

DEPARTMENT OF MINERAL RESOURCES

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ENVIRONMENTAL MANAGEMENT PLAN

I, **Mr SG Mantashe**, Minister of Mineral Resources, hereby publish the Environmental Management Plan for the Department of Mineral Resources in terms of section 15(5) of the National Environmental Management Act, 1998 (Act No.107 of 1998) for the implementation by the Department.



Mr Samson Gwede Mantashe, SG
Minister of Mineral Resources.

Date:



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF MINERAL RESOURCES

THIRD EDITION

**ENVIRONMENTAL MANAGEMENT PLAN
(2016/2020)**

Compiled in terms of Section 11(2) of the National Environmental Management Act, 1998
(Act No.107 of 1998)

EXECUTIVE SUMMARY

The Department of Mineral Resources (DMR) is proud to present the 2016/2020 Environmental Management Plan (EMP) as required by the National Environmental Management Act (NEMA, 1998). The aim of the EMP is to assess how the Department's policies, programmes, plans and decisions are taking into account environmental management.

The mandate of the DMR is to promote and regulate the mineral and mining sector to create economic growth through sustainable and responsible mining. To achieve sustainable and responsible mining, the Department values the sustainable development model, which is a balanced approach to economic development, social development and environmental protection. Pursuing the sustainable development model, the Department has established various structures internally to astutely administer mining applications and enforce relevant statutory requirements.

In response to environmental protection leg of sustainable development model, the mining sector is now administered under the "one environmental management system", which commenced on the 8th of December 2014. The system seeks to streamline licensing processes for mining, environmental authorisations and water use. Under this regime, the mining sector implements NEMA and listed activities and thus enhancing the mining environmental governance. Moreover, the Department has planned several initiatives in the next coming years aimed at ensuring and improving mine environmental management practices. This includes, amongst others, development of strategies, increasing human resources capacity and skills development.

To demonstrate commitment to mine environmental management governance, the Department will develop annual reports as required by NEMA. The annual reports will provide progress on implementation of the set policies, plans and programmes as indicated in the EMP.

ENDORSEMENT

Endorsement of the 2016/2020 Departmental Environmental Management Plan of the Department of Mineral Resources as required by National Environmental Management Act of 1998.

Endorsed by the Department of Mineral Resources



ADV. T MOKOENA

DIRECTOR-GENERAL: DEPARTMENT OF MINERAL RESOURCES

DATE: 15/02/2018

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BAR	Basic Assessment Report
BBSEE	Broad-Based Socio-Economic Empowerment
BCC	Benguela Current Commission
BCC-SAP	Benguela Current Commission Strategic Action Plan
BCLME	Benguela Current Large Marine Ecosystems
CGS	Council for Geoscience
CEC	Committee on Environmental Coordination
COP	Code of Practice
CSIR	Council for Scientific and Industrial Research
DSD	Department of Social Development
DOH	Department of Health
D&O mines	Derelict and Ownerless mines
DIRCO	Department of International Relations and Cooperation
DAFF	Department of Agriculture, Forestry and Fisheries
DoA	Department of Agriculture
DEA	Department of Environmental Affairs
DENC	Department of Environment and Nature Conservation
Departmental EMP	Departmental Environmental Management Plan as required in terms of Chapter 3 of NEMA, 1998
DGs	Director Generals
DPME	Department of Planning, Monitoring and Evaluation
DME	Department of Minerals and Energy
DMR	Department of Mineral Resources
DoE	Department of Energy
DoT	Department of Transport
DPE	Department of Public Enterprise
DSAA	Diamond Second Amendment Act, 2005 (Act No. 30 of 2005)
DWS	Department of Water and Sanitation

EA	Environmental Authorisation
EDD	Economic Development Department
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIARs	Environmental Impact Assessment Reports
EIPs	Environmental Implementation Plans
EM	Environmental Management
EM Plan	Environmental Management Plan as required in terms of Chapter 3 of NEMA, 1998
EMPR	Environmental Management Programme Report
FEPAs	Fresh Water Ecosystem Priority Areas
GAA	Geoscience Amendment Act, 2010 (Act No. 16 of 2010)
GTT	Government Task Team
GIS	Geographic Information System
HDSA	Historically Disadvantaged South Africans
HEGs	Homogeneous Exposure Groups
I&APs	Interested and Affected Parties
IEM	Integrated Environmental Management
IGFMMMSD	Intergovernmental Forum on Mining Minerals Metals and Sustainable Development
IPIC	Interdepartmental Project Implementation Committee
JPOI	Johannesburg Plan of Implementation
JWC	Joint Working Group
KOSH	Klerksdorp, Orkney, Stilfontein and Hartebeesfontein
LEDET	Limpopo Economic Development, Environment and Tourism
MEM	Mine Environmental Management
MERSD	Mine Environmental Research and Sustainable Development
MHSA	Mine Health and Safety Act, 2008 (Act No. 74 of 2008)
MHSC	Mine Health and Safety Council
MINTEK	Council for Mineral Technology Research
MoU	Memorandum of Understanding

MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MSP	Marine Spatial Planning
MTA	Mineral Technology Act, 1989 (Act No. 30 of 1989)
MTRAA	Mining Titles Registration Amendment Act, 2003 (Act No. 24 of 2003)
MTSF	Medium-Term Strategic Framework
MWP	Mining Work Programme
NFA	National Forestry Act, 1998
NCRWM	National Committee on Radioactive Waste Management
NDP	National Development Plan
NEM:AQA	National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEM:PAA	National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMLA	National Environmental Management Laws Act
NEPAD	New Partnership for Africa's Development
NHRA	National Heritage Resource Act, 1999 (Act No. 25 of 1999)
NSSD	National Strategy of Sustainable Development
NWA	National Water Act, 1998 (Act No. 36 of 1998)
NWGMSP	National Working Group on Marine Spatial Planning
OEL	Occupational Exposure Limit
PASA	Petroleum Agency of South Africa
PMA	Precious Metals Act, 2005 (Act No. 37 of 2005)
PPP	Public Participation Process
RMDEC	Regional Mining Development and Environmental Committee
ROC	Rehabilitation Oversight Committee

SALGA	South African Local Government Association
SANBI	South African National Biodiversity Institute
S&EIARs	Scoping and Environmental Impact Assessments Reports
SADC	Southern African Development Community
SAHRA	South African Heritage Resources Agency
SD	Sustainable Development
SDMSF	Sustainable Development through Mining Strategic Framework
SOC	State Owned Companies
SDI	Spatial Development Initiatives
SDIs	Sustainable Development Indicators
SEMA	Specific Environmental Management Acts
SLP	Social Labour Plans
SMWMP	Strategic Mine Water Management Programme
SoEs	State Owned Entities
SPLUMA	Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)
UNCSD	United Nations Conference on Sustainable Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
WML	Waste Management License
WSSD	World Summit on Sustainable development
WUL	Water Use License

1. INTRODUCTION

1.1. Purpose and objectives of the Environmental Management Plan

In terms of Section 11 of National Environmental Management Laws Second Amendment Act, 2013 (NEMLA, 2013), National and Provincial Departments listed in Schedule 1 and Schedule 2 of National Environmental Management Act (NEMA, 1998) must prepare Environmental Implementation Plans (EIPs) and/or Environmental Management Plans (EMPs) within every five years. Schedule 1 Departments must prepare EIPs, as these Departments exercise functions which may affect the environment. Schedule 2 Departments must prepare EMPs, as these Departments exercise functions involving management of the environment.

The Department of Mineral Resources (DMR) exercises functions involving management of the environment and thus required to prepare a Departmental EMP every five years, in this case the 2016-2020 Departmental EMP.

According to Section 12 of NEMA, 1998, the purpose of the Departmental EMP is to:

- a) Coordinate and harmonise the environmental policies, plans, programmes and decisions of the department in exercising functions that may affect the environment or powers and duties aimed at the achievement, promotion, and protection of a sustainable environment, and of provincial and local spheres of government, in order to –
 - (i) Minimise the duplication of procedures and functions; and
 - (ii) Promote consistency in the exercise of functions that may affect the environment;
- b) Give effect to the principles of cooperative governance as contemplated in Chapter 3 of the Constitution;
- c) Secure the protection of the environment;
- d) Prevent unreasonable actions by provinces in respect of the environment that are prejudicial to the economic or health interest of other provinces or the country; and

- e) Enable the Minister of Environmental Affairs to monitor the achievements, promotion and protection of sustainable environment.

In compliance with the requirements of NEMA, the First Edition Departmental EMP was published on February 2001 in the Government Gazette No.22080. The Second Edition Departmental EMP was published on July 2008 in the Government Gazette No.31188. The First Edition and Second Edition were based on the Department of Minerals and Energy (DME) mandate. In the Third Edition Departmental EMP, the Department is further required to describe the Department's Sustainable Development Indicators (SDIs).

Section 24 of NEMA describes the content of the EMP and the 2015/19 EIPs/EMPs Guidelines provide guidance on compiling the EMP. In meeting DEA's requirements for the Third Edition Departmental EMP, the layout is presented in the following ten sections:

1. Introduction
2. Functions exercised by the Department of Mineral Resources in respect to the environment
3. Norms and standards
4. Policies and plans
5. Priorities regarding compliance
6. Extent of compliance with the relevant policies by other organs of state
7. Cooperative Governance
8. Proposals for promotion of the objectives and plans for implementation of Chapter 5 of NEMA
9. Outcomes and key priority indicators

1.2. Legislative mandate, mission, vision and values of the Department

Legislative mandate

The key principal legislations, the Mineral and Petroleum Resources Development Act, (Act No. 28 of 2002) (MPRDA, 2002) and the Mine Health and Safety Act (Act No.29 of 1996) (MHSA, 1996), provides the regulatory framework for equitable access to and sustainable development of the nation's mineral resources and related matters which the Department is tasked with regulating.

Mission

To promote and regulate the minerals and mining sector for the transformation, growth, development and ensure that all South Africans derive sustainable benefits from the country's mineral growth.

Values

To improve quality and effectiveness of service delivery, the Department adheres to the following values; Batho Pele, ethics, honesty, integrity, accountability, professionalism and Ubuntu.

1.3. Key strategic objectives of the Government on the mineral resources

In preparation of the DMR's Strategic Plan (2014/19), the Department took into consideration the National Development Plan (NDP) government's priorities outlined in the Medium-Term Strategic Framework (MTSF) and the ways in which it could, with the mining sector, contribute to national priorities. As outlined in the DMR's Strategic Plan (2014/19), Table 1 indicates the Department's goals as linked with the national outcomes.

Department's Goals	National Outcomes
Increased investment in the minerals, mining and petroleum sectors	Linked to national outcomes: <ul style="list-style-type: none"> • 4: Decent employment through inclusive economic growth • 6: An efficient, competitive and responsive economic infrastructure network
Transformed minerals sector	Linked to national outcome: <ul style="list-style-type: none"> • 4: Decent employment through inclusive economic growth
Equitable and sustainable benefit from mineral resources	Linked to national outcomes: <ul style="list-style-type: none"> • 4: Decent employment through inclusive economic growth • 6: An efficient, competitive and responsive economic infrastructure network • 10: <i>Environmental assets and natural resources that are well protected and continually enhanced</i>
Efficient, effective and development oriented department	Linked to national outcome: <ul style="list-style-type: none"> • 12: An efficient, effective and development-oriented public service and an empowered, fair and inclusive citizenship

Table 1: Department's goals linked to National Outcomes (Department of Mineral Resources Strategic Plan 2014/19)

1.4. Previous Environmental Management Plan Editions

In compliance with the requirements of NEMA Chapter 3, DMR has since developed (2) Departmental EMPs; the First Edition Departmental EMP and Second Edition Departmental EMP. In both editions, the mine environmental management functions were primarily guided by the provision of the MPRDA and not the "one environmental management system" (the new regime discussed in Chapter 4). For each edition, four annual reports were submitted to the Committee on Environmental Coordination (CEC) containing implementation of the programmes or plans committed in the EMP. Reflecting on the programmes and/or plans from both editions, the Department has achieved great successes but also encountered several challenges. The following subsections provide a summary of programmes, achievements and challenges from the (2) Departmental EMPs.

1.4.1. First Edition Departmental EMP

The First Edition Departmental EMP was published on February 2001 in the Government Gazette No.22080. The First Edition was based on the DME's mandate and the major achievements of the First Edition Departmental EMP were:

- a) The President signed MPRDA on 03 October 2002 after being passed by Parliament on 26 June 2002.
- b) The Department spent R17 million on rehabilitation of asbestos mines alone. Rehabilitation work was done at old Voorspoed Asbestos Mine, Koegas, Ncweng, and Whitebank Complex in the Northern Cape. With regard to coal mines, the Department in co-operation with the DWS (known as DWAF at that point in time) and other Government Departments, implemented urgent short-term rehabilitation measures at the burning Transvaal and Delagoa Bay (T&DB) Colliery near Witbank. These include:
 - The construction of safety pathways over the T&DB site and access control; and
 - The construction of a storm water diversion system to prevent storm water flowing through the site and becoming acidic.

Investigations regarding the methods of rehabilitating at the T&DB Colliery were finalised. These methods included re-mining, blast and collapse, flooding and ashing.

- c) In 2002/03, Phepafatso strategy was launched. The aim of the strategy was to strengthen enforcement, support site inspections, assess the state of compliance, identify pollution hotspot areas, develop solutions to address water ingress into mines, and establish an inter-departmental working group to determine specific environmental norms and standards for hotspot areas.
- d) Taking into consideration the extent of environmental damage caused by mining in South Africa, the Department entered into a five-year agreement with the

Council for Scientific and Industrial Research (CSIR), Council of Geoscience (CGS) and Council for Mineral Technology Research (Mintek) to find solutions for long-term rehabilitation and environmental management. Given the thousands of derelict and ownerless (D&O) mines identified, the Department recognized the need to develop a national strategy to address the situation. A ranking system was developed to prioritize the rehabilitation of these mines.

- e) A policy to address water ingress and decanting problems was completed and through this the DMR together with the Department of Water and Sanitation (DWS) and Department of Environmental Affairs (DEA) achieved successes within the Klerksdorp, Orkney, Stilfontein and Hartebeesfontein (KOSH) and Witwatersrand gold mining area. Here mining companies collectively addressed the water ingress and decanting problems by establishing water utilities and water treatment plants where appropriate.
- f) A site inspection audit tool for environmental requirements was developed in collaboration with the CSIR. The purpose of the tool was to standardize the process of inspection and also train new officials on how to conduct environmental inspections and what questions to ask when conducting an inspection. It will also lessen and fast track the work of environmental officers when they carry out site visits.
- g) Amendments to the MPRDA were approved by Cabinet in November 2006, and certified by the State Law Advisors in February 2007 after extensive consultations with the DEA (DEAT) to harmonise environmental impact assessment (EIA) requirements in the Bill with that of NEMA, 1998.

Besides the major achievements, the following challenges were identified:

- a) Backlog with regard to renewals,
- b) Capacity constraints,
- c) Non-compliance,

- d) A few mining companies have revised their financial provision and as a result there is a shortfall,
- e) Regional Mining Development and Environmental Committee (RMDEC) referral delays approval processes,
- f) Applicants delay the submission of financial provision which is a requirement of approving the EMP's,
- g) Sub-standard EMP's,
- h) In certain instances, increased environmental liability this leads to unsatisfactory closure of mines and transfer of liability to the state,
- i) Ongoing objections from landowners.

1.4.2. Second Edition Departmental EMP

The Second Edition Departmental EMP was published on July 2008 in the Government Gazette No.31188. The Second Edition was also based on the DME's mandate and the major achievements were:

- a) The South African Mining industry's environmental legacy of more than a century requires a dedicated approach to mitigate further environmental degradation and pollution and the paternally negative impact on communities. Consequently, the Branch developed a rehabilitation strategy for derelict and ownerless mines, which was approved by the Minister in December 2009. The Rehabilitation Oversight Committee (ROC) was also established to develop an implementation plan for the rehabilitation strategy.
- b) Following the Minister's approval of the strategy for the management and rehabilitation of mines, the Mineral Policy and Promotion (MPP) Branch developed a draft rehabilitation procedure manual. As a part of the rehabilitation programme, five sites were successfully rehabilitated during the 2010/2011 financial year, creating a total number of 221 employment opportunities.
- c) South Africa's Sustainable Development (SD) framework, incorporating all three SD spheres, namely economic, environmental and social, was finalized and the

SD thematic report submitted to the United Nations Council for Sustainable Development (UNCSD) in preparation for the 18th session of the commission. The report outlined the mining industry's progress against the developmental targets agreed at the 2002 World Summit on Sustainable Development and Johannesburg Plan Of Implementation (JPOI).

- d) The Minister approved the Sustainable Development through Mining Strategic Framework (SDMSF) and the Mine Environmental Management Guideline (MEM) Series documents, which includes the following: a mine closure guideline, a guideline for monitoring and performance assessment and guideline on the content scoping, environmental impact assessment and environmental management programme to facilitate a better understanding, interpretation and successful implementation of the MPRDA.
- e) As part of the D&O mine sites rehabilitation programme, a total of three projects were completed during the 2011/12 financial year, one project in the Northern Cape and two in the Gauteng province. During inspections of mine sites completed during the last financial year in the Northern Cape, two open shafts were discovered that had to be closed off. The closure of these shafts at the Bestwell and Jebolo asbestos mine sites add to the achievements of this programme for the year.
- f) In the year 2009/10, 2010/11 and 2011/12 the Mineral Regulation Branch embarked on intensive environmental compliance inspections, achieving a total of 3 449 against a target of 1 380, 1 831 against a target of 1 380 and 1 898 against a target of 1 740 respectively.

Besides the major achievements, the following challenges were identified:

- a) EMP public participation was not sufficiently covered,
- b) A few mining companies have revised their financial provision and as a result there is a shortfall,

- c) In certain instance, increased environmental liability leads to unsatisfactory closure of mine and transfer of liability to the state,
- d) Objections from Non-Government Organization,
- e) EMP's approved late due to a large number of applications,
- f) Right/Permit holders not familiar with the mining sites,
- g) Difficult to get hold of contact person due to change of mine ownership.

2. FUNCTIONS EXERCISED IN RESPECT TO THE ENVIRONMENTAL FUNCTION

2.1. Institutional arrangements and functions

There are different components within the Department that deal with the mine environmental management function, that is: Mine Environmental Research and Sustainable Development (MERSD) and Mine Closure directorates (reporting under Mineral Policy and Promotion Branch), as well as MEM sub-directorates and Enforcement and Compliance directorates (reporting under Mineral Regulation Branch). The following subsections below provide specific details on the functions of each component.

2.1.1. Mineral Policy and Promotion Branch

The purpose of the Branch is to formulate mineral-related policies and helps promote the mining and minerals industry of South Africa in order to make it attractive to investors. While the objective is to conduct research in order to provide relevant information to enhance global competitiveness, review policies and formulate legislation to achieve transformation and attract new investment into South Africa.

The Branch has one chief directorate dealing with mine environmental function which is called Mine Environmental Management. The chief directorate is structured as follows:

- Chief Director: Mine Environmental Management
 - Director: MERSD
 - 2 x Deputy Directors
 - 3 x Assistant Directors
 - Director: Mine Closure
 - 3 x Deputy Directors
 - 1 x Environmental Officer

MERSD directorate undertakes research and provides strategic guidance on mine environmental management issues. Whereas **Mine Closure directorate** serves to provide strategic guidance on mine closure related issues including management and rehabilitation of D&O mines.

2.1.2. Mineral Regulation Branch

The purpose of the Branch is to regulate the minerals and mining sector to achieve transformation and sustainable development. While the objective is to transform the mineral and mining sector into one that competitively contributes to the sustainable development in the country. The Branch is divided into four chief directorates dealing with the mine environmental functions, which are:

1. Chief Directorate Mineral Regulation and Administration: Western Regions (responsible for Limpopo Region, Mpumalanga Region and Gauteng Region)
2. Chief Directorate Mineral Regulation and Administration: Central Regions (responsible for Free State Region, Northern Cape Region and North West Region).
3. Chief Directorate Mineral Regulation and Administration: Coastal Regions (responsible for Kwa-Zulu Natal Region, Western Cape Region and Eastern Cape Region).

Given the (3) chief directorates, each chief directorate is structured as follows:

- 1 x Chief Director: Mineral Regulation and Administration (Western Regions or Central Regions or Coastal Regions)

Then at *each* Regional Office:

- 1 x Director (Regional Manager): Licensing and Legal Compliance
- 1 x Deputy Director: MEM sub-directorate
- Assistant Directors: MEM sub-directorate (number differs per Regional Office)

- Environmental Officers: MEM sub-directorate (number differs per Regional Office)

Each **chief directorate** is responsible for overseeing the activities performed by the **Licensing and Legal Compliance directorate** in the three regions. Each Directorate (Regional Office) is headed by a Director (Regional Manager). The Directorate consists of the **Mine Environmental Management sub-directorate**, whose responsibility is to adjudicate EA applications in line with the provisions of the applicable legislation, review closure applications in terms of MPRDA, and conduct monitoring and compliance inspection of EAs.

4. Chief Directorate Enforcement and Compliance

Chief Directorate is established to deal with environmental enforcement and criminal prosecution for non-compliances. The chief directorate is structure as follows:

- Director: Enforcement and Compliance
 - 3 x Deputy Directors: Enforcement and Compliance
 - 6 x Assistant Directors: Enforcement and Compliance
- Director: Criminal Enforcement
 - Deputy Director
 - 4 x Assistant Directors
- Director: Administrative Enforcement and Compliance
 - Deputy Director: Reactive Environmental Enforcement
 - Assistant Director: Strategic Environmental Enforcement
 - Assistant Director: Reactive Environmental Enforcement
- Assistant Director: Complaints Management

The purpose of **complaint management** is to project manage the process of receiving assignment, processing and finalization of complaint cases. **Criminal enforcement directorate** investigates environmental crimes and initiates criminal prosecutions or administration fines. **Enforcement and compliance directorate** enforces compliance with waste and environmental legislation. **Administrative enforcement and compliance directorate** purpose is to undertake and coordinate enforcement activities in relation to legislation dealing with waste, pollution and environmental impact assessment. **Strategic environmental enforcement sub-directorate** implements remedial measures through effective administrative enforcement actions focus on proactive strategic projects. **Reactive environmental enforcement sub directorate** implements remedial measures through effective administrative enforcement actions focus on reactive projects.

2.2. Public Entities Reporting to the Minister of Mineral Resources.

2.2.1. The Mine Health and Safety Council (MHSC) was established in terms of Section 42 (1) of the Mine Health and Safety Act (Act No.29 of 1996) (MHSA, 1996). The Council has the responsibility of advising the Minister of Mineral Resources on health and safety at the mines, to promote a culture of health and safety in the mining industry and to consider annually an overall programme for relevant health and safety research.

2.2.2. The Council for Mineral Technology Research was established in terms of the Mineral Technology Act (Act No.30 of 1989). MINTEK provides research, development and technology that foster the development of businesses in the mineral and mineral products industries.

2.2.3. The Council for Geoscience was established in terms of the Geoscience Act (Act No.100 of 1993) as amended by Geoscience Amendment Act (Act No.16 of 2010), to systematic develop and maintain the national geoscience knowledge infrastructure for both the onshore (land) and offshore (oceans) environment of South Africa.

2.2.4. The South African Diamond and Precious Metals Regulator was established in terms of the Diamond Act 1986 as amended and the Precious Metal Act (Act No.37 of 2005) to administer the following legislation:

- Diamonds Act of 1986 (as amended)
- Precious Metals Act of 2005
- Diamond Export Levy Act of 2007, in collaboration with the South African Revenue Service (SARS)

2.2.5. The State Diamond Trader was established in terms of the Diamond Act (Act No. 56 of 1986), as amended, to promote equitable access to and beneficiation of diamond resources and grow South Africa's diamond cutting and polishing industry.

3. NORMS AND STANDARDS

The DMR applies principles, standards and criteria aimed at ensuring compliance with policy and legislation which promote sustainable development. Environmental principles, standards and criteria are normally reflected in statutory regulations. However, legislated standards are not common in South Africa. Therefore, DMR applies standards that are generally accepted although not legally binding. The standards are based on the principles of sustainable development.

3.1. Compliance with principles of the National Environmental Management Act

Section 2 of NEMA describes certain principles which are relevant to sustainable development and environment. These principles relate broadly to; (i) sustainable development, (ii) integration, (iii) participation, empowerment and transparency, (iv) environmental justice and equity, (v) maintenance of ecological integrity and (vi) international responsibilities. Table 2 outlines DMR's method on compliance with Section 2 of NEMA.

Relevant clauses in NEMA	Principles	Department Approach
Section 2(3)	Development must be socially, environmentally and economically sustainable.	For all mining applications, BAR, an EIA, EMP, financial provision, EA monitoring and performance assessment and mine closure as required. This is required by NEMA. The applicants are also required to prepare a Social and Labor Plan (SLP) strategy. This is required by MPRDA.
Section 2(4)(a)(ii)	Pollution and degradation of the environment are avoided, or where they cannot be altogether avoided, are minimized and remedied	The EMP must include a rehabilitation plan, decommissioning plan and mine closure strategy. It must demonstrate pollution control measures and management of mining waste. This is required by NEMA, MHSA, NEM: WA and NEM: AQA. The Department also manages and supports various projects with the objective of minimizing impact on the environment;

		<ul style="list-style-type: none"> • Rehabilitation of Derelict and Ownerless mines, • Strategic Mine Water Management which seeks to address Acid Mine Drainage issues. • Encourages use of green technology in mining processes.
Section 2(4)(a)(iii)	That disturbance of the landscape and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimized and remedied.	In the mining EIAs, applicants are required to consult with SAHRA and conduct phase I of the Heritage Impact Assessment. The assessment includes identification, investigation, assessment and management of the related cultural heritage resources onsite.
Section 2(4)(a)(iv)	Waste is avoided or where it cannot be altogether avoided, minimized and reused or recycled where possible and otherwise disposed of in a responsible manner.	Applicants are required to apply the mitigation hierarchy in the waste management plans. This includes avoid, prevent, minimize and rehabilitate.
Section 2(4)(a)(vi)	The development, use and exploitation of renewable resources and the ecosystems of which they form part do not exceed the level beyond which their integrity is jeopardized.	The Department requires the applicant to consult with all I&APs, including Government institution. The aim is to ensure that all possible negative environmental impacts are identified and addressed to avoid detrimental impacts on the environment. In the evaluation of the EIA, all factors and concerns raised by I&APs are taken into consideration. Alternative methods of achieving the same outcomes are considered, for example, mining underground as opposed to open cast mining.
Section 2(4)(a)(vii)	A risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions.	The aim of the EIA/EMP is to identify the nature, source and extend of potentially significant environmental impacts, in this manner, potential risks can be identified necessary control, mitigation and management measures can be applied to avoid and/or minimize the environmental consequences.
Section 2(4)(a)(viii)	Negative impacts on the environment and on people's environmental rights are anticipated and prevented, and where they cannot be altogether prevented, are minimized and remedied.	<p>EIAs/EMPs seek to identify negative impacts on the environment and on people's environmental rights and propose prevention, minimizing, management and remedying methods.</p> <p>The DMR is currently running a project on rehabilitation of Derelict and Ownerless mines prioritizing those that are next to communities.</p>

		<p>The DMR is also supporting various projects which seek to address Acid Mine Drainage challenges.</p> <p>Enforcement and compliance inspections are conducted to ensure that mining companies comply with the Environmental Authorisations conditions.</p>
Section 2(4)(i)	Social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.	The DMR applies a cradle to the grave environmental management process in the mining industry, which includes social, economic and environmental impacts and benefits.
Section 2(4)(b)	Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental options.	The DMR accepts DEA as the lead agent for the environment and will, in support of the lead agent and in accordance with national principles, norms and standards, develop and apply the necessary policies and measures to ensure that the mining industry's compliance to and integration with national policy on environmental management norms and standards
Section 2(4)(L)	There must be intergovernmental coordination and harmonization of policies, legislation and actions relating to the environment	The DMR complies with the principles and requirements of cooperative governance in the Constitution and in NEMA, 1998. In this regard, the DMR has accepted through the White Paper for Minerals and Mining that it will, in support of the lead agent for environmental issues (i.e. DEA) and in accordance with national principles, norms and standards, develop and apply policies and measures to ensure that the mining industry's compliance with national policy on environmental management and other relevant policies such as the national policy.
Section 2(4)(f)	The participation of all interested and affected parties (I&APs) in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantage person must be ensured.	The DMR requires I&APs to participate in environmental policy making and governance. Legislation, communication structures and mechanisms for participation are established and are known to the public.
Section 2(4)(g)	Decision must take into account the interests, needs and values of all interested and affect parties, and this	The DMR requires I&APs to participate in environmental policy making and governance. Legislation, communication

	includes recognizing all forms of knowledge, including traditional and ordinary knowledge.	structures and mechanisms for participation are established and are known to the public.
Section 2(4)(k)	Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.	The DMR complies with the principles of transparency in decision making and access to information as required in the Constitution. Legislation in terms of the MPRDA, 2002, and NEMA, 1998, are in place to ensure that decisions with regard to mining environmental management are open and transparent.
Section 2(2)	Environmental Management must place people and their need at the forefront of its concerns, and serve their physical, psychological, developmental, cultural and social interests equitably.	MPRDA, 2002 Mining Charter
Section 2(4)(C)	Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons	Various Acts and control measures administered by the DMR ensure that environmental justice is pursued to avoid, minimize or remedy the distribution of negative environmental impacts from mining related impacts to vulnerable or disadvantaged persons.
Section 2(4)(e)	Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.	Policy objectives and statutes administered by DMR ensure that environmental health and safety consequences of mining related aspects are addressed.
Section 2(4)(d)	Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination	The DMR has adopted the policy to encourage and facilitate the sustainable development of small scale mining in order to ensure the optimal exploitation of small mineral deposits and to enable this sector to make a positive contribution to the national, provincial and local economy.
Section 2(4)(p)	The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.	The DMR has adopted this principle in the White Paper for Minerals and Mining in South Africa and has incorporated practical implementation measures into legislation.
Section 2(4)(a)(i)	The disturbance of ecosystem and loss of biological diversity should be avoided, or where they cannot be altogether avoided, are minimized and remedied.	The DMR integrates the requirements relating to the conservation of the biodiversity as required in international agreements and conventions, the national policy on the conservation and sustainable

		use of biological diversity and other legislation within mineral development to minimize and remedy the disturbance of ecosystems and loss of biological diversity.
Section 2 (4)(r)	Sensitive, vulnerable, high dynamic or stressed ecosystem such as coastal shores, estuaries, wetlands and similar system require specific attention. In management and planning procedures, especially where they are subject to significant human resources usage and development pressure.	The DMR participated in the development of a coastal management policy and the implementation of policies, legislative requirements and non-legislative criteria pertaining to sensitive environments, vulnerable or highly stressed areas/ecosystems.
Section 2(4)(n)	Global and international responsibilities relating to the environment must be discharged in the national interest.	The DMR fulfills its global and international responsibilities relating to the environment as required in the Constitution in that international agreements, international law and international customary law are binding on the Republic of South Africa, unless it is inconsistent with the constitution or an Act of Parliament. The DMR also participates in international and sub-regional structures in the co-coordinating mining environmental management matters.

Table 2: DMR's compliance with NEMA

3.2. Environmental standards and criteria

Environmental ambient standards provide numerical limits and threshold values to which industrial operations must be designed, operated and managed. These standards relate to water quality effluent discharge, air emission and/or workplace air quality, noise emissions or exposure, waste disposal (especially waste materials allowed to be dumped) human exposure to dust, toxic chemicals or radioactivity. Criteria are scientifically determined at "no-effect" levels of a pollutant, with a certain safety factor added. Some of the standards applied by the DMR are reflected in the Table 3.

Subject	Standards	Legislation
Water Quality Resources Surface water; Water Use	General Authorization and license Surface Water Reserve Standards (Comprehensive Reserve Determination)	NWA, 1998

Determination of class of water resource and resource quality objective	Protection of Water Resources and Use of Water	NWA, 1998
Flood and storm water control	Regulations of the MPRDA, 2002 Regulations of NWA, 1998	MPRDA, 2002 NWA, 1998
Groundwater; Groundwater quality; Groundwater quantity;	General authorization and licenses; Resource quality objectives; Groundwater Reserve Standards	NWA, 1998
Air Quality	Common pollutants; Particulate matter/Dust fallout	NEM: AQA, 2004 (Ambient Standards)
Noise	85dBa Mine Health and Safety Act, 1996 regulations (only for health related aspects within the workplace)	MHSA, 1996
Natural Vegetation	Protected Flora Red Data Species	CARA, 1983 NEM: PAA, 2003 NEM: BA, 2004
Animal Life	Protected Fauna Red Data Species	NEM: BA, 2004 NEM: PAA, 2003
Sensitive Landscape/ Environments	Protected Areas	NEM: BA, 2004 NEM: PAA, 2003 NHRA, 1999
Cultural and Archaeological Resources	Protection of resources 50 years and older.	NHRA, 1999
Mine Waste	Minimum requirements for waste disposal by landfill, second edition	

Table 3: Environmental standards and criteria applied by DMR

3.3. Principles for Sustainable Development

The principles of sustainable development that are reflected in legislation or policies which guide the work of the DMR are reflected in Table 4. The statutes and policies that are based on these principles include the Environmental Management Policy, 1998; the Minerals and Mining Policy, 1998, MPRDA, 2002 and NEMA, 1998.

In particular Chapter 5 of the NEMA promotes the application of environmental management tools that can ensure integrated environmental management of activities. The objective of IEM is to integrate the principles of environmental management into decision-making; identify and evaluate the impacts on the environment and options for minimizing negative impacts and maximizing benefits; ensure that the effects to

activities on the environment receive adequate consideration; and ensure adequate participation by the public is provided for decisions that may affect the environment. IEM therefore provides a framework for the integration of environmental issues into planning, design, decision-making, implementation and decommissioning of projects and development proposals.

Principle	Description
Duty of care	Obligation which is imposed on an individual which requires adherence to a standard of reasonable care while performing activities that may potentially harm others and the environment. Duty of care is normally considered a formalization of the social contract, the implicit responsibilities held by individuals towards others within society.
Polluter Pays	The Polluter Pays Principle (PPP) principle requires that the costs of pollution or contamination be endured by those who cause it. The goal of this principle is to internalize the environmental externalities of economic activities, so that the prices of goods and services are reflect the costs of production.
Intragenerational equity	The principle seeks to ensure a fair distribution of the benefits and impacts of development within the members of the current generation.
Intergenerational equity	This is a concept of fairness or justice in relationships between different generations. This means that no generation should benefit from utilisation of resources at the expense of the subsequent generation enjoying the same quality of life.
Precautionary principle	This principle promotes a cautious and risk-averse approach to the use of resources especially where scientific information is insufficient to accurately indicate the possible impacts of such use.
Public trust doctrine	It places a duty on the State to hold environmental resources in trust for the benefit of the public.
Subsidiary principle	Decisions should be made by the communities affected or, on their behalf, by the authorities closest to them. Decisions should preferably rest at the national rather than the international level, and local rather than national level.
Proximity principle	This requires the treatment and disposal of hazardous waste to take place at the closest possible location to its source, in order to minimize risks associated with its transport.

Table 4: Principles for Sustainable Development

3.4. Standard practices in the mining sector

In addition to compliance with sustainable development as required by NEMA (as indicated in Table 2), the South African mining sector has a number of standard practices that seek to promote sustainable development. The standard practices are as follows:

3.4.1. ISO 14001

South Africa's mining companies are pursuing ISO 14001 certification on voluntary basis to ensure maximum compliance with environmental performance and pollution prevention requirements.

3.4.2. Social and labor plans

In relation to social and community issues, all companies are required to report annually on their progress towards implementing the approved social and labor plans. Mines currently fund and assist numerous local projects and many mining companies have integrated Charter requirements into their social and labor plans. The mining industry spends millions of Rands per year on social development.

3.4.3. Biodiversity management

In relation to biodiversity management, some mining companies have developed biodiversity management plans, whereby the surrounding biome is plotted, then possible impacts on the biome are identified and opportunities of mitigating impacts or improving biodiversity are evaluated. Once the assessment is conducted, ambitions are defined and strategies implemented.

The mining sector has contributed to research and development of Mining and Biodiversity Guidelines. The purpose of the Guideline, which is to integrate the relevant biodiversity information into decision making about where to mine and how best to avoid, minimize or remedy impacts on biodiversity to support sustainable development.

3.4.4. Mine water management

Most mining companies, particularly the blue-chip mining companies' continuously revise their water management plans to incorporate the latest technologies that recycle mine water in various processes to decrease freshwater consumption.

4. POLICIES AND PLANS

4.1 POLICIES AND LEGISLATION

4.1.1. Mineral and mining policy

The review process of the mineral and mining policy took into account the problems and opportunities facing the mining industry against the backdrop of changes in the country's policies and institutional environment. In particular, the development of MHSA, 1996 which had far-reaching impacts on the industry in the areas of health and safety and human resources development. The changes in labour legislation and introduction of employment equity legislation, as well as reform of the environmental regulatory system, all this created a strong context for policy review.

The review process also considered small-scale mining which is intended to encourage the small and medium sized operators, to the benefit of employment and the overall economy. The international nature of mining industry was also incorporated in order to ensure the continuing prosperity of the industry.

The policy is organized into six main themes, which are:

- Business climate and mineral development, which looks at the continuation of policy conducive to investment and includes a section on Mineral Rights and Prospecting Information which presents changes to the system of access to, and mobility of, mineral rights;
- Participation in ownership and management, which examines racial and other imbalances in the industry;
- People issues, which looks at health and safety, housing needs, migrant labor, industrial relations and downscaling;
- **Environmental Management;**
- Regional co-operation; and
- Governance.

4.1.2. The principles of environmental management

The policy also recognizes the Constitutional right that provides that everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected for the benefit of present and future generations. This must be done through reasonable legislative and other measures that will prevent pollution and ecological degradation promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

Thus the environmental management thematic consists of the following (12) principles;

1. Department supports the lead agent on Environment (develop the necessary policies and measures to ensure compliance by industry);
2. During decision-making, a risk-averse approach on limits of Environmental Management will be adopted which includes the "no go" option;
3. Polluter pays principle will be applied in the regulation & enforcement of Environmental Management (EM);
4. A Consistent standard of Environmental Impact Management will be applied, irrespective of the scale of mining;
5. Equitable & effective consultation with interested and affected parties will be undertaken (NEMA principle);
6. Mining companies will be required to comply with Local Development Objectives, Spatial Development Framework (Provinces) and Integrated Development Planning of Municipalities within which they operate;
7. Government will provide clear guidelines on the process & sequence of events for implementation of EM procedures and decision-making;
8. Principles of IEM will be applied to EM in the Mining Industry (Principle of NEMA);

9. The building of Capacity in implementing of EM measures, monitor pollution and monitor compliance with the requirements of National EM policy;
10. Principle of multiple land use will be adhered to in planning & SD options;
11. Mining industry to reduce pollution, promote waste minimisation & recycling; and
12. Problem areas in EM will be identified & co-ordinated towards research and development.

4.1.3. The "one environmental management system"

In 2008, the Director-Generals (DGs) of DEA and DMR concluded an agreement on the mine environmental management function. The agreement was based on the following three principles:

- a) Both Departments must follow one environmental system.
- b) The Minister of Mineral Resources is the Competent Authority for the environmental function.
- c) The Minister of Environmental Affairs is the Appeal Authority.

To give effect to this agreement, the two Departments made the necessary legislative amendments to the MPRDA of 2002 and NEMA of 1998. As part of the agreement, the legislative amendments would be effective 18 months from the date on which the last amendment Act came into effect. The NEMA of 2008 was promulgated on 5th January 2009 and came into effect on 1 May 2009. The MPRDA of 2008 was promulgated on 19 April 2009, but was not immediately brought into effect by the Minister of Mineral Resources. In 2008, the DWS was included in the agreement.

In March 2012, a matrix of options was developed and presented to the Ministers of DEA and DMR. The matrix proposed the following three options:

- Option 1: Move the Environmental function to DEA.

- Option 2: Keep the function at DMR, including the listed activities.
- Option 3: Leave the function where they are in the three Departments.

On the 26th of April 2012, the Ministers requested the officials to implement Option 2. The advantage of Option 2 is that it includes the incorporation of integrated permitting system. Under this system, DMR will be implementing NEMA (listed activities), thus administering mining S&EIARs and issuing Environmental Authorisations (EAs). Moreover, DMR will also issue mining waste licenses. Implementation of Option 2 provided a need to look at the following issues:

- a) Amendments of MPRDA, NEMA and NWA of 1998
- b) Timeframe alignment of the WUL with the processes of DMR and DEA
- c) DMR to be the Competent Authority
- d) DEA to be the Appeal Authority

4.1.3.1. Inter-departmental Project Implementation Committee and Task Teams

To oversee and drive implementation of Option 2, the Inter-departmental Project Implementation Committee (IPIC) was established. Under the IPIC, (6) task teams were established to discuss technical issues concerning alignment of processes and policies. The task teams are as follows:

1. Coordinated timeframes Task Team - to align timeframes, systems and processes.
2. Enforcement Task Team - to organize the Mineral Resources Enforcement and Compliance unit as defined in NEMA.
3. Capacity Task Team - to assess and make recommendations on capacity requirements for the new regime, this includes working tools, number of officials and training.
5. Joint Planning Task Team - to address overlapping issues between DEA and DMR, for example, mining in ecologically sensitive areas.

6. Appeals and Legislate Amendments Task Team - for amendment of legislation to provide for issuing of mining EAs and to ensure timeframe and process alignment between the three Departments.
7. Communications Task Team - to provide feedback to stakeholders and the public on the new regime.

4.1.3.2. Legislative changes and system alignment

In order to achieve the one environmental management system, legislative amendments were made in the three legislative laws – NEMA, MPRDA and NWA. From the MPRDA, all environmental provisions (excluding Section 43) were removed and incorporated into NEMLA 2008. The Departments also examined the application process timeframes for Prospecting and Mining Rights and Mining Permits, relative to the applicable timeframes for environmental authorizations (EA) in NEMA and for Water Use License (WUL) in respect of the NWA. The Departments agreed on the process, timeframe and alignment for Prospecting Right/Mining Permit and Mining Right (see Diagram 1 and Diagram 2 respectively).

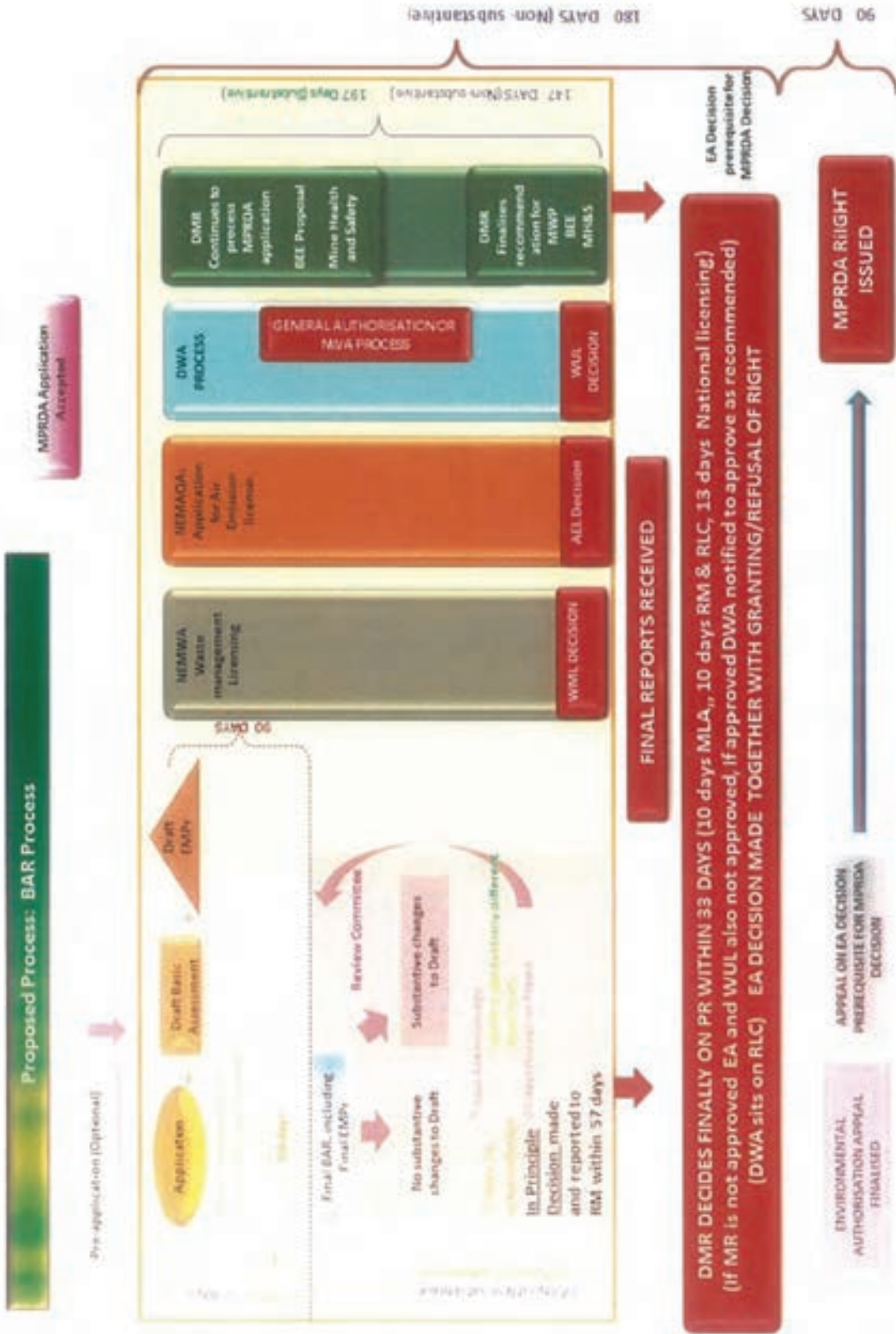


Diagram 1: Prospecting Right and Mining Permit application process.

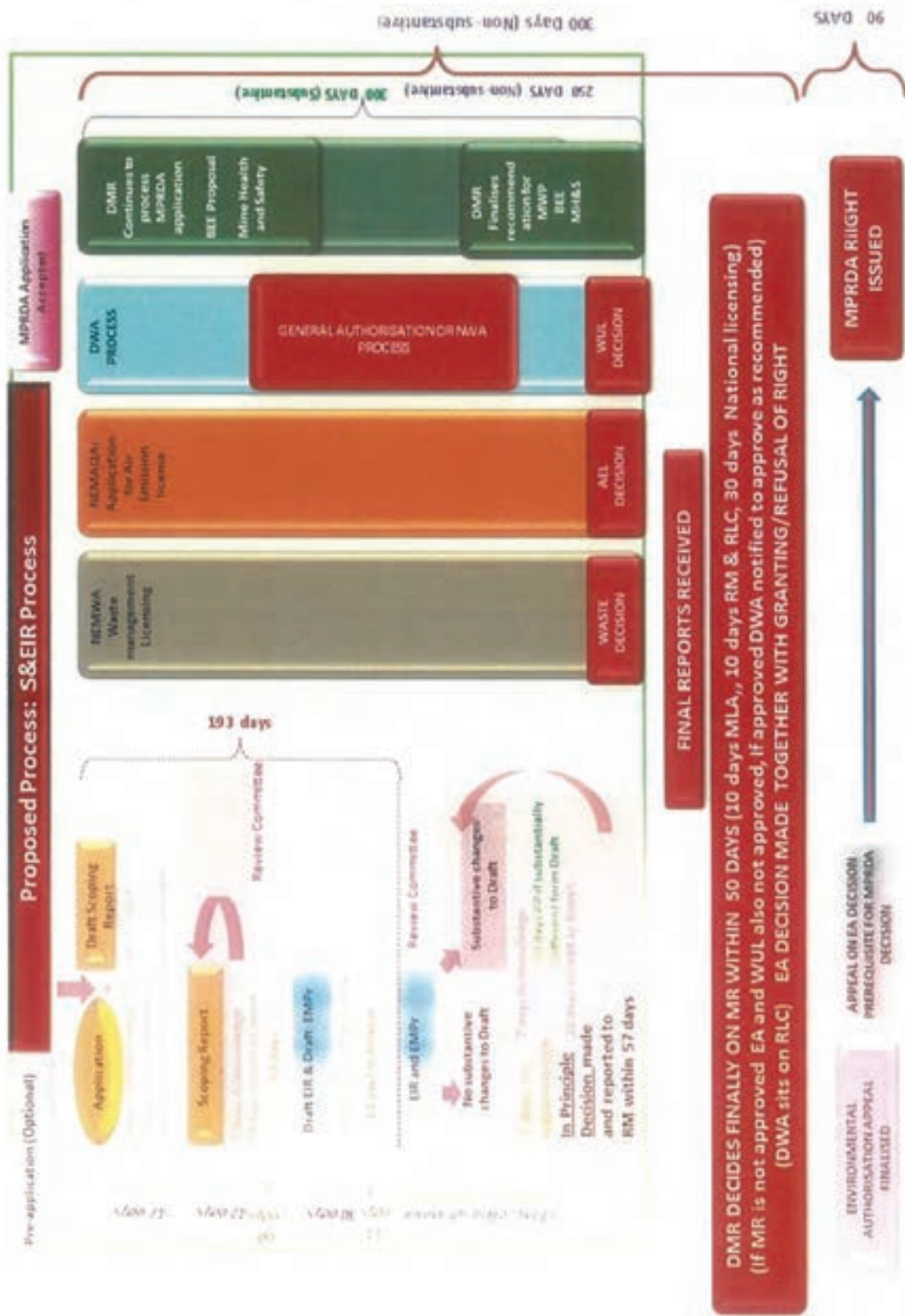


Diagram 2: Mining Right application process

4.1.3.3. Commencement of the one environmental management system and transitional period.

Commencement of the "one environmental management system" as stipulated in Section 13 and 14 of NEMA 2008, although repealed in NEMA 2014 (see Box 1).

13. The principal Act as amended by this Act is amended to the extent specified in the Schedule with effect from a date 18 months after the date on which the provisions relating to prospecting, mining, exploration and production and related activities comes into operation in terms of section 14(2) of this Act.

14. (1) This Act is called the National Environmental Management Amendment Act, 2008, and comes into operation on a date determined by the President by proclamation in the Gazette.

(2) Notwithstanding subsection (1), any provision relating to prospecting, mining, exploration and production and related activities comes into operation on a date 18 months after the date of commencement of—

(a) section 2; or 15

(b) the Mineral and Petroleum Resources Development Amendment Act, 2008, whichever date is the later

Box 1: Commencement of the "one environmental management system"

The amended MPRDA 2008 was brought into effect on 7th June 2014. Taking into account the above provisions, implementation of the one environmental management system began after 18 months, on the 8th December 2015. A transitional period will be provided for mining companies to review their EMPRs and align to NEMA requirements.

4.2. Legislative framework for mine environmental management

The strategic objective of DMR is to undertake its mandate from Mineral and Mining legislative and policy framework. With regard to its environmental responsibilities, certain aspects of the Constitution, NEMA, 1998 and several statutes which the DMR administers or complies to are important. For land-based mining activities, the following legislative pieces below are germane:

4.2.1. The Constitution

In terms of the Constitution of the Republic of South Africa, 1996 (Act No.108 of 1996), mining is a functional area of exclusive national legislative competence. As far as the environmental competence is concerned, note the relevant to Schedule 4 of the Constitution stipulates that a provincial executive is responsible for implementing national legislation unless the Constitution or an Act of Parliament provides otherwise.

In relation to environmental matters, the Constitution provides certain rights to its citizens which the Department must adhere to. Section 24 provides that:

Everyone has the right:

- a) To an environment that is not harmful to their health or well-being; and
- b) To have an environment protected, for the benefit of present and 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 social and economic development.

4.2.2. Mineral and Petroleum Resources Development Act

The MPRDA makes provision for equitable access to and the sustainable development of the nation's mineral resources and provides rehabilitation in cases of mine closure.

The objectives of the Act are to:

- a) recognise the internationally accepted right of the State to exercise sovereignty over all the mineral and petroleum resources within the Republic;
- b) give effect to the principle of the State's custodianship of the nation's mineral and petroleum resources;

- c) promote equitable access to the nation's mineral and petroleum resources to all the people of South Africa;
- d) substantially and meaningfully expand opportunities for historically disadvantaged persons, including women and communities, to enter into and actively participate in the mineral and petroleum industries and to benefit from the exploitation of the nation's mineral and petroleum resources;
- e) promote economic growth and mineral and petroleum resources development in the Republic, particularly development of downstream industries through provision of feedstock, and development of mining and petroleum inputs industries;
- f) promote employment and advance the social and economic welfare of all South Africans;
- g) provide for security of tenure in respect of prospecting, exploration, mining and production operations;
- h) give effect to section 24 of the Constitution by ensuring that the nation's mineral and petroleum resources are developed in an orderly and ecologically sustainable manner while promoting justifiable social and economic development; and
- i) ensure that holders of mining and production rights contribute towards the socio-economic development of the areas in which they are operating.

As indicated in the objective of the MPRDA, DMR recognizes the need for sustainable development, which essentially means the need to balance economic development, social and environmental aspects of the mining sector.

Currently, the MPRDA of 2008 is in force; however, there is a Draft Amendment Bill before the Parliament. There are significant amendments in the Draft Amendment Bill which could have a major impact in the mining industry. Nonetheless, the MPRDA of 2008 gives effect to implementation of NEMA. In the 2008 version, there are various sections that speak to mine environmental management issues, cross-referencing these issues to NEMA. Primarily, section 39 of the MPRDA 2008 requires the applicant

to submit the relevant environmental reports, as required in terms of Chapter 5 of the NEMA within 180 days from the date of the notice.

In the Draft Amendment Bill, section 43 is the only provision remaining (after removal of other provisions) in the Act that speaks to issues of mine environment. It has been amended to provide that the holder of a prospecting right, mining right, retention permit, mining permit, or previous holder of an old order right or previous owner of works that has ceased to exist, remains forever responsible for any environmental degradation. It also empowers the Minister to retain any portion of financial provision for latent and residual safety, health or environmental impact which may become known in the future for a period of 20 years after issuing a closure certificate.

4.2.3. Mine Health and Safety Act

The MHSA, 2008 is administered by the MHS Inspectorate and focuses on reducing the number of fatalities, injuries and ill health in the mining industry. The Act also establishes tripartite institutions where co-operation and consultation on health and safety between the State, employer and employees are given official status.

The objects of the Act are as follows:

- Protect the health and safety of persons at mines.
- Require employers and employees to identify hazards and eliminate, control and maximize the risks relating to health and safety at mines.
- Give effect to the public international law obligations of the Republic that concern health and safety at mines.
- Provide for employee participation in matters of health and safety through health and safety representatives and committees at mines.
- Provide for effective monitoring of health and safety conditions at mines.
- Provide for enforcement of health and safety measures at mines.
- Provide for investigations and inquiries to improve the health and safety at mines.

- Promote a culture of training in health and safety in the mining industry and cooperation and consultation on health and safety between the State, employers, employees and their representatives.

Regulation of air quality related matters through MHSA Code of Practice.

In accordance with section 9(2) of the Mine Health and Safety Act (MHSA) an employer must prepare and implement a Code of Practice (COP) on any matter affecting the health and safety of employees and other persons who may be directly affected by activities at the mine if the Chief Inspector of Mines requires it. Section 11 of the MHSA requires the employer to identify hazards, assess the health and safety risks to which employees may be exposed while they are at work, record the significant hazards identified and risks assessed. The employer must determine how the significant risks identified in the risk assessment process must be dealt with, having regards to the requirement of section 11(2) and (3) that, as far as reasonably practicable, attempt should first be made to eliminate the risk, thereafter to control the risk at source, thereafter to minimize the risk and thereafter, insofar as the risk remains, to provide personal protective equipment and to institute a programme to monitor the risk.

1.1. Guideline for assessment of personal exposure to airborne pollutants

In response to the legislative requirements as stipulated in the MHSA and Regulations, the Department has developed a guideline for assessment of personal exposure to airborne pollutants. Airborne means any substance in the air that is harmful to health, including dust, fumes, aerosols, gases, fibers, vapors or mists. The mining companies are required to adhere to this plan, which is set out as follows:

Where the employer's risk assessment indicates a need to establish and maintain a system of occupational hygiene measurements, or where such system is required by regulation, the following key elements must be addressed in the COP:

- Personal exposure monitoring,
- Hierarchy of controls, and
- Reporting and reviewing

1.2. Occupational Hygiene Programme

The employer must ensure that when undertaking an Occupational Hygiene Programme the following steps are included:

- Step 1: Risk Assessment and Control
- Step 2: Determination of Homogenous Exposure Groups
- Step 3: Personal Exposure Monitoring
- Step 4: Sampling methodology and quality control
- Step 5: Reporting

1.3. Hierarchy of control

The employer must execute the following control measures; elimination (e.g. substitution or elimination), engineering controls (e.g. dilute with ventilation, total or

partial exposure), administrative control (e.g. removal of person from hazard, safe systems of work or reducing exposure time) and/or personal protective equipment (e.g. respiratory protective equipment).

1.4. Ensuring compliance with air quality management guideline

Section 9 (3) provides that a COP required by the Chief Inspector of Mines must comply with guidelines issued by the Chief Inspector of Mines, thus "the guideline for assessment of personal exposure to airborne pollutants" as provided by the Department is mandatory. Section 9(7) provides that an inspector may instruct an employer to review any code of practice within a specified period if that code practice does not comply with a guideline of the Chief Inspector of Mines or is inadequate to protect the health or safety of employees. To ensure compliance with statutory requirements, section 47(1) of MHSA establishes a Mine Health and Safety Inspectorate supervised by the Chief Inspector of Mines. Section 50 of the MHSA provides various powers to the inspectorate, including amongst others; to enter any mine, conduct inspections of working places, question persons, examine documents and other articles, inspect work performed and inspect any condition. Thus the Department's power to monitor and enforce compliance with a COP.

Box 2: Description on regulation of air quality management

4.2.4. National Environmental Management Act

NEMA, 1998 was promulgated within the framework of Constitution and therefore fortifies the constitutional requirement for clean and healthy environment and the basis for co-operative governance in the field of environmental management. Noting that DMR is one of the Departments in the field of environmental management, and noting the "one environmental management system" as discussed above, the NEMA requirements and co-operative governance consequently apply to the DMR. The requirements and mandate for co-operative governance, as it applies to DMR is highlighted as follows:

Chapter 1: National Environmental Management Principles

Chapter 1, section 2, defines the national environmental management principles and provides a framework for environmental management in South Africa. These principles apply throughout South Africa to the actions that may significantly affect the environment including the organ of states.

Compliance:

The most relevant for prospecting and mining are the precautionary principle, the preventative principle and polluter pays principle.

Chapter 3: Procedures for co-operative governance

Under this chapter, section 11-16, national and provincial departments listed in Schedule 1 and Schedule 2 of NEMA are required to prepare an EIP and/or EMP. The purpose of these plans is to detail how the various Departments will ensure that their policies, plans and programmes and the exercising of their powers relating to the environment, will comply with the principles and national norms and standards for sustainable development and the protections of the environment.

Compliance:

DMR falls within the ambit of the Schedule 2 Department, hence the first edition of the Departmental EMP was published in the Government Gazette no. 22080 in February 2001 and the Second Departmental EMP was published in the Government Gazette no. 31188 in July 2008.

Chapter 5: Integrated Environmental Management

Through Integrated Environmental Management (IEM), Chapter 5, section 23-24 provides that national and provincial Departments involved in environmental management undertake an appropriate assessment process to identify and address environmental impact. The assessment process also provides for co-operation with I&APs.

Compliance:

- *The most common IEM tool used for application of prospecting or mining right is S&EIA/EMP. Other tools are used in support of the S&EIAR/EMPR.*

- *The EAPs are required to undertake Public Participation Process and consult with relevant national and provincial Departments during development of the S&EIAR/EMP.*

Chapter 7: Compliance, enforcement and protection (Part 1: Environmental hazards)

Chapter 7, section 28 provides that any 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 authorized by law or cannot reasonably be avoided or stopped, to minimize and rectify such pollution or degradation of the environment.

Section 31(1) gives powers to mandated Environmental Mineral Resources Inspector to issue a compliance notice in the prescribed form and following a prescribed procedure if there are reasonable grounds for believing that a person has not complied with- (a) a provision of the law for which that inspector has been designated in terms of section 31D; or (b) a term or condition of a permit, authorization or other instrument issued in terms of such law.

Compliance:

- *The applicants must demonstrate to the Department the proficiency to deal with possible negative environmental impacts through submission of EIARs/EMPRs. Mining EAs are issued on bases of sufficient and satisfactory information relating to management of possible negative environmental impacts. That includes provision of information relating to control of emergency incident.*
- *The Environmental Mineral Resources Inspectors occasionally conduct enforcement and compliance site visits and issue compliance notices in cases of non-compliance.*

4.2.5. National Water Act

The constitutional mandate relating to water gives every person a fundamental right to an environment that is not harmful and requires that the environment be protected. Protection should be afforded through reasonable legislation and other measures that secure ecologically sustainable development and the use of water resources, while promoting justifiable economic and social development. In relation to mine water management the Act recognizes the following; pollution prevention, water re-use and reclamation, water treatment and discharge.

Chapter 1: Interpretation and Fundamental Principles

Chapter 1 sets out the fundamental principles of the Act and the context for water management in South Africa. Sustainability and equity are identified as central guiding principles in the protection, use, development, conservation, management and control of water resources. These principles apply throughout South Africa to the actions that may significantly affect water resources including the organ of states.

Compliance:

The most relevant in respect to prospecting and mining are; protecting aquatic and associated ecosystems and their biological diversity, and reducing and preventing pollution and degradation of water resources.

Chapter 3: Protection of Water Resources

Chapter 3 speaks to protection of water resources. Parts 4 and 5 deal with measures to prevent the pollution of water resources and measures to remedy the effects of pollution of water resources. Part 4 deals with pollution prevention and in particular the situation where pollution of a water resource occurs or might occur as a result of activities on land. The person who owns, controls, occupies or uses the land in question is responsible for taking measures to prevent pollution of water resources. Part 5 deals with pollution of water resources following an emergency incident, such as an accident

involving the spilling of a harmful substance that finds or may find its way into a water resource. The responsibility for remedying the situation rests with the person responsible for the incident or the substance involved.

Chapter 4: Use of Water

Chapter 4 defines the various "Water Uses" and the various types of license. In general a water use must be licensed unless it is listed in Schedule I, is an existing lawful use, is permissible under a general authorisation, or if a responsible authority waives the need for a license. Section 21 of the Act provides the various types of the water uses.

Chapter 4 also speaks to permissible water uses, Section 22(2)(C) provides that any person who discharges or disposes of waste or water containing waste must comply with any applicable waste standards or prescribed management practices.

Compliance:

The mining activities trigger the need for a WUL which is issued by DWS. The WUL comes with a set of terms and conditions on how water use should be carried out. The mining companies must comply with the terms and condition of the WUL.

In relation to discharges or disposal of waste or water containing waste in watercourses, the mining company must incorporate the mine water management plan in the S&EiAR which must indicate how water use will be carried out. This includes, water recycling, water treatment, water discharge and etc.

Regulation 4 of the Act places restrictions on the location of a mine residue dam, stockpile, mining excavation or permanent structure relative to a water resource. It provides that no person in control of a mine or activity may locate or place any residue deposit, dam, reservoir, together with any associated structure or any other facility within 1:100 years flood-line or within a horizontal distance of 100 meters from any watercourse.

Compliance:

The applicants must demonstrate to the Department that the requirements of the NWA in relation to prospecting and mining will be satisfied through submission of S&EIARs/EMPs. Mining EA is issued when all necessary matters in relation to water use are addressed.

4.2.6. National Heritage Resources Act

Section 27(18) provides that No person may destroy, damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of any heritage site without a permit issued by the heritage resources authority responsible for the protection of such site. Furthermore, section 38(1) provides that any person who intends to undertake a development that will alter the character of a location must inform the heritage resources authority, if heritage resources occur, must then apply for a permit. However, section 38(8) stipulates that section 38(1) does not apply to applicants for/or holders of prospecting or mining rights issued in terms of the MPRDA provided that the information obtained during the environmental impact assessment includes an assessment of the heritage resources that may occur on site and how those will be protected. Also provided that the consenting authority must ensure that the evaluation fulfills the requirements of the relevant heritage resources and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.

4.2.7. National Environmental Management: Air Quality Act

The Act gives effect to the Constitutional right that provides that everyone has the right to an environment that is not harmful to their health or well-being. The act provides reasonable legislative and other measures that;

- a) Prevent pollution and ecological degradation;
- b) Promote conservation; and

- c) Secure ecological sustainable development and use of natural resources while promoting justifiable economic and social development.

Section 36 (5) (e) stipulates that the Minister of Environmental Affairs is the licensing authority if the listed activity relates to a prospecting, mining, exploration or production activity as contemplated in the MPRDA.

Listed activities have been established in terms of section 21 of the Air Quality Act (AQA). They include all activities regarded to have possible negative impacts on the environment, including health. Mining is not incorporated under the listed activities. However, dust control regulations under section 26 of AQA have been published and these are applicable to mining.

Compliance:

The applicants must demonstrate to the Department that the requirements of the dust control regulations will be satisfied through submission of S&EIARs/EMPs. Mining EA is issued when all necessary matters in relation to dust control are addressed.

4.2.8. National Environmental Management: Protected Areas Act

The Act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscape and seascapes. Section 17 of the Act sets out the purpose of declaring protected areas. In general, protected areas are designed to protect functioning of natural ecosystems, to act as a refuge for threatened species and to maintain ecological processes within managed landscape/seascapes.

Section 48 (1) of the act stipulates that no person may conduct commercial prospecting or mining activities in protected areas such as nature reserves, any protected environment or protected areas referred to in section 9(b) (world heritage sites) or (d) (specially protected forest areas or forest wilderness areas). Although mining is

prohibited in Protected Areas, it may be allowed in Protected Environments if both the Minister of Mineral Resources and Minister of Environmental Affairs approve it.

Compliance:

The Department recognizes the restriction of mining activities in protected areas and does not issue mining EAs in those areas.

4.2.9. National Environmental Management: Biodiversity Act

To provide for the management and conservation of South Africa's biodiversity within the framework of NEMA; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bio-prospecting involving indigenous biological resources; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith.

There are four categories of biodiversity priority areas in relation to their biodiversity importance and implication for mining.

Category	Biodiversity priority areas	Risk for mining	Implication for mining
A. Legally protected	Protected Areas	Mining prohibited	Mining prohibited.
B. Highest biodiversity importance	<ul style="list-style-type: none"> • Critically endangered and endangered ecosystems • Critical Biodiversity Areas (or equivalent areas) from Provincial spatial biodiversity plans • River and wetland freshwater Ecosystem Priority Areas (FEPAs), and 1km buffer around these FEPAs 	Highest risk for mining	<p>The EAP must incorporate this information during development of the S&EIAR/EMPR and attached associated specialist studies confirming the presence and significance of these biodiversity features provide mitigation measures.</p> <p>Where license and permits are required, the EAP must indicate such.</p>

C. High biodiversity importance	<ul style="list-style-type: none"> • Ramsar sites • Protected area buffer (including buffers around National Parks, World Heritage Sites and Nature Reserves) • Trans frontier Conservation Areas (remaining areas outside of formally proclaimed protected areas) • Other identified priorities from Provincial spatial biodiversity plans • High water yield areas • Coastal Protection Zone • Estuarine functional zones 	High risk for mining	
D. Moderate biodiversity importance	<ul style="list-style-type: none"> • Ecological support areas • Vulnerable ecosystems • Focus areas for expansion 	Moderate risk for mining	

Table 5: Four categories of Biodiversity Priority Areas (Mining and Biodiversity Guideline)

4.2.10. National Forest Act

Chapter 3, section 7 of National Forest Act, 1998 (NFA, 1998) stipulates that no person may cut, disturb or damage or destroy any indigenous tree in a natural forest without a license issued by the Minister of the Department of Agriculture, Forestry and Fisheries (DAFF). According to the Act, natural forest means a group of indigenous trees (a) whose crowns are largely contiguous or (b) which have been declared by the Minister to be a natural forest under section 7(2).

Compliance

NEMA states that the EAP must consult with all I&APs, it is therefore expected that the EAP must consult with DAFF and cover the requirements of the NFA if the application is located in a natural forest. Adjudication of the EA by the Department will consider the comments of the DAFF.

4.2.11. National Environmental Management: Waste Act

Section 43(1) (a) stipulates that the Minister responsible for mineral resources is the licensing authority where the waste management activity is, or is directly related-

- a) Prospecting or exploration of a mineral or petroleum resource;
- b) Extraction and primary processing of a mineral or petroleum resource; or
- c) Residue deposits and residue stockpiles from a prospecting, mining, exploration or production operation.

The Act provides a list of Waste Management Activities that have, or are likely to have a detrimental Effect on the Environment (Notice No.921).The list is further divided into category A and category B. A person who wishes to commence, undertake or conduct an activity listed under category A must conduct a basic assessment process, as stipulated in the EIA regulations made under section 24(5) of NEMA as part of a waste management license application. Whereas, a person who wishes to commence, undertake or conduct an activity listed under category B, must conduct an environmental impact assessment process, as stipulated in the EIA regulations made under section 24(5) of NEMA as part of a waste management license application.

Compliance:

Under this notice, there are several listed activities that apply to the prospecting and mining and therefore trigger the requirement for WML. The EAP will be required to build-in these activities in the development of the S&EIAR/EMPR.

Schedule 3 of the Act speaks to defined waste, which includes residue stockpile and residue deposits listed under category A as hazardous waste. Section 43A (1) stipulates that residue stockpiles and residue deposits must be managed in the prescribed manner on any site demarcated for that purpose in the environmental management plan or environmental management programme for that prospecting, mining, exploration or production operation.

Since implementation of NEMA, waste management licenses are required for mine residue stockpiles and deposits. The Residue Stockpile and Deposits Regulations have detailed provisions on the management of residue stockpiles and deposits including:

- Assessment of their impacts;
- Analysis of the risks relating to their management;
- Their characterization and classification to identify any potential risks to health, safety and the environment;
- Site selection and designs; and
- Duties of mining rights holders regarding construction and operation; designs; water monitoring; preventative or remedial environmental measures; dust pollution and erosion; rehabilitation; maintenance and repair; monitoring and reporting; decommissioning, closure and post closure management.

Compliance:

The EAP must include the location and management plan of the residue stockpile and residue deposits in the S&EIAR/EMPR.

4.2.12. Spatial Planning and Land Use Management Act

The Spatial Planning and Land Use Management Act (SPLUMA) is a national framework legislation designed to provide a framework for provincial and local governments in their spatial planning and land use principles and policies. The Act will

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be enacted within provincial legislation and further cascaded to municipalities who have the exclusive executive competency in respect to municipal planning. The mining sector is governed at a national level through the MPRDA; however, land used for mining purposes is not excluded from complying with land use scheme of the municipalities. Section 26 (1) advocates that an adopted and approved land use scheme has the force of law, and all land owners and users of land, including a municipality, a state-owned enterprise and organs of state within the municipal area are bound by the provisions of such a land use scheme.

Furthermore, according to section 24 of SPLUMA, municipalities must within 5 years of the commencement of SPLUMA, adopt and approve a single land use scheme which applies to the entire municipal area including areas not previously subject to a land use scheme. This section affects the mining sector as there are prospecting and mining rights issued before land use scheme. However, section 26(3) provides relief, it stipulates that where no town planning or land use scheme applies to a piece of land, before a land use scheme is approved in terms of this Act such land may be used only for the purposes listed in Schedule 2 to this Act and for which such land was lawfully used or could lawfully have been used immediately before the commencement of this Act.

4.2.13. NEMA: Financial Provision Regulations

The NEMA 107 of 1998, Section 24P(1) states that an applicant for an environmental authorisation relating to prospecting, exploration, mining or production must, before the Minister responsible for mineral resources issues the environmental authorisation, comply with the prescribed financial provision for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts.

The purpose of these Regulations is to regulate the determination and making of financial provision as contemplated in the Act for the costs associated with the undertaking of management, rehabilitation and remediation of environmental impacts

from prospecting, exploration, mining or production operations through the lifespan of such operations and latent or residual environmental impacts that may become known in the future.

Compliance

As part of S&EIA administrative process, the applicant must attach proof of payment of financial provision. Financial provision can either be provided through one or combination of: trust fund, bank guarantees, insurance, or cash.

4.2.14. NEMA: Environmental Impact Assessment Regulations (EIA)

Chapter 1, section 1 of EIA Regulations speaks to the one environmental management system with respect to mining, which includes-

- (a) that all environmental related aspects would be regulated through one environmental system which is the principal Act and that all environmental provisions would be repealed from the MPRDA;
- (b) that the Minister sets the regulatory framework and norms and standards, that the Minister responsible for mineral resources will implement the provisions of the Act and the subordinate legislation as far as it relates to prospecting, exploration, mining or operations;
- (c) that the Minister responsible for mineral resources will issue environmental authorisations in terms of the Act for prospecting, exploration, mining or operations, and that the Minister will be the appeal authority for these authorisations; and
- (d) that the Minister responsible for mineral resources and the Minister responsible for water affairs agree on fixed timeframes for the consideration and issuing of the authorisations in their respective legislation and agree to synchronise the timeframes;

Compliance:

This essentially means that mining activities are now included in the Listing Notices requiring mineral right holders to obtain EAs for the commencement and decommissioning of these activities.

Other significant changes included the following:

- Timeframe; submission of a Basic Assessment Report (BAR) to a final decision will take a turnaround time of 197 days. Extension of 247 days will be granted for only exceptional cases. Whereas submission of S&EIARs to final decision will take a turnaround time of 300 days. Extension of 350 days will be granted for only exceptional cases;
- Public and organs of states are only given 30 days to provide comments;
- Application will lapse immediately if the EA timeframe is exceeded by the applicant; and
- Exemption and appeals regulations are promulgated separately.

4.2.15. White paper: National Environmental Management of the Ocean 2014

South Africa's Constitution requires the protection, conservation and sustainable use of the marine environment. The ocean current systems around South Africa's coast are highly productive and display rich biodiversity which requires management and conservation prioritization. Moreover, the available living and non-living ocean resources represent a significant economic and development opportunity for present and future generations of South Africans. This economic opportunity comprises both traditional sectors, like fishing, mining and shipping, and significant new and emergent technologically advanced sectors relating to medicine, energy and food production. These economic opportunities present a potential impact on the habitat and biodiversity conservation objectives.

Various user groups, who did not previously infringe on one another, now find themselves using similar areas of the marine environment. This has placed a

responsibility on states to manage their marine resources in a more effective manner. States are increasingly seeking to formulate management approaches, which maximizes marine resource usage in balance with the need to conserve and maintain ocean environmental integrity.

South Africa's ocean policy therefore takes cognizance of the following responsibilities in the marine area under its national jurisdiction:

- Implementation of measures to address the sustainable use of resources;
- Implementation of measures to address the maintenance of biological diversity;
- Implementation of measures to undertake research and monitoring;
- Integration of management of its ocean environment by pursuing coordinated sectoral development while adopting a precautionary approach;
- Implementation of measures to respect international marine usage rules and to encourage research and monitoring of the High Seas. This is particularly so where ecosystem components straddle areas of national jurisdiction and the High Seas;
- Implementation of measures to address pollution of the ocean environment from both land and sea-based sources;
- Implementation of measures to ensure international and regional cooperation in respect of marine management;
- Co-ordination and harmonization of policies, legislation and actions relating to the environment at an intergovernmental level; and
- Realization that global and international responsibilities relating to the marine environment must be discharged in the national interest.

4.2.16. Other pieces of legislation and international policies that potentially influence activities in the territorial seas:

Other legislation

- 1) Maritime Zones Act No. 15 of 1994;
- 2) Merchant Shipping Act No. 57 of 1951;

- 3) Marine Living Resources Act No.18 of 1998;
- 4) Maritime Safety Authority Act No.5 of 1998;
- 5) Marine Pollution Prevention by Ships Act No. 2 of 1986;
- 6) Marine Pollution Control and Civil Liability Act No. 6 of 1981;
- 7) Wreck and Salvage Act No. 94 of 1996;
- 8) NEM: Integrated Coastal Management Act No.24 of 2008; and
- 9) Marine Traffic Act No. 2 of 1981.

International Policies

- 1) Benguela Current Convention
- 2) Geneva Convention on the Continental Shelf
- 3) United Nations Convention on Law of the Sea

4.3. Other legislations applicable to DMR

Over and above the mentioned legislative pieces specific to mine environmental issues, other legislative pieces administered by Department or Public Enterprises are as follows:

4.3.1. Mining Titles Registration Amendment Act, 2003 (administered by the Department).

The Mining Titles Registration Act (Act No.24 of 2003) was enacted to amend the Mining Titles Registration Act, 1967 with the objectives, among others, of re-regulating the registration of mineral and petroleum titles and to ensure consistency with the MPRDA, 2002.

4.3.2. Precious Metals Act, 2005 (administered by the South African Diamond and Precious Metals Regulator).

The Precious Metals Act was enacted to provide for the acquisition, possession, smelting, refining, beneficiation, use and disposal of precious metals; and to provide for matters connected therewith.

4.3.3. Diamond Second Amendment Act, 2005 (administered by the South African Diamond and Precious Metals Regulator).

Diamond Second Amendment Act was enacted to amend the Diamonds Act, 1986, so as to define certain expressions; to prohibit assistance to licensees by non-licensed persons at any place where unpolished diamonds are offered for sale; to provide a new for the kinds of licenses that may be issued by the South African Diamond and Precious Metals Regulator; to provide for the issue of temporary diamond buyers' permits and certificates which entitle holders thereof to be in possession of unpolished diamonds under certain circumstances; to make fresh provision for the premises on which unpolished diamonds may be dealt in, to require that unpolished diamonds intended for export purposes must first be offered at a diamond exchange and export centre; to extend the powers of the Regulator and of the State Diamond Trader; to require diamond producers to offer a percentage of all diamonds produced in a production cycle to the State Diamond Trader; to require a licensee to retain a register in respect of unpolished diamonds for five years and not only two years; and to repeal certain obsolete provisions; and to provide for matters connected therewith.

4.3.4. Broad-Base Socio-Economic Empowerment Charter for South African Mining Industry (2010)

The Broad-Based Socio-Economic Empowerment (BBSEE) Charter (also referred to as Mining Charter) for the South African Mining Industry has been developed in accordance with Section 100 (2) (a) of the MPRDA, 2002. The Mining Charter seeks to achieve the following objectives:

- a) To promote equitable access to the nation's mineral resources to all the people of South Africa;
- b) To substantially and meaningfully expand opportunities for HDSA to enter the mining and mineral industry and to benefit from exploitation of the nation's mineral resources;

- c) To utilize and expand the existing skills base for the empowerment of HDSA and to serve the community;
- d) To promote employment and advance the social and economic welfare of mine communities and major labour sending areas;
- e) To promote beneficiation of South Africa's mineral commodities; and
- f) Promote sustainable development and growth of the mining industry.

4.3.5. Mineral Technology Act, 1989

To provide for the continued existence of Mintek and for the management thereof by a Board; and for matters connected therewith. The objects of Mintek are through research, development and technology transfer, to promote mineral technology, and to foster the establishment and expansion of industries in the field of minerals and products derived therefrom.

4.3.6. Geoscience Act, 2010

The Geoscience Amendment Act, 2010 was enacted to amend the Geoscience Act, 1993, so as to mandate the CGS to be the custodians of geotechnical information, to be a national advisory authority in respect of geo-hazards related to infrastructure and development, and to undertake reconnaissance operations, prospecting research and other related activities in the mineral sector; and to provide for matters connected therewith.

4.4. International Collaboration

4.4.1. Conventions

South Africa is a Party to several international conventions which deal with a range of issues on which international action is required for effective environmental management. South Africa's participation in these conventions is consistent with its acceptance of shared responsibility for global and regional environmental issues as

outlined in the Environmental Management Policy. The Conventions and other agreements advocate the application of the principles of sustainable development elaborated in Table 2. Some of the commitments result from South Africa's membership of the United Nations. However, as a member of the Southern African Development Community (SADC), the country is committed to ensuring that national policies are consistent with the goals of regional coordination.

The global and regional agreements that relate to the environment are administered by DEA. Other Departments support implementation where it relates to their mandates. Table 6 and Table 7, describes conventions and agreements relevant to South Africa's onshore prospecting and mining activities, and conventions and agreements relevant to South Africa's offshore prospecting and mining activities (marine diamond and oil and gas exploration) respectively.

Name of Convention	Date of signature or ratification, accession	Overall objectives
Benguela Current Convention	Signed on 18 March 2013.	Seeks to promote the sustainable management and protection of Benguela Current Large Marine Ecosystem (BCLME). The BCLME is situated along south-western Africa and the coastline of Angola, Namibia and South Africa.
Geneva Convention on the Continental Shelf (1958)	Date of accession: 9 April 1963. Entered into force on 10 June 1964. Administered by Department of International Relations and Cooperation.	To define and delimit the rights of States to explore and exploit the natural resources of the continental shelf.
UN Convention on Law of the Sea	Administered by Department of Environmental Affairs.	It provides for the comprehensive codification of the law of the sea.
Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matters, 1972 and its Protocol of 1996	South Africa became a signatory in 1972 and ratified the Convention in September 1978.	The convention provides a regulatory framework for the prevention and control of dumping of waste into sea, where dumping is defined as: <ul style="list-style-type: none"> • Any deliberate disposal at sea of wastes or other

		<p>matter from vessels, aircrafts, platforms or other man-made structures.</p> <ul style="list-style-type: none"> Any deliberate disposal at sea of vessels, aircrafts, platforms or other man-made structure.
Convention of the Prevention of Pollution from Ships, 1973 (MARPOL) including 1987 Protocol	South Africa ratified the Convention in March 1975. Convention entered into force on 28 February 1985.	Prevention of marine pollution from ships.
The Convention on Wetlands of International Importance especially as Waterfowl habitat (RAMSAR Convention)	RSA ratified the convention in March 1985.	The broad aims of this convention are to stem the loss and to promote wise use of all wetlands. The convention of the country's water supplies, for both the use of the natural and human environments.

Table 6: International conventions relevant to offshore prospecting and mining activities

Rio Declaration and Principles, Agenda 21	Administered by Department of Environmental Affairs.	The main objective of this declaration and agreement is to promote sustainable development.
United Nations Educational, Scientific and Cultural Organization (UNESCO)	Ratified on the 10 th July 1997.	The Convention sets out the duties of States Parties in identifying potential sites and their role in protecting and preserving them. By signing the Convention, each country pledges to conserve not only the World Heritage sites situated on its territory, but also to protect its national heritage.
UN Convention on Biological Diversity	The convention was signed by South Africa in June 1993 and ratified on 2 November 1995.	<ul style="list-style-type: none"> Conservation of biological diversity; Sustainable use of its components; and Fair and equitable sharing of benefits arising from genetic resources
UN Convention to Combat Desertification and Drought	The convention was signed on 9 January 1995 and ratified on 30 September 1997.	To combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective actions at all levels, supported by

		international cooperation and partnership arrangements, the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas.
Convention on Wetlands of International Importance and Waterfowl Habitat (Ramsar Convention)	South Africa ratified the convention in March 1975.	The broader aims of this convention are to stem the loss and to promote wise use of wetlands; South Africa has designated 15 sites to the List of Wetlands of International Importance. The designation of other sites is under consideration.
Protocol for the Protection of the Ozone Layer (Montreal Protocol)	South Africa became signatory to the protocol in January 1990.	The protocol is aimed at ensuring measure to protect the ozone layer.
Convention on the Trans-boundary Movement of Hazardous Wastes and their Disposal	Ratified in May 1994.	<ul style="list-style-type: none"> • Reduce transboundary movements of wastes subject to the Convention to a minimum consistent with the environmentally sound and efficient management of such wastes; • Minimize the amount and toxicity of wastes generated and ensure their environmentally sound management as closely as possible to the source of generation; and • Assist least developed countries in environmentally sound management of the hazardous and other wastes they generated.
UN Framework Convention on Climate Change	Ratified in August 1997	The ultimate objective is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system.
Kyoto Protocol	South Africa acceded to the Protocol on 31 July 2002. The	The Kyoto Protocol is an amendment to the United

	protocol entry into force in South Africa on 16 February 2005.	Nations Framework Convention on Climate Change (UNFCCC). Countries that ratify this protocol commit to reduce their emissions of carbon dioxide and five other greenhouse gases, or engage in emissions trading if they maintain or increase emissions of these gases.
Protocol on Mining, 1997	Ratified on 29 April 1999	<ul style="list-style-type: none"> • Seek to harmonize national and regional policies, strategies and programmes related to the development and exploitation of mineral resources. • Cooperate in facilitating the development of human and technological capacity. • Encourage the development, transfer and mastery of science and technology throughout the Region. • Encourage private sector participation in the exploitation of mineral resources. • Promote economic empowerment of the historically disadvantaged groups in the mining sector. • Jointly develop and observe internationally accepted standards of health, mining safety and environmental protection.

Table 7: International conventions relevant to onshore prospecting and mining activities

4.4.2. International Commitments

The commitments that specifically relate to the mining sector are as follows:

4.4.2.1. World Summit on Sustainable Development Johannesburg Plan of Implementation

The key aspects of the WSSD JPOI include poverty eradication, changing unsustainable patterns of consumption and production, protecting and managing the natural resource base of economic and social development, sustainable development of small Island developing states, sustainable development for Africa, other regional initiatives in Latin America and the Caribbean, Asia and the Pacific, West Asia, Economic Commission for Europe region, the means of implementation, as well as an institutional framework for sustainable development.

Paragraph 46 states that mining, minerals and metals are important to the economic and social development of many countries. Minerals are essential for modern living. Enhancing the contribution of mining, minerals and metals to sustainable development includes actions at all levels:

- i) Support efforts to address the impacts and benefits of mining, minerals and metals, including workers health and safety, and use various partnerships to promote transparency and accountability for sustainable mining and mineral development.
- ii) Enhance the participation of stakeholders, to play an active role in minerals, metals and mining development throughout the life cycles of mining operations, in accordance with national regulations and taking into account significant transboundary impacts.
- iii) Foster sustainable mining practices through the provision of financial, technical and capacity-building support for the mining and processing of minerals, including small-scale mining, and, where possible and appropriate, improve value-added processing, upgrade scientific and technological information and reclaim degraded sites.

4.4.2.2. Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development

This Forum is a Type II Partnership Agreement which emanates from the 2002 WSSD outcomes for mining which was held in Johannesburg, South Africa in September 2002. From this summit, a WSSD JPOI was developed for implementation. The JPOI provided specific actions and targets for the mining industries throughout the world.

The objective of the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGFMMSD), is to enhance and promote the contribution of the mining, minerals and metals sector to sustainable development. The functions of the Forum are consultative and advisory. The forum aims to provide governments with a framework for discussing the opportunities provided by the mining sector and to respond to the challenges that they pose.

4.4.2.3. New Partnership for African Development

The New Partnership for Africa's Development (NEPAD) is a programme of the African Union whose primary objectives are to eradicate poverty; place African countries on a path of sustainable growth and development; halt the marginalization of Africa in the globalization process and enhance beneficial integration into the global economy; and, accelerate the empowerment of women. These priorities are:

- i) Establishing the conditions for sustainable development by ensuring peace and security; democracy and good, political, economic and corporate governance; regional co-operation and integration; and capacity building.
- ii) Policy reforms and increased investment in agriculture, human development, infrastructure, diversification of production and exports, intra-African trade and improving access to markets of developed countries; as well as the environment.

- iii) Mobilizing resources by increasing domestic savings and investments; improving management of public revenue and expenditure; improving Africa's share in global trade; attracting foreign direct investment; and increasing capital flows through further debt reduction and increase overseas development assistance.

4.4.2.4. Southern African Development Community Mining Protocol

Acknowledging the influence of the mining industry to economic development, alleviation of poverty and ameliorating the wellbeing of surrounding communities within region, the Member States decided to develop a Protocol on Mining in September 1997 which came into effect on February 2000. Essentially, the protocol seeks to develop the region's mineral resources by embracing internationally recognized standards within the mining sector. Through signing of the protocol, the Member States agree to harmonise their policies and procedures for mineral extraction, to exchange information, enhance technological capacity of the sector as well as encourage and assist small scale mining. Furthermore, the Protocol in Mining incorporates the need to conform to internationally accepted health and safety and environmental principles and standards.

4.5. National Priorities

The Department takes into consideration the National Development Plan (NDP) government's priorities outlined in the Medium-Term Strategic Framework (MTSF) and the ways in which it can, with the mining sector, contribute to national priorities.

4.5.1. Outcomes 10 MTSF 2014 – 2019

The NDP 2030 vision is that by 2030, South Africa's transition to an environmentally sustainable, climate-change resilient, low-carbon economy and just society will be well under way. The NDP 2030 envisages a phased trajectory over the three successive MTSF periods. The NDP has identified the following sub-outcomes and actions:

- Sub-outcome 1: Ecosystems are sustained and natural resources are used efficiently.
- Sub-outcome 2: An effective climate change mitigation and adaptation response.
- Sub-outcome 3: An environmentally sustainable, low-carbon economy resulting from a well-managed just transition.
- Sub-outcome 4: Enhanced governance systems and capacity.
- Sub-outcome 5: Sustainable human communities.

4.5.2. Compliance with the National Priorities

As indicated earlier on Table 1, the Department Strategic Plan took into consideration the national outcomes and outcomes 10 is included. In relation to sub-outcomes, the Department falls under sub-outcome 1: Ecosystems are sustained and natural resources are used efficiently (Table 8). This provides that ecosystems will be sustained through an increase in the conservation estate, the protection of biomes and endangered species, rehabilitation and restoration of degraded land and ecosystem as well as through sustainable exploitation of natural resources.

Sub-outcomes 1: Ecosystem are sustained and natural resources are used efficiently				
Action	Minister	Indicator	Baseline	Target
Implement environmental regulations to mitigate negative environmental impacts in exploitation of mineral resources	Mineral Resources	Number of D&O mines rehabilitated	50	250 (50 per year)
	Mineral Resources	Number of mines monitored for non-compliance in accordance with water license conditions	289	450

Table 8: DMR's compliance with Outcomes 10 MTSF 2014-2019

4.6. National Strategy on Sustainable Development

The vision of the NSSD is to build a South Africa that is sustainable, economically prosperous and self-reliant nation that safeguards its democracy by meeting the fundamental human needs of its people, by managing its limited ecological resources responsibly for current and future generations, and by advancing efficient and effective integrated planning and governance through national, regional and global collaboration. Sustainable development according to the NSSD "implies the selection and implementation of a development option which allows for appropriate and justifiable social and economic goals to be achieved, based on meeting of basic needs and equity, without compromising the natural system of which it is based".

In order to realize this vision, the NSSD has identified five strategic priorities and an associated action plan, that is;

- Priority 1: Enhancing systems for integrated planning and implementation.
- Priority 2: Sustaining our ecosystems and using natural resources efficiently.
- Priority 3: Towards a green economy.
- Priority 4: Building sustainable communities.
- Priority 5: Responding effectively to climate change.

DMR leans more to Priority 3 of the NSSD "Towards a green economy" puts additional emphasis on amongst others, sustainable consumption and production (SCP), environmental sustainability, resource conservation and management, sustainable waste management practices and water management.

4.7. Measures to ensure compliance

The compliance and performance monitoring of the DMR's statues, policies and programmes with the objectives and principles of sustainable development is determined through information obtained from regional inspection, DMR internal Branch management meetings, multi stakeholder and internal departmental communication structures, quarterly and annual reports, ministerial inquiries or

complaints received, EMP reports and EMP compliance reports. The information obtained assists the DMR to identify shortcomings in the implementation of these policies and statutes, and, undertake the necessary corrective action.

4.7.1. Regional mining inspections and reporting procedures

The Regional Offices in cooperation with other relevant authorities undertake inspections:

- At all mines on an ongoing basis to determine compliance with EMPs, measure performance, and to provide guidance and advice on their implementation.
- At all sites that are the subject of reconnaissance, prospecting and mining applications, in order to consider and evaluate these applications and any draft S&EIAR submitted for approval.
- To follow-up on complaints from interest and affected parties about negative environmental impacts and degradation at operating mines.
- Before closure of prospecting or mining operations.

List of affected organs of state or persons	DMR (Regional Office), DEA (Province), DWA (Province), DoA (Province) and DMR (MHSA). In certain instance: SAHRA or Municipalities or affected persons (community member)
Responsibility of the affected organ of state Or persons	Provide comments to the DMR.
Resources available	Human and Financial Resources and Inspection equipment
Lifespan	Frequently

Table 9: Arrangements on Regional mining inspections and reporting procedure

4.7.2. Mineral Development and Environmental Committees

The statutory committee in terms of the MPRDA was established within the regions to coordinate and promote participation on the approval of EIAs. The primary function of RMDEC is providing a forum for consultation between different authorities with mandates and expertise relevant to mining and the environment in the application

process for rights and permits in respect of the MPRDA. RMDEC draws members from various Government Departments at both national and local level.

List of affected organs of state	DMR (Regional Office) and Affected organs of state relevant to the issues are invited. In many instance: DEA & DWS
Responsibility of the affected organ of state	Discuss and reach agreement on objections
Resources available	Human Resources
Lifespan	Frequently

Table 10: Arrangements on Regional mineral development and environmental committee

4.7.3. Internal Branch management committees

Internal Branch management meetings are held monthly to discuss the implementation of policies, legislation, norms and standards (including the interpretation of the provisions of the MPRDA), and to identify shortcomings in the application of these policies and legislation.

List of affected organs of state	DMR(various Directorates)
Responsibility of the affected organ of state	Discuss and address issues
Resources available	Human Resources
Lifespan	Frequently

Table 11: Arrangements on Internal Branch Management Committee

4.7.4. Multi-stakeholder and inter-departmental communication structures

Discussions in multi-stakeholder and inter-departmental communication structures at national and regional level are also a source of information on the implementation of DMR policies and statutory environmental obligations.

List of affected organs of state	Affected organs of states relevant to the subject in question are invited
Responsibility of the affected organ of state	Provide comments to the DMR.
Resources available	Human and Financial Resources
Lifespan	Frequently

Table 12: Arrangements on Multi-Stakeholder and inter-departmental communication structure

4.7.5. Department's Annual Reports

An annual report is produced at the end of each financial year to demonstrate the Department's performance against the set targets and commitments. The annual report covers all the programmes the Department including mine environmental management issues.

List of affected organs of state	DMR (various Directorates)
Responsibility of the affected organ of state	Compile the Annual Reports
Resources available	Human Resources
Lifespan	Annually

Table 13: Arrangements on Department's annual reports

4.7.6. Ministerial enquiries or complaints received

Ministerial enquiries or complaints are received by the DMR and are investigated. Recommendations on responding or resolving the enquiries or complaints are forwarded to the principals to make decisions. Through this process, the Department is able to determine the extent of compliance and areas of improvement.

List of affected organs of state	Enquiries from all organs of states are welcomed
Responsibility of the affected organ of state	Enquire to the Minister
Resources available	Human Resources
Lifespan	Frequently

Table 14: Arrangements on Ministerial enquiries or complaints received

4.7.7. EMP Performance Assessment Reports

In relation to monitoring environmental management within the mining sector, there is a specific reporting procedure to monitor compliance and measure performance. In terms of NEMA, mining companies are required to submit environmental performance assessment reports to the Department every two years. These reports provide the Department with a mechanism to monitor compliance and performance with all mining environmental management policies and legislative requirements.

List of affected organs of state	DMR (Regional Office)
Responsibility of the affected organ of state	Assess and comment on the EMP Performance Assessment Reports
Resources available	Human Resources
Lifespan	Biennial

Table 15: Arrangements on EMP performance assessment reports

4.7.8. EMP Annual Reports

The purpose of the EMP annual report is to monitor the implementation of targets and commitments made in the EMP; monitor the implementation of recommendations made in the assessment report; monitor compliance by local authorities with the EMP; and provide information not included in the current Environmental Management Plan.

List of affected organs of state	DMR (Head Office) and CEC subcommittee Departments and Provinces
Responsibility of the affected organ of state	CEC subcommittee provides comments and adopts the EMP annual reports.
Resources available	Human Resources
Lifespan	Annually

Table 16: Arrangements on EMP annual reports

4.8. Industry's compliance with statutory requirements

4.8.1. Monitoring and Evaluation

There are various methods in place to monitor and evaluate progress on the commitments set out in the Department's Annual Performance Plan. This includes directorates and sub-directorates meetings, Branch management meetings, Branch monthly reports and Department's quarterly reports. Moreover, at the end of each financial year, the Department produces an annual report which covers the Department's annual performance, highlights and challenges against the commitments and targets. These methods will be of great assistance during compilation of EMP annual reports. In addition, Table 17 will be used to keep track of the mining industry's compliance with statutory environmental requirements. The table will be populated on annual basis and reported in the EMP annual reports.

Item	Eastern Cape	Free State	Gauteng	Kwa-Zulu Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	To
Prospecting applications received										
Prospecting Permits/Rights granted										
Mining applications received										
Mining Rights granted										
Social and Labor Plans received										
Social and Labor Plans approved										
Mine Works Programme received										
Mine Works Programme approved										
S&EIARs/BARs received										
S&EIARs/BARs approved										

EAs issued																					
Waste Licenses issued																					
Integrated EA Licenses issued																					
Performance Assessment Reports received																					
Performance Assessment Reports approved																					
Closure Applications received																					
Closure certificates granted																					

Table 17: Mining industry's compliance with statutory environmental requirements

5. PRIORITIES REGARDING COMPLIANCE

Over and above the commitments and targets reflected in the Department's Strategic Plan, the Department has other policies and plans that if not adhered to, it will compromise the ability of the Department to execute its mine environmental management functions. These policies and plans are considered priority to the Department, they may be dependent or independent of other organs of states.

5.1. Priorities independent of other of organs of states

5.1.1. Awareness of the Departmental EMP

The Departmental EMP has consolidated the current and planned activities of the Department's mine environmental function, including; commitments and targets, policies, plans and priorities. Essentially, the EMP provides external stakeholders with a comprehensive idea on how the Department undertakes its mine environmental function. To ensure that MEM officials at various directorates and sub-directorates understand and deliver expected outcomes, awareness of the Departmental EMP will be conducted.

5.1.2. Monitoring of compliance with the Departmental EMP

The Departmental EMP lifespan is 2015 – 2020, on annual basis the Department is expected to submit a report on progress with implementation of activities reflected in the EMP. Thus, it is important to continually track progress with various mine environmental directorates and sub-directorates on implementation of their activities. Monitoring compliance with the Departmental EMP will also assist with monitoring progress on implementation of targets in the Department's Annual Performance Plan.

5.2 Priorities dependent on compliance by other organs of state

Table 18 provides a list of policies and plans that are dependent on participation by other state organs.

Name of the policy, plan or programme and date of commencement	Description of possible risk of non-compliance	Description of expected state of compliance	Name of affected organs of state	Target timeframe of compliance	Description of measures to ensure compliance
<p>Currently, successful implementation of the "one environmental management system" is primacy. On the 8th December 2015, DMR, DEA and DWS started implementation of the one environmental management system". As described in section 4, essentially, the one environmental management system is intended to streamline environmental and water authorisation-permitting processes. The system runs in parallel and decisions are issued simultaneously. In many instances, it reduces the time period for processing applications.</p>	<p>The "one environmental management system" has reduced the timeframe for the EA application thus reducing the time period to undertake the BA/S&EIA process. In order to meet the timeframes, prudently, the EAPs may have to be proactive and undertake a bulk of EIA work before submitting the actual EA application to the Department. Submission of EA application to the Department initiates timeframe countdown. In cases where an EA submission was made with a bulk of EIA work outstanding, the EAP may be incapable of completing and submitting the EIA within required timeframe which may</p>	<p>The EAPs are expected to undertake majority of the EIA work before submitting the EA application to the Department in order to meet required timeframes. It is also advisable to the EAPs to have pre-consultation meetings with the Department before submitting application. In order for the system to run parallel and to issue decisions simultaneously, the three Departments are expected to ensure compliance with the timeframes as indicated in Section 4 (Diagram 1 & 2).</p>	<p>DMR, DEA and DWS</p>	<p>Time periods for submission of applications and for issuing of decisions are provided in Section 4 (Diagram 1 & 2).</p>	<p>The IPIC will be a platform between the three Departments to resolve issues in relation to implementation of the one environmental management system. There are also (6) IPIC task teams to support implementation of the system.</p>

	<p>result in lapsing of the application.</p> <p>As mentioned, the "one environmental management system" is intended in to run in parallel and decisions issued simultaneously. However, each Department has its own administrative process; a delay in the decision-making process by one Department may affect other Departments. This will result in delaying mining projects and consequential financial losses.</p>				
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Table 18: Priorities dependent on compliance by other organs of state

6. EXTENT OF COMPLIANCE WITH THE RELEVANT POLICIES BY OTHER ORGANS OF STATE

This section is intended to provide an indication of the seriousness or success of compliance to Department's policies by other organs of state.

6.1. Seriousness or success of "one environmental management system"

Implementation of the one environmental management system, the newly introduced regime came into effect on the 8th December 2014, which is fairly recent. In general, the industry has welcomed the new regime and Department is already receiving mining EIA applications. Majority of the applications are still under administrative process, EAs and Waste Licenses are not yet finalized. In addition, the one environmental management system requires parallel process and simultaneous decisions between the three Departments, the WUL and Air Emission Licenses with the respective Departments are also under administrative process and not yet finalized. Similarly, cases of closure application under the new regime are very few and still under administration. Moreover, in line with the requirements of NEMA, the Department has recently designated EMIs to enforce compliance and thus execution of EMI powers has also recently started.

In light of the above, it is too early for the Department to provide the extent of compliance with the new regime. More details on the extent of compliance will be provided in the annual reports.

7. COOPERATIVE GOVERNANCE

The Department collaborates with other Departments in implementing its mandate in addition to fostering coordination between the various Branches, chief directorates and directorates of the Department. The mechanism for collaboration and coordination include memoranda of understanding, interdepartmental committees and regular meetings within the Department.

7.1. Memorandum of Understanding

7.1.1. Joint Working Group

Joint Working Committee (JWC) for Water and Environmental issues relating to Department of Public Enterprise's (DPE) State Owned Companies (SOCs) is established a Memorandum of Understanding (MoU) between Department of Public Enterprise (DPE), Department of Energy (DoE), Department of Transport (DoT), Department of Agriculture, Forestry and Fisheries(DAFF) and Economic Development Department (EDD), DEA, DWS and DMR. The MoU provides for the working relationship on sustainable development facilitation and management, including water and environmental management and conservation issues and challenges between the different Departments. The scope of work covers the following:

- Environmental Authorisations
- Atmospheric pollution issues
- Waste Management
- Water conservation and Water Demand Management
- Strategic Environmental Assessment
- Co-operation and partnership in integrated water conservation and environmental management principles of efficiency and sustainability
- Creation of sustainable working relationships between the Parties and SOC to share inform and guide regulatory initiatives on water conservation and environmental management

- Protection of Agricultural Land
- Conservation of Agricultural Resources
- A Protection of State Forest
- Marine Pollution
- Sustainable biodiversity, ecosystem and natural heritage management, use and conservation
- Sustainable coastal and estuary development, management and conservation
- Development and implementation of South Africa's national and global climate change adaptation and mitigation responses.

Lifespan	March 2023
Role Players	DMR, DAFF, DEA, DoE, DWS, DoT, DPE, EDD
Commitment of the Role Players	MoU was recently signed hence status on commitment not clear at this stage

Table 19: Cooperation on Joint Working Group

7.2. Interdepartmental Committees

7.2.1. Subcommittee on EIPs and EMPs

NEMA provides for the establishment of a CEC to promote the integration and coordination of environmental functions by organs of State. In particular it is intended to facilitate EMPs/EIPs. The DMR is also represented on the CEC.

Lifespan	
Role Players	Various organs of state (National Departments and Provinces) (as provided in Schedule 1 and 2 of NEMA)
Commitment of the Role Players	Good participation and cooperation from most role players

Table 20: Cooperation on Committee on Subcommittee on EIPs and EMPs

7.2.2. Government Task Team for Mine Closure and Water Management

The purpose of the Government Task Team is to facilitate solutions and decision-making on water management and related problems as well as the implementation of

safe and sustainable mine closure options within mining areas. The GTT is chaired by the DMR. Other representatives include DEA, DWS, Mineral Policy and Promotion Branch, Mineral Regulation Branch and MHS Inspectorate.

Lifespan	
Role Players	DMR, DWS, MHS and CGS
Commitment of the Role Players	Good participation and cooperation from all role players.

Table 21: Cooperation on Government Task Team for Mine Closure and Water Management

7.2.3. Interdepartmental Project Implementation Committee and Task Team

The IPIC was established by the Minister to drive the implementation of the one environmental management system. Under the IPIC, there are (6) task teams created to discuss technical issues concerning alignment of processes and policies. The task teams are as follows:

- Capacity Task Team
- Enforcement Task Team
- Coordinated Timeframes Task Team
- Joint Planning Task Team
- Appeals and Legislative Amendments Task Team, and
- Communication Task Team

The main representatives of the IPIC are DEA, DWS, Mineral Policy and Promotion Branch and Mineral Regulation Branch. In the task teams, there are various representatives, including national and provincial Departments.

Lifespan	
Role Players	DMR, DEA and DWS
Commitment of the Role Players	Good participation and cooperation from all role players

Table 22: Cooperation on Interdepartmental Project Implementation Committee and Task Team

7.2.4. Operation Phakisa

In 2013, Government initiated a “big fast result methodology” entitled Operation Phakisa, a programme designed to fast-track the implementation of solutions on critical developmental issues. The programme on the Ocean Economy seeks to unlock the economic potential of South Africa’s oceans which are estimated to have potential to contribute up to one hundred and seventy seven billion rand to the GDP by 2033.

Operation Phakisa is a results-driven approach, involving setting clear plans and targets, on-going monitoring of progress and making these results public. It focuses on bringing key stakeholders from the public and private sectors, academia as well as civil society organizations together to collaborate in:

- Detailed problem analysis,
- Priority setting,
- Intervention planning, and
- Delivery.

These collaboration sessions are called laboratories (labs). The results of the labs are detailed (3 foot) plans with ambitious targets as well as public commitment on the implementation of the plans by all stakeholders.

7.2.4.1. National Working Group on Marine Spatial Planning

South Africa has decided to pursue Marine Spatial Planning (MSP) as a governance tool in order to obtain integrated ocean planning and management. This programme falls under initiative 10 of the Operation Phakisa. MSP is a process that brings together multiple users of the ocean; including energy, mining, aquaculture, shipping, fisheries, recreation and conservation to make informed and coordinated decisions about how to use marine resources sustainably. Currently in South Africa there is no overall system to guide the development, implementation and monitoring in the marine space and this can

lead to conflict, unsustainable use of ocean resources and failing to capitalise on development opportunities.

Cabinet has designated DEA as the Coordinator for MSP. MSP is to be conducted by a National Working Group on Marine Spatial Planning (NWGMSP) comprised of organs of state bearing regulatory responsibility for human use activities in the ocean area, this includes the DMR.

Lifespan	
Role Players	DMR, DoT, DEA, DAFF, DoE and Department of Tourism
Commitment of the Role Players	Good participation, cooperation and progress from all role players

Table 23: Cooperation on National Working Group on Marine Spatial Planning

7.2.4.2. Enhancing Environmental Governance Capacity of the Oil and Gas Regulator (Initiative E2)

Offshore oil and gas exploration is one of the priority areas identified as new growth areas in South Africa. The vision of the Oil and Gas Lab is to drill 30 exploration wells in the next 10 years in a sustainable manner. In order to realize this vision, there are a number of issues that must be addressed particularly around the negative environmental impacts of offshore oil and gas exploration and the capacity to manage and mitigate such impacts. Operation Phakisa Initiative E2 recognized the need to advance environmental governance structures, systems, skills, strategies and incentives for effective implementation. DMR is the lead Department in this initiative.

Lifespan	
Role Players	DMR, DEA and PASA
Commitment of the Role Players	Good participation and cooperation from all role players

Table 24: Cooperation on enhancing environmental governance capacity of oil and gas regulator

7.2.4.3. Mining Phakisa

The broad aim of the Mining Phakisa is to stimulate growth, investment and employment creation along the mining value chain, in relevant input sectors and in mining related communities.

There are various work streams within the Mining Phakisa leg, that is:

- The **Growing the Cluster Work-streams** aim to galvanise initiatives to stem the short term decline of the mining sector and the associated loss of jobs as well as promote investment, productivity improvement and growth in key areas.
- The **Next Generation Mining Work-stream** aims to improve the competitiveness and capability of mining through integrating the development of mining systems and associated extraction technologies with the building of the capabilities to design and manufacture relevant capital equipment.
- The **Beneficiation Work-stream** involves designing new applications for our minerals as well as developing new technologies that will enable us to beneficiate outputs in both national and global markets
- The **Community Development Work-stream** involves the design and implementation of best practice human settlement and economic development projects in collaboration with companies and communities.

Lifespan	
Role Players	DMR
Commitment of the Role Players	Good participation and cooperation

Table 25: Cooperation on Mining Phakisa

7.2.5. National Committee on Radioactive Waste Management

The NCRWM was established in 2006 to oversee and coordinate the implementation of the Radioactive Waste Management Policy and Strategy for South Africa that was

approved in 2005. The NCRWM includes all national Departments or entities having regulatory responsibility for radioactive waste management in South Africa. The DMR is a member in this committee given the fact that some of the mining processes produce radioactive waste material.

Lifespan	
Role Players	DMR, DEA and DoE
Commitment of the Role Players	Good participation and cooperation from all role players

Table 26: Cooperation on National Committee on Radioactive Waste Management

7.2.6. Intergovernmental Forum on Climate Change Committee

In order to operationalize cooperative governance in the area of climate change, the IGCCC has been established to foster the exchange of information, consultation, agreement, assistance and support among the spheres of government with respect to climate change and government's response to climate change. The DMR is a member of this committee.

Lifespan	
Role Players	DMR, DEA, DoE, LEDET, DIRCO, DWS, DST, DPME, DoH, Department of Social Development, SALGA, Provinces, Municipalities, Weather SA, Treasury and SANBI
Commitment of the Role Players	Good participation and cooperation from most role players.

Table 27: Cooperation on Intergovernmental Forum on Climate Change Committee

7.2.7. Rehabilitation Oversight Committee

ROC was established to develop an implementation plan for the rehabilitation strategy of D&O mines. ROC is only responsible for rehabilitation of mine sites at source, which excludes the effects of secondary pollution. The functions of the ROC are to:

- Recommend and oversee the annual and three-year cycle implementation plan of rehabilitation projects.

- Prioritise sites for implementation and recommend the programme to the DMR Minister for approval.
- Establish short, medium and long term goals in addressing challenges in rehabilitating D&O mines in this regard.
- Recommend appropriate policy, legislative and/or any other government intervention required to ensure swift implementation of the D&O programme.
- Strengthen communication between the relevant Government Departments and other interested as well as affected stakeholders.
- Coordinate determination of the D&O liability.
- Process and affirm the D&O database.

Lifespan	
Role Players	DMR, CGS, and MINTEK
Commitment of the Role Players	Good participation and cooperation from all role players

Table 28: Cooperation on Rehabilitation Oversight Committee

7.3. Research Projects

The DMR undertakes various research projects relating to mining environmental management. This includes mine water management, air quality management, waste management and seabed mining impacts. In all these initiatives, the Department collaborates and/or consults with internal and external stakeholders including Government and industry to ensure that necessary aspects are sufficiently covered.

Lifespan	
Role Players	Various role players (Government and Private Sector)
Commitment of the Role Players	There is considerable progress but also challenges on cooperation with other stakeholders.

Table 29: Cooperation on Research Projects

7.4. Joint Site Inspections

The Department embarks on site inspections to monitor the mine environmental management performance. Complaint inspections are conducted when an environmental offense is reported. The Department also conducts compliance and enforcement inspections to monitor compliance with the EA. Occasionally, the Department undertakes joint compliance and enforcement operations with DEA and DWS.

Lifespan	Occasionally
Role Players	DMR, DEA (Province) and DWS (Province)
Commitment of the Role Players	Good participation and cooperation from all role players

Table 30: Cooperation on Joint site inspections

7.5. Regional Mineral Development and Environmental Committees

The statutory committee in terms of the MPRDA was established within the regions to coordinate and promote participation on the approval of EIAs. The primary function of RMDEC is providing a forum for consultation between different authorities with mandates and expertise relevant to mining and the environment in the application process for rights and permits in respect of the MPRDA. RMDEC draws members from various Government Departments at both national and local level.

Lifespan	Occasionally, when there is an objection.
Role Players	DMR and Affected Parties (e.g. landowner, municipality, etc.)
Commitment of the Role Players	Good participation and cooperation from all role players

Table 31: Cooperation on Regional Mineral Development and Environmental Committees

8. PROPOSALS FOR THE PROMOTION OF THE OBJECTIVES AND PLANS FOR THE IMPLEMENTATION OF CHAPTER 5 OF NEMA

Integrated Environmental Management (IEM), Chapter 5, section 23-24 provides that national and provincial Departments involved in environmental management undertake an appropriate assessment process to identify and address environmental impact. The most common IEM tool used for application of prospecting or mining right is S&EIA/EMP.

8.1. One environmental management system

The one environmental management system was proposed a few years ago and is now in operation, the system is envisioned to promote effectiveness of the mine environmental management regime. The one environmental management system allows for the following:

- Integrated Permitting System,
- Implementation of NEMA and relevant SEMAs,
- Issuing of mining EAs and waste licenses,
- DMR Competent Authority,
- DEA Appeal Authority.

The advantages of the one environmental management system are:

- Synchronised system for environmental authorization between the NWA, MPRDA, NEMA, NEM:AQA and NEM:WA;
- Systems run in parallel and decisions are issued simultaneously;
- Timeframes are reduced;
- Mining EIAs are now subject to a full consultative process – Public Participation Process;
- Stronger cooperation between DMR, DEA, DWS - no conflicting decisions as there is inter-departmental consultation prior to final decision making;

- Financial provision regulations are more comprehensive – identified the timeframe for which financial provision must be available; and
- Financial provision is calculated on annual, end of life of mine and latent defect – assessment of each step.

Moreover, the “one environmental management system” supports the Infrastructure Development Act in that the timeframes for decision making on environmental authorisations can be confirmed in the Act and simultaneous submission of applications can be achieved. It also in line with the requirements of the NDP for integration of requirements.

8.2. Geographic Information System data as a supporting tool for applications

Installation of Geographic Information System (GIS) data for screening of mining applications on the DEA intranet (inclusive of national and provincial priority areas). In this manner, applicants can determine sensitivity of a site by locating the development site and then identifying sensitivity related to different layers.

8.3. Dealing with Mine Residue Deposits

Mine Residue Deposits and Stockpiles are also authorized by relevant provisions of the NWA, therefore DMR and DWS may need to explore ways of using both section 24(g) of NEMA and section 22(3) and (4) of the NWA. Hence the proposal to develop an MoU to ensure that minimal Departmental requirements for processing of WML for Mine Residue Deposits and Stockpiles are met, i.e. 1. Rendering the services of certified engineers from DWA which are responsible for approving MRSD design drawings; 2. Rendering the service of specialist (geo-hydrologist) from DWA for providing comments on hydrogeological studies supporting these WLA.

9. OUTCOMES AND KEY PRIORITY INDICATORS

The DMR is implementing several programmes and strategies aimed at realizing its objectives. The programmes and strategies are largely aligned with national policy and legislation, as well as international commitments.

9.1. Mineral Policy and Promotion Branch Programmes and Targets

The Branch has committed several programmes that seek to promote sustainable use of mineral resources, including programmes intended to address mine environmental management issues (see Table 32).

9.2. Mineral Regulation Branch Programmes and Targets

The Branch has committed several programmes that seek to promote sustainable use of mineral resources, including programmes intended to address mine environmental management issues (Table 33).

Strategic Objective	Measure	Annual Targets					Initiatives
		2014/15	2015/16	2016/17	2017/18	2018/19	
Promote job creation	Number of SLP development projects implemented	120	120	120	120	120	<ul style="list-style-type: none"> Conduct compliance and inspections. Compile inspection reports. Issue statutory notices in cases of non-compliance.
	Number of Indirect jobs created through SLP	7 000	7 000	7 000	7 000	7 000	<ul style="list-style-type: none"> Conduct compliance inspections. Compile inspection reports. Issue statutory notices in cases of non-compliance.
Promote sustainable resource use and management	Percentage of evaluated work programmes relative to rights issued considering the elements of sustainable development	100%	100%	100%	100%	100%	Adjudicate PWP and MWP.
	Percentage of approved SLPs relative to rights issued considering the elements of sustainable development	100%	100%	100%	100%	100%	Adjudicate the SLP.
	Percentage of approved environmental management programmes (EMPs) relative to rights	100%	100%	100%	100%	100%	Adjudicate environmental management programmes and plans.

	issued considering the elements of sustainable development.	100%	100%	100%	100%	100%	100%	100%	<ul style="list-style-type: none"> Review EMP in respect of financial provision, and performance assessment reports. Issue statutory notices in cases of non-compliance. Asses closure applications in line with section 43 of the MPRDA.
Reduce state environmental liability and financial risk	Percentage of orders issued to remedy inadequate financial provision.	100%	100%	100%	100%	100%	100%	100%	<ul style="list-style-type: none"> Support and implement the Special Presidential Package on distressed mining towns. Conduct compliance inspections on housing and living conditions in terms of the Mining Charter. Issue statutory notices in cases of non-compliance. Compile inspection and reports and submit to relevant stakeholders. Conduct EMP compliance inspections. Issue statutory notices/ orders in cases of non-compliance. Compile inspection reports.
Monitor and enforce compliance	Percentage closure certificates issued in line with the regulatory framework Number of SLP inspections	100%	150	150	150	150	150	150	
	Number of environmental authorisation inspections conducted	1 700	1 700	1 700	1 700	1 700	1 700	1 700	

Table 32: Mineral Policy and Promotion Programmes and Targets for 2014/19 (DMR Strategic Plan 2014/19)

Outcomes	Strategic Objective	Measure	Annual Targets					Initiatives
			2014/15	2015/16	2016/17	2017/18	2018/19	
Equitable and sustainable benefit from mineral resources	Promote sustainable resource use and management	Number of technical partnerships implemented with SOEs	3	3	3	2	2	<ul style="list-style-type: none"> CGS strategic mine water research programme. CGS and MINTEK on rehabilitation programmes.
		Framework for mining environmental management developed	4	3	2	2	2	<ul style="list-style-type: none"> Review of the departmental EMP. Review the database for derelict and ownerless mines. Guideline document for financial provision. Review the state liability for the rehabilitation of derelict and ownerless mines.
		Number of derelict and ownerless mine sites rehabilitated	50	50	50	50	50	Rehabilitation of derelict and ownerless mine sites and holdings.

	Revised Mining Strategy for Sustainable Growth and Meaningful Transformation	0	1	0	0	0	Amend the Mining Strategy for Sustainable Growth and Meaningful Transformation.
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Table 33: Mineral Regulation Programmes and Targets for 2014/19 (DMR Strategic Plan 2014/19)

9.3. Other programmes: Hydraulic Fracturing

A holistic cost-benefit study of Karoo shale gas extraction requires a robust, quantitative estimate of the recoverable resource; however, in order to acquire such data, exploration activities must be undertaken. In order to govern exploration of shale gas, the Department has developed regulations for petroleum and production underpinned the MPRDA. The regulations also take into account environmental responsibility. Exploration of gas, same as with exploration of minerals, will also be administered in terms of NEMA. Over and above S&EiAR, the regulation require specific details to be included in the EiAR, that is; assessment of conditions below ground, water resource monitoring and assessment of related seismicity.

REFERENCES

- Department of Mineral Resources Strategic Plan 2014/2019
- Department of Mineral Resources Annual Performance Plan 2015/2016
- Mineral Policy and Promotion Strategic Plan 2016/2019
- Mineral Regulation Strategic Plan 2016/2019
- Mining and Biodiversity Guidelines (Mainstreaming biodiversity into mining sector)
- Delivery agreement outcomes 10
- National Water Act, 1998 (Act No. 36 of 1998)
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- National Heritage Resource Act, 1999 (Act No. 25 of 1999)
- National Environmental Management Act, 1998 (Act No. 107 of 1998)
- National Environmental Management Laws Second Amendment Act
- National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
- National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)
- National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
- National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
- Mine Health and Safety Amendment Act, 2008 (Act No.74 of 2008)
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- Mineral Technology Act, 1989 (Act No.30 of 1989)
- Mineral Titles Registration Amendment Act, 2003 (Act No.24 of 2003)
- Precious Metals Act, 2005 (Act No.37 of 2005)
- Spatial Planning and Land Use Management Act, 2013 (Act No.16 of 2013)