

**THE OBLIGATION TO REHABILITATE MINING AREAS: POST MINING  
ACTIVITIES**

by

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## ABSTRACT

The study focuses on rehabilitation, since absence of proper rehabilitation process result in indelible damage to the environment. South Africa, like many other countries, is faced with many environmental problems caused by mining. These problems are particularly caused by, *inter alia*, abandoned mining areas without rehabilitation, inadequate environmental impact assessment after closure, inadequate financial provision for rehabilitation, and lack of monitoring and aftercare system after post mine closure. The study found that many Companies ignore laws governing prospecting, extraction and rehabilitation. The main purpose of this research is to investigate and recommend guidelines in the rehabilitation process so as to instil respect for the environment. The study therefore recommended strict legislation relating to environmental protection against mining.

## DECLARATION

I declare that the mini-dissertation hereby submitted to the University of Limpopo for the degree of Master of Laws has not been previously submitted by me for a degree at any other University; that it is my own work in design and execution, and that all materials contained therein have been duly acknowledged.

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T. Madalane

## **DEDICATION**

**To my parents Frank Madalane and Sophie Molobela-Madalane**

**To my sisters, Jillian and Katlego,**

**To my brothers, Leavit, Gilbert and Abednego**

**To my daughter, Nhluvuko and**

**To my late brother Jacob and sisters Constance and Thami**

## **ACKNOWLEDGMENT**

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**Ms I T Nyathela, for her valued advise, intellectual guidance and motivation throughout the study.**

## TABLE OF ABBREVIATIONS

<b>DEAT</b>	Department of Environmental Affairs and Tourism
<b>DME</b>	Department of Mineral and Energy
<b>EIA</b>	Environmental Impact Assessment
<b>EMP</b>	Environmental Management Programme
<b>EMPR</b>	Environmental Management Programme Report
<b>EIMP</b>	Environmental implementation and management plan
<b>EPA</b>	Environmental Protection Agency
<b>HDSA</b>	Historically disadvantaged South Africans
<b>SAMDA</b>	South African Mining Development Association

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## TABLE OF CONTENT

	<b>page</b>
<b>1. INTRODUCTION</b>	
1.1 Background	
1.1.1 The concept of rehabilitation	1
1.1.2 Manner of rehabilitation	2
1.1.3 Ability to rehabilitate	2
1.1.4 Provision for rehabilitation	2
1.2 Problem statement	4
1.3 Hypothesis	4
1.4 Objectives of the study	5
1.5 Rationale	5
1.6 Research methodology	5
1.7 Organization chapter	6
<b>2. MINING AND ITS IMPACTS ON THE ENVIRONMENT: WHY A NEED TO REHABILITATE</b>	
2.1 Different stages of mining activities and their impacts on the environment	7
2.1.1 The prospecting and exploration phase	7
2.1.2 The extraction and beneficiation phase	8
2.1.3 The closure, post closure and reclamation phase	9
2.2 The environmental pollution	9
2.2.1 Air pollution	9

2.2.2 Water pollution	9
2.2.3 Land pollution	11
2.3 Environmental rights of residents	12
<b>3. REHABILITATION OF THE LAND DISTURBED BY MINING ACTIVITIES</b>	
3.1 Environmental rehabilitation measures	15
3.1.1 Rehabilitation of mining activities	15
3.1.2 Purpose of rehabilitation	17
3.1.3 Financial provision for rehabilitation	19
3.1.4 Removal of buildings, structures and other objects	24
3.1.5 Land rehabilitation	24
<b>4. OBLIGATIONS OF MINING COMPANIES TO REHABILITATE</b>	
4.1 Nature of the obligation to rehabilitate	26
4.1.1 Is the duty retrospective?	29
4.1.2 Implications of the judgement	30
4.1.3 Rationale for contamination obligations being retrospective	30
4.2 Obligations of the mining companies in terms of NEMA	32
4.2.1 Duties in terms of the principles of NEMA	33
4.1.2 Statutory duties of NEMA applicable to mining companies	34
4.3 Obligations in terms of the MPRDA	35
4.4 Obligations in terms of the National Environmental Management: Air Quality Act	37

4.5 Obligation in terms of the National Water Act 36 of 1998 (NWA)	38
4.6 Legal recourse available to residents	38
4.6.1 Legal standing available to residents	39

## **5. LIABILITY OF THE MINING COMPANIES FOR ENVIRONMENTAL DAMAGES**

5.1 Introduction	41
5.2 Liability of mining companies under the MPRDA	41
5.2.1 Nature of environmental liability	41
5.3 Liability of mining companies under the NEMA	43
5.3.1 Nature of the duty	44
5.3.2 Measures to be taken	45
5.3.3 Enforcement of the duty	46
5.4 National water Act	46
5.4.1 Scope of the duty	47
5.4.2 Measures to be taken	47
5.4.3 Enforcement of the duty of care	47
5.4.4 Nature of liability if duty is not discharged	48

## **6. MINE CLOSURE AND POST CLOSURE**

6.1 Closure	49
6.1.1 Closure Requirements in terms MPRDA legislation	50
6.2 Environmental rehabilitation measures: an obligation to rehabilitate	51

6.3 Closure certificate	55
6.4 Safe post mining areas	57
<b>7. CONCLUSION AND RECOMENDATIONS</b>	<b>59</b>
<b>8. BIBLIOGRAPHY/ REFERENCES</b>	<b>61</b>

# CHAPTER ONE

## 1. INTRODUCTION

### 1.1 Background

#### 1.1.1 The concept of rehabilitation

The concept of rehabilitation has become part of South African environmental law. It forms the basis of sustainable development in terms of section 2 (4) and section 28 of National Environmental Management Act<sup>1</sup> (NEMA). For the purpose of mining it is important to define precisely what rehabilitation is. Rehabilitation is the replacement of the degraded asset with an asset that need not be similar in nature but which must at least have a similar value. The rehabilitation process must be executed according to a detailed environmental management programme<sup>2</sup>. Rehabilitation is therefore, the key concept in development activities. If a strict definition sets requirements that cannot be met, it will mean that the land cannot be rehabilitated. Mining authorisation must then be refused. The precise term of the definition will therefore determine whether permission in principle to mine has to be granted or refused. It will also definitely determine the cost of rehabilitation. A mining authorisation (the right in principle to mine), may be issued if the ability to rehabilitate land disturbed by mining is proven.

Mining causes the degradation, removal or destruction of natural resources. Natural resources are part of the resources or assets available to mankind. Their unsustainable use diminishes the value of the resource or asset base of the earth. This diminishes the future ability to develop. Rehabilitation is neither re-vegetation nor the restoration of land as closely as possible to a previous condition. Re-vegetation is at best a form of rehabilitation or a component part of a rehabilitation process. Thus the re-vegetation of mine dunes might as well fail to rehabilitate the dunes if the replaced plants are more visual screens inhabiting erosion. A financial qualification of a final product should show a value at least similar to the value of the plant, animal and bird biodiversity that has been destroyed. Good rehabilitation

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<sup>1</sup> Act 107 of 1998.

<sup>2</sup> Section 5 (c) of the Mineral and Petroleum Resources Development Act 28 of 2002.

can for example include replacing of the land used for a quarry or a mine with a lake, a waste disposal site, a sports complex or a holiday resort.

### **1.1.2 Manner of rehabilitation**

The manner refers to the way in which the applicant proposes to rehabilitate an area. Detailed particularity about the proposed rehabilitation process must accompany the application.<sup>3</sup> The rehabilitation process must be described with sufficient particularity to make it clear what steps will be necessary for the purpose of rehabilitation. An integral part of the manner must logically be the description of the end-use of the land after decommissioning of the mine. Only then can the proposal be understood and dealt with in its entirety.

### **1.1.2 Ability to rehabilitate**

Ability refers to the question of whether the applicant will be able to execute the mining plan in the manner proposed. The applicant must convince the Director that he has the skills, the machinery and the capacity to execute the process. The applicant will of course, not be able to satisfy the Director that he is able to rehabilitate if the suggested process is impossible to execute. For example, if the proposed end-use of a quarry will create a lake, a source of water must be in reach to fill the quarry eventually. If a water source is not available, the impossibility to create a lake may result in refusal of authorisation for quarrying.

### **1.1.4 Provision for rehabilitation**

The applicant has to satisfy the Director that sufficient funds will be available for the rehabilitation process on which the application is based.<sup>4</sup> This requirement creates an opportunity for the Director to make sure that the applicant makes adequate financial provision for rehabilitation. He can demand the creation of a fund or the delivery of a guarantee that will not become worthless if the applicant becomes insolvent. This will ensure that sufficient money will be available to execute the rehabilitation programme. The

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<sup>3</sup> Section (5) (c) of the Mineral and Petroleum Resources Development Act 28 of 2002

<sup>4</sup> Section 41 of the Mineral and Petroleum Resources Development Act 28 of 2002 as amended.

rehabilitation process also determines the extent of the provision. The MPRDA demands that rehabilitation should, as far as possible, take place simultaneously with mining. This means that most of the rehabilitation will take place during the life span of the mine. In an open cast mine that is worked by using the strip-mining method, the strips where mining has been completed are rehabilitated as the mining process continues. At the most three or four strips could be in an unrehabilitated state at any given moment. In such a case the financial provision can be less than the provision for a mine where a much larger part of the land remains disturbed.

Whilst the mining industry stimulates economic growth in South Africa, its activities have also impacted on the environment in which it operates. The purpose of this research is to reveal the need to protect the environment during mining activities. It will be shown how mining activities damage the environment and what mechanisms or legislation the government have enacted over the years, to ensure that mining companies take reasonable measures to prevent such damage, and there are penalties in terms of which companies are held responsible for non-compliance with the legislation.

South Africa has been, and is still, relying heavily on mining activities to generate wealth that could be translated into economic development, infrastructure and employment. However, mining companies do not adhere to lawful procedures when conducting its activities, and this causes damage to the environment. The miners concentrate on profit making but they do not consider the protection of the environment as required by law. Some mining companies do not rehabilitate after conducting its activities, but instead abandon the mine with the damages caused. Section 24 of the Constitution provides that everyone has a right to an environment that is not harmful to their well-being.<sup>5</sup> Mining activities impact on the environment in different ways and include *inter alia*, air pollution, water pollution and environmental degradation.

The environmental impacts differ depending on the mining activity and the different stages of mining. The environmental damage in the prospecting and exploration phase may be less than the damage caused during the extraction or metallurgical

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<sup>5</sup> Act 108 of 1996.

phase.<sup>6</sup> A particular problem with which the mining industry has been constantly faced since the early days of mining in South Africa, is the pollution caused by water emanating from slimes dams and other mining workings. In the case of certain coal mines, the acid content of the water which caused pollution is produced as the results of the water which chemical action of air and water on the iron pyrites naturally in the ground. The damage caused in such cases may involve contamination either of soil or of underground water supplies. The lowering of water table as results of such operations has led to the drying up of bore holes on land adjoining the mines concerned and damage to the land itself and surface installation on it as buildings, roads and railway.

## **1.2 Problem statement**

South Africa is faced with many major problems such as:

1. abandonment of mining areas without rehabilitation,
2. inadequate Environmental Impact Assessment after mine closure,
3. inadequate financial provision for rehabilitation, and
4. lack of monitoring and aftercare system after post mine closure.

In South Africa there are many mining operations that are taking place. These mining operations often cause environmental damages because many companies ignore the laws governing prospecting, extraction and rehabilitation. As a result, strict legislation relating to environmental protection should be put in place during mining operations; and rehabilitation processes must be strictly monitored, to ensure minimal environmental damages.

## **1.3 Hypothesis**

The hypothesis as suggested in the title is that mining operations cause a great damage to the environment in the absence of proper rehabilitation processes. And that the right to a healthy environment has to be exercised or given effect to in South Africa to ensure environmental protection.

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<sup>6</sup> Glazewski, Environmental Law in South Africa (2005) at 135.



#### **1.4 Objectives of the study**

In South Africa, there are environmental problems caused by mining industries. The purpose of this study is to compile documentation on the failures of the mining companies to rehabilitate areas on post mining activities. The study aims to investigate problems relating to mine rehabilitation in South Africa. The general aim of the study is therefore to evaluate the closure and rehabilitation of mines and to specifically:

1. Whether an Environmental Impact Assessment is well conducted and how to manage the impacts;
2. Evaluate, monitoring and aftercare system after post mine closure;
3. To show that although mining is important to the economy of the country, it should not be operated in a hazardous manner.
4. To set out the importance of environmental protection from mining activities
5. To set out the importance of the rehabilitation processes

#### **1.5 Rationale**

It is importance to take into account environmental protection in mining operations. Some mining companies neglect the environmental laws during their prospecting or mining. The main purpose of this research is to investigate and to recommend or suggest guidelines, for both the state and mining companies, in following the mining rehabilitation process.

#### **1.6 Research methodology**

The research methodology to be adopted in this study will be quantitative. It will be library research; primary and secondary sources of law such as legislation, case law, text books, journal articles, newspaper reports and the internet will be used as source of information and data.

## **1.7 Organization of chapters**

In accordance with this plan, chapter 1 contains an overview of the research; Chapter 2 deals with the mining impacts on the environment, the different stages of mining, and their impacts on the environment and the environmental rights of residents.

Chapter 3 focuses on rehabilitation measures, purpose and need for rehabilitation, financial requirements and public participation. It sets out the importance of rehabilitation process more specifically the effect of a proper rehabilitation process, which leads to minimal environmental damage and the conclusion.

Chapter 4 deals with the obligations of mining companies to rehabilitate, whether there is retrospective duty, obligations of mining companies in terms of NEMA, MPRDA and NWA, and the breach of statutory duties to rehabilitate.

Chapter 5 deals with liability of mining companies for environmental damages caused during and after their activities. The nature of duty and liability in terms of the following Acts: MPRDA, NEMA and NWA.

Chapter 6 focuses on the closure requirements, environmental closure implications under the MPRDA, the need and procedure of obtaining a closure certificate.

Chapter 7 is a conclusion and recommendation in dealing with future challenges in the process of ecological restoration if biodiversity losses is to be avoided.

## **CHAPTER 2**

### **MINING AND ITS IMPACTS ON THE ENVIRONMENT: WHY A NEEDS TO REHABILITATE?**

South Africa has a wealth of natural resources, but also some severe environmental problems. This chapter deals with the main environmental concerns relating to mining, and then describing each phase of the mine cycle and how those activities impact on the environment. An applicant for mining authorization is required to motivate that the applicant can mine in a responsible and optimal way and to show that it has the necessary financial wherewithal to do so.<sup>7</sup> The environmental impacts of mining differ between various stages of the mining process, and are discussed under the following subheading:

## **2.1 Different stages of mining activities and their impacts on the environment**

### **2.1.1 The prospecting or exploration phase**

A prospecting right means searching for a particular mineral or minerals including the scary excavation and boring but does not include mining.<sup>8</sup> The definition of prospecting in the MPRDA presupposes the disturbance of the earth's surface by means of excavation or drilling. The prospecting or exploration phase typically has the lowest impact level of any part of the mining process, but even this first step can cause environmental damage; for example, clearing of trees, vegetation and habitat; displacement dysfunction and death of and biota; land reform disruption, through constructions of roads, camps, excavations, pads, pits, holes, shafts and so on, foreclosure of alternative land and resources uses; disruption or displacement of indigenous population and local communities; social and cultural conflict and integration; criminal activity; opening of sensitive ecosystem to unplanned settlement influxes and other extractive uses.

### **2.1.2 The extraction and beneficiation phase**

Extraction is the first phase of hard rock mining which consists of the initial removal of ore from the earth. Extraction is the removal of the ore from the ground on a large scale.<sup>9</sup> The extraction phase in mine development and operation can exacerbate the

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<sup>7</sup> Section 9 of the Mineral and Petroleum Resources Development Act 28 of 2002.

<sup>8</sup> Section 1(xxxi) Definition of a prospecting right.

<sup>9</sup> Glazewski, Environmental Law in South Africa.

above mentioned impacts and in addition, result in destruction of vegetation cover; loss of topsoil ;the extinction of other natural resources; major land form changes; human safety hazards; a reduction in water quantity; changes in the water quality (ground water, surface water, wetlands, or the sea), due to acidic mine drainage, the leaching of heavy metals, toxic leaks and overflows and sedimentation and erosion; noise; air pollution from dust, evaporation, releases of toxic and other gases. The extraction and beneficiation of minerals generates large quantities of waste.

Beneficiation follows and is the initial attempt at liberating and concentrating the valuable mineral from the extracted ore.<sup>10</sup> After the beneficiation step, the remaining material is often physically and chemically similar to the material (ore or mineral) that entered the operation, except that particle size has been reduced. Beneficiation operations include crushing; grinding; washing; dissolution; crystallization; filtration; sorting; sizing; drying; sintering; pelletizing; briquetting; calcining; roasting in preparation for leaching; gravity concentration; magnetic separation; electrostatic separation; floating; ion exchange; solvent extraction; electro winning; precipitation; amalgamation; and heap, dump, vat, tank, and in situ leaching.

Mineral processing operations generally follow beneficiation and include techniques that often change the chemical composition, the physical structure of the ore or mineral. Examples of mineral processing techniques include smelting, electrolytic refining, and acid attack or digestion.<sup>11</sup> Mineral processing waste streams typically bear little or no resemble to the material that entered the operation, producing product and waste streams that are not earthen in character.

### **2.1.3 The closure, post closure and reclamation phase**

The closure of a mine refers to cessation of mining at that site. It involves completing a reclamation plan and ensures the safety of areas affected by operation, for instance, by sealing the entrance to an abandoned mine. The closure, post-closure and reclamation can exacerbate the impacts described above. Abandoned mines,

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<sup>10</sup> Section 1 of the Mineral and Petroleum Resources Development Act 28 of 2002 as amended.

<sup>11</sup> Section 1 of the Mineral and Petroleum Resources Development Act 28 of 2002.

failed or inadequate reclamation projects, secondary effects of the reclamation efforts themselves, an adequate economic base to support the region's population and health and environmental safety issues often pose serious problems.

## **2.2 The environmental pollution**

Pollution is the introduction of a contaminant into the environment. It is created mostly by human actions, but can also be a result of natural disasters. Pollution has a detrimental effect on any living organism in an environment, making it virtually impossible to sustain life. Three major kinds of pollution has been identified, namely, air pollution, water pollution and land pollution.

### **2.2.1 Air pollution**

Air pollution is the introduction of chemicals, particulate matter, or biological materials that causes pollution. Air pollution in the atmosphere, at elevated levels, may affect human health as well as impact on natural ecosystems. The primary human-induced sources of air pollution in the country include mining and industrial activities.<sup>12</sup>

### **2.2.2 Water pollution**

Water pollution is the introduction of chemical, biological and physical matter into large bodies of water that degrade the quality of life that lives in it and consumes it. All water pollution affects organisms and plants that live in these water bodies and in almost all cases the effect is damaging either to individual species and populations but also to the environment. It occurs when pollutants are discharged directly or indirectly from the mine into water bodies without adequate treatment to remove harmful constituents.<sup>13</sup>

In the case of *Prinsloo v Luitaardsvlei Estates and Gold Mining Co Ltd*<sup>14</sup> concern was expressed about the pollution of water by a mining company discharging foul and acid water. The court held that mining should be carried out without polluting streams, rivers or water-courses.

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<sup>12</sup> Glazewski, Environmental Law in South Africa.

<sup>13</sup> Glazewski, Environmental Law in South Africa.

<sup>14</sup> 1933 WLD 6

Section 19(1) of the National Water Act <sup>15</sup> places an obligation on an occupier of the land not to cause pollution to a water resource.<sup>16</sup> An owner or occupier of land who uses or occupies land on which any activity or process or situation caused or is likely to cause pollution of water resource, must take all reasonable measures<sup>17</sup> to prevent any such pollution from occurring or continuing.<sup>18</sup>

A common form of pollution of land and water resulting from the operation of gold mines is that caused by the escape of acid bearing water flowing from slimes dams in which there are cyanide compounds, which are difficult to neutralise. This water, which may be rain water which dissolves such deleterious matter, may percolate or flow from the beds and walls of slimes dams into adjoining land and into streams, thus polluting the land and water. Other forms of pollution may occur as a result of effluent flowing or seeping from mineral, tailings and waste rock dumps or simply as a result of the chemical action of air and water on iron pyrites in the ground, producing acid –bearing water flowing from coal mine.

Prior to the introduction of the Minerals Act,<sup>19</sup> the depositing of material in the course of mining operations were generally authorised in terms of surface rights permit, granted under the Mining Rights Act,<sup>20</sup> or its counterpart, the repealed gold law,<sup>21</sup> where the mining operations were being carried out pursuant to the provisions of the Mining Rights Act. In terms of this section, any person who was entitled to mine on proclaimed land or land held under the mining title, could apply to the mining commissioner and be granted permission to use the surface of land so held of any open proclaimed land for the purpose of mining or any purpose incidental thereto.<sup>22</sup> Therefore it is evident that water and air pollution are contaminant to mining activities.

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<sup>15</sup> Act 36 of 1998.

<sup>16</sup> In terms of the water resource includes a water cause, surface water, estuary or equier.

<sup>17</sup> Section 19 (2) provides a list of measures to be undertaken.

<sup>18</sup> Section 19(1) of the National Water Act 36 of 1998.

<sup>19</sup> Act 50 of 1991.

<sup>20</sup> Section 90 of Act 20 of 1967

<sup>21</sup> Section 68 of the Tvl Precious and Base Metals Act 35 of 1908.

<sup>22</sup> Section 90 (2) (a) of Mining Rights Act 20 of 1967.

A particular problem with which the mining industry has been constantly faced since the early days of mining in South Africa, is the pollution caused by water emanating from slimes dams and other mining workings. In the case of certain coal mines, the acid content of the water which caused pollution is produced as the results of the water which chemical action of air and water on the iron pyrites naturally in the ground. The damage caused in such cases may involve contamination, either of soil or of underground water supplies. The lowering of water table as results of such operations has led to the drying up of bore holes on land adjoining the mines concerned, and damage to the land itself and surface installation on it as buildings, roads and railway.

### **2.2.3 Land pollution**

Land pollution is pollution of the Earth's natural land surface by industrial, commercial, domestic and agricultural activities. Mining presents a particular problem, in the sense that mining activities often destroy the land. Mining operations often have a huge impact, also on landowners over whose land the mine gets a right of way. The size and number of trucks using such roads can be very problematic. Land used for mining is often lost to crop production forever.

## **2.3 Environmental rights of residents**

It is common cause that the mining activities severely impact on the environment. The soil, water, human health, built-up environment, air, plants and animal life are all affected by the mining process.<sup>23</sup>

The environmental impact differs depending on the mining activity and the different stages of mining. For example, the environmental damage in the prospecting and

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<sup>23</sup> Mabitsela and Du Plessis " The impact of environmental legislation on mining in South Africa" (2001) SAJELP at 186.

exploration phase may be less than the damaged during the extraction or metallurgical phase.<sup>24</sup>

Diamond mining, in particular, requires extensive explosions to remove rock, soil and vegetation in order to reach mineral deposits which are found in the ore beneath the earth surface. The explosives contain the mixture of ammonium nitrate and fuel oil, which apparently pollute the environment. The explosions as well as the stone mining and rock crushing cause dust which results in air pollution. Water is used to cool the drilling machines, to wash away deposits of waste rock and to suppress dust caused by the explosions and drilling, these results in water pollution.<sup>25</sup>

In a case study on diamond mining in Angola, it was found that the mining activities degraded the surrounding land by increasing atmospheric pollution, contaminating surface and ground water, and increasing soil erosion and leaching. This affected the health of the inhabitants in the region, which was apparently evidenced by the fact that most residents were suffering from sickness and diseases related to contaminated drinking water supplies.<sup>26</sup>

In South Africa, the position on whether the courts will accept the premise that ill-health is resultant from pollution without evidence of direct injury is unclear. In the *Woodcarb* case,<sup>27</sup> the court relied on the testimony of expert witnesses to demonstrate that the smoke caused the emission of noxious and poisonous gases which resulted in air pollution which was found to be a risk to the health of the neighbouring residents.

The right to a clean environment and sustainable development is fundamentally and closely connected to the right to health and well-being.<sup>28</sup> It is of fundamental importance to note that there is a strong connection between the quality of the environment and the health of the people living and/or exposed to those environments. The responsibility for the provision of a safe and healthy environment is outlined in a range of legislation and different sections of the Constitution.<sup>29</sup> Section 24 of the Constitution provides that everyone has a right to an

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<sup>24</sup> Glazewski Environmental law in South Africa 2005 at 457

<sup>25</sup> Zlatko v D 'Environmental Consequences of Diamond mining.  
[http://www.dimitar.net/documents/ib/Geo-Environmental Consequences of Diamond mining.htm](http://www.dimitar.net/documents/ib/Geo-Environmental%20Consequences%20of%20Diamond%20mining.htm).

<sup>26</sup> "Angola's Diamond Mining case issue" <http://www.american.edu/ted/angdiam.htm>.

<sup>27</sup> Minister of Health and Welfare v Woodcarb (Pty) Ltd and Another 1996 (3) SA 155 (N).

<sup>28</sup> Section 24 of Act 108 of 1996.

<sup>29</sup> Act 108 of 1996.



environment that is not harmful to their health and well-being; and to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. The Constitution further places an obligation in terms of section 152 (1)(b) and (d) on the part of local government as stipulated in sections 4(2)(d)3 and 4(2) (i), 73(1) and (2) of the Municipal System Act<sup>30</sup> to ensure that the right to a clean and healthy environment is fulfilled. One of the greatest challenges facing South Africa and the rest of the world is to improve the quality of human life for both the present and future generations through sustainable development.

The principle of sustainability of the environment encompasses the notion of inter-generational equity, that is, the harm to the environment affects the present as well as future generations. Hence, the public needs to be properly and broadly informed regarding any threats to the environment, whether globally, regionally, nationally or locally. The purpose and focus of this chapter is to give a brief overview of the analysis of government's responses mandated with section 24 of the Bill of Rights. The departments responsible for ensuring the right to a clean and healthy environment are the national Department of Environmental Affairs and Tourism; Department of Water Affairs and Forestry; Department of Minerals and Energy; Department of Agriculture; Department of Health; the provincial departments of Environment and local government. The analysis includes assessing policy measures, legislation, budgetary measures and other measures taken by the government in order to progressively meet its constitutional obligation in terms of section 24.

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<sup>30</sup> Act 32 of 2000.

## **CHAPTER 3**

### **REHABILITATION OF THE LAND DISTURBED BY MINING ACTIVITIES**

#### **3.1 Environmental Rehabilitation Measures**

Rehabilitation is, as pointed out above, the restoration of a disturbed area that has been degraded as a result of activities such as mining, road construction or waste disposal, to a land use in conformity with the original land use before the activity started. This also includes aesthetical considerations, so that a disturbed area will not be visibly different to the natural environment. Rehabilitation includes the development of management strategies to restore

and maintain physical, chemical and biological ecosystem processes in degraded environments.

### **3.1.1 Rehabilitation of mining activities**

Mining is one of the activities that have a severe impact on all states of the environment, i.e. surface and groundwater, air and soil. The Minerals Act (No. 50 of 1991) requires that an Environmental Management Programme Report (EMPR) containing rehabilitation plans be submitted and approved by the authorities before any mining activity can start, and that finances be set aside for this purpose. EMPRs are reports containing elements of Environmental Impact Assessments (EIAs) plus Environmental Management Programmes (EMPs) for the various stages in the life cycle of a mine. The EIA addresses all the impacts (positive and negative) on the fauna and flora, water (both surface and ground), air, soil and also on the society as a whole. A public participation process is undertaken, in which interested and affected parties (I&APs) are consulted and are provided with an opportunity to express their concerns.

Rehabilitation methods include the vegetation of mine dumps to blend in with existing vegetation, the reduction of storm water run-off and prevention of water pollution, and the backfilling of excavations, for example by making use of waste material during the mining process. The main aim of rehabilitation is to restore the land to a potential similar to what it had before the activity started. The landscape must also be visibly acceptable – excavations must be backfilled and visible structures, such as mine dumps, must be effectively camouflaged. Trees can be used to conceal visible structures and shrubs and grass can be used to blend the structures in with the environment and to prevent dust problems. Mine dumps typically consist of clay or hard rocks, which are unsuited for the establishment of vegetation. Therefore, topsoil is normally placed on the dumps to establish new vegetation on mine dumps. The slopes of the mine dumps must be altered so that they are not too steep, as steep slopes enhance erosion and have poor water retention which is not conducive to revegetation.

Another important reason to use vegetation that is similar to the existing vegetation in the area is that the new vegetation will be able to exist in the natural environment, after irrigation of the site has halted. For example, plants requiring high rainfall will not exist in an area

where there is low annual rainfall. The timing that planting of vegetation takes place for rehabilitation purposes is also important. For example, planting should not take place during the dry season. Although temporary irrigation

Will help the plants survive; this could be lengthy and costly.

The Environmental Management Programme Reports (EMPRs) outline how all the negative impacts will be prevented or minimised. Rehabilitation plans should be clearly outlined, and should include the method of payment for rehabilitation, as no EMPR will be approved without any financial provision for rehabilitation. The national Department of Minerals and Energy (DME) grants approval of an EMPR if the suggested rehabilitation plans for the site would ensure that the site would be:

1. aesthetically acceptable;
2. blend in with the environment;
3. a suitable habitat for fauna and flora;
4. safe and pollution free;
5. and non-erodible.

This concept should therefore be taken into consideration in all rehabilitation plans. During 1998, 493 Environmental Management Programmes (EMPs) were approved in the North West Province (DME, 1998). At the moment the North West DACE does not have information on the number of mines that have already been rehabilitated or those that are in the process of rehabilitation. Most mines seem to be reluctant when it comes to rehabilitation and the new applications for mining and prospecting that are received indicate that financial provisions are unrealistically low, with the mines often contracting the rehabilitation to specialised environmental restoration companies.

### **3.1.2 Purpose of Rehabilitation**

1. To minimise the area of land disturbed and the area of land that is cleared at any point in time, and to progressively rehabilitate mined areas as soon as practicably possible;
2. To ensure that the post-mining landform is consistent with the pre-mining landform and the surrounding undisturbed area wherever possible;

3. To stabilise disturbed areas as soon as practically possible to prevent wind and water erosion; and

4. To re-vegetate the stabilised post-mining landform to provide for the long-term stability of the system, and for the return of native flora and fauna communities that are similar to pre-mining conditions and surrounding undisturbed areas.

Rehabilitation therefore, deals with techniques for renewal of the damaged land for its sustainable and beneficial use. It is the process by which impacts of mining on the environment are repaired. It is an essential part of developing mineral resources in accordance with the principle of sustainable development.<sup>31</sup> Rehabilitation of mines should be aimed at a clearly defined future land use for the area.

The mineral extraction process must ensure return of productivity of the affected land. The MPRDA requires in section 38,<sup>32</sup> that the rehabilitation of the surface of land concerned in any prospecting or mining shall be carried out by the holder of the prospecting permit or mining authorization concerned in accordance with the environmental management programme approved in terms of section 39; and as an integral part of the prospecting or mining operations concerned throughout the life of the operation until closure.<sup>33</sup> Many mining companies used irresponsible mining methods with no regard towards protecting the environment and had often shirked their responsibility towards environmental rehabilitation by leaving an area unrehabilitated prior to them being liquidated or leaving the country.

In *Director : Mineral Development, Gauteng Region and Sasol Mining (Pty) Ltd v Save the Vaal Environment & others*,<sup>34</sup> Olivier J held that 'Our Constitution, by including environmental rights as justifiable human rights, by necessary implication requires that environmental considerations be accorded appropriate recognition and respect in the administrative processes in our country.'<sup>35</sup>

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<sup>31</sup> Sustainable development means a pattern of resource use that aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for future generations.

<sup>32</sup> Section 38 of the the Mineral and Petroleum Resources Development Act 28 of 2002 as repealed.

<sup>33</sup> Section 39 of the Mineral and Petroleum Resources Development Act 28 of 2002 repealed.

<sup>34</sup> *Director: Minister Development, Guteng Region and Sasol Mining (Pty) Ltd v Save Vaal Environment and Others* 1999 (2) SA 709 (SCA).

<sup>35</sup> Para 710G

Rehabilitation of the surface of land in any prospecting or mining must be carried out by the holder of the prospecting permit or mining authorization:

- a. In accordance with the approved environmental programme, if any;
- b. As an integral part of the prospecting or mining operations;<sup>36</sup>
- c. Simultaneously with such operations, unless determined otherwise in writing by the Regional Director,<sup>37</sup> and
- d. To the satisfaction of the regional director.<sup>38</sup>

If the regional director is of the opinion that, having regard to the known and disclosed mineral reserves of any mine, the mine is likely to cease mining operations within a period of five years, must in writing give notice accordingly to the owner of that mine?<sup>39</sup> The owner of the mine may not dispose of any or his assets in relation to that mine without a certificate furnished by the regional director to the effect that the necessary steps have been taken or adequate provision has been made for the rehabilitation of the mining area concerned.<sup>40</sup> South African legislation governing mine closure, particularly the Mineral and Petroleum Resources Development Act,<sup>41</sup> requires rigorous mitigation of both biophysical and socio-economic impacts.

In *Grand Mines (Pty) Ltd v Giddey NO*,<sup>42</sup> are designed to provide close scrutiny of any activity related to mining operations which may result in irremediable change, to prevent permanent impacts on the environment, and to ensure the usability of the site for future generations. The case turned on question of the respondent mining company's duties to rehabilitate an open cast coal mining site, which it was entitled to mine in terms of the contract with the owner of the mine, Grand mines. Grand mine refused to pay the mining company its agreed fee on the ground of *exceptint non adimpleti contractus*, in that it had not rehabilitated the mining site in terms of one of the conditions of the contract between them.

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<sup>36</sup> Section 38 (1) (b) repealed.

<sup>37</sup> Section 38 (1) (c) repealed.

<sup>38</sup> Section 38 (1) (d) repealed.

<sup>39</sup> Section 38 (2) (a) repealed.

<sup>40</sup> Section 38 (2) (a) repealed.

<sup>41</sup> Section 39 as repealed Act 28 of 2002.

<sup>42</sup> *In Grand Mines (Pty) Ltd v Giddey NO* 1999 (1) SA960 SLA.

The exception was dismissed, but in this context it is relevant to note that the supreme court of appeal noted that no arrangement had been made between the parties as regards rehabilitation. The act obliges the duly authorized prospector or mining operator to implement a rehabilitation programme and make the granting of authorization contingent on such programme. The confinement of these obligations only to the rehabilitation of surface is too narrow from the point of view of the broad potential impact of environmental concern. Prospecting, and more particularly mining, typically draws heavily on scarce water resources, pollutes sensitive ecosystems, as exemplified in the Grootvlei wetland controversy, and has many other potential impacts.<sup>43</sup> Mining has potentially significant socio-economic impacts, particularly on the surrounding villages and communities, which can be particularly acute at the closure phase.

### **3.1.3 Financial provision for rehabilitation**

Financial provision means the insurance, bank guarantee, trust fund or cash that applicants for or holder of a right or permit must provide in terms of section 41 and 89 of the MPRDA guaranteeing the availability of funds to undertake the agreed work programmes and to rehabilitate the prospecting, mining, reconnaissance, exploration or production areas, as the case may be.<sup>44</sup> The pecuniary provision requirements, which are in Regulation (Reg) 5.16 to the Mineral Act, are basically the same as those now included in the Act (section 41)—financial provision for remediation of environmental damage. This section speaks of making the prescribed financial provision for the rehabilitation or *management* of negative environmental impacts and this is elaborated on in the regulations. The methods of financial provision are set out in Regulation 38. One can construe these requirements to mean that provision must be made for the ongoing costs of rehabilitation as well, and not just for closure. These provisions are not linked back to EMP obligation or commitments. Regulations 38–40 cover the method for financial provision and provide for standard forms for financial provision and the quantum. Regulation 5.16.4 under MA currently provides the pecuniary provision referred to in that regulation should only be used for the purposes of the said regulations.

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<sup>43</sup> On Grootvlei (1999) 9 South Wetlands 8.

<sup>44</sup> Section 1 (b) of the Mineral and Petroleum Resources Development Act 28 of 2002.

The new requirements go beyond what was previously contemplated, as it appears to cover more than just the closure phase. Regulation 38 uses different words to the Act financial provision for rehabilitation and remediation of environmental damage. The methods identified tie back to the DME policy on financial provision i.e. trust fund, written guarantee, financial deposit or other methods. There is inconsistency with the financial provision definition, which includes insurance. Regulation 39 sets out the standard forms. It seems these are intended to be prescriptive. Regulation 40 requires the holder of the right to submit financial statements from a financial institution as proof that it has the financial means to execute the EMP. The detailed itemization of costs is set out in Regulation 40 (2). Annual update and review of quantum is similar to the position under the MA.

The agreement with DME, negotiated by the Chamber of Mines, on top up for sudden closures, has not been reflected in the regulations. Regulation 46 sets out the detail of the environmental risk report, which must accompany the application for a closure certificate and the methodology that must be used in undertaking the risk assessments to be done in accordance with this provision. Notwithstanding the significantly more detailed requirements, which appear from the draft regulations, there is still some uncertainty about residual liability from a legal perspective. Residual liability remains for mining companies at present insofar as they may still be exposed to liability under both the National Water Act and under NEMA, which are worded in such a way that their provisions apply retrospectively to activities that took place in the past, which gave or give rise to water pollution or environmental pollution now. Neither Act allows for exemptions to be given to a person so that the provisions of the Act do not apply to them. When one considers the question of liability (or residual liability) after closure, it is important to note the provisions of section 38(2).

Section 38 (2) provides that notwithstanding the provisions of the Companies Act <sup>45</sup> and the Close Corporations Act,<sup>46</sup> directors of a company or members of a Close Corporation (cc) are jointly and severally liable for any unacceptable negative impact on the environment, including damage, degradation or pollution advertently or inadvertently caused by the co/cc they represent. This is an extraordinary section that creates unlimited and strict liability on the part of directors of a company or cc. If this section stands it will most certain need to be explored in the context of residual liability after mine closure as on the face of it, anyone,

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<sup>45</sup> Act 61 of 1973

<sup>46</sup> Act 69 of 1984



including the state, would be able to proceed against a director of a mine, which may have been closed properly and which has received a closure certificate but impacts occur on the environment, notwithstanding all efforts taken to address these. These provisions relating to residual liabilities remaining after mine closure can have inequitable results.

The Minerals Act<sup>47</sup> introduced more stringent requirements for mines to make financial provision for rehabilitation. The funds must be managed and accessible to the DME should the mine be unable to meet their obligations to rehabilitate as stipulated in the EMP document. Financial provision can be made available as a bank guarantee or funds committed to a trust administered jointly by government departments and the mining proponent. In practice the system has failed to address the considerable financial risk represented by most mines, particularly those that have been in existence from before the promulgation of the Minerals Act 50 of 1991.

Section 41 of the MPRDA deals with financial provision for remediation of environmental damage. Section 41(1) of the MPRDA provides that an applicant for a mining right or mining permit must make the prescribed financial provision for the rehabilitation or management of negative environmental impacts before the Minister approves the environmental management programme or environmental management plan. The mining right or mining permit holder is also required to assess environmental liability on an annual basis and provide the DME with an indication of the environmental liability at the time of the assessment and the estimated environmental liability at the time of closure. This is referred to as the "snapshot in time approach" as it provides an estimate of environmental liability at that time only.

The annual assessment must be submitted to the DME for review and approval and the financial provision may have to be increased after consideration by the DME of the environmental liability, the current stage of mining operations and the current market value of the financial provision (section 41(3)).<sup>48</sup> In terms of section 41(5) of the MPRDA, the financial provision must be maintained and retained by the mining right/permit holder until a closure certificate is issued by the Minister in terms of section 43 of the MPRDA. After the issue of a closure certificate, the Minister may retain a portion of the financial provision as may be required to rehabilitate the closed mining or prospecting operation in respect of latent or residual environmental impacts that may occur in the future. In terms of section 43(6) of

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<sup>47</sup> Act 50 of 1991

<sup>48</sup> Mineral and Petroleum Resources Development Act 28 of 2002.

the MPRDA when the Minister issues a closure certificate, such portion of the financial provision provided in accordance with section 41 as deemed appropriate by the Minister must be returned to the holder of the mining right/permit in question, however the Minister may retain any portion of such financial provision for latent and/or residual environmental impact that may occur in the future. Regulation 53 of the MPRDA Regulations GN R527 sets out the methods for financial provision and can take the form of contributions to a trust fund, a financial guarantee from a South African Bank or a bank or financial institution approved by the Director-General, a deposit into an account specified by the Director General or any other method determined by the Director-General.

In addition guidance on rehabilitation standards can also be sought from the DME '*Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provision provided by a Mine*', January 2005. Section C of this guideline sets out generally accepted closure methods for various components of mining operations. Successful rehabilitation should be integrated with the operational phase activities and not left to the decommissioning phase. There should at least be rehabilitation trials conducted during the period of operation to ensure that the scope of mitigations, activities or measures are adequate and costing is accurate. This will reduce the cost of implementing the final rehabilitation prior to closure and could be used to reduce the financial risk in terms of pecuniary provision for rehabilitation. The approach to financial provision should be from the perspective of the DME who will be required to contract an outside organisation, on public tender, to undertake the rehabilitation on behalf of the department. The funds should be sufficient to ensure that adequate planning, implementation, monitoring and maintenance take place for the period specified by the EMP. The EO must accept that the initial financial projections for rehabilitation of a new mine will have to be based on short-term development targets.

The provision for annual review of the quantum of financial provision for rehabilitation must project the rate of development of the mine and provide sufficient funds to rectify the impacts of this development. In the event of a mine closing prematurely or being declared insolvent the guaranteed funds must meet the requirements of the rehabilitation programme and mitigation measures outlined in section 6 of the EMPR. Professional consultants must be engaged to plan the implementation of the rehabilitation programme and monitoring or maintenance programme for the post-mining period as stipulated in the EMPR. In general a major cost factor of all rehabilitation operations is a major programme of earthworks

including drilling and blasting to reduce high wall step height or reduce slope gradients or heavy mechanisation to move overburden, shape residue stockpiles or redistribute topsoil. Demolition of structures and disposal of the waste material also involve earthworks. Civil engineering design is necessary to meet the legal requirements in terms of the design and long-term stability of storm water control and water pollution control structures. Topsoil sourcing and restoration, re-vegetation, irrigation and labour intensive activities such as alien plant control must be costed accurately.

### **3.1.4 Removal of buildings, structures and other objects**

Whenever a prospecting permit or mining authorisation which is held is suspended, cancelled or terminated or lapses, and the prospecting for or exploitation of any mineral finally ceases, the holder of the permit or authorisation may not demolish or remove any building structure or object.<sup>49</sup>

- (a) Which may not be demolished or removed in terms of any law?
- (b) Which has been identified in writing by the Regional Manager for the purpose of this section, or
- (c) Which is to be retained in terms of the agreement between the holder and the owner or occupier of the land, which agreement has been approved by the Regional Manager in writing?<sup>50</sup> The removal of buildings and structures is however, subject to the National Heritage Resources Act <sup>51</sup> which states that permission is needed to demolish buildings and structures which is older than 60 years; permission must be obtained from the relevant provincial heritage resources authority.<sup>52</sup>

### **3.1.5 Land rehabilitation**

Land rehabilitation is the process of returning the land in a given area to some degree of its former state, after some process (industry, natural disasters etc.) has resulted in its damage. Many projects and developments will result in the land becoming degraded, for example mining, farming and forestry.

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<sup>49</sup> Section 46 of the Mineral and Petroleum Resources Development Act 28 of 2002 as amended.

<sup>50</sup> Section 44 (1) Ministerial delegations of 12 may 2004.

<sup>51</sup> Act 25 of 1999

<sup>52</sup> Section 34 Mineral and Petroleum Resources Development Act 28 of 2002.

Mining may have a profound detrimental effect on soil, not to mention being a potential cause of other environmental hazards, both during the lifetime of the mining operations and after its discontinuance. The MPRDA requires the rehabilitation of land concerned in any prospecting or mining to be carried out by the holder of the prospecting permit or mining authorization concerned in accordance with the environmental management programme approved in terms of section 38 of the Act, if any; as an integral part of the prospecting or mining operations concerned; simultaneously with such operations unless determined otherwise in writing by the regional director concerned.<sup>53</sup>

While it is rarely possible to restore the land to its original condition, the rehabilitation process usually attempts to bring some degree of restoration. Modern methods have in many cases not only restored degraded land but actually improved it, depending on what criteria are used to measure 'improvement. Land Rehabilitation Systems supply solutions to soil erosion and retaining wall problems. In Southern Africa poor farming practices and bad rehabilitation measures led to large areas of land and property being disturbed and valuable topsoil's were washed downstream into the sea, exposing unfertile eroded soils.

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<sup>53</sup> Section 38 (1) of the Mineral and Petroleum Resources Development Act 28 of 2002 as repealed.

## CHAPTER 4

### THE OBLIGATIONS OF MINING COMPANIES TO REHABILITATE

#### 4.1 Nature of the obligation to rehabilitate

Section 24(a) of the Constitution of the Republic of South Africa guarantees the right of every person to an environment that is 'not harmful to their health or wellbeing'.<sup>54</sup> Effect is given to this right by section 28 (1) of the National Environmental Management Act 107 of 1998 (NEMA) through the imposition of a duty that requires that:

*Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot be reasonably avoided or stopped, to minimise and rectify such pollution or degradation of the environment.*

The constitution makes provisions for environmental protection through legislative or other measures. Section 24 (b) refers to the duty imposed by the right to have the environment protected. It imposes a duty on the state to provide environmental quality in the form of reasonable legislative measures.

The constitution is the legal source of environmental law in South Africa, and all statutes are required to be compatible with the provisions of the constitution.<sup>55</sup> Section 24 of the Constitution provides that everyone has a right to an environment that is not harmful to their health or well-being, which could be applied vertically and horizontally. To ensure that this right is realised, the government must, through

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<sup>54</sup> Act 108 of 1996.

<sup>55</sup> Henderson Environmental Law of South Africa Volume 1 (2005) at 1-3

reasonable legislation and other measures, ensure that the environment is protected for present and future generations. This right is not an absolute right but must be weighed against the promotion of justifiable economic and social development.<sup>56</sup> The commitment of environmental protection was evidenced by the inclusion of an environmental right into the Bill of Rights in the constitution, namely section 24.

Section 24 of the Bill of Rights provides that:

Everyone has the right –

- (a) To an environment that is not harmful to their health or well-being; and
- (b) To have the environment protected, for the benefit of present future generations, through reasonable legislative and other measures that
  - (i) Prevent pollution and ecological degradation;
  - (ii) Promote conservation; and
  - (iii) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

This section sets out the main objectives and constitutional obligations of the state to secure the right of individuals through reasonable legislative and other measures. The legislative measures impose obligations on the state to ensure that the environment is protected. It has also ensured that government introduces legislation to protect the environment, prevent pollution and ecological degradation, promote conservation, secure ecologically economic development,<sup>57</sup> and the use of natural resources while promoting justifiable economic and social development. The promotion of access to information, and co-operative governance in all departments is also addressed in the constitution.<sup>58</sup> Therefore constitutionally speaking, everyone

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<sup>56</sup> For an interpretation of section 24 see Ferreira; Du Bois F and Glazewski J in *Bill of Rights Compendium* (Butterworth's Durban) par 2B1-2B12.

<sup>57</sup> Sustainable development means a pattern of resource use that aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for future generations.

<sup>58</sup> Section 24 of the Constitution of the Republic of South Africa.

is afforded the rights to an environment that is not harmful to his/her health and well-being, as well as access to information to protect these rights.

Although this duty is imposed on 'every person', NEMA specifically refers to the owner of, or person who has the right to use, land or premises. The scope of what constitutes 'reasonable measures' is not defined, but Section 28(3) of the Act indicates that they may include, but are not limited to, assessing the impacts of activities; eliminating the source of pollution; containing pollution; or remedying the effect of pollution. A very similar duty of care, but specific to water resources, is set out in Section 19 of the National Water Act 36 of 1998 (NWA), where once again 'reasonable measures' must be taken to prevent or rehabilitate pollution. However, the NWA is slightly narrower than NEMA in that the obligation is imposed on owners, persons in control of or persons who occupy land only.

Both NEMA and the NWA do not yet prescribe specific remediation standards. This may be addressed through the regulations established under these Acts or, alternatively, through the relevant department's published guidelines and policies specifying standards. In the interim, confusion on the part of both the departments and polluters or other responsible parties will remain.

What is clear is that our law imposes obligations to remove pollution from the environment, and to rehabilitate affected areas. However, in light of a recent decision by the High Court (in Chief Pule Shadrack VII *Bareki and Others v Gencor Limited and Others* 2006 (1) SA 423 (T)) looking closely at the issue of when and how far back (retrospectively) do these statutory obligations apply.<sup>59</sup>

Both NEMA and the NWA include historical contamination as one of the triggers for the obligation. As such, it was the intention of the drafters of the legislation to require reasonable measures to be taken not only where activities are currently causing pollution, or where they may in future cause pollution, but also where past activities have caused contamination, which contamination remains evident in our environment today. The government is required to establish a regulatory framework that minimise the impacts of mining on the environment. It should establish the regulatory framework which ensures that everyone is afforded an environment that is economically sustainable, safe and not harmful to the society.

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<sup>59</sup> *Bareki NO and Another v Gencor Ltd and others* 2006 (1) SA 423 (T)

The constitution of the republic of south Africa, 1996, and key legislation such as, for example, the National Environmental Management Act (NEMA),<sup>60</sup> and the Mineral and Petroleum Resources Development Act (MPRDA),<sup>61</sup> are intent on examining and ascertaining the extent of environmental protection in the country.

#### **4.1.1 Is the duty retrospective?**

The question here is, was it the intention of the legislature to limit the obligation to take reasonable measures to only those activities that took place or to that contamination that occurred prior to the promulgation of NEMA and/or the NWA? Or was it their intention to hold polluters and other responsible parties liable for polluting activities and resultant contamination whenever it occurred, even if this was substantially prior to the implementation of NEMA (in 1999) and the NWA (in 1998)? In so far as it relates to NEMA, this question was considered by the Transvaal Provincial Division of our High Court in the *Bareki Case*.<sup>62</sup>

This case concerned the *Bareki* tribe and an environmental concern group. The *Bareki* alleged that their environment had been degraded as a result of asbestos mining activities conducted by one or more of the defendants over a number of years in what are now the North West Province. The mining activities were discontinued by the mid-1980s. The plaintiffs claimed that the defendant mining company had failed to take the reasonable measures envisaged by Section 28(1) of NEMA to rectify the contamination, and that it was their obligation to do so, notwithstanding that the activities took place and the contamination arose, substantially prior to 1999.

After having considered the principal of retrospectively in our law, the court concluded and held that the obligation in Section 28(1) of NEMA is retrospective only up to 1999, when the Act came into operation. It therefore held that it does not extend to activities that took place, or contamination that arose, prior to this date.

The basis of the court's decision was primarily its application of the legal precept of leaning against retrospectively where this will result in unfairness. Having decided that it would be unduly unfair, in the court's view, to require the defendant mining company to incur

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<sup>60</sup> Act 108 of 1998.

<sup>61</sup> Mineral and Petroleum Resources Development Act 28 of 2002.

<sup>62</sup> *Bareki NO and Another v Gencor Ltd and others* 2006 (1) SA 423 (T).



substantial costs as a result of a contemporary statutory obligation to clean up and rehabilitate an environment degraded prior to 1999, the court held that ‘the unfairness of retrospective effect being given to section 28(1) and (2) of NEMA,<sup>63</sup> is so great that it is unlikely that the legislature could have intended it’.

#### **4.1.2 Implications of the judgement**

A considerable number of sites and areas in South Africa were degraded as a result of activities that caused contamination prior to 1999. In fact, given that protection of the environment is a relatively contemporary concept, much of our most significant contamination occurred through poor business practices at a time when the environment was not considered to be a priority, and pollution was seen as part of doing business.

Two problems arise as a result. Firstly, a number of pollutants, if left unattended, will over time and through natural or man-made forces, often migrate over wide areas, and affect a broad spectrum of the human and natural environment. The costs associated with addressing this problem, where it occurs, very often magnifies, and can run into many millions of rand.

Secondly, companies are dynamic, they come and go. Whether they are bought or sold, liquidated or disbanded, or simply abandoned, the perpetrator of the pollution may no longer exist today. In light of the court’s decision in the *Bareki* Case, who then will *bear* the responsibility for the costs of the removal of the contamination caused prior to 1999?

#### **4.1.3 Rational for contaminated obligations being retrospective**

South Africa is not alone in having to address a legacy of contamination that precedes contemporary legislation designed to address harm caused to the environment. Much of the developed world has had to face precisely the same dilemma as that faced by our court in the *Bareki* Case. When viewed generally, the trend overseas appears to have been to adopt a somewhat different view of the ‘unfairness’ issue considered by our court in *Bareki*. While conceding that it is somewhat harsh to compel a company to incur substantial costs today for activities that were not considered particularly irregular 50 years ago, foreign jurisdictions appear to view the alternative solution as far more unpalatable – namely that ordinary taxpayers, who have no connection whatsoever to the harm, and derived no benefit from it, will through the clean-up activities of their governments, be compelled to pay for the

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<sup>63</sup> NEMA 62 of 2008 as amended.

remediation of the affected environment. As a result, many foreign jurisdictions have had no difficulty in holding parties (who generally derived some direct or indirect financial benefit from the harmful activities) liable for harm caused retrospectively, even where such harm occurred substantially prior to the enabling legislation.

To be fair to our court in the *Bareki* Case, it could only interpret and apply the law as set out in NEMA. Nevertheless, given that:

1. The creation of NEMA came after similar legislation in foreign jurisdictions, and a comparison of such similar legislation with NEMA suggests that our drafters borrowed heavily from laws in other countries.
2. NEMA identifies a wide, but connected (to the polluter), pool of responsible parties who are liable on a joint-and several basis.
3. Clearly uses retrospective-type language.
4. Limits the obligation to taking ‘reasonable measures’.
5. In a developing country such as ours, there is even less prospect of our government, through ordinary taxpayers’ money, funding massive and numerous clean-up operations than there is in developed countries that apply similar laws retrospectively.

It could, and arguably should, be the case that the drafters of NEMA intended, in balancing unfairness towards parties connected to the polluter and who derived financial benefit from the pollution against the even greater unfairness that would result for ordinary taxpayers having to fund clean-ups, that the retrospective provision in Section 28 was intended to apply to activities that took place and to harm that arose at any time historically whether before or after the inception of NEMA in 1999. It will be interesting and important to see how the decision in the *Bareki* Case is applied and how it develops further.

## **4.2 Obligations of the mining companies in terms of NEMA**

In terms of section 24 (b),<sup>64</sup> of the constitution, a duty is placed on the state to enforce the environmental rights as provide for in section 28 of NEMA.<sup>65</sup> The

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<sup>64</sup> Section 24 of the constitution of the Republic of South Africa

<sup>65</sup> Section 28 of NEMA

National Environmental Management Act of 1998 provides for integrated environmental management and prescribes certain sustainability principles that government should take into account in decision-making. The Act provides for cooperation between government departments with the institution of a committee for environmental cooperation between departments and spheres of government involved in environmental issues. Despite these mechanisms, fragmentation still occurs and departments are taking responsibility for their own decision-making on matters regarding the environment.

The Department of Minerals and Energy's (DME) legislation, for example, indicates a strong trend in monopolizing issues regarding the environment within its own departmental sphere, excluding the final decision-making from the other departments. The Department of Environmental Affairs and Tourism (DEAT), on the other hand, is proposing legislation (for example environmental impact legislation) which will provide it again with a say in energy and mining issues pertaining to the environment.

The benefit of the protection afforded by NEMA has to be ascertained in terms of the definition of the environment.

The NEMA defines environment as:

*(xi) ... the surrounding within which human exist and that are made up of –*

- (i) The land, water and atmosphere of the earth;*
- (ii) Micro-organisms, plants and animal life;*
- (iii) Any part or combination of (i) and (ii) and the interrelationships among and between the; and*
- (iv) The physical, chemical, aesthetic and cultural properties and condition of the enviforegoing that influence human health and well being.*

Applicants for development sometimes initiate informal gatherings to ensure cooperative governance in environmental matters, creating new mechanisms to ensure the enforcement of environmental policies and legislation.

#### 4.2.1 Duty in terms of the principles of NEMA

The disturbance of the ecosystem, ecological degradation as well as pollution by the mining companies is likely to result in environmental harm to people's health and well being. The principles of NEMA which forms the basis of the said Act, stipulate that the disturbance of ecosystem, loss of biological diversity and pollution should be avoided or, if not possible, should be minimised and remedied.<sup>66</sup> The court has found that the principle which were included in NEMA were to create a framework to guide organs of state, as defined in the constitution,<sup>67</sup> to formulate environmental policies or to draft and adopt environmental implementation and management plans.<sup>68</sup> The disturbance of the ecosystem, ecological degradation as well as pollution by the mining companies results in environmental harm to the health and well-being of the people. The principles of NEMA which form the basis of the said Act, stipulates that the disturbance of ecosystem, loss of biodiversity and pollution should be avoided, or if not possible, should be minimised and remedied.<sup>69</sup> These principles are to guide the organs of state in formulating policy and not to create rights and duties.

As pointed out above, section 24 of the constitution entrenches the right to an environment that is not harmful to one's health and well being, and through reasonable legislative measures to prevent pollution and ecological degradation and to promote justifiable economic and social development. Section 24 is reinforced by NEMA as it is included in the preamble. NEMA further defines the term environment to be including aesthetic and cultural properties.

Although the MPRDA does not contain specific rights afforded to everyone affected by mining activities, it does specify the obligations that the mining companies are compelled to take, to ensure that the environment is protected for the benefit of the

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<sup>66</sup> Section 2 (4) of NEMA

<sup>67</sup> Organ of state means any department of state or administration in the national, provincial or local sphere of government or any functionary or institution exercising a power or performing a function in terms of the Constitution or a provincial Constitution, or exercising a public power or performing a public functions in terms of any legislation, but does not include a court or a judicial officer.

<sup>68</sup> Minister of Public Works and Others v Kyalami Ridge Environmental Association and others 2001(7) BCLR 652 (CC).

<sup>69</sup> Section 2(4) of NEMA

present and future generations, as well as to ensure ecologically sustainable development of mineral and petroleum resources, and to promote economic and social development.

Therefore the South African law has acknowledged the right to an environment that is not harmful to the health and well-being of a person, a protected environment that includes aesthetic and cultural properties that influence human health and well-being.

#### **4.2.2 Statutory duties of NEMA applicable to mining companies**

Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law, or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.<sup>70</sup>

Every person who causes or has caused pollution or degradation is liable to minimise or rectify such dangers.<sup>71</sup> The complexity in mineral cases is that the person responsible might not necessarily be the owner of the land where the mining activities took place. Traditionally the common law principle on land ownership entails that the owner of land would also be the owner of the mineral found in the soil. This could result in the owner of the land being the owner of the mineral rights.

Even if the owner may own the land and the mineral rights, the owner may not prospect, remove, mine, explore for and produce any mineral without the authorisation from the state.<sup>72</sup>

NEMA has resolved the any ambiguity pertaining to the persons to be held liable for pollution or ecological degradation by extending the net of culpability to include the

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<sup>70</sup> Section 28 (1) of NEMA

<sup>71</sup> Section 28 (2) of NEMA

<sup>72</sup> Section 5 (4) of Mineral and Petroleum Resources Development Act 28 of 2002

following category of persons, namely: the owner of the land; and or the person in control of the land; and or any person that has the right to use the land in which any activity or process was undertaken; or any other situation exists which causes or has caused significant pollution or environmental degradation.<sup>73</sup> The *Bareki* case,<sup>74</sup> confirmed that even an owner or possessor of land who has not been responsible for such pollution or degradation has an obligation to take reasonable corrective measures.

The above section<sup>75</sup> is applicable to future mineral right holder as well as to any person who caused significant pollution in the past. The mining company, as an entity that has control of the land and who has a right to use the land is the responsible person who has the duty of taking measures to prevent, stop, minimise or rectify pollution or degradation caused at the mine.

However the retrospectively of this liability on the polluter is not indefinite. The *Bareki* case<sup>76</sup> referred to the liability of asbestos mine which had been operational prior to the commencement of NEMA. The court decided that retrospectively would entail an unfairness that parliament could not have intended.

### **4.3 Obligations in terms of the MPRDA**

The MPRDA which repealed the Minerals Act was promulgated to make provision for amongst others, equitable access to and sustainable development of the nations mineral and petroleum resources. One of its objectives is to give effect to section 24 of the constitution, by ensuring that the nations mineral and petroleum resources are developed in an orderly and ecologically sustainable manner while promoting justifiable social and economic development.<sup>77</sup>

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<sup>73</sup> Section 28 (2) of NEMA

<sup>74</sup> *Bareki NO and Another v Gencor Ltd and others* 2006 (1) SA 423 (T)

<sup>75</sup> Section 28 (2) of NEMA

<sup>76</sup> *Bareki NO and Another v Gencor Ltd and others* 2006 (1) SA 423 (T)

<sup>77</sup> Section 2 (h) of the Mineral and Petroleum Resources Development Act 28 of 2002.

The above objective is given credence by the fact that the Minister will only grant a mining right if the applicant can demonstrate, that the mining will not result in unacceptable pollution, ecological degradation or damage to the environment.<sup>78</sup> As a consequence, the renewal of such a right is dependent on the applicant reporting on the extent of its compliance with the requirements of approved EMP,<sup>79</sup> the rehabilitation to be completed and estimated cost thereof.<sup>80</sup> As a gesture of commitment to reform the mining industry, the government enacted the Mineral and Petroleum Resources Development Act (MPRDA), which is administered by the Department of Minerals and Energy, to enforce the environmental protection and the management of the impacts of prospecting and mining in South Africa.<sup>81</sup>

The MPRDA affirms the state's obligation to protect the environment for the benefit of future generations, and ensure ecologically sustainable development of mineral and petroleum resources and to promote economic and social development.<sup>82</sup> This Act deals with the obligations of the mining companies in dealing with, pollution and ecologically degradation that could be harmful to people's health and well-being.

#### **4.4 Obligations in terms of the National Environment Management: Air Quality Act**

Mining activities generate dust which can have serious health implications, particularly when the mine is situated near an urban development. As discussed above, dust from explosions, stone blasting and rock-crushing is prevalent in diamond mine operations.<sup>83</sup>

The exposure of dust from diamond mines has not been proven to have the severe effects. Though the dust from diamond operations is not as hazardous as dust fibres emitted during asbestos mining, dust pollution from mining activities has been as a

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<sup>78</sup> Section 3 (1) (d) of the Mineral and Petroleum Resources Development Act 28 of 2002.

<sup>79</sup> Section 39 of the Mineral and Petroleum Resources Development Act 28 of 2002.

<sup>80</sup> Section 24 (2) and Section 24 (3) (d) of the Mineral and Petroleum Resources Development Act 28 of 2002.

<sup>81</sup> Section 2 of the Mineral and Petroleum Resources Development Act 28 of 2002.

<sup>82</sup> Section 3 of the Mineral and Petroleum Resources Development Act 28 of 2002.

<sup>83</sup> Mabitsela and Du Plessis "the impact of environmental legislation on mining in South Africa "(2001) SAJELP at 186.

serious health risk. As a result there have been statutory provisions to prevent such pollution. The previous Atmospheric Pollution Prevention Act,<sup>84</sup> (APPA) included sections pertaining to control of pollution in the form of dust, which is usually prevalent in mining areas. If the mining areas was declared a dust control area, the entity performing the industrial activities resulting in the dust pollution, had to use the best practicable means to prevent such dust from causing a nuisance to people in the vicinity.<sup>85</sup> The Air Quality Act<sup>86</sup> has repealed the APPA and was promulgated to reform the law regulating air quality to protect the communities exposed to air pollution as well as the environment by providing reasonable measures for the prevention of pollution and ecological degradation.<sup>87</sup> In terms of the Air Quality Act, the minister has to introduce steps to prevent nuisance by dust or any other measures aimed at the control of dust.<sup>88</sup> There is an additional provision pertaining to mining companies in respect of rehabilitation.<sup>89</sup>

Within a period of five years, prior to the cessation of the mine, the mine owner is obliged to notify the Minister of, any plans that are in place or in contemplation for the rehabilitation of the area where the mining operations were conducted after mining operations have stopped and the prevention of pollution of the atmosphere by dust after those operations have stopped.<sup>90</sup>

#### **4.5 Obligations in terms of the National Water Act 36 of 1998 (NWA)**

Water pollution constitutes a threat to the health of all things living and has the potential of affecting the availability of water if its usage is not regulated. The owner or person in control of the water resource has the responsibility of avoiding pollution of the water resource. Such a person has strict liability in respect of any damage

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<sup>84</sup> Act 45 of 1965

<sup>85</sup> Section 28 (1) of APPA.

<sup>86</sup> Act 39 of 2004

<sup>87</sup> Ibid.

<sup>88</sup> Section 32 of the Air Quality Act.

<sup>89</sup> Section 33 of the Air Quality Act.

<sup>90</sup> Section 33 of the Air Quality Act.



caused by such pollution for the clean-up and remedial expenses and for any benefit that the person has derived from the pollution.<sup>91</sup>

Government must provide for the promotion of mining and mineral development while maintaining and enhancing the environmental performance of the mining industry through the application of reasonable, attainable, affordable and effective measures and standards based on local needs and requirements, while taking due cognisance of international tendencies and developments with regard to environmental impact management practices, measures and standards. While accepting that the Department of Environmental Affairs and Tourism will play a broad co-coordinative lead agent role in the national context, environmental management for the mining industry will be addressed on a sector.

#### **4.6 Legal recourse available to residents<sup>92</sup>**

In the case of *Lascon Properties (Pty) Ltd v Wadeville Investment CO (Pty) Ltd and Another*,<sup>93</sup> damages were claimed from the defendants who permitting water, polluted by noxious and injurious substances to escape from a mine dump and slime dam on their land onto land leased by the plaintiff and which had caused and continued to cause damage to land.<sup>94</sup>

The legal question was did a breach of statutory duty which causes damage give rights to a claim for damages independently of the *Actio Legis Aquiliae* or should it be brought within such action to satisfy the requirements of the *Aquilian* action.<sup>95</sup> The held that the regulation imposes a duty in absolute terms. Those who have suffered as a result of the failure to comply with such duty should be entitled to compensation. The regulation clearly was intended to place both the duty to prevent the escape of noxious water arising from mining operations and the risk of damage caused by such water on the persons responsible and benefiting from

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<sup>91</sup> Section 20 of the NWA.

<sup>92</sup> Section 38 of the Constitution.

<sup>93</sup> 1997 4 SA 578 (W).

<sup>94</sup> 579E- 580E.

<sup>95</sup> 580G.

the mining operation. The court held that the legislature intended to provide a civil remedy for damages caused by a breach of the regulation extending beyond a mere interdict.<sup>96</sup>

#### 4.6.1 Legal standing of residents

The residents have the right to an environment that is not harmful to their well-being.<sup>97</sup> Mining companies has obligations in terms of the Constitution,<sup>98</sup> NEMA, MPRDA Air Quality Act and the NMA, amongst others, to ensure that they prevent or minimise pollution and ecological degradation.

Should the residents wish to enforce their rights, they might have to take legal recourse. However the merits of a case are examined, the court must be satisfied that the person/entity bringing forth a suit has legal standing (*locus standi*) to appear before the said court.<sup>99</sup> To ascertain *locus standi*, the court must determine if the person/entity claiming relief has sufficient interest in the matter and has to indicate that they were adversely affected. To demonstrate sufficient interest, the plaintiff's legal right or recognised interest must be direct and personal.<sup>100</sup> Therefore, persons wishing to claim relief in the interest of the public could not acquire *locus standi*. This would be detrimental to the cause of the residents if each of them has to demonstrate a direct and personal injury.

Persons whose rights have been infringed have legal standing to enforce their rights in terms of section 38. They can proceed to litigate in:

- a. That person's or group of persons' own interest
- b. The interest of, or on behalf of, a person who, for practical reasons, is unable to institute such proceedings
- c. The interest of or on behalf of a group or class of persons whose interests are affected

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<sup>96</sup> 583C-583G.

<sup>97</sup> Section 24 of the Constitution.

<sup>98</sup> Section 24 of the Constitution.

<sup>99</sup> Kidd Environmental Law: A South African Guide (1997) at 27.

<sup>100</sup> Moltke v Costa Aerosa 1975 (1) SA 255 (C).

- d. The public interest, and
- e. The interest of protecting the environment.<sup>101</sup>

It can be concluded that the *locus standi* provisions in the constitution, NEMA or common law are not restricted to individuals who have shown injury, prejudice, or damage of a right peculiar to themselves but to any person/entity who may want to enforce their environmental rights irrespective of whether that person/entity is adversely affected by the alleged infringement of their rights.

## **CHAPTER 5**

### **LIABILITY OF THE MINING COMPANIES FOR ENVIRONMENTAL DAMAGES**

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<sup>101</sup> Section 38 of Act 108 1996 Constitution.

## 5.1 Introduction

As already started above, the activities by mining companies' causes' environmental degradation; in most instances they do not take responsibility for their actions. This results in the government spending vast amount of money in rehabilitating the damages caused by mining companies. To ensure that the mining companies minimise the damage that caused by the mining activities, the government have enacted legislations and regulations in terms of which companies may be found liable. The most important legislations in this instance are the MPRDA and NEMA.

## 5.2 Liability of mining companies under the MPRDA

The MPRDA is a complex piece of legislation in that it creates layers of rights under the auspices of the State's custodianship role. The nature of the liability that is attracted in terms of the legislation is dependent on a range of factors, the most important of which is the type of mineral right that is held. In *Raaths v Minister for Mineral and energy*<sup>102</sup> the court did not refer to the facts but made several orders pertaining to pollution and environmental damages caused by a failing complex consisting of a sand dam and a slime dam. The court held that a mine had to take responsibility for the remediation of the dam, the Minister of Mineral and Energy had to oversee the management of the dam's environmental impact.

### 5.2.1 Nature of environmental liability

The key insight to the MPRDA's approach to environmental liability lies in reading its section 38. In terms of this section, the holders of permits and rights are required to-

1. appraise the potential environmental impacts;
2. manage any environmental impacts; and
3. rehabilitate the environment in so far as is reasonably possible.

The section also provides that the holder is responsible for any environmental damage, pollution or ecological degradation which occurs inside or outside the

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<sup>102</sup> Unreported, TPD case no 25284/06,24 October 2006

boundaries to which the right or permit relates. Accordingly the MPRDA expressly provides for environmental liability based on broad responsibilities of the holder of a right or permit.<sup>103</sup> In terms of this section, the nexus of liability is between the activity which caused the pollution or degradation and the holder of the right or permit (Directors and members may be jointly and severally liable where there is an unacceptable negative impact on the environment).

In practise, the extent of the liability may be limited by pollution or degradation that occurs in accordance with an approved environmental management plan or environmental management programme. The MPRDA does not, however, attempt to expand the range of people to whom liability can attach as the environmental legislation discussed below does. If the holder creates a situation that results in environmental pollution or degradation and which may cause harm to health or well-being and which requires urgent attention, the Minister may direct the holder to take certain steps to address the situation.

Unlike the NEMA, the failure to comply with the directive of the MPRDA constitutes a criminal offence. If the holder no longer exists or cannot be traced, the Minister may direct the Regional Manager of the Department to take the relevant steps, to recover the costs from the provision that has been made by the holder and to apply for endorsement of the title deeds. The liability created in terms of section 38 is not infinite. Environmental liability may be terminated either by the sanctioned transfer of liability or on the obtaining of a closure certificate.

The holder of a recognisance permission, prospecting rights, retention permit, mining permit or mining right is responsible for any environmental damage, pollution or ecological degradation as the results of the holder's reconnaissance, prospecting or mining operations and which may occur inside and outside the boundaries of the area which such right, permit or permission relates.<sup>104</sup> In terms of the companies

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<sup>103</sup> Section 38 of the Mineral and Petroleum Resources Development Act 28 of 2002 as repealed.

<sup>104</sup> Section 38 (1) (e). see the provisions of section 19 and 151 of the National Water Act 36 of 1998 which contain similar 'polluter pays principle' provisions and impose additional liability on the holder of the reconnaissance permission, prospecting rights, retention permit, mining permit or mining right. See too the provisions of s 28 of the NEMA Act which contains similar 'polluter pays principle' provisions.

Act<sup>105</sup> or the Close Cooperation Act<sup>106</sup> the directors of the company or members of the close cooperation are jointly and severally liable for unacceptable negative impact on the environment, including damage, degradation pollution caused by the company or close cooperation which will give effect represent or represented.<sup>107</sup>

*In Minister of Water Affairs and Forestry v Stilfontein Gold Mining Company Ltd and Others*<sup>108</sup> the Minister of Water Affairs and Forestry applied for an interdict to force the respondent to comply with a previous court order pertaining to the pumping of water in underground mines in the Klerksdorp-Orkney-Hartebeesfontein- Stilfontein area. The possibility existed that if some of the respondents did not pump water to the surface and treated it properly the water would have polluted other water resources. The court found that the directors did not act in good faith or practice sound cooperate governance. The directors were found guilty of contempt of court as they had allowed the company to disobey court orders. Mining directors could not their environmental obligations in terms of the constitution, MPRDA, NEMA as well as directives issued to them in terms of the National Water Act.

### **5.3 Liability of mining companies under the NEMA**

In line with international approaches and the Constitution, NEMA expanded liability for environmental matters by narrowing the divide between what was traditionally left to the realm of civil liability and statutory requirements. Environmental liability is not restricted to the MPRDA. mines may be held liable for past pollution in terms of section 28 of the NEMA and its obligations in terms of the former Mines and Works Act<sup>109</sup> were addressed in *Bareki NO v Gencor Ltd.*<sup>110</sup> In this case it was found that section 28 of the NEMA did not have any retrospective effect as it constituted strict

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<sup>105</sup> Act 61 of 1973

<sup>106</sup> Act 69 of 1984

<sup>107</sup> This section suggest that the directors of company and members of close corporation will be held strictly liable for environmental harm caused by the company or close cooperation concerned. Notwithstanding common law presumption against strict liability and the fact that the language of the section is not explicit in that it does not expressly refer to strict liability, it is considered likely that the courts will give effect to the intention of the legislature should the need for statutory interpretation arise.

<sup>108</sup> Unreported, WLD case no 2005/7655, 15 May 2006.

<sup>109</sup> 27 of 1956

<sup>110</sup> 2006 (1) SA 432 (T)

liability. The presumption against retrospectively was therefore applicable. Section 28 therefore did not apply to any pollution created before 1 November 1999 (when the act came into operation). Using the rules of interpretation the court also found that the regulations of the Mines and Works Act<sup>111</sup> were repealed by the Minerals Act<sup>112</sup> and that Gencor is no longer liable to act in terms of the regulations. Although the court referred to the constitution, one of the mechanisms that were adopted to achieve this was the incorporation of a duty of care in respect of environmental matters and is discussed under the following sub headings:

### **5.3.1 Nature of the duty**

The duty of care is contained in section 28 of NEMA, and is titled “*duty of care and remediation of environmental damage*”.<sup>113</sup>

In terms of subsection (1), the duty is imposed on every person who causes, has caused or may cause significant pollution or degradation of the environment to take reasonable measures to prevent such Mineral waste and the required governance environment to enable reuse. Pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment. Waste management activities that cause or may cause pollution or environmental degradation will fall within the scope of the duty, although the extent to which the duty applies to actors throughout the life cycle of waste is not explicit.<sup>114</sup>

The obligation contained in subsection (1) is imposed on a range of people including owners or people in control of land or premises and people who have the right to use the land or premises on which, or in which, an activity or process is, or was, performed or undertaken or any other situation exists which causes, has caused, or is likely to cause, significant pollution or degradation of the environment.

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<sup>111</sup> Regulations 2 (11), 5 (10), 5(12) (2) and 5 (13) (3) GN 992 in Government Gazette 2741 of 26 of June 1970.

<sup>112</sup> 50 of 1991

<sup>113</sup> Section 28 of the NEMA

<sup>114</sup> Section 28 (1) of the NEMA

The people on whom the duty is imposed is not confined to these three categories since the subsection is qualified by the statement that the identification does not limit the generality of the duty in subsection (1) and that subsection uses the wording “every person”. In view of this, liability is not only linked to rights in the land where the breach of the duty occurs. The identification of people on whom the duty is imposed also indicates that there need not necessarily be a connection between the duty to take steps and the undertaking of an activity. This intent is made clearer when the provisions for costs apportionments discussed below are considered since in that provision successors in title and people who negligently failed to stop the pollution may be liable for costs.

### **5.3.2 Measures to be taken**

The measures that must be taken to discharge the duty are not prescribed, but an indicative range of measures are provided for in section 28(3). In terms of section 28(3), the measures which must be taken can include measures to –

1. investigate, assess and evaluate the impact of the environment;
2. inform and educate employees about the environmental risks of their work and the manner in which their tasks must be performed in order to avoid causing significant pollution or degradation of the environment;
3. cease, modify or control any act, activity or process causing the pollution or degradation;
4. contain or prevent the movement of pollutants or the consequent degradation;
5. eliminate any source of the pollution or degradation; and
6. remedy the effects of the pollution or degradation.

The list indicates that remediation is now clearly part of South African law. The list is not exhaustive and the state is entitled to expect that other appropriate measures are adopted if necessary to discharge the duty. However, because section 28(1) requires that “reasonable” measures be taken, without providing any guidance on what would constitute reasonableness, the appropriateness of the measures that must actually



be taken in a situation will have to be evaluated against the test of reasonableness on a case by case basis.

### **5.3.3 Enforcement of the duty**

The duty of care may be enforced by government or by private persons. With regards to government enforcement, the Director- General of the Department of Environmental Affairs and Tourism or a provincial head of department may issue a directive to a person to investigate, evaluate and assess the impact of activities and to take specific measures within a certain time frame or period. If the directive is not complied with, government may take the measures itself and recover the costs from a range of people, including the person responsible for the activity or situation, the owner of the land or their successor-in-title, the person in control of the land at the time and any person who negligently failed to prevent the activity or process being performed or the situation from coming about. The failure to comply with a directive to take measures to prevent a situation from occurring or to remedy a situation and the failure to comply with the duty per se has not been criminalized.

## **5.4 National Water Act<sup>115</sup>**

The duty of care contained in NEMA is based on the approach taken to the duty of care set out in section 19 of the National Water Act (NWA). The wording of the duty in the NWA provides for faultless – or strict liability - and is accordingly substantially similar to that contained in section 28 of NEMA and issues that arise only in respect of the NWA are discussed below. Mineral waste and the required governance environment to enable reuse.

### **5.4.1 Scope of the duty**

The duty of care contained in the NWA is applicable to activities that may cause, or are likely to cause the pollution of water resources.<sup>116</sup> The scope of the duty is broad

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<sup>115</sup> National Water Act 36 of 1998

<sup>116</sup> The provision does not contain the additional term “degradation” that is included in the NEMA duty of care.

as the words “likely to cause pollution” are used. An activity or situation that is land-based may therefore trigger the application of the duty. Unlike NEMA, any pollution is included in the scope of the provision since the NWA merely refers to pollution and does not qualify this with a requirement that the pollution be significant. The duty will accordingly apply to waste management activities where it impacts, or has the potential to impact, negatively on a water resource.

#### **5.4.2 Measures that must be taken**

Like NEMA, the measures that must be taken are not prescribed, but may include the following –

1. cease, modify or control any act, activity or process causing the pollution;
2. comply with any applicable waste standard or management practise;
3. investigate, assess and evaluate the impact of the environment;
4. contain or prevent the movement of pollutants or the consequent degradation;
5. eliminate any source of the pollution; and
6. remedy the effects of any disturbance to the bed and banks of a watercourse.

It is noted that the measures expressly refer to waste management standards and practices.

#### **5.4.3 Enforcing the duty of care**

The Act provides that a water management institution may direct any person to whom the duty applies to take the measures that it considers necessary to remedy the situation. The water catchment agency may also take specific steps itself to prevent pollution itself in certain circumstances and recover the costs from a wide list of people; including a person responsible for causing the pollution, the owner or successor-in-title, the person in control of the land who has the right to use the land at the time when the situation occurred and a person who negligently failed to prevent the activity or situation. The failure to comply with a directive to take measures to prevent a situation from occurring or to remedy a situation is a criminal offence. The failure to comply with the duty *per se* has also been criminalized by virtue of section 151(1) (i), which states that it is an offence to “unlawfully and

intentionally or negligently commit any act or omission which pollutes or is likely to pollute a water resource” and section 151(1) (j) which provides that it is an offence to “unlawfully and intentionally or negligently commit any act or omission which detrimentally affects or is likely to affect a water resource”.

#### **5.4.4 Nature of the liability if duty is not discharged**

The categories of people that costs may be recovered from include people who were responsible for the pollution or a range of other people including owners, successors-in-title, people in control of the land who have the right to use the land at the time when the situation occurred and people who negligently failed to prevent the activity or situation. The provision makes a clear distinction between people who are at fault and others.

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## **CHAPTER 6**

### **MINE CLOSURE AND POST CLOSURE**

#### **6.1 Closure**

In support of its mining application, the applicant is required to submit an environmental management programme (EMP). This indicates the manner in which the applicant intends to rehabilitate disturbances of the surface, which may be caused by mining operations.<sup>117</sup> The environmental impacts of mining during all the phases of mining that is the construction, operation and closure, must be considered and addressed in the EMP. Hence, one of the components of the EMP is a mine closure plan. The minerals Act also requires that a mining authorization holder notify the director of mineral and energy in writing that it intends ceasing operations.<sup>118</sup>

A number of broader environmental issues typically arise on closure of a mine. They concern not only rehabilitation but also socio economic issues such as the question of the impact on the community when the mine closes down. The mining industry does not get involved with social impacts of mine closure. The objectives of a mine closure are started by the Department of Mineral and Energy to be safe guarding the health of humans and animals from the hazards resulting from mining operations; minimizing environmental damage or residual impacts; rehabilitating the land in as far as is practicable to its natural state, or to an alternative, predetermined land use, within a framework of sustainable development; ensuring physical and chemical stability, bearing in mind the effect of natural process; and ultimately the optimal utilization of South Africa's mineral resources.<sup>119</sup>

The applicant must identify and list known bodies representing interested and affected parties. The mining closure plan, being the component of the EMP covering the closure phase, needed to cover all aspects of closure including the socio-economic and environmental issues. The closure plan, and what needs to be covered in such a plan, is not specified by legislation but rather through guidance documents and policies provided by the DME such as the policy on financial provision for closure and mine closure policy in terms of section 12.<sup>120</sup> It is important to look at some of the detail of these policies as it provides the necessary

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<sup>117</sup> Section 38B of the Mineral and Petroleum Resources Development Act 28 of 2002 as amended.

<sup>118</sup> Mineral and Petroleum Resources Development Act 28 of 2002.

<sup>119</sup> <http://www.gov.za/minerals/mineclosure.htm>

<sup>120</sup> Section 12 of the minerals Act 50 of 1991

background material to consider the new Act and draft regulations. One of the most important provisions of the minerals act, section 12 also provide for ongoing liability until the issue of a certificate known as a closure certificate, which when issued, frees the holder from any further liability under the minerals act.<sup>121</sup>

### **6.1.1 Closure requirements**

The MPRDA provides statutory requirements enforcing environmental protection, the management of environmental impacts and the rehabilitation South Africa.<sup>122</sup> Other legislation such as the National Environmental Management Act<sup>123</sup>, the National Water Act, 1998, the Atmospheric Pollution Prevention Act, 1965, and the National Nuclear Regulatory Act, 1999 and other applicable legislation provide further controlling measures. The most important requirement concerning the environment and its rehabilitation is that an environmental management programme (EMP), based on an environmental impact assessment, must be submitted and officially approved.<sup>124</sup>

Government and the mining industry have accepted the principle that the polluter must pay for pollution or the damage that prospecting or mining actions incur on the environment.<sup>125</sup> The monitoring and EMP performance assessment process will also assist government, as well as the mining industry, in determining compliance with the requirements of the EMP and the appropriateness of the EMP, and guide mines to effective and acceptable closure. Section 54 of the Act requires the holder to notify the Director of Mineral Development in writing, at least 14 days before he/she intends to permanently or temporarily cease operations.<sup>126</sup>

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<sup>121</sup> Section 12 of the minerals Act 50 of 1991

<sup>122</sup> MPRDA

<sup>123</sup> Act 107 of 1998

<sup>124</sup> National Environmental Act of 1998. Section 25 Of the Mineral and Petroleum Resources Development Act 28 of 2002.

<sup>125</sup> Polluter pays principle (NEMA Principles).

<sup>126</sup> National Environmental Management Act, 1998 and section 43 (4) Mineral and Petroleum Resources Development Act 28 of 2002 as amended.

In terms of section 12 of the Minerals Act,<sup>127</sup> the responsibility to comply with the relevant provisions of the act remains with the holder of a prospecting permit or mining authorization until a closure certificate has been issued to the effect that the said provisions have been complied with. A proviso is, however, that if residual impacts have been identified, these must be described in the mine's EMP and adequate and irrefutable arrangements put in place to ensure that these impacts will be adequately dealt with.

## **6.2 Environmental closure implications under the MPRDA**

The new mining legislation i.e. the Minerals and Petroleum Resources Development Act (the Act) has been drafted in such a way as to give effect to the above policy as well as the section 24 right. There is much reference to the environment as well as to sustainable development in the new Act and in the draft regulations. It also concerns itself much more with legalities around closure. It is important to note that, because the definition of 'mining area' has been cast to include the area for which the right is granted and in relation to any environmental, health, social or labour matter includes: any adjacent or non-adjacent surface of land on which the extraction of any mineral has not been authorized but upon which related or incident operations are being undertaken and including any area connected to such an area by means of any road, railway line, power line, pipeline or cableway or conveyor belt, and any surface of land on which such road, railway line, power line, pipeline or cableway is located and all buildings, structures, machinery, mine dumps or object situated on or in that area which are used for the purpose of mining on the land in question, it is therefore implicit that, when it comes to the environmental issues around closure, adjacent and non-adjacent areas will need to be factored into the closing plan. That holders of rights are responsible for the environmental consequences of mining on areas beyond the immediate mining areas, is borne out by the wording used in section 38B. Section 5 as amended provides that no one may prospect or mine or even commence with any work incidental thereto on any area without an approved EMP or plan. Section 38 (1)(d) and (e) makes it clear that the holder of the mining right must as far as it is reasonably practicable, rehabilitate the environment affected by mining operations to its natural or pre-determined state or to a land use that conforms to the generally accepted principles of sustainable development. In (e) it goes on to provide that the holder is responsible for any environmental damage, pollution, or ecological degradation as a

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<sup>127</sup> Act 50 of 1991.

result of his mining operations and which may occur inside or outside the boundaries of the area to which such right relates. Section 39 of the new Act deals with the preparation of an EMP and plan and requires a description of the manner in which the holder intends to modify, remedy, control or stop any action, activity or process, which causes pollution or environmental degradation.

The holder must indicate how he will contain or remedy the cause of pollution or degradation and migration of pollutants and comply with any prescribed waste standards or management standard or practice. Although this does not specifically refer to the rehabilitation aspect for mine closure, the draft regulations make it clear that the current position will continue in that the EMP will need to include a preliminary closure plan, which will require updating over the operational life of the mine and then be finalized once closure is imminent. What the draft regulations of the act provide in this regard is covered later. An EMP will not be approved unless the applicant satisfies the requirement of making financial provision for the rehabilitation of negative environmental impacts.

Section 41 covers the financial provision.<sup>128</sup> This imposes a requirement to maintain and retain the financial provision until the Minister has issued a closure certificate (as contemplated in s 43). The definition of financial provision makes it clear that this includes the provision that must be made for rehabilitation of the prospecting or mining areas. Section 42 covers the management of residue stockpiles and residue deposits (both terms have been defined in the Act with the latter being the stockpiles remaining on termination, cancellation or expiry of the right). These have to be managed in the prescribed manner. No temporary or permanent deposit may take place on any other site. Failure to do this is an offence under the Act (MPRDA) as is a failure to comply with s 38B (managing environmental impacts in accordance with the EMP) and section 44 (demolition).<sup>129</sup> Section 43 of MPRDA is one of the most important provisions concerning closure as it deals with the issuing of a closure certificate. It is in this section that reference is made to the prescribed *closing* plan. Responsibility for any environmental liability, pollution or ecological degradation remains until the issue of the certificate to the holder. This is similar to the current situation; however, the section goes on to provide for the transfer of liability under the EMP to approved third

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<sup>128</sup> Mineral and Petroleum Resources Development Act 28 of 2002 as amended.

<sup>129</sup> Mineral and Petroleum Resources Development Act 28 of 2002 as amended.

parties. Unlike the current requirements a duty arises for the holder or an approved third party to apply for a closure certificate on certain eventualities occurring.

A closure certificate must be applied for to the Regional Manager within 180 days of cessation of mining operations (or completion of the prescribed closing plan).<sup>130</sup> This term is not defined and it is not clear at this stage what will need to be contained in the closing plan. The draft regulation dealing with it has set out certain requirements. In addition, this application for a closure certificate must be accompanied by the prescribed environmental risk report. This term is also not defined, but appears to involve a risk assessment on closure. DWAF must confirm that the provisions pertaining to potential water pollution have been addressed and the Chief Inspector (CI) must confirm the provisions relating to health and safety are addressed, before a closure certificate can be issued (section 43(5)). As indicated above, section 43 contemplates a situation where there can be a transfer of environmental liabilities and responsibilities as may be identified in the EMP or EM plan and in the prescribed closure plan from the original holder to a third party.

This third party would have to meet certain prescribed qualifications for this to occur. While these provisions are to be applauded, the full implications of what such a transfer of liability will actually entail have not been clarified. For example, the question arises whether the qualified person will become a holder for the purposes of the Act. Other concerns about the process of transferring environmental liabilities to a third party relate to the 'qualified person'. The definition of this does not cover the requirements in section 45. These requirements are very onerous and suggest the intention is not to allow for transfer of these liabilities in the normal situation where a mine or part of it is sold to another mining entity.

A consultation provision with other state departments in s44 (3) is not provided for in the Act. As indicated above, no closure certificate may be issued unless the CI and DWAF have confirmed in writing that the provisions pertaining to health and safety and management of potential pollution to water resources have been addressed. It is curious that DWAF is the only other regulator singled out here, as one would expect DEAT would need to be equally satisfied about environmental media other than water. There are a number of legal concerns that arise about the effects of this provision:

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<sup>130</sup>Section 43 Mineral and Petroleum Resources Development Act 28 of 2002 as amended.



- what will the effect be of such a written confirmation to the holder of the closure certificate? Will it remove liability for water pollution insofar as DWAF has signed off on it? The NWA does not make provision for any exemptions to be issued from its provisions so in view of the fact that residual liability remains under that Act, the effect of DWAF's written confirmation is not clear. Section 43(6) contemplates that where a certificate has been issued there will be a return of such portion of the financial provision as is deemed appropriate, but in the same sentence there is provision for the retention of any portion for latent and or residual environmental impacts, which may become known in the future.<sup>131</sup>

How will a decision be made on what portion to retain, especially in view of a closure certificate only being obtainable where DWAF is satisfied that potential pollution to water resources has been addressed? Section 44 prevents the demolition or removal of buildings, structures or objects except in certain circumstances and except as regards bona fide mining equipment.<sup>132</sup>

This section completely turns around the current provision, which allows for demolition except in certain circumstances. Section 45 deals with emergency type situations where urgent remedial measures are necessary to prevent ecological degradation, pollution or environmental damage, which may be harmful to the health or well-being of anyone. It is not clear when such circumstances would be likely to arise, bearing in mind the EMP. In these circumstances a directive may be issued by the Minister for certain steps to be taken by the holder such as an assessment of the pollution, measures to address it and a timeframe for this to be done.

Failure to do the necessary entitles the Minister to implement the measures and recover the costs from the holder concerned. In the first instance these measures must be funded from the financial provision made by the holder. It is difficult to reconcile this provision with the EMP or the closure plan as surely this is properly addressed through that mechanism. The Act makes provision in section 41(5), for retaining a portion of the financial provision by the Minister even after the closure certificate has been issued, if this is required to rehabilitate the closed mining operation in respect of latent or residual environmental impacts. This again should be properly provided for in the closure plan and it is not clear whether other

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<sup>131</sup> Mineral and Petroleum Resources Development Act 28 of 2002.

<sup>132</sup> Ibid.

circumstances could give rise to these provisions being invoked. Section 46 states that, where measures contemplated under s 45 are required to address pollution or rehabilitate dangerous occurrences but the holder or his successor-in-title cannot be traced, the RM may be instructed to take the necessary measures. These measures must be funded from the financial provision made by the holder or from money appropriated by parliament.

### **6.3 Closure certificate**

Section 43 of the Mineral and Petroleum Resources Development Act<sup>133</sup> provides that the holder of prospecting right or mining right remains responsible for any environmental liability, pollution or ecological degradation, and the management thereof, until the Minister has issued a closure certificate to the holder concerned. The holder of a prospecting right or mining right, as the case may be, must apply for a closure certificate upon:

1. the lapsing, abandonment or cancellation of the right in question;
2. cessation of the prospecting or mining operation;
3. the relinquishment of any portion of the prospecting of the land to which a right, permit or permission relate; or completion of the prescribed closing plan to which a right, permit or permission relate.

An application for a closure certificate must be made to the Regional Manager in the region in which the land in question is situated within 180 days of the occurrence of the lapsing, abandonment, cancellation, cessation, relinquishment or completion contemplated above, and must be accompanied by the prescribed environmental risk report. No closure certificate may be issued unless the Chief Inspector and the Department of Water Affairs and Forestry have confirmed in writing that the provisions pertaining to health, safety and management of potential pollution to water resources have been addressed. Section 57 of the Mineral and Petroleum Resources Development Act<sup>134</sup> provides as follows:

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<sup>133</sup> Act 28 of 2002.

<sup>134</sup> Act 28 of 2002.

(1) An application for a closure certificate by the holder of a prospecting right, mining right, retention permit or mining permit in terms of section 43(4) of the Act must be completed in the form of Form P, contained in Annexure II.

(2) The application referred to in sub regulation (1) must be accompanied by the following documentation –

- (a) a closure plan contemplated in regulation 62.
- (b) an environmental risk report contemplated in regulation 60.
- (c) a final performance assessment report contemplated in regulation 55(9).

An acceptable competent third party may be identified to assume responsibility for such management or maintenance and will utilize the funds that the mine has made available for this purpose. It is of the utmost importance that effective planning for closure should take place as early as possible in the life of a mine and, preferably, even before mining operations commence. Equally important is to identify the post-mining land use (or land use options if there is yet no certainty) so that mining methods, the placing of structures and interim rehabilitation actions may be adapted to meet identified goals cost effectively. The principles and objectives of this policy guideline have been included in the regulations in terms of the Mineral and Petroleum Resources Development Act, 2002 as the Principles for Mine Closure.

A closed mine, where a mine has been granted a closure certificate in terms of section 43 of the Act,<sup>135</sup> or in terms of previous legislation Regulation 2.11. Temporary closure (care and maintenance),<sup>136</sup> where the mine is said to be in a state of care and maintenance when it has stopped production for various technical, environmental, financial or labour related reasons, but the holder has not declared their intent to finally close mine. An abandoned mine, derelict mine or liquidated mine, where a mine has ceased to operate, environmental management including rehabilitation and/or demolition have not been conducted to acceptable standards and the holder has been liquidated, the mine has been abandoned or left without any

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<sup>135</sup> Mineral and Petroleum Resources Development Act 28 of 2002.

<sup>136</sup> Regulation 2.11.

responsible legal entity/person passing the buck' where irresponsible mining companies sell their environmental and social responsibilities to other mining companies

1. Derelict and ownerless mine, where there is no traceable owner/holder
2. Conditional/provisional closure'
3. Partial closure
4. Closure under other legislation
5. Offshore closure.

The certificate may be furnished in general terms or in respect of specified assets.<sup>137</sup>

The certificate may be made subject to such conditions as the regional director may determine.<sup>138</sup>

#### **6.4 Safe post mining areas**

Due to the nature of the mined heavy minerals the mining area, primary wet plant and residue dam pose a radiation risk. The radioactive nature of the mined minerals also creates the risk of surface contamination of materials being removed from the site either as re-usable or waste. Due to its strong link with limited residual impact the actions to be put in place to mitigate this risk is discussed under the section dealing with this objective. At the mining area, primary wet plant and residue dam, there is risk of uncontrolled access to potentially dangerous areas – primarily during post-mining and rehabilitation activities. In the mining area, there is also the risk that the final mining void is deeper than planned for.

In order to ensure secured potentially dangerous areas, formation or creation of these areas is prevented through implementation of a mine plan limiting the final void depth. Access to unsafe areas must be limited and controlled during demolition activities and reduced to farming standards during post-mining periods. A general communication must go out that there is no value in the abandoned, post-mining assets. Monitoring with regard to stability of both the slopes and the residue dam wall will be in the form of geotechnical inspections.

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<sup>137</sup> Section 43 of the Mineral and Petroleum Resources Development Act 28 of 2002 as amended.

<sup>138</sup> Ibid

## **CHAPTER 7**

### **CONCLUSION AND RECOMMENDATIONS**

Current international practice requires that mining operations define their rehabilitation and closure objectives prior to commencement of mining, and that these be reviewed in association with the communities and organizations that will be affected by these activities. In those developing nations where legislative requirements may be less developed than in the first world, mining companies remain obliged to use currently available technology to achieve satisfactory solutions to biodiversity issues.

Mining corporations therefore, continually upgrade their biodiversity and social impact assessments in an effort to minimize the long-term negative impacts, and to maximize the long-term positive impacts of their activities.

Future challenges in ecological restoration in the mining and mineral industries leading to the maximising and/or return of biodiversity include the increasing scale of operations with large mining companies seeking to exploit large reserves in more remote wilderness environments, greater innovation in new technologies such as the *in situ* extraction of metals through leaching, the increasing need to regulate and develop environmental management in the artisanal and small mining sector, and the imperative to incorporate policies of sustainable development as far as possible.

A further challenge to sustainable development is the continuing social and environmental problems associated with the enormous number of abandoned and “orphaned” mine sites.

The social agenda as part of sustainable development should, as a result, become increasingly important to environmental management in the mining sector in general, and to ecological restoration and biodiversity issues in particular.

These developments will require considerable research and ecological knowledge if biodiversity losses are to be avoided.

Government should therefore, provide for the promotion of mining and mineral development, while maintaining and enhancing the environmental performance of the mining industry through the application of reasonable, attainable, affordable and effective measures and standards based on local needs and requirements, while taking due cognisance of international tendencies and developments with regard to environmental impact management practices, measures and standards.

Section 24 of the Constitution provides that everyone has a right to an environment that is not harmful to their health and well-being; and to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

It is recommended that from this constitutional imperatives, the legislature enact laws which ensure maximum compliance with rehabilitation regulations.

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