support community initiatives and social transition

Decommissioning of the site

- infrastructure demolition at the site or transition to end uses
- removal and disposal of waste
- making areas safe

Rehabilitation of the site

- rehabilitation of the site, during and post life of mine, in accordance with accepted final post mining use of disturbed areas

Post closure monitoring and maintenance

- should not be limited to biophysical parameters (affecting human, animal and plant life and the physical environment)
- should include progress towards the meeting of socio-economic objectives (affecting the social well-being and economic stability of the community).

4.5 Site-specific risk-based approach

A site-specific risk-based approach to planning (identifying local opportunities and threats directly related to that site) should reduce both cost and uncertainty, and should provide an understanding of the range of aspects which could contribute to the likelihood that operation leaves behind a positive legacy (a set of beneficial effects).

It is essential to assess opportunities and threats in a site-specific context. Social mitigation and rehabilitation need to be planned within the local community context and the ambient environmental conditions; they cannot be handled in a generic manner. A site-specific approach allows the identification of specific local opportunities and prevents over-expenditure on achieving generic standards that might not be meaningful in the local biophysical context.

Current trends in closure planning involve technical review and analysis of risk and cost benefit in social, engineering and environmental terms. The advantages of a risk-based approach to closure planning lie in the quantification of subjective factors (analysing them numerically, objectively and statistically) and the analysis of uncertainty related to both performance and cost. Through this quantification, a risk-based approach allows a focused and prioritised management style, well equipped to address social and environmental impact mitigation (efforts towards redressing deleterious effects).

4.6 Ensuring feasibility through research

Demonstrating the ability to successfully close a mine is now becoming important in the Namibian project approval process. It is necessary to ensure that closure is socially, technically and economically feasible without incurring long-term liabilities. Although high level objectives will be identified in the closure strategy, research is needed to develop closure targets and to be able to estimate costs with a high degree of accuracy. Research to investigate and support the practicality of proposed management interventions is critical to reduce technological and financial and reputational risks. This includes developing a detailed understanding of social and environmental baseline conditions, the impacts the operations will have or have already caused, and the identification of mitigation alternatives.

4.7 Regular and critical review

The dynamic nature of closure planning and economic conditions requires regular and critical review to reflect changing circumstances.

The Closure Plan should be modified as a result of any operational change, new regulations or new technology, and should be comprehensively reviewed on a regular and pre-determined cycle (e.g. every 3 to 5 years). It should always remain flexible enough to cope with unexpected events. Results from research need to inform the regular review.

4.8 Completion criteria and targets

Completion criteria are specific to the mine being closed, and should reflect its unique set of social, economic and environmental circumstances. These criteria need to be predetermined as early as possible, as they are an important component of both the closure strategy and the closure plan. They need to be achievable, accepted by stakeholders and supported by an agreed set of indicators and targets. A process needs to be in place that allows operations to develop closure targets that are both acceptable and achievable. Research is necessary to identify and set criteria and targets.

4.9 Stakeholder input

Closure can only be called successful if the stakeholders affected by the closure of a mine are satisfied with the end result of the planned interventions. Thus stakeholder input is required during the various phases of planning, and typically links to social impact mitigation strategies and planning for future use of the area, the closure strategy and the setting of closure criteria and targets.

5 FINANCIAL PROVISION

It is the objective of this Framework to ensure the cost of closure is adequately provided for and that the Namibian government is not left with a liability.

In view of the numerous abandoned mines that have not been closed to a satisfactory standard, the Namibian government formulated in 1999 the Minerals Policy of Namibia, which places emphasis on the 'polluter pays' principle (which places responsibility for pollution mitigation on the party that caused the pollution). This will ensure that environmental liabilities do not remain with the government. The government intends to implement the policy through enactment of relevant laws. It is therefore imperative that the mining industry put mechanisms in place which will ensure that adequate financial resources have accrued at the time of closure.

It is in the best interest of an active mining operation to develop and periodically review and update the closure strategy and plan, and to modify its internal accrual process so that unexpected costs do not occur at the beginning of decommissioning.

In addition to the minimum requirements stipulated in Namibian legislation, for example the Labour Act, mines should consider the following closure aspects as a minimum for financial provision.

Employee costs

- retrenchment provision
- new employment opportunities
- re-training costs

Social aspects (sustainability of associated communities)

- exit strategy (that is, the process by which mines cease to support initiatives)
- social transition (that is, communities receiving support for transition to new economic activities)

Demolition and rehabilitation costs

- infrastructure break-down, salvage and/or disposal at the site or transition to end uses
- ecosystem rehabilitation costs of the site

Post closure monitoring and maintenance

Project management

- administration and management costs during the decommissioning period

It is essential that the cost of closure be estimated as early as possible in the operational life of the mine. Without a realistic closure cost estimate, it is likely that provisions will be inadequate at the time of closure. As early in the closure planning process as possible, the licence holder should aim at a high level of detail in estimating costs.

5.1 Cost Estimate

A cost estimate for closure should be developed from the closure strategy and plan.

Closure plans provide cost estimates for final rehabilitation, severance payments, social closure, project management and final closure activities, as well as for environmental monitoring and long-term site management. The closure cost estimate provides a basis for the value of the closure funds required, and can be estimated reasonably accurately, provided that there is sufficient local socio-economic and site-specific information and data available from research. If sufficient information is gathered regarding the site specific closure needs, it will remove the need to use blanket calculations, thus reducing the risk of underestimating the real closure cost, and of carrying out inadequate implementation planning.

It should not be forgotten that adequate provision must be made for the execution of the closure project. This might take place for some time after the cessation of mining operations, and will therefore require a dedicated team and resources.

5.2 Regular review of cost estimates

Closure cost estimates should be reviewed regularly to reflect changing circumstances.

On submitting, during the feasibility stage of the project, the application for environmental clearance, companies should provide as detailed an estimate as possible and state what level (for example the level of order of magnitude, or scale) of closure costs they will incur, together with a description of the appropriate financial instrument they wish to use to manage their financial provision. The environmental clearance will be awarded if the level of commitment is adequate.

Once the project is operational, the licence holder will need to submit proof that the proposed financial mechanism is in place and that there is financial provision, supported by financial statements.

Licence holders should review their cost estimates at least every time the environmental clearance certificate comes up for renewal (every three years) and at least annually closer to decommissioning to adjust for:

- inflation and escalation
- changes in legislation
- changes in available technology to better address closure risks
- changes in the 'Life of Mine' plan (for instance, expansions, changes in process or new activities)
- changes in stakeholder expectations.

At this stage more detailed estimates of projected final closure costs will be required to demonstrate that the necessary financial provision has not been underestimated. The level of accuracy of the cost estimation should reach at least +/- 30 percent accuracy half way through its

'Life of Mine' plan. Two to three years before planned mine closure, the cost estimation should reach the level of accuracy expected in the feasibility stage of closure project development.

Return on the sale of assets or salvage value are difficult to determine and should not be used to offset the cost of closure.

5.3 Financial provision

Mine closure takes place when there is typically no return from the operation and there may be little value in the remaining assets. The objective of establishing financial provision is to ensure that adequate funds are available at the time of closure (premature or planned). The financial provision for closure should reflect the real cost, and needs to be sufficient to reduce the liabilities and residual risks to an acceptable level.

A schedule for financial provision should be part of all closure plans. The amounts provided for the five closure aspects (employment, social, rehabilitation, monitoring and maintenance and project management). The provision is typically accrued over the life of the operation, and may be varied to reflect changes in mine planning and operations.

5.4 Accepted accounting standards

There is a need for an independent audit on the closure plans and resulting costing estimates. This helps to ensure that plans and costings are realistic. Accounting standards should be the basis for the financial provision and companies should seek advice from financial professionals on how to address these accounting issues.

5.5 Financial mechanisms

It is essential that there should be 'real money in the bank', and not just a balance sheet showing a provision. For progressive environmental rehabilitation, mining companies may adopt their own optimum methods of funding during operations. However, for final closure, companies, in conjunction with Government, need to establish an independent fund. The trust fund is currently the preferred instrument in Namibia and in some cases being implemented.

In case of deficit of funds during rehabilitation, mining companies will be liable to top up as the liabilities lie with the licence holder.

5.6 Closure aspects to be considered in the cost estimate

5.6.1 Employee costs

The Labour Act, Act 6 of 1992, provides for severance packages, which include an amount of one week's remuneration for each year of employment, and pensions. In addition, companies might want to consider negotiating additional closure compensation with individuals and/ or the bargaining unit. These might include retention packages or additional benefits to allow easier transition to new economic activities. A responsible company should consider assisting their employees to find new employment or engage in alternate economic activities. This might include working with recruitment companies and industry associations to identify employment opportunities in the market place. The successful re-employment of retrenched employees could be achieved by timeous retraining of employees with future market needs in mind.

5.6.2 Social aspects

Once a mining company ceases to exist it cannot continue to support the community/communities which depended on it. Therefore companies need to develop a social closure plan that reduces dependency, within a realistic time-frame, in a well managed way that is supported by the affected community/communities. This will include making the transition from one circumstance to another, and could include costs such as seed funding, skills development and ongoing administration and management aimed at providing the remaining communities with better prospects for a sustained livelihood.

5.6.3 Demolition and rehabilitation costs

The cost estimate for demolition and rehabilitation will include the cost of breaking down, salvaging and disposing of infrastructure (roads, rail and pipelines) and facilities (process plant, workshops, drilling platforms etc) and the ecosystem rehabilitation of the mining area, including permanent waste storage facilities (such as rock dumps or tailings facilities) in accordance with the post closure use of the affected area.

5.6.4 Post closure monitoring and maintenance

Costs need to be set aside to allow for an adequate monitoring programme that will track progress towards objectives and maintenance, to allow for adaptive management (a systematic process for continually improving management policies and practices by learning from the outcomes of operational programmes; responsive to changes as they occur).

5.6.5 Project management

Project management costs include administration and management costs, services (for instance, legal fees) and resources such as offices, laboratories, medical facilities, vehicles and heavy duty equipment to manage the closure project. This is needed regardless of whether the company chooses to manage the project themselves or to contract it out.

6 IMPLEMENTATION

Well planned closure programs consist of two phases: planning and implementation. The successful coordination of these stages will result in a well designed, systematic, safe and cost-effective mine closure.

The following considerations need to be taken into account in the management and implementation of closure plans:

- accountability for plan implementation
- objectives, targets and time frames
- the human and financial resources needed to ensure conformance with the plan
- ongoing management and monitoring requirements after closure of the operation.

6.1 Accountability for closure

The accountability for resourcing and implementing the closure plan lies with the mining company. A management structure to implement the plan should be clearly identified.

In theory, closure is the converse of commissioning, requiring similar skill levels, operational experience, motivation and commitment as does the establishment of a mine. The closure process will be enhanced if there is a dedicated team structure, reporting to a project manager. Roles and responsibilities need to be clearly established early in the process.

6.2 Adequate resources

Adequate financial and human resources should be provided to ensure conformance with the closure plan. Should there be a shortfall at the time of closure, it is unlikely that adequate resources will be sourced from elsewhere within a relatively short period of time. This highlights the importance of:

- calculating the estimate to a high level of accuracy
- starting to set money aside from early on in the operational life of the mine
- ensuring that at the time of closure the fund has grown to an adequate level.

Provisioning (the accrual of funds in advance to provide for a future obligation) is designed to ensure that adequate funds are available to meet closure commitments. Release mechanisms for accessing externally administered closure funds need to be specified and agreed upon.

6.3 Ongoing management

The ongoing management and monitoring requirements after closure should be assessed and adequately provided for when it comes to implementation. It should be the objective of all mine closure programs to achieve socio-economic stability and a post closure maintenance-free use of disturbed areas. However, under some closure circumstances there may be a need to provide long-term, active management and/or monitoring of the closed site. The post-mining management and monitoring requirements need to be assessed and adequately provided for, with clearly defined responsibilities assigned to specific relevant parties. The design of monitoring programs should be informed by the results from research.

6.4 Objectives, targets and time frames

In order to execute a closure plan, the objectives, targets and time frames developed during the mine closure planning phase will need to be met. The progress towards meeting them needs to be properly tracked. This will allow identification of shortfalls and, if necessary, interventions to achieve the established targets, within the planned time frames.

7 RELINQUISHMENT

Relinquishment is the formal approval by an Organ of State, confirming that agreed upon targets have been achieved as the completion criteria for the closing mine have been met to the satisfaction of the ministries concerned. Once sign-off has occurred, the mine is then in a position to transfer liabilities to the subsequent owner.

7.1 Preparing for relinquishment

In general terms, relinquishment should reflect closure objectives having been met. Sign-off should be obtained from the ministries concerned and major stakeholders, prior to relinquishment. When an Organ of State has agreed to relinquishment of the site, the

management and maintenance of the site would rest with subsequent owners, traditional authorities or the government.

Under the current legislation, it is relatively easy to satisfy closure obligations because performance criteria have not been regulated. However, the Namibian Minerals Policy calls for broader responsibility on the part of the licence holder, namely in addressing social responsibility, in compliance with national policies and best practice, and in providing mechanisms to rehabilitate closed mines for the purpose of sustained land or coastal use.

In order to bring these policy objectives into operation, and bearing in mind that mine closure is a complex combination of socio-economic and biophysical considerations, more detailed processes need to be put in place to allow for meaningful relinquishment that can be accomplished.

This means establishing and agreeing on a set of targets, completion criteria (conditions that show that mine closure objectives have been met), indicators (parameters that provide information about a socio-economic or an environmental phenomenon), and a review or auditing process that will demonstrate successful closure of an operation.

Once relinquishment has been granted, accountability will revert to subsequent owners, traditional authorities or the government. However, there is still a considerable lack of clarity regarding how much responsibility can be relinquished at closure and how much residual liability remains, as well as identifying the parties remaining liable and the period of time over which liability remains. Prior to closure, licence holders will need to reach agreement with the Organ of State responsible for relinquishment regarding residual liability.

7.2 Target setting process

A process needs to be put in place by a licence holder that allows for the development of closure targets that are both acceptable and achievable. It is in the interest of the licence holder to develop a transparent process in consultation with the responsible ministries and other stakeholders, so as to develop completion criteria, indicators and targets that make it possible to determine whether the vision, objectives and goals set during closure planning have been met.

When establishing these criteria it is essential first to verify, during operations, that the criteria are acceptable, the indicators are the correct ones and the targets are achievable, as these criteria will form the basis of a performance analysis, which should lead to justified acceptance and relinquishment.

In the event of a licence holder having to comply with more than one set of requirements (for example, internal codes of practice or standards set by a parent company as well as external ones set out by the CoM, Namibian or international legislation), then that operation should choose and meet the most stringent of requirements.

7.3 Completion criteria

Completion criteria are specific to the mine being closed, and reflect the unique set of social, economic and environmental circumstances of the operation. They should be developed and agreed with stakeholders and, where possible, indicators should be quantitative and capable of objective verification during the review and auditing process.

Completion criteria need to be based on:

- the closure objectives developed in consultation with stakeholders during the mine closure planning process

- the outcomes of research
- the site-specific post closure conditions required to bring about the anticipated socio-economic stability and use of post closure rehabilitated areas.

Meeting completion criteria should result in a satisfactory transition of former employees to alternate livelihoods and conditions for the previously dependent community/communities to self-manage the transition process. At the same time, completion criteria should enable closed out sites to be returned to subsequent owners, traditional authorities or the government.

Ongoing stakeholder interaction beyond the planning phase is essential, as it leads to broad agreement on both the end socio-economic and post mining objectives, and the basis for measuring the achievement of those objectives.

Completion criteria should be flexible enough to adapt to changing circumstances without compromising the agreed end objective. This provides certainty of process and outcome (the relinquishment of the mineral licence when conditions have been met). As part of the planning process there should be an agreed mechanism for the periodic review and modification of completion criteria in the light of improved knowledge or changed circumstances.

7.3.1 Indicators

An indicator is a parameter that provides information about a socio-economic or environmental phenomenon. An agreed set of indicators should be developed to allow mines to measure progress on the path towards achievement of socio-economic and environmental performance targets. As the agreed socio-economic conditions and post-mining use of the rehabilitated areas may take years, or even decades, to achieve, a set of specific performance indicators should be developed to measure progress in meeting the completion criteria. Indicators can be identified from codes of practice, regulations and standards, review of best practice and/or from site-specific research.

7.3.2 Performance targets

Performance targets should be in place to manage the close out process and to demonstrate the achievement of objectives. Where possible appropriate targets should be developed that provide benchmarks against which to measure performance. As far as possible, targets should be quantitative, as it is difficult to validate qualitative targets. Targets may be quantitative (for instance, the proportion of former employees successfully retrained, or concentrations of a residual metal) or semi-quantitative (for instance, high, medium, low).

Measuring progress against performance targets should show whether the implementation is progressing in the right direction. Where trends are not as expected, an early intervention will ensure that the desired closure objectives can still be realised in a cost-effective and time-efficient manner.

7.4 Formal approval for relinquishment

7.4.1 The process

A point needs to be reached where the licence holder will have met the agreed completion criteria and targets to the satisfaction of the concerned ministries. An Organ of State should then grant relinquishment and transfer of accountabilities. As this is a formal process, relinquishment should be in the form of a final mine closure certificate. This certificate should address all aspects of the mine closure plan (socio-economic and biophysical) and stipulate conditions.

For relinquishment to be effected, the following management steps need to be completed:

- a detailed account of the entire implementation process must be documented (including, reports, monitoring results, minutes of meetings and so on)
- an acceptable outcome of a comprehensive mine closure review or audit has been achieved
- remaining liabilities are specified in conditions attached to the mine closure certificate and bind the licence holder, the subsequent owners, traditional authorities or the government
- a mine closure certificate has been issued to the licence holder
- a record of the certificate is kept by the Organ of State
- issuing of the closure certificate is communicated to the stakeholders
- records retention strategy has been implemented.

7.4.2 Records retention strategy

In the past, when mines closed or were abandoned, most of the records of activities that occurred on the sites were lost, destroyed or inadvertently disposed of. These records, while potentially of no further use to the company that once operated the site, are valuable to the government, potential future land users, stakeholders and researchers. The retention of records, beyond that already called for in current legislation, should include:

- medical records (for a period of at least 30 years)
- locations, quantities and qualities of stored waste products (for instance, tailings dams, waste dumps, and so on)
- site-specific surveys or studies (for instance, contaminated site surveys)
- design and specifications of final land form construction and rehabilitation
- documentation of the mine closure process.

Retention of records is important because they provide:

- information that will assist the subsequent landowner(s)
- a history of past developments
- information for incorporation into Namibian natural resource data bases
- the potential to improve future post mining use planning and/or site redevelopment
- the basis to develop case studies for lessons learnt (for instance, social and environmental aspects and closure management)
- evidence to assist in investigating potential claims in the future.

8 DEFINITIONS

adaptive management: a systematic process for continually improving management policies and practices by learning from the outcomes of operational programmes

biophysical: relating to both biological (human, plant and animal) and physical elements

completion criteria: conditions that show that mine closure objectives have been met

decommissioning: the process that begins near, or at, the cessation of mineral production, and ends with the removal of all unwanted infrastructure and services

indicator: a parameter that provides information about a socio-economic or an environmental phenomenon

mine closure: a 'whole of mine life' process which typically culminates in relinquishment of a mining licence; it includes social closure, decommissioning and rehabilitation

mine closure framework: an outline for mine closure, a basis on which to design future mine closure strategies and plans. This document is the mine closure framework that is recommended by the CoM for use by Namibian mining companies

mitigation: actions taken to correct for deleterious effects

order of magnitude: scale, level of size

Organ of State: any office, ministry or agency of state or administration in the local or regional sphere of government, or any other functionary or institution exercising power or performing a function in terms of the Namibian constitution, or exercising a public power or performing a public function in terms of any law

provision: a financial accrual based on a cost estimate of the closure activities

provisioning: the accrual of funds in advance to provide for a future obligation

quantification: expression as a numerical equivalent, subject to statistical analysis

rehabilitation: the practice of setting a disturbed ecosystem on a trajectory back to recovery (in other words, to being restored); this implies that the ecosystem has not yet fully recovered its structure and function, but is moving in that direction

relinquishment: formal approval by the relevant regulating authority indicating that the completion criteria for the mine have been met to the satisfaction of the authority

site-specific: relating to a particular site

social closure: the addressing of the needs of employees and dependent communities, post closure; it includes an exit strategy, which is the process by which mines cease to support community initiatives and social transition, and communities receive support for transition to new economic activities

socio-economic: relating to both social and economic factors

stakeholder: a person, group or organisation with the potential to affect or be affected by the process of or outcome of mine closure

standard: a document that prescribes the requirements with which the product, service or function has to conform

target: a value derived from a parameter that is aimed for or aspired to; an objective towards which effort is directed

9 ACTS, POLICIES, ORDINANCES AND GUIDELINES REFERRED TO IN DOCUMENT

Minerals Policy of Namibia, 2002

Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation, 1994

Policy for Prospecting and Mining in Protected Areas and National Monuments, 1999

General Environmental Assessment Guidelines for Mining (Onshore and Off-shore) Sector of Namibia, 2000

Policy for the Conservation of Biotic Diversity and Habitat Protection, 1994

The Minerals (Prospecting & Mining) Act, 33 of 1992

The Environmental Management Act, 7 of 2007

Water Act, 54 of 1956

The Atmospheric Pollution Prevention Ordinance, 11 of 1976

Labour Act, 6 of 1992

Minerals Policy of Namibia, 1999

10 ACRONYMS

Chamber of Mines of Namibia (CoM)

Code of Conduct and Ethics (COC)

Environmental assessments (EA)

Environmental Management Act (EMA)

Environmental Management Plan (EMP)

Integrated Environmental Management (IEM)

International Council on Mining and Metals (ICMM)

Mining Commissioner (MC)

Namibian Mine Closure Framework (NMCF)

Rehabilitation and Closure Committee (RCC)

Small- and medium-sized enterprises (SMEs)

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