

Law Enforcement in the South African Gold Mining Sector:
The nexus between Company, Environmental and Equity law

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Abstract

Although the mining industry contributed to the development of the country by providing infrastructure and employment, it left a negative impact on the environment. To this end, various pieces of law were promulgated to limit environmental damage and hold those who pollute (Mining Companies / licensees) accountable. This research focused on two study sites namely Blyvooruitzicht and Grootvlei gold mines. Both mines underwent forced mine closure and their environmental liabilities remained unresolved. This study focused on important laws governing the South African gold mining sector, to form an understanding of these laws and to establish if these laws protect the environment sufficiently or not. The study included an overview of the current relevant legislative framework regarding mines, with the aim of identifying if there were gaps between Mining law, Company law, B-BBEE law (Equity Law) and Environmental law. This included an exploration of the interrelationships between the various pieces of legislation and the challenges relating to compliance and enforcement of these mentioned laws. Further to this, the research study investigated the requirements and responsibilities of the South African State, and directors of mining companies.

The finding was that South African law with respect to mining companies needs minor adjustments, but the crux of the problem is a lack of effective implementation and enforcement by the State. There is ineffective administration of environmental quality control by the various designated National Government Departments. Recommendations made include the need for clear monitoring of compliance and enforcement of the environmental regulatory framework if there is to be successful mine closure in South Africa. In addition, the South African State Government could consider incentivizing compliance, that is, reward mining companies who uphold environmental law. Further to this the thesis suggest the elimination of any contradictions between the various legislations within the mining industry and stipulates that legislation must be read in conjunction with one-another if a robust legislative framework is to exist.

Key Terms: Non-Compliance, Grootvlei, Blyvooruitzicht, Environmental Law, Company Law, Equity Law, regulating, Government, Government Departments, Gold Mines.

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List of Abbreviations:

AMD:	Acid Mine Drainage
AU:	African Union
B-BBEE:	Broad Based Black Economic Empowerment Act
Bona Fide:	Without intention to deceive
CBO:	Congressional Budget Office
CER:	The Centre for Environmental Rights
CI:	Chief Inspector
DME:	Department of Energy
DMR:	Department of Mineral Resources
DTI:	Department of Trade and Industry
DWA:	Department of Water Affairs
DWS:	Department of Water and Sanitation
ECA:	Economic Commission for Africa
EIA:	Environmental Impact Assessments
EIS:	Environmental Impact Systems
EMP:	Environmental Management Plan
EMPR:	Environmental Management Plan Reports
FSD:	The Foundation for Sustainable Development
EPA:	Environmental Protection Agencies
IEM:	Integrated Environmental Management
IODSA:	The Institute of Directors in South Africa
Mala Fide:	In bad faith / intent to deceive
MEPA:	Mineral Exploration and Production Agreement
Mine Sites:	Refers to either Blyvooruitzicht and/or Grootvlei Mines
MPRDA:	Minerals and Petroleum Resources Development Act
NEMA:	National Environmental Management Act
NGO:	Non-Governmental Organizations
NWA:	National Water Act
PDI:	Previously disadvantaged Individual, this could also refer to black individuals

Prima Facie:	Accepted as correct until proved otherwise
SADC:	South African Development Community
SAG:	South African Government
SDCA:	South Durban Community Environmental Alliance
SHEQ Manager:	Safety, Health, Environment and Quality Manager
SMME:	Small, Medium and Micro-sized Enterprise
TSF:	Tailing Storage Facility
UN:	United Nations
WUL:	Water Use License
Zama Zama's:	Informal term used for illegal miners in South Africa.

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Chapter 1: Introduction

1.1 Introduction

Gold mining started as early as 1886 in the Witwatersrand Basin (Tutu, McCarthy & Cukrowska, 2008). However, now the South African gold mining industry is in its “sunset stage”, with significant cash-flow challenges (De Wet & Sidu, 2013). It is also now becoming clear that the industry had a significantly negative impact on the environment. The biggest impact is acid mine drainage (ADM). Acid Mine Drainage (AMD) was a threat to freshwater systems of the Vaal Barrage Sub-catchment and Vaal river, therefore any water pumped out by mines had to be treated to improve such pollution (McCarthy, 2011). However, managing the impacts is not a simple process for a country rich in mineral resources and with a long history of mining, as it allowed the South African mining sector to hold a privileged economic and political position (*Coupen Holdings vs Germiston City Council*, 1961). That is, it was an economy deemed as “friendly” to business, so that mining houses would be able to attract foreign direct investment (Adler, Claassen, Godfrey & Turton, 2007). Unfortunately for many years mine environmental liabilities and mine closure was not managed, and instead of mines being closed correctly, to limit environmental damage, many were simply abandoned (Leon, 2012). Thus, insolvent or abandoned mines were a serious concern and Government needed to manage mine closure and mine liquidation very carefully. Thus, the law was changed and now, according to the South African Company Law, the directors of a company (juristic person) are liable for any environmental damages (Companies Act No 71 of 2008). But in the case of abandoned mines, environmental liabilities are passed onto South African taxpayers (Beall, Crankshaw & Parnell, 2002).

In this regard, post 1994, South African citizens acquired a sovereign right to a clean and healthy environment (Section 24, South African Constitution, 1998). Laws such as the National Environmental Management Act (NEMA Act No. 107 of 1998) and the Mineral and Petroleum Resources Development Act (MPRDA Act No. 28 of 2002) were passed. Part and parcel of this was the implementation of Broad Based Black Economic Empowerment (B-BBEE) in the mining industry (Broad Based Black Economic Empowerment Act No. 53 of 2003). The B-BBEE Act required mines to ensure racial transformation in the mining sector (South African Government, 2015). The aim was to change the mining-economy from being a purely extractive one to a socially and environmentally responsible one (Geller & Schultze, 2013). Thus, the State has a duty to act

against mines that pose a threat to human rights or violate environmental laws (Hilson & Murck, 2000). However, it seems that compliance with B-BBEE is prioritized over environmental matters. Such that mines fund transformation deals rather than environmental rehabilitation (Sampson, 2008). In addition, historical environmental liabilities became contentious as they were viewed as holding transformation back (Milaras, 2015). It has been argued that previously disadvantaged individuals (PDI) - who were not able to benefit from mining in the past – should not now carry the financial burden of environmental rehabilitation. In such cases environmental liabilities are often unfairly passed on to the taxpayer (Rungan, Cawood & Minnitt, 2005).

1.2 Problem Statement and Rationale for the Study

Several legal liabilities and responsibilities are delegated to mining companies, stakeholders, directors of companies and the South African Government (Dixon, 2003). However, limited acceptance of these responsibilities were prevalent (Willis Limited, 2014). When it came to mine closure (forced or planned), the legislative framework between Environmental Law, Company Law and Equity Law were not made clear as to which one was the primary legislation. Company Law, on the one hand, dealt with responsibilities - which was liable for damages caused. Environmental Law on the other hand dealt with systems designed to monitor the industry with specified norms and high constraints. Equity Law was designed to increase the numbers and stakes for previously disadvantaged individuals (PDI) in the mining sector. How these acts were supposed to work together, however, was not made clear in the legislation (Hamann, 2004). There was uncertainty as to which legislative route to follow, and misperceptions prevailed as to which sections carried more weight (Lane, Guzek & Van Antwerpen, 2014). To date, the Government has not attempted to address the situation, which was further aggravated by a history of poor co-operation between mines and Government post-1994 (Pulles, Bannister & Biljon, 2005). The South African Government adopted a segregated and purely legislative approach, despite the challenges such an approach precipitated for enforcement. Ackerman (2013) and Humby (2015) both argue that this segregated approach is hindering the protection of the environment and imposed on socio-economic rights, and created a burden on the taxpayers.

It was also argued that those discrepancies in legislation (or contradictions) foster a culture of non-compliance (Feris, & Kotze, 2014). The inconsistencies and discrepancies between the above mentioned laws placed various Government Departments at logger heads with each other (Swart,

2003). Therefore, misalignment between the various pieces of legislation needed urgent attention. Consequently, it was imperative to identify the discrepancies between Company Law, Environmental Law and Equity Law so that recommendations could be made as to how these discrepancies should be addressed. The study was an attempt to do so through the lens of the forced or catastrophic closure of two Gauteng gold mines, namely Blyvooruitzicht and Grootvlei (Van der Merwe & Lea, 2003; De Wet & Sidu, 2013). These two mines highlighted the legal challenges surrounding end-of-life gold mines facing economic limitations, the operation of B-BBEE and the managing of environmental impacts (such as Acid Mine Drainage) and liabilities (Faku, 2015). Both mines were placed under liquidation and eventually closed as operational mines. It could be argued that the events surrounding the liquidation and forced closure of these two mines highlighted the problems caused by the lack of integration and synergy between Environmental Law, Company Law and Equity Law.

Feris and Kotze (2014) as well as the trade union Solidarity, indicated that there were several discrepancies between Company law, Environmental law and Equity law that needed to be addressed through amendments to current legislation and the practical use of management systems (McKay & Milaras, 2017). This research sought to determine exactly what these misalignments with respect to gold mines were to assist Government Departments and the mining industry. The purpose of this study was to use the cases of Grootvlei and Blyvooruitzicht to explore the interrelationships between the various pieces of legislation highlighted above and draw up recommendations for improvement.

1.3 Aims and Objectives

The primary aim of this study was to unpack, how the various pieces of legislation – the National Environmental Management Act (Act No. 107 of 1998); the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002); the Broad Based Black Economic Empowerment Act (Act No 53 of 2003 and the Companies Act (Act No. 71 of 2008) interacted in the cases of Grootvlei and Blyvooruitzicht. The secondary aim, was to establish how and why these two mines underwent catastrophic or forced closure (without a closure certificate) despite all the legislation which should have prevented such a situation (Plaut, 2011). Thirdly, the study hoped to make recommendations as to how the various acts could be amended to prevent such events occurring in the future, in a response to the call by Marais (2013).

Therefore, to achieve those aims, the objectives were as follows:

1. Outline the application of Company Law, Environmental Law, Mining Law and Equity Law to the two gold mines that were under study.
2. Chart the processes that resulted in the two mines that were under study undergoing forced closure.
3. Identify the misalignment and gaps between the mining, environmental, equity and company law frameworks.
4. Recommendations had to be made on how the above-mentioned acts should be amended to remedy the gaps as identified by the case studies.

1.4 Research Questions

The study addressed the following research questions:

Research Question 1:

What were the requirements of Company Law, Environmental Law, Mining Law and Equity Law with regards to forced mine closure?

Research Question 2:

What were the limitations/contradictions (with respect to each other) of each of these laws that could hinder both compliance and enforcement thereof?

Research Question 3:

How can Company Law, Environmental Law, Mining Law and Equity Law be amended to address limitations and contradictions in mine closure scenarios?

1.5 Research Design and Methodology

The methodology and research design for this study was based on case study research. More specific descriptive, explanatory and qualitative research frameworks. The purpose of the case study research was to establish a framework for discussion through the investigation of current legislation (NEMA, MPRDA, NWA, Companies Act and B-BBEE Act), past academic research,

past studies and through conducting in-depth interviews with respondents that dealt with the two mine sites Grootvlei and Blyvooruitzicht to draw relevant conclusions. Case study research was defined by Yin (2011) *“as an empirical inquiry that investigates a contemporary phenomenon within its real-life context: when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used.”* The case study research allowed for an investigation to retain the holistic and meaningful characteristics of real life events (Yin, 1994). The case study research was acknowledged as being able to make accurate findings, interpretations and assessments as well as draw more deliberated and clear conclusions (Zucker, 2001).

This study used descriptive, explanatory and qualitative case study frameworks to establish i) how Company Law, Environmental Law, Mining Law and Equity Law should be applied in the mining industry; ii) the sequence of events that led to both mine sites (Grootvlei and Blyvooruitzicht) being provisionally liquidated and eventually forced to close; iii) identify the misalignment and gaps between the mining, environmental, equity and company law frameworks and iv) make recommendations as to how the governing legislation could be amended to address the gaps in the legislation and how this would remedy the current situation within the mining industry of South Africa and in both mining sites under study.

By providing the lay out and application of the current legislation (NEMA, MPRDA, NWA, Companies Act and B-BBEE Act) the descriptive case study framework described the natural phenomena within the data in question, namely the misalignments and gaps between the mining, environmental, equity and company law frameworks and how these legislations could be amended to remedy the current problems within the South African mining industry and Grootvlei and Blyvooruitzicht. Potential discrepancies in the legislation is highlighted. How these discrepancies might have on the mining industry, was also further investigated and discussed in this dissertation to provide more clarity.

The qualitative research framework was also used for this dissertation with the focus being to collect, integrate and present opinions from individuals / respondents within the mining industry or people / respondents that dealt with Grootvlei and Blyvooruitzicht mine sites directly or indirectly explaining the current situations in more detail. This qualitative framework allowed for the study of real life settings and its participants to draw more valid conclusions. By collecting relevant data this meant dealing directly with a primary source of data through interviews and not

secondary sources such as other research studies or reports. A thorough legal review was also done on the existing current legislation (Companies Act, NEMA, MPRDA, and the NWA Act), to identify any gaps and/or misunderstandings these legislations would pose within the mining sector and consolidated with the findings of the in-depth interviews (Tashakkori & Creswell, 2007).

The research frameworks used for this dissertation had several advantages and disadvantages that will be discussed in more detail in chapter 3. This dissertation presented several shortcomings i) the research design and methodology produced a high volume of documentation that needed to be examined and processed, which made the processing of data lengthy and complicated; ii) the reviewing of current legislation posed more challenges as the legislation was not clear on certain definitions and interpretations and more resources had to be utilized; iii) the sources collected and reviewed presented contradictory or differing views; iv) Approved access to both studies sites (Grootvlei and Blyvooruitzicht) was not granted throughout this study; v) access to confidential corporate and government documentation was not readily available; & vi) the setting up and conducting of the in-depth interviews were lengthy and complex. Thus, this study was limited to extensive media reports, research articles, journals, court judgments and relevant legislation. Follow up studies to clarify and support the findings presented here are recommended.

1.6 Description of the Study Sites

The study sites selected and investigated for this dissertation was the Blyvooruitzicht mine located on the North-Western rim of the Witwatersrand basin and the Grootvlei mine located near Springs on the East rand mining basin.

Blyvooruitzicht Gold Mining Company Ltd first was constituted in 1937. Blyvooruitzicht's most important mine was located on the richest gold-bearing reef ever discovered on the North-Western rim of the Witwatersrand basin, some 80 kilometres outside Johannesburg (Davenport, 2013). Production only started in 1942, due to technical challenges faced with the sinking of a deep-level mine shaft. The Blyvooruitzicht mine was operational until August 2013 (Humby, 2014). Over the operational life of the mine, Blyvooruitzicht was proclaimed as the "*richest gold mine in the world*" (Humby, 2014, 9). Blyvooruitzicht mine comprised of both underground and surface reclamation operations, metallurgical plants and tailing facilities. It was estimated that the

Blyvooruitzicht mine produced a million kilograms of gold, silver and other commodities (Feris & Kotze, 2014).

Blyvooruitzicht housed the majority of its employees in company-owned homes and hostels within its mining village. People still live there today. In the 1990's the mining village slowly gave way from a two-tier, racially divided housing system which saw black mine workers and their families, to one of being integrated into a mining village that was traditionally reserved for white employees only. The company also built and maintained community halls, sports fields, a golf course and other recreational facilities. Further to this the Blyvooruitzicht Gold Mining Company was also responsible for supplying schools, a medical clinic and basic services such as access to running water, sanitation electricity and rubbish collection – essentially, all the services that are usually provided by local government.

In September 1997, a publicly-listed South African gold company, DRD Gold Limited acquired the entire share capital of Blyvooruitzicht Gold Mining Company and took over the day-to-day management of the mine. DRD launched various projects to increase the profitability of the Blyvooruitzicht mine to extend the mines planned life cycle to 2027 (DRD Fact Sheet, 2016). As part of DRD plan for profitability, a black economic empowerment company, namely Khumo Bathong Holdings (Pty) Ltd acquired a stake in the mine in 2005 although DRD remained the majority shareholder. As DRD controlled the Blyvooruitzicht mine, the company regularly reported to DRD shareholders and South African regulatory authorities, this included submitting Environmental Management Programmes (EMP) to the Department of Mineral Resources on behalf of the Blyvooruitzicht Gold Mining Company - in 2001 and in 2007 (Humby 2014).

In the 2007 Environmental Management Programme (EMP) submitted to the Department of Mineral Resources (DMR), DRD detailed its commitment to concurrent rehabilitation aimed at progressively and systematically reducing rehabilitation and closure liability (Faku, 2014). This EMP included a conceptual closure plan (Faku, 2014). However, in 2009, DRD experienced financial trouble and over a period of 4 years (2009 to 2013) attempted to solve the problems by proposing an asset sale and, later, business rescue. In 2012, Village Main Reef Limited agreed to purchase DRD's entire shareholding (of 74%) subject to certain conditions. Village Main Reef Limited took operational management of the mine in June 2012 (Village Main Reef Annual Report, 2012).

Village Main Reef Limited sunk many millions of Rands into Blyvooruitzicht mine and took responsibility for the updating of the Mines Social Labour Plan and engaging local government regarding various development projects. But by July 2013 neither Village Main Reef Limited nor DRD would acknowledge any responsibility for the Blyvooruitzicht mine (Kings, 2013). This may be due to the gold price plummeting to an all-time low, making any efforts to sustain the mine or begin the process of mine closure very difficult (Kings, 2013). This also meant that the environmental and socio-economic obligations went unmet and there were no funds for rehabilitation. Subsequently, Village Main Reef Limited claimed that the deal to take over the mine from DRD was not properly concluded and so they would no longer act as owners of the mine. DRD disagreed and claimed to be absolved of any responsibility for the mine (Moneyweb, 2013).

Eventually the impasse resulted in the Blyvooruitzicht mine being placed under provisional liquidation in 2013. Provisional liquidators were appointed and assumed operational control of the mine (Village Main Reef Annual Report, 2012). Later on, Village Main Reef Limited was itself acquired by a Chinese equity finance firm - Heaven-Sent Capital (in 2015) - and de-listed from the Johannesburg Stock Exchange. Today the village community of some 6000 people lives in the shadow of the abandoned mine in abject poverty.

Grootvlei Gold Mine was located on the far east of the East Rand Basin of the Gauteng Province (Lea, Waygood & Duthie, 2003), three kilometers east of Springs on the borders of Consolidated Modderfontein mines and Nigel Mine. Grootvlei was active for over 80 years until its permanent closure in 2011 when it employed in the region of 5500 workers (Palmer, Caywood & Lea, 2006). By the 1970's and 1980's the mine suffered from lower-grade of gold reserves, rising costs and increased water ingress (Baartjes & Gounden, 2012).

By 1995, Grootvlei mine could not manage the sheer volume and cost of pumping and treating Acid Mine Drainage (AMD) and this led to untreated Acid Mine Drainage (AMD) being pumped into the Blesbokspruit river (McCarthy, 2010). This led to problems such as salination of the soil within the region and a decrease in water quality (Thorius, 2004). By 1996, the Department of Water Affairs and Forestry (DWAF) issued Grootvlei mine with a water permit despite the water still being contaminated only to revoke the water permit later in 1996. A second water permit was granted to the Grootvlei mine on condition that six settling ponds and a High-Density Separation

treatment plant be built to remove all contamination (Fourie, 2009). Poor financial conditions led the State to subsidize the pumping treatment of AMD (at a monthly cost of R8 million).

Harmony Gold (Pty) Ltd took control of Grootvlei Gold mine and Consolidated Modderfontein mine in 1997. Later in 1998 both mines were sold again to Petmin Ltd. In December 2006 Pamodzi Gold Ltd acquired a 51% stake in Berna's Gold East Rands operations and by doing so took control of all three mines (Plaut, 2013). By 2009, Pamodzi Gold Ltd started showing financial strain and faced provisional liquidation. Later in 2009 Pamodzi Gold Ltd went in to final liquidation and Aurora Empowerment Systems bid to take control of the mine (McKay & Milaras, 2017).

After Aurora Empowerment Systems took control of Grootvlei Gold mine the HDS plant at shaft 3 ceased to operate (De Wet & Sidu, 2013). The directors of Aurora Empowerment Systems claimed to lack the money needed to continue to pump and treat AMD. By 2010, Solidarity and another trade union (National Union of Mineworkers) claimed that Aurora either underpaid or failed to pay their employees. Later in 2010 Aurora laid off 1440 mineworkers. Suppliers also went unpaid and in the case of Eskom, the mine's power supply was cut off and so mining operations ceased (McKay & Milaras, 2017). Eventually Aurora Empowerment Systems were liquidated and what was left of Grootvlei sold. However, due to asset stripping and failure to pump the underground water, the mine itself was no longer viable.

Thus, when Grootvlei and Blyvooruitzicht mines went into liquidation, they ceased to operate, and dependent communities were left destitute. These derelict mines had become a source of income for illegal miners known as "zama zamas" leading to safety risks and often violent gang fights. Little of value was left of either mines and both could be said to have undergone forced or catastrophic closure (McKay & Milaras, 2017).

1.7 Overview of the Different Chapters

The dissertation took on the form of the following chapters:

Chapter 2: presented the literature review. The primary aim of the literature review was to establish the current governing legislation with regards to mining in South Africa, as well as to identify limitations and discrepancies in the identified legislation. Chapter 3 was the methodology, a systematic description of the analysis methods followed during the study. Chapter 4 entailed the analysis of the relevant legislation applied to mine closure due to liquidation at the study sites, as

well as its effect on the employees, owners, regulatory bodies and communities. Also, a review of the detrimental effect of discrepancies between legislations were performed. The findings were presented in chapter 5, followed by the discussion and analysis in chapter 6. Chapter 7 presents recommendations and the conclusion.

1.8 Conclusion

The purpose of legislation was to protect South African citizens (Sampson, 2008). In Chapter 2 more deliberations and interpretations will be done regarding mine decommissioning and closure. Further attention will be given to mines and their legislation and the interpretation of these Acts that were under study.

Chapter 2: Literature Review

2.1 Introduction

The mining industry always faced challenges such as mines closing prematurely due to lower product prices, governing deviations, firm challenges and social conflict. Mine closure locally or internationally were always seen as a complex issue, best dealt with proactively on a day to day basis (Swart, 2003). Proactive engagement around mine closure by the South African Government - or any Government around the world - meant that mine closure should be planned carefully (as was the case with mine openings). The status quo after a mine site was closed, initially defined the long-term impact on a community's public, financial and influential development (Fraser, 2012).

An important priority was to implement appropriate policies and procedures that assisted local communities when it came to the problems regarding mine closure. South Africa's environmental recovery and mine rehabilitation projects needed to be aligned to South African legislation (Van Eeden, Liefferink & Durand, 2009). Many of South Africa's environmental reclamation and mine rehabilitation projects challenged existing laws and principles which were considered to be too broad and not as effective as they should have been (Van Eeden et al., 2009).

If there were inconsistencies or unsuccessful monitoring of legislation, this could have led to non-compliance by the mining industry. This chapter's primary focus was the implementation of mining laws in South African and at international level (Laurence, 2002).

The absence of satisfactory legal structures, led to ineffective mine closure (Madalane, 2012). Inconsistent enforcement of legislation also led to complications with mine closure. Working together mining companies, Governments and communities could diminish the hazards of mine closure and maximize the prospects it offered (Clark & Clark, 2005).

2.2 The International Experience

2.2.1 International Mine Decommissioning and Closure

Mine closure was the period when the ore-extracting activities of a mine stopped, and final decommissioning and mine reclamation completed. It was generally associated with reduced employment levels, which had a significant negative impact on local economies. It was further

said that mine closure was when the functioning phase of the mine was over and the mine rehabilitation started. Mine closure was considered permanent, but mines that were not closed correctly and monitored after closure, created future problems (Fourie, 2009).

When it came to mine closure, mining communities were seldom - if ever - consulted about the challenges associated with the closure of mines. The majority of the country's corporations acknowledged mine closure as merely being the stopping of production and decommissioning of a mine (Andrews, Maraboli & Strongman, 2002). Thus, they ignored the fact that mine closure was a complex procedure with social, environmental and financial effects (Smith, Nindi & Bechaus, 2011). Most countries and mining corporations acknowledged that mine closure was more than the neutralising of mines. Mined areas needed to be rehabilitated; responsible mine closure involved the removal of equipment, plant and dangerous materials, the safeguarding of the pits and waste disposal amenities, and restoring the land surface.

Funding for mine closure was limited both locally and internationally, despite the challenges of mine closure, decommissioning and rehabilitation. For example, technical, human capital and policy considerations were required for successful mine closure to materialize (Mogotsi, 2003). Mines in developing countries such as Chile, Australia, and the Middle-East had problematical mines that needed to be closed. To assist with the problematic mines, mine closure discussions between relevant mining corporations, Governments and communities were established to determine what could be done regarding mine closure and to prioritize mine closure accordingly. However, still viewed as a type of crisis management, as for mine closure to be truly effective and done correctly, planning should had to start at the mine design or even pre-feasibility studies (Sellers & Vogel, 2015).

2.2.2 The International Legal Context

2.2.2.1 Mining in Chile

Mine closure was not new in Latin America, and the ecological consequences of previously unsuccessful mine closures were still visible (Campusano, 2002). In Latin America, Chile was the single most significant mining nation in the world, but one with little practical experience regarding mine closure. What was more, mining in general had a high degree of social acceptance

in Chile, because of the role mining played in the economy (Weeks, 2015). Thus, few wanted to actively ensure mines protected the environment. For mine closure laws in Chile to be appreciated and be understood the focus had to turn to the abandoned mines and the legislative framework in Chile.

According to Chile's National Mining Service, the country had at least 1400 abandoned sites/mines, this included mines situated close to communities. These abandoned mines generated ongoing impacts with no Government funding for remediation (Puratic, 2011). When it came to mine closure in Chile, mines were categorized according to their risk profile and ranked to be closed according to their risk profiles (Weeks, 2015). Chilean closure laws focused on the creation of an Environmental Impact System (EIS) that directly addressed mine closure (Sands, Peel & Mackenzie, 2012).

The next major step for mine closure in Chile was in 2002 when a new mine regulation system was introduced. The focus of this new system was to highlight health and safety issues and to address and resolve them as far as possible (Sellers & Vogel, 2015). In 2012 mine closure laws were amended and updated to a point where the Government became more actively involved in the mine closure process. This change was the result of public pressure that drew attention to the enormous number of abandoned mines in Chile. The new mine closure laws focused on preventative measures that ensured future generations did not deal with abandoned mine sites and negative environmental impacts (Bastida & Stanford, 2015).

The new laws required mining companies to provide financial guarantees for each mining operation. The money for mine closure was ring fenced and held by the Government had the mine owners defaulted on their mine closure responsibilities (Bastida & Stanford, 2015). The new mine closure law made the submission of mine closure plans compulsory before a mining project commenced. These plans had to include provision for how mine closure would be communicated to the various stakeholders. The new laws in Chile also added in a phasing-in process. The phase-in process confirmed that all mine closure plans had to include a risk assessment for the principal installations. Mines now needed an approved closure plan before mining could start. Nationally, all mines had to submit one before the end of November 2014 (Weeks, 2015). Such plans had to include a closure cost estimate, a closure plan and an Environmental Impact Assessment (EIA). The calculated percentage that mines had to set aside for closure was set at 20% of the project cost

to mine. The mining cost could also be calculated at a different percentage higher or lower than the set 20% depending on the mine closure and decommissioning status of the mining company within the mining sector (Weeks, 2015). Closure processes were to be well-defined and implemented with due diligence to mitigate the risks that mine closure posed.

Chile also tabled voluntary closure plans for mines, a process that was eventually implemented in 2008. The voluntary closure plan required resources from mining companies and had to be self-financed even if this meant that mining companies in Chile had to sell their scrap metal (Campusano, 2002).

Mines in Latin America were confronted with unpredictable challenges, such as how to remain competitive in terms of being an investment attraction and to deal with demands to be ecologically and socially sustainable. Chile implemented a central method to environmental regulations and confirmed this in their Constitution as *“the right to live in an environment free from pollution a fascination that expanded with the enactment of the Framework Environmental Law in 1994”* (Urruta & Avilés, 2015). The Chilean Environmental system was developed over several years and the Environmental Impact Assessments (EIA) were done using ISO 14001 as an environmental management system. Post 1997, Chile changed their focus in the mining sector, by getting the communities involved on a greater scale with mine closure.

Only a small number of mines were closed in Chile between 1997 to date. The Lota Mine was successfully closed in 1997 and provided a cautionary tale - not for the technical challenges - but for the community challenges that resulted from the mine closure. The impact of mine closure was aggressive as the aftershock was still felt 10 years after the mine officially closed. The closure of this mine was responsible for elevated levels of poverty, unemployment and protests by ex-miners (Clark & Clark, 2005).

2.2.2.2 Mining in South East Asia

Mining in developing regions of South-East Asia faced more significant challenges such as operational closures and planning challenges (Campusano, 2002; Mauric, McCullough, Wilson-Clark, Witcomb & Millgate, 2012). Mine closure posed substantial risks to the environment and local communities. Poor management of the mines by mining companies and poor planning of

mine closures resulted in the negative environmental impacts. Thus, mines needed to be closed properly and according to the rules and regulations of the various governments of South-East Asia.

The Phu Kham Mine in Laos highlighted some of the key challenges associated with mine closure in the region (Campusano, 2002). The Phu Kam Mine had specific plans when it came to mine closure. This included what liabilities and risks would have remained with the mining companies and stakeholders after the mine had closed. There was a specific mine closure strategy, which regulated the social, economic and ecofriendly sustainability of closure. This was linked to environmental impact assessments (Bridge, 2004).

Most of the mining companies based in South-East Asia did not focus sufficiently on mine closure, and mine closure was not a legal requirement. Thus, the focus turned to general environmental and social impacts. To this day, a Mineral Exploration and Production Agreement (MEPA) was put in place, signed by the Government and mines to address mine closure and rehabilitation. But the Mineral Exploration and Production Agreement (MEPA) did not include a structured or detailed closure plan and there was no timeframe for implementation and completion of this plan. The idea behind the mining plan was to deal with closure hazards (Mauric et al., 2012). Gaps in the plan included monetary, ecological and social impacts (Campusano, 2002).

It was also imperative to compare mining situations in other countries. This brought us to Australia and Canada and their implementations and regulations when it came to mine closure.

2.2.2.3 Mining in Canada

In the last two decades, changes were made to legislation in Canada that impacted on mine closure (Cowan & Robertson, 2000). In terms of mine closure in Canada, there was additional guidelines at provincial level. Mining companies had to submit mine closure plans before they were granted approval to commence mining. Under the Canadian legal systems, the accountability for managing the mine closure process lies with the provincial regulators. Canada then introduced a range of technical and operating mechanisms designed to support better mine closure and this was made a national standard. This included an impact management plan alongside a mine closure plan. The management plan included the reclamation of land, revegetation and remediation of other environmental impacts, as well as social and economic rehabilitation of affected communities and

employees. A monitoring program was also put in place to assist with mine closure, that to regulated the process. After the implementation of closure activities, the proponents had to apply for abdication. Site assessments also had to take place to complete the plan acceptance procedures (Kabir, Rabbi, Choudhury & Akbar, 2015).

It was said that Canada had well documented legal provisions for mine closure which was more detailed and comprehensive than other countries. For example, in the province of Saskatchewan a process was established under its Reclaimed Industrial Sites Act to provide an approach for long term care and monitoring following mine closure (Castrilli, 2007). Manitoba again had separate regulations for mine closure processes. In Ontario progressive rehabilitation throughout the life of a mine was in force and became a requirement from 1991 (Kabir et al., 2015). Further to this community participation in Canada during the planning and implementation of mine closure was a requirement and considered an important part for mine closure to be successful (Cowan, Mackasey & Robertson, 2010).

Furthermore, to mine closure, directors and officers of mining corporations could be held personally accountable for any negligent actions that led to damage to the environment (Cowan et al., 2010). The Canadian Government was specific when they setup the legal requirements for mining companies. Mining companies had to set aside resources and/or funds to be used for mine closure, reclamation and rehabilitation (Castrilli, 2007).

2.2.2.4 Mining in Australia:

Specific mine closure-related obligations in most Australian jurisdictions involve mine closure planning as part of the mining approval process. These obligations arose through key approval regimes (particularly those pursuant to environment, planning and mining-related legislation) and set a minimum industry standard for closure, which had to be planned for and evidenced before approvals could be obtained. Regulators were generally provided with significant enforcement powers over these commitments, which may also link to financial securities (Kabir et al., 2015).

It was said that there could be many reasons as to the premature closure of mines. Approximately 70% of the mines in Australia closed in the past 25 years, of which most were unexpected closures. Below par mine closures (such as orphaned and abandoned) mines were problematic inheritances

for communities, Governments and mineral companies that ultimately, tarnished the mining industry in Australia. Thus, mining companies reputations to follow effective closure processes and satisfactory mine relinquishment became critical to the company's ability to acquire approval for new mining projects (Laurence, 2002).

All the states and Northern Regions in Australia developed and drafted mine closure legislation. Environmental Acts provided regulatory procedures. For example, the Mine Health and Safety Act 2002, the Environmental Planning and Assessment Regulation of 2008, and the Water Management Act of 2000 in Northern Territory. Full strategies for mine closure was available in each of the States except the Northern Territory and New South Wales.

In Australia it was a requirement that any proposal submitted for approval for mine closure had to include a mine closure plan. The steps for a mine closure plan included: standard information, closure issues identification, closure impacts, closure supervision policies (including strategies to address the closure impacts), improvement of closure principles and the monitoring of plans. Guideline inputs were also required to make the mine closure process as successful as possible. After the submission of the mine closure plan, the plan had to be reviewed by the Environmental Protection Agencies (EPA's) in its entirety. These EPA's had to look for sufficiency and reliability of the information provided in these mining plans. Legal provisions were documented for mine closures in Australia. The idea was for Government to constantly evaluate and update these guidelines where possible. In addition, sufficient and efficient legislation and guidelines for mine closure specified the legal requirements of mine closure, improved confidence and decreased delays for groups as they became aware of the requirements and opportunities to be met in advance (Jones, 2008).

Mining land in Australia was returned to the owner or the State after rehabilitation. Site valuations were required in West Australia prior to acceptance of this land. The inspection was geared to the terms and conditions of the permit. There was also sign-off by the Minister for Mines (or the Minister of Stage Agreement Acts) and the Minister for Land and possibly the Minister for Environment (if bonds were required by under Environmental Protection Act) required. However, the abdication process varied across States in Australia in terms of closure criteria, against which the inspection was undertaken, the release of land by the mining companies and the issuance of certificate for abdication by the relevant agency.

Administrative and legal mechanisms were accessible to all State agencies in Australia and was seen as additional performance guarantee bond systems. The bond systems were established to enforce rehabilitation requirements across Australia. Performance bonds were monetary guarantees to perform a required standard of post-mining rehabilitation. In most cases in Australia, the submission of an environmental bond was a prerequisite for the issuing of a mining lease. In addition, there were other financial assurances, for example; rehabilitation funds introduced in Western Australia (Sommer & Gardener, 2012). However, the determination of cost in terms of rate and calculation varied across the States based on policies adopted by the state governments (Miller, 2005).

Canada and Australia demanded difficult mine closure processes, and this included the development of closure plans before mining commenced. Both nations established legislation that outlined the requirements of mine closure. Mine closure laws emerged within the mining sector or via specific environmental legislation that were relevant to the mining sector. Furthermore, guidelines for mine closure was available in both Canada and Australia, particularly in each of the mineral resource rich provinces or States and Regions (Kabir et al., 2015). The revised closure plans indicated that both countries designed broadminded closure strategies. This enabled the minimizing of closure costs in the future. Mine closure plans were the fundamental part of the entire development (Sommer & Gardener, 2012).

Mine closure had substantial environmental and social effects on local communities and the employees of the mining project. Deliberations of social issues were found inadequate in practice in both Canada and Australia. Mine closure plans were still more focused on revegetation and geophysical aspects rather than social and community needs relating to income, displacement, social cohesion, and the re-establishment of cultural connections and heritage (Rolfe, Ivanova & Lockie, 2006).

2.3 The South African Experience:

2.3.1 Mines and South African Legislations

Despite South Africa being rich in minerals, mine closure had an important impact on the economy (World Bank, 2012). In South Africa gold mine closure planning was not considered in the initial stages of mining (Beavon, 2004). This meant that all gold mine closure plans had to be responsive

and, thus, probably unreliable, particularly from the viewpoint of provision of financial resources for rehabilitation (Willis Limited, 2014). In South Africa, most communities remained dispossessed and overlooked when it came to mine closure. This meant that local communities were usually not consulted about the impacts of mine closure and what they as a community could do to assist the South African Government in managing mine closure. That said, these were similar problems associated with mine closure internationally (Palmer, et al., 2006).

Further attention was given to South African regulatory guidelines to assist when it came to mine closure.

2.3.1.1 The Mineral and Petroleum Resources Development Act No. 28 of 2002

The Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) or MPRDA stated that mining companies and/or owners should draft Environmental Management Plans (EMPs) that had to be pre-approved by various government departments before mining could commence. The Environmental Management Plan (EMP) included the restoration of mines after closure, and declarations given as to how the environmental impact would be managed and how mine closure costs or post mining would be handled (Van Eeden, 2010). Section 41 of the MPRDA stated: “*the polluter pays principal and required applicants of prospecting or mining rights had to make financial provisions for the rehabilitation or management of negative environmental impacts*” (Department of Mineral Resources (DMR) 2002).

Regulation 56 of the MPRDA regulations prescribed the principles for mine closure as: “*the owner of the mining right or mining authorization had to guarantee the closure of mining operations, an amalgamated method which had to start at the inauguration of the operation and continue through the life of the mine operation*”. Ecological effects had to be measured and achieved; this meant that all the essential information had to be gathered through the entire mining operation and driven by a system that ensured all the relevant rules and regulations were adhered to as required by the authorities (Ratshibvumo, 2016).

The MPRDA (Act No. 28 of 2002) was responsible for the publishing of guidelines that assisted the Act and placed legal onuses on the holder of the mining rights. The MPRDA outlined the requirements and procedures for mine closure, and introduced the risk-based-approach to mine

closure. The philosophy behind the approach was to apply caution when it came to mine closure. This approach relied on broad information being gathered and the methodical elimination of risk factors that ensured acceptable end-state for mining environments. The risk-based- approach was considered to be a water tight plan or approach due to the technicalities investigated when it came to mine closure (Weiersbye & Sutton, 2007).

The MPRDA was a revolution in the mining sector. This Act applied the cradle-to-grave approach which meant that consideration was given to social, environmental and economic expenditures to achieve maintainable growth in the industry of mining. In the preamble to the MPRDA certain responsibilities were confirmed such as the Government had certain obligations to protect the environment, ensure ecologically sustainable development and had to protect economic development.

Section 37 of the MPRDA confirmed that it recognized the principles of section 2 of NEMA (Act No. 107 of 1998) this meant that these two acts were synced with one-another. Section 38 of the MRDPA focused on the incorporated environmental management systems and the responsibility to rehabilitate after mine closure. Section 38(2) made provisions that kept the directors of registered companies and members of closed corporations accountable for any impairments, deprivation or contamination caused by these entities (Swart, 2003).

Section 39 of MPRDA stipulated that an EIA (Environmental Impact Assessments) and EMP (Environmental Management Plan) had to be undertaken by the applicant that assisted with identifying, mitigating and managing of environmental impacts that originated from the mine closures and decommissioning and rehabilitation after mine closure. Section 40 made provisions for in-consultation decision-making for Government Departments. The reason for this was to keep the government actively involved with mine closures and decommissioning. Section 41 focused on the financial provisions that had to be made regarding environmental damage caused. All costs were normally itemized which meant the bills would be settled a lot faster. Looking at the last Acts discussed it was important to apply the reasonable person test meaning that should Section 38 – 41 be fulfilled, Section 43 provided that a closure certificate could be issued for mine closure. This was never the case as the correct process was never followed (Swart, 2003). With mine

rehabilitation, Section 44 made provision for buildings and/or structures to be removed for this mentioned rehabilitation to take effect.

2.3.1.2 National Water Act No. 36 of 1998 and National Environmental Management Act No. 107 of 1998

Both the National Water Act and National Environmental Management Acts allowed for the recovery of expenses (proportionately) from any person who deviated from the procedures that were agreed upon. Both Acts allowed for accountability to be assigned to those from whom expenses were recovered (Van Eeden et al., 2009). Unlike the National Water Act, the National Environment Management Act criminalized any illegal, deliberate or careless omission or commission that caused substantial contamination or collapse of the environment.

If there was non-compliance with the set off rules seen under Section 28(14) NEMA this could have led to – *“1 year’s incarceration or R 1 million fine that would have been the maximum charge that could be held against the guilty party”*. A plaintiff could institute a common law pollution claim against a mine within 3 years after mine closure based on any of the following: (a) The infringement of the right of owners use and enjoyment of the property; (b) damage to a person and (c) damage to property rights (Swart, 2003), Expenses (that had to be realistic) could afterwards be recovered (National Water No Act 36 of 1998). For example, in the case of the National Water Act, costs would have been recovered from any person who negligently prevented the activities and processes from being performed (National Water Act No. 36 of 1998).

2.3.1.3 National Environment Management Act No. 107 of 1998

NEMA’s focus was to systematize procedures. This meant submissions, processing and considerations of applications for environmental authorization. The idea behind the systematic procedures were to avoid the impact on the environment, manage and mitigate any problematic areas and enhance positive environmental impacts within the mining sector. NEMA empowered individuals and communities affected by mine closure. NEMA provided for private prosecutions and criminal proceedings in section 33 and 34 respectively. If the person responsible failed to take

sensible steps, the regulatory authority needed to address these issues and resolve them as far as possible.

NEMA promulgated a set of 18 environmental principles that guided administrative and court decisions in the field of environmental management. Section 2(4)(a) of NEMA required that sustainable development considered all aspects such as disruption of ecosystems, the loss of genetic variations, contaminations and deprivation of the environment, and the disruption of sceneries and places. Under section 34 of NEMA, parties found guilty of a crime under an Act listed in Schedule 3 (which included the National Water Act No. 36 of 1998) could be prosecuted or held accountable for the damage caused.

Courts could determine the sum of the losses and damages caused. Damages and compensation were awarded equally to the sum of the extent in addition to other liabilities such as the restoration of the environment at own cost and took steps that ensured damages would not occur again. Court expenses could also be claimed from the guilty party. Parties in these actions relied on common law remedies, with those presented in terms of the law of delictual accountability and the law of damages. As the MPRDA also stipulated, in Section 38(1)(d) *“that the owner of the mining license had to take accountability for the recovery of the environment affected by mining to its natural state or to conform with the principle of maintainable growth as far as sensible practicable.* Thus, under the MPRDA and NEMA, accountability was extended to the directors of the mining company in their individual capacity (see MPRDA Section 38(2) and NEMA Section 34(7)) (Murombo, 2013). Most importantly, even after a closure certificate was granted by the DME (Department of Energy), the requirements of other laws, such as the NEMA and the NWA, could still have prevailed in the event of undisclosed or future environmental damage (Bohdan, De Vivo & Davies, 2014).

2.3.1.4 The Broad Based Black Economic Empowerment Act No. 3 of 2007

Broad Based Black Economic Empowerment exacerbated the difficulty of the mine closure (Durand, 2012). There was a trend in the gold mining industry for larger, often listed mining companies, to sell their less profitable or financially marginal operations (Rungan, et al., 2005). Within the context of B-BBEE this meant that they were often selling to smaller B-BBEE mining companies who worked the marginal deposits but usually lacked the money to rehabilitate the

mines that were in use (Feris & Kotze, 2014). In addition, much of the focus on B-BBEE in the mining sector had been on ownership as an element (Kohler, 2004). This led to the rise of narrowed B-BBEE and entrepreneurship that enriched a well-connected few, rather than empowered workforces and marginalized mine societies (Leon, 2012). Transformation in mining was an initiative that should have been undertaken with sufficient caution, and not to drive away foreign investor's particularly those who invested in developing operations in South Africa. The B-BBEE concerns were a controversial subject in South Africa, and was deliberated as if South Africa was to fully shed all the vestiges of its apartheid's past (Kohler, 2004).

Without a reputable, lawful plan for mine closure, mining corporations disregarded their responsibilities and potential future obligations (Hilson & Murck, 2000). The absence of an all-inclusive legal plan led to deficiencies and confusion within the South African authorities. Unless the lines of authority and responsibility weren't clearly indicated and correctly monitored, mine closure would never succeed in South Africa (Milaras, 2015). For mine closure to succeed, communities had to participate and give Government the backing to successfully close mines within their provinces and municipalities (Van Tonder, Coetzee, Esterhuyse, Msezane, Strachan, Wade & Mudua 2008).

The mining industry faced many labour-related obstacles and challenges such as load shedding that triggered a large loss in profits and also resulted in increased expenses for maintaining mining sites after mine closure or decommissioning (Anon, 2007).

2.3.2 Legal History of Gold Mining in South Africa

South Africa's mineral resources were nationally recognized for the supply of commodity resources (Dale, 1979). Since minerals were discovered in South Africa, the Government struggled to regulate mining activities, with the idea to change some of the effects of mine closure and decommissioning within the mining industry (Van der Schyff, 2012). The mining of gold was, however, extremely costly and difficult due to the deep-levels at which the ore lay. This involved deep level mining that required expensive extraction technologies and generated lots of waste and pollution (Innes, 1977). Government did not, however, manage environmental impacts and most mines did not openly mitigate environmental problems (Viljoen, 2009). Without doubt some mines

exploited the position of Government in mining as this enabled the externalization of some of their costs, not least of which was Acid Mine Drainage (AMD) (Sampson, 2008).

This changed post-1994, with the focus on environmental rights due to the adoption of a new Constitution that contained environmental rights (Humby, 2015). A number of laws were promulgated and mining developments were now controlled by the South African Government via a permit system (Humby, 2015). But there was poor implementation of managing mine closure including insufficient specificity in legislation; inter-departmental disagreements regarding primary enforcement responsibility; as well as a shortage of sufficiently qualified Government officials. Within the mining industry, mining companies balanced profits against health and safety records (Palmer, et al., 2006). This meant environmental issues tended to be sidelined, a situation made worse by the fact that the industry also struggled to retain critical skills, a big problem when it came to mine closure (Laurence, 2002). Thus, in the late 2000's the idea was implemented to converge legislative, judicial and political systems to a single environmental system (Seggie, 2015). This was designed to address issues of poor enforcement of environmental law (Adler, et al., 2007).

2.4 Conclusion

South Africa was an evolving country that could have learnt a lot from Chile with respect to mine closure guidelines and principles, as well as decommissioning and rehabilitation phases. The South African Governments' involvement on a day-to-day basis was very important as the whole process started with them allocating licenses to the mines. Mining companies involved with mine closure in South Africa had to draw up Environmental Assessment Plans and provide the government with these plans, wherein they confirmed that the property where mining took place was to be handed back in the state received (Sellers & Vogel, 2015). Companies had to give financial guarantees which could be anything from 20% additional to the project cost that assured they delivered on all their assurances granted. Mines also had to consider the local surrounding communities and the effect of mine closure on these communities.

A lot could be learned from countries such as Australia, Canada, Chile and East Asia about how to apply the correct guidelines, principles or legislation when it came to mine closure. If the South African Government followed the same proactive approach like the above-mentioned countries,

more could be done to assure that mines when closed will be given back in the same condition as received with the opening of the mine.

With financial guarantees given and surrounding communities warned about the mine closure possibilities the mining companies, stakeholders and government could have coincided with one another assuring no damage was caused to either party involved. This could lead the way to mines in South Africa being properly closed. In the simplest form explained mine closure objectives aimed to return land as closely as possible to its pre-mining conditions. While this was extremely important and ecologically optimal, there seemed to be a less placed emphasis on the socio-economic aspects of mine closure and the impact on people because the individuals focus was channeled and shaped by the 'green agenda'. The most effective way to resolve issues and to assure the polluter pays principle was applied, was to at the start of the project secure an agreement with mine management and further develop a project plan that would focus on rigorous sustainable development to optimize social, environmental and economic benefits.

Chapter 3: Methodology

3.1 Introduction

In the previous Chapter, the literature review, focussed on the implementation of mining legislation in South Africa and at international level. The literature review explored legislation such as the National Environmental Management Act (No. 107 of 1998), the Company Act (No. 71 of 2008), Mineral and Petroleum Resources Development Act (No. 28 of 2002) and Broad Based Black Economic Empowerment Act (No. 3 of 2007). Chapter 2 further gave a brief explanation of the legal history of gold mining in South Africa. The international legal context for mine closure and the effects for mine closure was also discussed for Chile, Far East Asia, Australia and Canada and the comparisons made, to the current South African legislation and mining environment.

In this case study, a comprehensive legal review was done on the legislation that played an important role in the mining industry of South Africa. The legal review was done to establish what the impacts were on mine closure and forced mine closure due to liquidation in the said sites in the case study. Significantly, this outlined how the legal reviews were conducted on the current mining legislation in South Africa. The legal review was done with a primary goal in mind, namely to establish if the legislation - read in conjunction with one another - overlapped and supported one another. Further to this, the legal review was undertaken to establish if there was any gaps and/or misunderstandings in the legislation that needed to be addressed or if the Acts should be re promulgated for the mining environment to have clarity.

3.2 Research Design

The methodology and research design for this study was based on case study research. More specific descriptive, explanatory and qualitative research frameworks. The purpose of the case study research was to establish a framework for discussion through the investigation of current legislation (NEMA, MPRDA, NWA, Companies Act and B-BBEE Act), past academic research, past studies and through conducting in-depth interviews with respondents that dealt with the two mine sites Grootvlei and Blyvooruitzicht to draw relevant conclusions. The case study research was defined by Yin (2011) “*as an empirical inquiry that investigates a contemporary phenomenon within its real-life context: when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used.*” The case study research allowed for

an investigation to retain the holistic and meaningful characteristics of real life events (Yin, 1983). The case study research was acknowledged as being able to make accurate findings, interpretations and assessments and drawn more deliberated and clear conclusions (Zucker, 2001).

The case study approach focussed on two research designs namely the single-case or multiple-case design. The multiple-case design suited this dissertation best. The reason was that the multiple-case design adopted with real life events such as Grootvlei and Blyvooruitzicht mine sites under study. The multiple-case design showed numerous sources of evidence through replication rather than sampling logic. The generalisation of results from case studies either through single or multiple designs stemmed on theory rather than on populations. This assisted the case study research with confidence and its level of robustness (Yin, 1994).

With this case study approach, there were certain advantages and certain disadvantages. Some of the advantages were: i) the examination of data was most often conducted within the context of its use; ii) a lot of data or information on specific topics could be gathered and analysed iii) The information gathered was generally of greater complexity and value to the researcher compared to other research designs; iv) allowed for data to be qualitatively analysed and v) the qualitative analyses produced in case studies that assisted to explore or describe the data complexities in real-life environment, not captured in previous research studies. Some of the disadvantages to the case study approach were i) that it was problematic to conclude cause-effect; ii) it was normally hard to generalise from specific cases; iii) credible prejudices in the information gathering and clarification process due to individuals being influenced; iv) the case study approach was seen as too long, difficult to conduct and produced a massive amount of documentation and v) data was not managed and systematically organized (Yin, 1984).

3.3 Methodology: A case study approach

The case study approach allowed for the examination of data within a specific context by the researcher. This meant that specific geographical areas such as Grootvlei and Blyvooruitzicht mine sites were selected to be the study sites for the dissertation under study. Further to this a limited number of individuals / respondents were selected for in-depth interviews to gather more detail of the real-life environment on both mining sites under study. The case study approach allowed for the exploration and understanding of complex issues through the review of past research studies,

articles, journals and case law. The case study approach also allowed for a legal review to be conducted that provided a clearer understanding of the National Environmental Management Act (No. 107 of 1998), the Company Act (No. 71 of 2008), Insolvency Act (No. 24 of 1936), Mineral and Petroleum Resources Development Act (No. 28 of 2002) and Broad Based Black Economic Empowerment Act (No. 3 of 2007).

With the case study approach and the inclusion of quantitative and qualitative data, this assisted with the explanation of processes and outcomes through complete observation, reconstruction and analysis of both study sites under investigation (Tellis, 1997) For this dissertation the focus was shifted to qualitative data or the more relevant term used in research studies qualitative research. Qualitative research was defined as “*explanatory research, used to gain an understanding of underlying reasons, opinions and motivations*”. Qualitative research was used to uncover trends in thought, opinions and dove deeper in to the problem. The qualitative research had certain methods in collecting information and one of these methods were through in-depth interviews. Relevant to this dissertation due to data being collected through in-depth interviews with individuals / respondents that dealt with both mining sites directly or indirectly.

With the qualitative research method that formed part of the case study approach, this method posed certain advantageous and disadvantageous. The advantageous were i) that the data collected presented more detail and opportunities that assisted during the examination process; ii) Research frameworks were fluid based on incoming or available data; iii) the data collected had a predictive quality to it; iv) data complexities could be incorporated into generated conclusions; v) created industry-specific insights into the data collected and vii) allowed for smaller sample sizes that saved on costs. The disadvantageous of the qualitative research approach were: i) quality of the data collected was subjective; ii) data rigidity was difficult to assess and demonstrate; iii) data collected was time consuming; iv) created findings that were difficult to present; v) data not collected disappeared during the data collection process and vi) if the researcher was not familiar with the subject matter, inaccurate data would be collected. The advantages and disadvantages of the qualitative research approach made it possible to gather and analyse data on deeper levels. This also assisted in gaining more insights into consumer thoughts, demographic behavioural patterns and emotional reasoning processes.

The case study approach allowed for several categories of case study frameworks such as exploratory and descriptive case study frameworks. For this dissertation the focus was specifically on descriptive and explanatory case study frameworks (McDonough & McDonough, 2010). The descriptive case study framework described natural phenomena that occurred within the data collected, referring to both Grootvlei and Blyvooruitzicht mine sites under study. The explanatory case study framework examined the data collected closely both at surface and deep level that explained the phenomena in the data. With the descriptive, explanatory and qualitative frameworks for the case study approach used established i) how Company Law, Environmental Law, Mining Law and Equity Law were applied in the mining industry; ii) the sequence of events that led to both mine sites (Grootvlei and Blyvooruitzicht) being provisionally liquidated and eventually forced to close; iii) identify the misalignment and gaps between the mining, environmental, equity and company law frameworks and iv) make recommendations as to how the governing legislation could be amended to address the gaps in the legislation and how this would remedy the current situation within the mining industry of South Africa and in both mining sites under study. The case study approach read together with all the relevant frameworks allowed the researcher to timeously review media reports, research articles, Journals, Court Judgments and relevant legislation to draft in-depth interviews questions that were posed to selected individuals / respondent in this dissertation

This case study was undertaken in three parts: Firstly, the investigation of legislation had to be done, secondly in-depth interviews were conducted with selected interviewees that were specialists in their fields and thirdly media reports, research articles, Journals, Court Judgments were reviewed at surface and a deeper level creating a better understanding of the current situation at both Grootvlei and Blyvooruitzicht mines and the South African mining industry overall.

3.3.1. The legal review

Firstly, a legal review was undertaken.

Legal was a term used to describe matters that related to law and a term used to describe the formal assessment of something with the intention of instituting change if necessary. A legal review was the development, modification, refinement or construction of add-ons to something such as an idea, regulation, or something written with the intention to commence a key amendment of the

Constitution. Legislation consisted of laws and Acts promulgated by the South African Parliament that governed the Republic of South Africa from a legislative view. Legislation was broken down into Acts and supplementary legislation. There were 'golden rules' associated with the review of legislation. These were: 1) legislation must be read as a unit, and 2) legislation must be understood in a manner that gave effect to the resolution or objective of the Act. Understanding the resolution may be assisted by the long title (in an Act) and provisions (if any) that set out the resolution or objects. 3) Legislation must be read gradually, judiciously and systematically if the reader was to understand the legislation (Clark & Connolly, 2006).

The purpose of a legal review was to seek answers to questions posed and to make final findings after reviewing the legislation. The review process involved becoming acquainted with the introduction of the Act. The contents page should then be referred to as this offers the reader insight into how the Act was structured. A well-defined and structured Act was easy to read. By perusing the table of contents, the reader should have gained a better understanding or a broader idea of what the Act was about. Modern Acts were divided into fragments with fragments being divided, if need be, into Divisions and Divisions, if need be, were divided into Subdivisions. Acts were normally numbered and had a diminutive explanation of the topic concerned in the title. Separating an Act into fragments permitted sections to be clustered according to their themes (The South African Constitution, Act No. 108 of 1996).

During the review it was imperative to refer to the introductions and resolution sections as they could support the intent of the Act. Thus, when deciding between numerous reasonable clarifications, one should state the Act's resolution. In addition, when reviewing difficult statutes, one should be mindful of the mention of other statutes (Clark & Connolly, 2006).

These references led the reader too supplementary Acts that influenced the importance and functionality of the statute being analysed. It was also important to have a strong understanding of the aims and the fundamental facts of the legal problem, to determine which statutes would be applicable. Statutes appeared to be straightforward at first glance but upon further examination it may be that the section was technical, difficult to read and the understanding thereof limited (Wren & Wren, 1986). Finally, a legal review involved a comparison of all the legislation under review to identify discrepancies, contradictions and limitations between the various pieces of legislation. In particular, in this case study, this was: the National Environmental Management Act (No. 107

of 1998), the Company Act (No. 71 of 2008), Insolvency Act (No. 24 of 1936), Mineral and Petroleum Resources Development Act (No. 28 of 2002) and Broad Based Black Economic Empowerment Act (No. 3 of 2007).

With the Statutes being difficult to read, technical and the understanding thereof limited the author conducted the legal review to provide feedback on the gaps and/or misunderstandings within the relevant legislation from his own legal perspective. The author could conduct the legal review due to his legal background and completing a 4-year Bachelor of Law degree at the University of Pretoria. Further to this, it was also important to understand how a legal review would fit into or be linked to Environmental Sciences. As stated in the case study, the legal review was done to identify the gaps and/or misunderstandings these legislations could pose with one another within the mining sector if not understood or interpreted correctly. This meant that any gaps and/or misunderstandings between Environmental Sciences and environmental law, could undermine the sound environmental decision-making which could impact on the mining industry greatly. Environmental decision-making was governed by laws, regulations and policies informed by scientific evidence which coincided together, creating informative decision-making windows to form retrospective analyses to inform future regulations or participants to the mining industry.

3.3.2 In-depth interviews

An in-depth interview was a loosely structured or qualitative data collection method. Interviews created the possibility for the interviewer and the interviewee to discover added facts and change course if necessary. Further to this, the interviews were also applied as an independent study technique and was used as a multi process strategy, subject to the requirements of the study. With in-depth interviews it could be stated that there were certain advantages and disadvantages (Reddy, 2017).

The advantages of in-depth interviews were that they allowed the people interviewed to contribute their thoughts and honest views on specific topics. This resulted in the feedback obtained being accurate, correct and more current. The in-depth interviews provided for a better understanding of the participants and the data collected. This further meant that the data collected from the individuals could be processed and incorporated in this dissertation. The in-depth interviews

allowed for direct interaction with the people involved. A further advantage of in-depth interviews was that they could be flexible and cost effective in most cases. The disadvantages of in-depth interviews were seen as time consuming and the compiling of notes took longer than anticipated (Reddy, 2017). The in-depth interviews represented a small sample. In this case study a small number of interviews were conducted due to time constraints (Reddy, 2017).

The in-depth interviews were conducted according to certain procedures and processes. The one-on-one interviews were conducted with the individuals at the premises of their choice. The interviews were started with the interviewer explaining the outcome and purpose of the interview. The interviewee was then given the chance to introduce himself/herself to the interviewer that gave the interviewer a better understanding of what role they fulfilled within the mining sector. The interviewee was then given a chance to read the questions and acquaint themselves with these questions that assured they understood the questions, clearing any doubt the interviewees might have prior the interview starting. With the following of this standard process and structure, the interviewees had no objections to the questions posed and the interviews could proceed.

The questions were read to the individuals and they provided answers to the questions, and this was written down by the interviewer. During the interview process additional notes were made to clarify specific aspects on the questions posed. The notes made by the interviewer projected that the answers given were not clear and after the completion of the interview these areas were rephrased and re-asked to the interviewees. For this case study data was collected from individuals within the mining sector or from people who had dealt with the two mining sites directly. This was not an easy undertaking as the interviewees had to be sourced and different methods used to retrieve the data from the respondents. LinkedIn was one of the social media networks used to recruit individuals. Through the reading of books, journals and articles on Grootvlei and Blyvooruitzicht, lists were created with all the specialist names and surnames and searched using LinkedIn or Google as search tools. Company names and individual profiles found were contacted to set up meetings with the interviewees. In some cases, not all the interviewees whom agreed to be interviewed arrived for the interviews, some agreed to do telephonic interviews. Some individuals declined the interviews. After a long list of calls made, there were nine respondents who committed to the interviews and who gave their opinions based on the questions asked.

In-depth, one-on-one interviews were conducted with nine (9) stakeholders who included: SHEQ Managers, Environmental Control Officers, Environmental Lawyers, Environmental Specialists/Researchers, and B-BBEE Specialists. The interviewees' positionality (their relationship) to the mining industry had to be explained in more detail. The SHEQ Manager was responsible for safety, health environment and quality assurance for mining companies. He/she supervised and coordinated work systems on mine sites to meet the highest quality of standards that ensured working conditions from mining companies were favourable and safe. The Environmental Control Officers monitored compliance with construction related activities with the mining industry assuring that the conditions or requirements of the Environmental Authorisation (EA) and Environmental Management Programmes (EMP) were met and advised the parties involved, this included the Governmental Departments. The Environmental lawyers specialized in legal matters concerning the air, land and water. They lobbied for balanced regulations regarding pollution and materials handling, fought to protect biodiversity, agriculture and ecosystems and confronted issues of waste management within the mining industry.

The Environmental Specialist dealt with improving and enhancing the living conditions of the environment within the mining industry – alleviating pollution as well as other factors that impacted on the mining industry. B-BBEE specialists focussed on advising and strategy planning for mining companies to achieve the best possible score on the Codes of Good Practice and Mining Charter scorecard. The B-BBEE specialist primary aim was to investigate that all transformation deals concluded, were done in the interest of the public and that corruption did not form part of any deals concluded. The primary aim was to apply B-BBEE legislation to the benefit of the mining industry.

Apart from the in-depth interviews conducted with the nine (9) stakeholders, there were other civil society actors that needed mention in this dissertation and the roles they fulfilled when it came to mine closure issues in South Africa. The Centre for Environmental Rights (CER) had mining programmes that focussed on environmental management of mining in South Africa. The goal with their mining programmes were to promote environmental justice in the mining sectors, better environmental laws and assured the implementation of these mining laws. CER primary focus was

ensuring adequate assessment and mitigation of detrimental impacts within reasonable timeframes before mining and prospecting commenced.

The Foundation for Sustainable Development (FSD) was also seen as a stakeholder involved in mine closure issues. The FSD approach focussed on mobilizing resources – human, economic and natural – for sustainable, life changing initiatives. The FSD focussed on local and surrounding communities and the impacts and/or effects mine closure had on them. Further to this, the Benchmark Foundation was also key role players when it came to mine closure. The Benchmark Foundation believed that the mining sector had to engage the communities from inception date of the mines, to the mine closure stage. Over the years the Benchmark Foundation provided guides of what mining companies should do to enhance community engagement, by establishing a relationship between mining companies and effected communities. This assisted with the issues such as relocation of people, Environmental Impact Assessments, Social Impact Assessments and Economic Impact Assessments. The Benchmark Foundation established that through proactive engagement from mining companies with effected communities could have resolved the issues relating to the mining stage and closure stage within the mining industry of South Africa, for example i) waste, emissions and pollution problems; ii) lack of access to water resources; iii) Corporate social responsibility and iv) job losses. Follow up studies recommended to investigate the findings further.

Some of the interviewees that were interviewed were specialists within the environmental field and some even dealt with the two mine sites directly or indirectly daily. The interviewees were referred to as respondents one (1) to nine (9) in this thesis (see Table 3.1).

Table 3.1 Respondents Interviewed

Name:	Job description/Title:
Respondent 1	SHEQ Manager
Respondent 2	Environmental Specialist
Respondent 3	Environmental Specialist (PhD Graduate)
Respondent 4	Environmental Academic
Respondent 5	SHEQ Manager
Respondent 6	Surface water management specialist
Respondent 7	Environmental & Social Scientist
Respondent 8	Environmental Control Officer
Respondent 9	B-BBEE Specialists

The purpose of the in-depth interviews was to assist with the identification of discrepancies in legislation and the effects of this on forced liquidation within a mining context. The interrelationships between the various pieces of legislation were explored to make recommendations for changes to the legislation, as well as explore challenges relating to compliance and enforcement. This led to more insight to the problems in and around the gold mines in the Witwatersrand area. The legal review was in line with the call from Feris and Kotze (2014) as well as the trade union Solidarity, who have both indicated that there were several discrepancies between Company law, Environmental law, Mining Law and Equity law that needed to be addressed (through amendments to current legislation and practical use of management systems).

3.4 Ethics and Ethical Issues

This case study was undertaken to promote and assist the societies of South Africa and/or people outside its borders. Reliability and culpability was the primary aim during the collection of data and the writing of this case study. The rights and interests of specialists within their field and communities were protected. There were no ethical compromises during this case study. This case study was done based on the ethical clearance received by the Ethics Review Committee through

the University of South Africa. The ethics reference number issued to this case study was 2015/CAES/113 (see Appendix A). This case study refrained from any study that contravened the procedure on research integrity as drafted by the University of South Africa. This case study was written, and the relevant data collected in a responsible and case sensitive manner. This case study strived to reach the top probable level of excellence, integrity and quality that was aligned to the University of South Africa's policy standards.

All the rights and interests of the participants were respected and protected for this case study. There were no risks or benefits for the participants. The criteria for selecting participants were fair and reasonable that assured correct and accurate data was collected. The interview process and relevant procedures were explained to the interviewees in writing that assured they understood the completion of the interviews or questionnaires. The interview questions were available on request should the participants wanted to peruse through the questions to ascertain if they would be comfortable to complete the interview questions or sheets to the best of their ability. Interviewees or participants were satisfied with the location of the interview (Glasgow, 2002). No undue advantage was taken of any individuals in this case study and no participant or interviewee was abused as participant or interviewees.

No benefits were promised to the participants or interviewees. No incentives were given to the interviewees whom participated; the data was collected *Bona Fide*. Reasonable practical security measures were applied to ensure that records were stored in an area with limited access. Personal information was collected in adherence to the Protection of Personal Information Act No. 4 of 2013. Names of participants were kept anonymous. These interviews were done in good faith and in confidentiality to protect the participants' privacy. No interviews were done without the freely given, specific and informed consent of the interviewees.

The primary aim of the in-depth interviews was used to address the three main research questions as stated below in 3.6 and to form a consistency matrix based on the answers given by the respondents interviewed. The secondary aim was to establish if there were any specific requirements for the statutes in this case study with regards to forced mine closure within in context to liquidation. To establish clarity on the definitions which was not clear and explanatory. In addition, another aim was to establish if there were any limitations or contradictions with the legislation and if this affected compliance on the study sites. Lastly another aim was to establish

if any recommendations could be made to address the limitations or restrictions on the relevant legislation.

This all will be further explained in the paragraphs that follow:

3.5 Data Analysis

In this case study a qualitative analysis was done on the interviews conducted. The primary focus of the qualitative analysis was to analyse the data collected and to attract themes that would best support the case study. The qualitative analysis was seen as subjective. This meant that the data was viewed from a more personal viewpoint such as personal life experiences and personal opinions, that were found in the interviews conducted with the relevant respondents.

A desktop data analysis was then performed in two sections. The first section was a desktop analysis on the laws mentioned in the study and the second part of the desktop analysis was done on the interviews to understand if there was a similarity between the identified discrepancies in the laws and the answers provided in the interviews.

3.6 Research questions for this study were:

Research Questions 1,2 and 3 were constructed after reviewing the relevant literature and legislation such as Company Law, Environmental Law, Mining Law and Equity Law. The knowledge gained from reviewing the literature and legislation served as a guiding framework to construct the research questions to provide accurate data for this case study. The research questions addressed a variety of goals, categories and provided information that could confuse the research process. The Consistency Matrix was added to the research questions to provide consistency, logic and transparency to the research process and link the objectives, categories and research goals in a consistent and understanding manner.

Research Question 1:

What were the requirements of Company Law, Environmental Law, Mining Law and Equity Law with regards to forced mine closure?

Consistency Matrix for Research Question 1:

The definition of mine closure was investigated and explained to an extent where the definitions could be interpreted in the thesis on the sole basis of understanding these terminologies. Articles were studied, and relevant legislation reviewed. The requirements for mine closure within the context of liquidation could be found in the Companies Act, NEMA, the MPRDA and the NWA and incorporated into this case study. This formed the basis of the study and focused on the requirements in the context of mine closure. NEMA focused on the sustainable development and the setting of national standards and principles for integrated environmental management. This required Government and Organs of State to support and consult one-another.

In-depth interviews were conducted with specialists in the mining sector or specialists that dealt with Grootvlei and Blyvooruitzicht directly to grow a better understanding of what mine closure entailed and what the current legislative interpretation was on the mining sites or within the mining sector. The primary aims of the in-depth interviews were to identify if the legislation was followed and interpreted as planned by the South African Government and if sustainable development and successful rehabilitation was possible with the current state of the mines.

Research Question 2:

What were the limitations/contradictions (with respect to each other) of each of these laws that could hinder both compliance and enforcement thereof?

Consistency Matrix for Research Question 2:

A detailed review was performed on the mentioned legislation to identify limitations and/or contradictions originating from these legislations. This also included a qualitative analysis that was performed on the above-mentioned legislation. A qualitative analysis could be defined as: The collecting and analysing of evidence, accessible in print or available on the internet. The evaluation

of two or more similar alternatives, processes, products, qualifications, sets of data or systems where, paralleled to one-another, so that gaps in the legislations could be identified.

A qualitative analysis was done regarding the definitions of liquidation and mine closure. Relevant data was reviewed and investigated, that determined if there was any additional compliance and enforcement requirements subject to the various laws mentioned in the study and how these scenarios could intervene with one another. For the desktop analysis to have been successful certain tools had to be used to determine the outcome of the case study. Comparisons were made between the different Acts to identify and address the discrepancies. It was not to scrutinise the Acts for their limitations but to identify indifferences and to address them individually per act. Court cases were also reviewed as these cases provided practical and tangible scenarios that had already taken place or was still in the process.

During court cases, judgments were formed that lead to a precedent being set and followed. A standard became law, unless disallowed or altered by a higher court. A standard was important because it became the new law and could be used in upcoming rulings. Journals, website articles and newspaper articles were reviewed and studied of the two different study sites that confirmed the data in the case study.

Research Question 3:

How can Company Law, Environmental Law, Mining Law and Equity Law be amended to address limitations and contradictions that arisen from the mine closure scenarios?

Consistency Matrix for Research Question 3:

The legislation was scrutinised to a point where the discrepancies could be identified, and reasonable and effective amendments made to address the limitations and contradictions. Recommendations for the amendments and effective compliance to all applicable legislation were made.

It was also clear from the in-depth interviews that no persons interviewed had a very clear idea if there were any gaps in the legislation or if the legislation could be amended and implemented effectively. When asked what they would do to correct this issue within the mining sites or mining

sector the answers were generic to the questions, the law should be enforced and implemented to each mining site on its own merit as the current situations differ from one-another.

The focus of the interview process was to develop an understanding of the mentioned study sites. In this study and stated below in the interview schedule, the following list of interviews were posed to the respondents (See Table 3.2).

Table 3.2 Interview schedule

Question 1:

What do you know about Mine Closure in general?

Question 2:

Who do you think is the significant role players when it comes to Mine Closure?

Question 3:

Are you aware of what is currently happening on the Grootvlei / Blyvooruitzicht sites?

Question 4:

In your own opinion, what should the various Government Departments do when they look at mine closure?

Question 5:

Who do you think must carry the cost for decommissioning with mine sites and why?

Question 6:

Who should be held accountable or responsible for mine decommissioning?

Question 7:

What do you foresee happening in the future with regards to decommissioning of derelict and ownerless gold mines?

Question 8:

In your opinion, what went 'wrong' in the cases of Grootvlei / Blyvooruitzicht?

Question 9:

If you had taken over Grootvlei / Blyvooruitzicht how would you have handled the situation with respect to AMD and its costs/liabilities?

Question 10:

Who should be held accountable or responsible for the decommissioning or closure of Grootvlei / Blyvooruitzicht?

3.7 Reliability and Validity

In the case study, dependability and legitimacy of the research was of vital importance and there was strong focus to gather consistent results over a period of time while guaranteeing the correct

demonstration of facts (Healy & Perry, 2000). The information gathered was considered reliable as it was based on existing published legislation, existing textbooks and journals and in-depth interviews/discussions with specialists and individuals in the mining field. Consistency was the main focus of the study, and this, in the end, led to stable results and findings (Joppe, 2000).

A sample was chosen from the conducted interviews with the relevant specialists and individuals within the mining industry. The focus with these interviews were to eliminate misrepresentation and improve the accuracy of the findings. This meant that the conclusions formed was based on the interviews which were more simplified and accurate. As with reliability, emphasis was also placed on validity. This meant that construct rationality was applied, and this determined which data would be gathered and how it would be gathered. If the information's validity was accepted, this meant the measurement was accurate and it was measuring its intended target, and this would have a positive outcome.

In this study, the pattern was established, and the credibility confirmed. This meant using the qualitative approach. Reliability and validity was abstracted as honesty, thoroughness and excellence in qualitative patterns (Healy & Perry, 2000). The information was gathered from primary and secondary sources and confirmed as reliable and validated that assured the information was accurate and correct. Legislation was reviewed to conduct legal comparisons to address the current and future relevancy to the situations on the Gold mines. This was confirmed by relevant Acts mentioned in the research study. The in-depth interviews were reviewed, transcribed and validated to ensure that there were no discrepancies between the original facts and individual statements.

After the interviews took place, the completed questionnaires were transcribed to a readable source for it to be reviewed and analysed. With the interviews transcribed summaries were prepared for the interviewer to go over the questions answered that assured nothing was missed with the collection of data or the conducting of the interviews. The interview process was the start of the data analysis and seen as the cornerstone for data collection through the interviews conducted. The transcribing of the interviews allowed the researcher to familiarize himself with all aspects of the data. Only then preliminary coding of the data could start. This assisted the researcher to group the data collected together, according to themes and subthemes. The defining and the naming of the themes and subthemes lead to a unified study emerging.

3.8 Limitations

Access to both study sites were limited. Access to the two mine sites were limited due to special permission being required and not granted due to safety reasons. The closest access was the gates of the two mine sites as security mentioned the dangerous “Zama-Zama’s” (illegal miners) and the mining areas not being considered safe to access, this also included the surrounding areas and communities involved, due to the sensitivity of the mine closure matters and the politically connected being involved. The challenges faced with accessing both mine sites were already extensively covered in critical mining research and media in the past and this would not be new information. The challenges with both mine sites, included the accessing of data as well as physical access to the mine sites were information already known to all. This meant that academic studies and media write-ups served as alternative sources of information to collect the required information needed and to understand why it was difficult to access both mine sites. In addition, not all articles in the above-mentioned Acts were used and only a selected few were reviewed in detail to form a stronger legislative opinion for this case study. The reason for only a selected few being reviewed was due to time constraints.

Another limitation was the arranging for the in-depth interviews to take place with the relevant and selected few respondents. The interview process was delayed due to the selected few interviewees whom agreed to the interviews were difficult to get hold off or to setup meetings with them individually because of their daily work commitments. In some instances, telephonic interviews had to be conducted as the interviewees were only willing to agree to this option for the interview for the sole reason of protecting their identity. The completion of the interviews with the selected individuals at the mines or specialist in the environmental field was also a complex task to complete. More time had to be spent with the interviewees to explain what the interview questions entailed or meant, to understand the reason for the interview to take place. Mine closure due to liquidation and ownerless mines were very sensitive topics to discuss with the selected respondents whom agreed to conduct the interviews, making data collection restricted due to initially uncooperative individuals or the “danger” factor that needed to be considered with the conducting of the interviews.

3.9 Conclusion

This chapter defined the research methodology, as well as data collection, mechanisms and strategies used. This ensured the ethical standards, reliability and validity of the case study.

In Chapter 4 the focus will turn to the summarizing meaning of the findings of the literature review and analysis of legislative discrepancies within the study. Further to this Chapter a legal analysis would be done between the discussed legislation, that assured all the relevant gaps were identified and addressed and the recommendations made going forward, so that there were better understandings formed of the legislation. Further to this an analysis would be drawn out of the in-depth interviews conducted with the selected respondents to form a more concrete conclusion or opinion based on the status of the mining sector.

Chapter 4: Analysis of the legislation

4.1 Introduction

The objective of this chapter was to provide a detailed analysis of the current legislative framework for mine closure within the South African gold mining industry. In this chapter consideration was given to certain sections of the National Environmental Management Act No. 107 of 1998 (NEMA), the Mineral and Petroleum Resources Development (MPRDA) Act No. 28 of 2002, the National Water Act (NWA) No. 36 of 1998 and the Companies Act No. 55 of 1998. These Acts were considered key pieces of legislation governing the South African mining industry.

NEMA set out the means and processes for Integrated Environmental Management, whereas the MPRDA promoted responsible conduct in the mining sector and set out the norms regarding mine closure in the mining industry. The NWA ensured that the nation's water resources were safe, used effectively, preserved and well managed. The Companies Act focused on who was accountable for damages caused and to whom legal liabilities accrued. The interrelationships between these laws that governed the gold mining industry in South Africa were explored in this chapter. Further to this, the focus shifted to the role and responsibilities of the South African Government, as well as other and stakeholders involved with mine closure within the gold mining sector.

Historically mining had considerable impacts on the environment and economy and left South Africa with a negative economic, social and environmental legacy (Krause & Snyman, 2014). Prior to the implementation of the mining laws discussed in this chapter, it needed to be reiterated that the damage caused to the environment was usually due the use of irregular and un-monitored mining approaches, not applying reasonable pollution prevention measures or not having policies regarding remediation (Humby, 2014). More recently, mining companies avoided their responsibility to remediate or rehabilitate due to either: a lack of mining legislation; or the legislation not being clear on its requirements or not being enforced by the South African Government (Humby, 2015). This left South Africa with a mining legacy of bad long-term residual effects such as social, health and environmental problems (Humby, 2013).

4.2 Mine Closure versus Sustainable Development:

Mine closure was considered a process, not a discrete event and one that required best practice that ensured closure planning started at the commencement of mine viability. The design for mine closure involved the taking of cost-effective actions by all stakeholders involved to promote sustainable development for all non-operational, orphaned or abandoned sites. In this way appropriate mine closure led to mines becoming instruments for development beyond their own life through a process that minimized adverse impacts and maximized after use benefits (Stacey, Naude, Hermanus & Frankel, 2010). The biggest challenges that faced mine closure were the difficulty thereof and the site-specific nature of the process. In addition, mine closure requirements were seldom specified in detail. Further to this, mine closure was seen as a difficult process due to little or no information available on how to properly close a mine or why particular approaches should be favored over others (Fourie & Brent, 2006).

Mine closure was a complex process that required attention when it came to the management, legislative, judicial staffing and authorization functions of the closure process. Mine closure had notable consequences for social development in surrounding and host communities. The outcome of successful mine closure and sustainable development depended on i) the mine's investment in time, money and energy in dealing with the consequences of closure and ii) the reaction from the public. Further to this, the legal framework contributed significantly to the uncertainty of the closure process. For example, there was no uniform defined process for closure risk assessment or management, and no defined level of risk that the South African regulatory authorities were willing to accept (Stacey et al., 2010).

Therefore, it was important for mines to comply with the South African Constitution (specifically Section 24) and environmental legislation. Mines complied by conducting their operational and closure activities with due diligence and care for the rights of others. Adhering to the South African Constitution will lead to successful mine closure and the protection of the rights of others. Thus, it was important to define and explain sustainable development in more detail in order to understand the role the South African Constitution fulfilled, regarding mine closure and sustainable development in the mining industry in general (Swart, 2003).

4.3 Defining and explaining Sustainable Development

Sustainable Development was defined as “*a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional changes were all in harmony and enhanced both current and future potential to meet human needs and aspirations*”(UN, 1984). With Sustainable Development defined, it was clear that the end goal was to achieve a balance between environmental sustainability, economic sustainability and socio-political sustainability (Stacey et al., 2010). The ongoing pursuit of economic growth without consideration given to social and environmental impacts caused unsustainable development. In South Africa, the consequences of non-compliance and weak implementation of environmental management systems pertaining to sustainable development had severe consequences (Limpitlaw, 2004).

Based on this, it could be argued that environmental governance also included a social element, an aspiration towards establishing a society based on social justice. This was something clearly envisioned by the South African Constitution. Thus, Section 24 of the South African Constitution placed a duty on the South African Government to ensure sustainable development and the protection of the environment for both present and future generations. Section 24(b)(iii) of the Constitution stated “*that provision had to be made for legislative measures, that had to be implemented to ensure ecologically sustainable development and the use of natural resources*”. This provision in the South African Constitution brought South Africa up to par with what was required by international standards to link human rights, the environment and social development with one another (Milaras, 2015). This meant that ecologically sustainable development was a positive obligation on the Government. Thus, Organs of State made decisions that ensured protection of the environment (Nel & Du Plessis, 2004).

Sustainable development had to be built on three pillars i) sustainable utilization of natural resources; ii) the pursuit of equity in the use of allocation of natural resources and iii) the integration of environmental protection and economic development. When an environmental dispute arose three factors should have been given mutual consideration and a compromise found.

The biggest concern with the three-pillar approach, was that this led to short term economic or social concerns getting priority even if there were unfavorable impacts on the economy and society in the long-term (Feris, 2010). Thus, Judge Sachs provided the variation approach to the integration element of sustainable development in the judgement known as the *Fuel Retailers Association of Southern Africa v Director-General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province, and Others 2007 (6) SA 4 (CC)*. In this case, the integration element was fundamental to the concept of sustainable development. Thus, in terms of integration it was necessary to collect and disseminate environmental information and conduct environmental impact assessments to develop environmental considerations as part of the economic and development policies of the mining industry. This offered a principle for the resolution of the tensions between the need to protect the environment and the need for socio-economic development (Feris, 2010). Adhering to sustainable development encouraged mines to enhance mining resources by gradually changing the ways in which they were developed, how they used technologies and how mining legislation was applied. Importantly, an environmental management system was required.

It was important to understand the role of good environmental governance in achieving sustainable development. In this regard, governance of the environment was a function of public administration (Feris & Kotze, 2014). Environmental legislation could only be effective once the administrative functions were carried out by an administrative body which was the South African Government. Environmental governance adhered to the values of transparency, accountability, public participation in decision making and freedom of association. These values were seen as morally binding. In addition, with the implementation of environmental law there was an awareness of the need to advocate for environmental protection (Director: Mineral Development Gauteng Region v Save the Vaal Environment and Others, 1999).

The powers conferred to the Government was normally discretionary, with a wide range of legislative guidelines, norms and standards that needed to be followed. Should the Government's decision-making powers be exercised and aligned to the integrated development of the environment and aligned to the Constitution, sustainable development should be achieved pre- or post-mine closure and damage to the environment could be minimized or even avoided.

Environmental legislation, Environmental Impact Assessment (EIA) and Environmental Management Plans (EMP) all existed to guide and regulate government decision making. All seen as compliance tools to regulate, implement and regulate processes, policies and guidelines compliance to enable sustainable development.

However, environmental governance and environmental decisions were constantly challenged in court (Feris, 2010). For example, in the case of *BP Southern Africa (Pty) Ltd v MEC for Agriculture, Conservation, Environment and Land Affairs* 2004 (5) SA 124 (W) “*which concerned an application for the review and setting aside of a decision by the Gauteng Provincial Department of Agriculture, Conservation, Environment and Land Affairs to refuse the applicant's application for an authorization in terms of s 22(1) of the ECA to develop a filling station on one of its properties. The department had applied departmental guidelines which provided, inter alia, that new filling stations would not generally be approved if they were situated within a three-kilometer radius of an existing filling station. The court stated that the department in this case had been not only lawfully entitled, but had been duty-bound, to take its guidelines into consideration in arriving at a decision regarding the applicant's application.* The court found that ecologically sustainable development and the use of natural resources should be promoted jointly with justifiable economic and social development from government. The Department was obliged to develop an integrated Environmental Management Plan (EMP), taking into consideration the wider definition of environment, the principles of NEMA and consider socio-economic conditions.

In the case of the *Fuel Retailers Association of Southern Africa v Director-General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province, and Others* 2007 (6) SA 4 (CC) “*the applicant in this matter objected to an authorization that was granted by the Mpumalanga provincial environmental authorities for the establishment of a filling station in White River in Mpumalanga. The applicant argued that the Director-General in his decision to issue a record of decision in terms of section 21 of the Environment Conservation Act 73 of 1989 (ECA) had not considered socio-economic issues. The Director believed the "need and desirability" (in this case for a filling station in the area) had been considered during the rezoning application in terms of the Town-Planning and Townships Ordinance 15 of 1986 (T).*

This majority decision in the Constitutional Court set aside the decision of the environmental authorities of Mpumalanga for several reasons, including the failure of the department to consider socio-economic conditions. In this respect the Court argued that the *"nature and scope of the obligation to consider the impact of the proposed development on socio-economic conditions must be determined in the light of the concept of sustainable development and the principle of integration of socio-economic development and the protection of the environment"*. It was the Court's position that failure to consider socio-economic considerations amounted to a failure by the environmental authorities of Mpumalanga to make a decision that was grounded in sustainable development. The Court thus treated sustainable development as a checklist consisting of three elements. A failure by the decision-makers to consider each of these elements amounted in the Court's opinion to a failure to adhere to the dictates of the Constitution.

Good environmental governance and decision-making contributed to transparency and accountability within the mining industry and led to sustainable development if implemented strategically and timeously. Good environmental governance and decision making focussed on the substance of decisions made, processes and procedures followed and consultation with interested and affected parties when the time for mine closure arrives (Van Der Merwe, 2008).

In the following paragraphs the attention shifted to the mining legislation (the NWA, the MPRDA, NEMA and the Companies Act) all relevant legislation promulgated to assist the government to regulate and implement processes and policies within the mining industry to foresee non-compliance and unsustainable development.

4.4 The National Water Act No. 36 of 1998 (NWA)

A major concern in South Africa was sustainable water management and the cost associated with the prevention and remediation of water pollution (Vorster, 2011). The primary objective of the NWA was to safeguard, utilize, preserve and supervise the nation's water resources this included i) meeting the human need for water, ii) promoting rightful water access, iii) facilitating social and economic development and iv) reducing and/or avoiding pollution and degradation of the water resources (Swart, 2003). Section 19 of the NWA stated *"that this imposed a duty of care on the*

owner, responsible person or occupier of land on which a potentially polluting activity was taking place, to take all reasonable measures to prevent pollution from occurring, continuing or recurring”.

The NWA was the basis for water management at mines and this meant South Africa had a water management hierarchy. Thus, in terms of water management, the NWA was the over-riding piece of legislation. But although the NWA brought about major positive changes in the management of water resources in South Africa, it also made the South African Government the ultimate custodian of water resources. Thus, the South African Government had a duty to act with due diligence and care towards water resources. The Government should have used its powers to protect water sources and courses. But, this raised concerns about who was ultimately responsible for the rehabilitation of the water resources. If mining companies caused the pollution, rehabilitation was the responsibility of the mining companies and be held accountable for rehabilitation. It was seen as the duty of the Government to hold polluters accountable due to the Government being seen as the guardian of the environment (Swart, 2003). This included ensuring that the legislation was complied with, policies were followed, and water resources cared for. This then was what custodianship in terms of the NWA implied.

The NWA incorporated numerous principles laid down in both the Constitution and NEMA. It also brought the regulation of water in South Africa in line with the internationally accepted concept of resource protection rather than emission controls. In many ways, the NWA was world leading (De Wet & Sidu, 2013). When the NWA was first promulgated there were great expectations for this Act. With the implementation of the NWA certain problematic issues had to be dealt with, not limited to: the lack of the Department of Water and Sanitations’ (DWS) assistance on how to formalize existing lawful uses; out-of-date guidelines or guidelines that lacked sufficient information to assist both applicants and DWS officers; no specific minimum requirements for mines in terms of residue disposal; variability of policy interpretation between DWS regional offices and DWS head office; and different requirements for Environmental Management Plan Reports (EMPR) and Water Use Licenses (WUL) applications leading to unnecessary delays in getting the DWS’ approval for these licenses or plans to successfully proceed (Krause & Snyman, 2014).

With all of this to contend with, it was no wonder that the Department of Water and Sanitation (DWS) officers were struggling to grant new water license applications for mining operations or formalize existing operations. In addition, there were constantly moving goalposts which meant that supporting documentation often had to be revised and updated to satisfy all the relevant DWS Directorates. So, obtaining a Water Use License (WUL) was currently as critical (and time consuming) as the development of the Environmental Management Plan Report (EMPR). This added pressure on the mines to get their water management systems in order. In the past, it was difficult for mine environmental staff and their consultants to justify the necessary expenditure to mine management with respect to specialist investigations, ongoing monitoring and upgrades to water management systems. The lack of progress in some cases, resulted in threats of legal action from the DWS to speed up the process (Mogotsi, 2003). For mines to comply with this hierarchy they had to i) comply with all relevant legislation, ii) ensuring a life-cycle approach was followed with regards to water management, iii) ensuring that the cradle-to-grave approach was followed with regards to responsibility for mining waste streams and consequential impacts and lastly, iv) adopted a risk based approach to quantify the long-term impacts pertaining to water (Madalane, 2012).

With the NWA primary objectives discussed, the NWA incorporated the principles of the Constitution and NEMA within its guidelines as governing legislation that safeguarded, utilized, grown, preserved and supervised the nation's water resources. In the following paragraphs the attention will shift to NEMA that was seen as co-operative governance legislation that assured the Organs of State promoted sustainable development in the mining industry.

4.5 The National Environmental Management Act No. 107 of 1998 (NEMA)

NEMA's objectives were to provide co-operative, environmental governance through the establishment of principles that assisted with decision-making on matters that affected the environment, as well as promoted procedures to co-ordinate environmental functions exercised by Organs of State. NEMA also referred to sustainable development in the preamble of the act.

Section 2 of NEMA provided the outline and environmental management principles that if implemented would achieve sustainable development.

It also set out the national standards and norms for Integrated Environmental Management as a tool to protect the environment, serve the Constitution and to place people and their needs at the forefront of its concern. Integrated Environmental Management functions were seen as: (i) viewpoints concerned with finding the right balance between development and the environment; (ii) observing the actual and potential impact on the environment; (iii) ensuring that sufficient and appropriate public participation took place; and lastly (iv) clearly categorized models of environmental management that gave effect to the principles under Section 2 of NEMA.

For NEMA to succeed with its objectives to protect the environment from pollution and create a sustainable environment through integrated environmental management all social, economic and environmental factors had to be considered pre- and post-mine closure. The overall aim of NEMA was environmental protection (Feris, 2010). Within this context NEMA, aligned itself with Section 24 of the South African Constitution. This meant the collation and promulgation of regulations to clearly govern the mining industry and to prevent pollution and encouraged the preservation of the environment. Section 24 of the Constitution placed an obligation on everyone involved in the closure of mines within the mining sector to apply caution, due diligence and vigilance when it came to mine closure and mine site rehabilitation within the mining sector.

Section 28(1) of NEMA stated *“that every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorized by law or cannot reasonably be avoided or stopped, to minimize and rectify such pollution or degradation of the environment”*. This section of NEMA imposed a responsibility of upkeep and remediation of environmental damage on any person that caused pollution and deficiency to the environment.

Section 28(2) of NEMA stated *“without limiting the generality of the duty in subsection (1), the persons on whom subsection (1) imposes an obligation to take reasonable measures, include an owner of land or premises, a person in control of land or premises or a person who has a right to use the land or premises on which or in which—(a) any activity or process is or was performed or undertaken; or (b) any other situation exists, which causes, has caused or is likely to cause significant pollution or degradation of the environment”*. This section sanctioned the responsible

party such as the land owner, the person in control of the land or managed it, as well as the individual who had a right to use the land.

Section 28(3) of NEMA stated further “*the measures required in terms of subsection (1) may include measures to (a) investigate, assess and evaluate the impact on the environment; (b) inform and educate employees about the environmental risks of their work and the manner in which their tasks must be performed in order to avoid causing significant pollution or degradation of the environment; (c) cease, modify or control any act, activity or process causing the pollution or degradation; (d) contain or prevent the movement of pollutants or the effect of degradation; (e) eliminate any source of the pollution or degradation; or (f) remedy the effects of the pollution or degradation*”. This section of NEMA clearly provided for the assessment and evaluation of the environment that assured the necessary caution and vigilance were applied, to assure that no pollution or degradation of the environment occurred or recurred. This section of NEMA further provided the Government spheres with power to control, cease and modify any action or process that might cause pollution and degradation and also provided a relevant window period to remedy the effect of the pollution and degradation (Swart, 2003). This meant that the South African Government had the power to control pollution within the mining sector; all it needed to do was take a hands on approach.

Further to Section 28(3) of NEMA this was seen an explanatory approach to educate all parties involved in the mining sector, on environmental impacts of the activities and the methods used. Section 28(11) of NEMA further stated that “*If more than one person is liable under subsection (8) the liability must be apportioned among the persons concerned according to the degree to which each was responsible for the harm to the environment resulting from their respective failures to take the measures required under subsections (1) and (4)*”. In this section of NEMA the focus was the apportionment of liability. This meant that if there was more than one person linked or responsible for the damage caused to the environment, apportionment of the damage should be done on a case by case basis. Every case was assessed on its own merit. Once the extent of the damage was determined and who was responsible for the damage caused confirmed, only then would apportionment be made. Section 32 and 33 of the NEMA provided legal standing to enforce environmental laws and prosecution of the parties at fault. According to Section 8(2) of

the Constitution, parties meant natural persons (company directors) and juristic persons (mining companies) bound to the extent of their right.

Section 32 of NEMA stated: *“that any person or group of persons may seek appropriate relief in respect of any breach or threatened breach of any provision of this Act, including a principle contained in Chapter 1, or of any provision of a specific environmental management Act, or of any other statutory provision concerned with the protection of the environment or the use of natural resources”*. This section of NEMA focused on the legal standing to enforce environmental laws and private prosecution respectively that were in the interest of public interest or in the interest of protecting the environment. Section 33 of NEMA stated that *“any person may - (a) in the public interest; or (b) in the interest of the protection of the environment, institute and conduct a prosecution in respect of any breach or threatened breach of any duty, other than a public duty resting on an Organ of State, in any national or provincial legislation or municipal bylaw, or any regulation, license, permission or authorization issued in terms of such legislation, where that duty is concerned with the protection of the environment and the breach of that duty is an offence”* this section of NEMA enabled private prosecution of individuals or groups within the mining industry. Section 32 and 33 of NEMA provided a legal standing to enforce environmental laws, that should any damage be caused to the environment the parties not at fault could seek appropriate relief for the damage caused against the correct parties at fault.

NEMA could also be seen as a further controlling measure that assisted Organs of State and the Government (Swart, 2003). Section 34(7) of NEMA stated *“any person who is or was a director of a firm at the time of the commission by that firm of an offence under any provision listed in Schedule 3 shall himself or herself be guilty of the said offence and liable on conviction to the penalty specified in the relevant law, including an order under subsection (2), (3) and (4), if the offence in question resulted from the failure of the director to take all reasonable steps that were necessary under the circumstances to prevent the commission of the offence: Provided that proof of the said offence by the firm shall constitute prima facie evidence that the director is guilty under this subsection”*. This section specifically focused on the accountability of the executives within their personal capacity. This should be read together with the Companies Act that focused on the same liabilities.

The emphasis was placed on the overlapping of the two Acts as this excluded any loopholes when it came to who should be held accountable due to the damage caused. Under Section 34 of NEMA, if any director or mining company were suspected of an offence that, under the Act listed in Schedule 3 of NEMA, caused damage to the environment, the court had to determine the extent of the damage caused, and demand damages or compensation equal to that extent in addition to other punishment such as the rehabilitation of the environment and taking steps to ensure that such damage would not occur again.

NEMA was written with a broad framework and left to the specialists and the South African Government to add context to the application of the related environmental laws. Thus, the context and the practicality was considered to be important and not just the regulations (Ridl & Couzens, 2010). Thus, NEMA had certain outcomes in mind such as developing a framework that integrated good environmental management into activities. The primary aim of NEMA was to promote the decision-making capacity of the Organs of State when the environment was affected, meaning that the environmental legislation had to establish principles guiding the Organs of State to exercise their full function when it came to the affected environment. This included mine closure. Realistically the law should have established procedures and institutions to facilitate and promote co-operative government and intergovernmental relations which should be enforced by the South African Government.

Further to this NEMA was a regulating tool in the mining industry, to improve environmental impact assessment and current management through the regulation and implementation of Environmental Impact Assessments (EIA) and Environmental Management Plans (EMP). But, without the enforcement and implementation of NEMA as regulating tool, there would be no co-operative environmental governance regarding decision-making on matters that affected the environment. Additionally, without enforcement, the promotion of procedures to co-ordinate environmental functions in the mining industry would not materialize. If NEMA was not the governing and regulating tool, the mining industry would not achieve sustainable development. Without NEMA there would be no clear application of the law and principles guiding the South African Government or mining companies to adhere to Section 2 of NEMA and Section 24 of the South African Constitution coherently.

So, NEMA was a critical governing tool, that created/ensured thorough environmental management and ensured development considerations never overrides environmental protection. It also called for mines to take public participation into consideration (Ridl & Couzens, 2010).

Thus, there were no challenges associated with the regulations and principles promulgated in NEMA. Rather, the Act itself was not being properly implemented and managed by all mining stakeholders (South Durban Community Environmental Alliance (SDCEA) v Head of Department: Department of Agriculture and Environmental Affairs and Others 2003 (6) SA 631 (D)” 2005 SAJELP 151-171). Without enforced compliance with NEMA, public participation would not happen, no financial provisions would be made for mine closure and environmental risks not managed.

The function of NEMA was to focus on environmental issues and apply all the important and relevant principles throughout South Africa on matters that effected the environment. Further to this NEMA’s function was to ensure co-operative environmental governance and to establish principles for decision-making on matters effecting the environment. This meant that all spheres of Government and all Organs of State had to consult and support one another for sustainable development to succeed. NEMA also imposed a duty of care and remediation on the polluter such that who cause, has caused or may cause any damage to the environment would be held to account. So, NEMA provided for a legal standing that assisted with the enforcement of the environmental laws and also regulated the private prosecution process (Swart, 2003).

In terms of mine closure, NEMA provided a framework and principles to achieve sustainable development. NEMA also further set national norms and standards for integrated environmental management that ensured the South African Government and Government Departments consulted and co-operated with one-another ensuring successful mine closure. NEMA imposed a duty of care and remediation at pre- or post-mine closure on any person who had caused or would cause damage to the environment and ensuring rehabilitation takes effect. NEMA as an environmental regulatory framework provided a legal standing to enforce environmental laws and private prosecution on any polluter in the mining industry.

With NEMA discussed in detail, it was important to further shift the focus to the MPRDA as regulating legislation in the mining industry of South Africa. The MPRDA was a milestone in the transforming of the mining industry.

4.6 The Mineral and Petroleum Resources Development Act No. 28 of 2002 seen as the fundamental shift for mining governance

The MPRDA (Mineral and Petroleum Resources Development Act No. 28 of 2002) was an accelerative step in the evolution of legislation governing the mining industry in South Africa. Introducing the MPRDA into the mining industry led to a revolution in South Africa's mineral industry. The MPRDA provided for the cradle-to-grave approach for the mining industry. The objective was to adopt an ecological approach to determine the impacts of mining on the environment and to assist with the development and design of the rehabilitation process. This supported legal liabilities for the responsible party to rectify, remedy and compensate for any environmental damage or degradation caused. This approach also confirmed that the mining industry would be held liable for any damage or degradation caused by its activities throughout the life cycle of the mining operations until decommissioning and rehabilitation (Vorster, 2011). With this said, the primary aim of the MPRDA was to redress the historical inequalities and to give effect to Section 9 of the South African Constitution and make provision for equitable access to the mineral and petroleum resources.

With the introduction of the MPRDA the focus turned to the Government who was seen as obligated to (i) safeguard the environment for current and future generations and (ii) the upkeep of economic and sustainable development and (iii) ensure ecologically sustainable development. Section 37(2) of the MPRDA confirmed that it accepted the principles of Section 2 of NEMA and stated *“that any prospecting or mining operation must be conducted in accordance with generally accepted principles of sustainable development by integrating social, economic and environmental factors into the planning and implementation of prospecting and mining projects in order to assure the exploitation of mineral resources serves present and future generations”* Section 38(2) of MPRDA focused on the individual and joint liability of company directors for any unacceptable negative impact caused to the environment.

This included damage, pollution or degradation of the environment that occurred advertently or inadvertently. Section 38 of MPRDA stated that *“the directors of a company or members of a close corporation are jointly and severally liable; for any unacceptable negative impact on the environment, including damage, degradation or pollution; advertently or inadvertently caused by the company or close corporation which they represent or represented”* and this section of MPRDA had to be read in conjunction with the Companies Act No 61 of 1973 in terms of director’s liabilities.

Section 39(1) of the MPRDA stated *“that every person who has applied for a mining right in terms of Section 22 must conduct an Environmental Impact Assessment (EIA) and submit an Environmental Management Plan (EMP) within 180 days of the date on which he or she is notified by the regional manager to do so”*. This section primarily focused on the responsibility to implement impact assessments, environmental management programmes and environmental plans that identified, mitigated and managed the environmental impacts that originated from mining activities. This was further confirmed in Section 39(2) of the MPRDA which stated *“that any person who applies for permission, prospecting right or mining permit must submit an environmental management plan as prescribed”* this meant that for a mining permit to be approved an environmental management plan had to comply with the requirements of Section 39(3) of the MPRDA.

Further to this was custodianship. Prior to 1 May 2004, the mineral rights were vested in the land owners and could be held for as long as the land owner wished and not be forced to exploit this right. This position changed after 1 May 2004 as the MPRDA transferred mining rights to the South African Government. The objective of the MPRDA was to avoid discrimination and promote distribution of assets among historically disadvantaged groups. Section 40 of the MPRDA turned its focus to the Government Departments and Organs of State’s in terms of their participation and decision-making on national, provincial and local levels within the mining sector (Nicholas, 2013).

Section 41(1) to (5) of MPRDA stated that *“(1) An applicant for prospecting right, mining right or mining permit must before the Minister approves the Environmental Management Plan or Environment Management programme in terms of Section 39(4), make the prescribed financial provision for the rehabilitation or management of negative environmental impacts;*

(2) If the holder of the prospecting right, mining right or mining permit fails to rehabilitate or manage, or is unable to undertake such rehabilitation or to manage any negative impact on the environment, the Minister may upon written notice to such holder, use all or part of the financial provision contemplated in subsection (1) to rehabilitate or manage the negative environmental impact in question; (3) the holder of a prospecting right, mining right or mining permit must annually assess his or her environmental liability and increase his or her financial provision to the satisfaction of the Minister (4) If the minister is not satisfied with the assessment and financial provision contemplated in this section, the Minister may appoint an independent assessor to conduct the assessment and determine the financial provision and (5) the requirement to maintain and retain the financial provision remains in force until the Minister issues a certificate in terms of Section 43 to such holder, but the Minister may retain such portion of the financial provision as may be required to rehabilitate the closed mining or prospecting operation in respect of latent or residual environmental impacts.” This section of the MPRDA made monetary provision for the remediation of environmental damage caused. The process put in place and mandated by Section 41(1)-(5) provided for the South African Government to be actively involved. This process allowed for annual assessments to take place to assure that environmental liability was managed correctly, and that financial provision maintained to rehabilitate the mines after closure.

The term “mine closure” was used to define several aspects linked to the ending of mining activities and the shutting down of mines. Section 43 of the MPRDA was the most important provision as this section dealt with the issuing of a mine closure certificates and referred to the closure plan that was required. The environmental accountability, contamination or ecological deprivation remained the responsibility of the holder of the mining right until the issuing of the closure certificate. A mine closure certificate could be applied for and issued 180 days prior to the closure of a mine. An environmental risk report had to accompany the application that confirmed that all the risk areas had been eliminated and were correctly managed (Dixon, 2003). Further to the application submitted for assessment, the Department of Water and Sanitation had to confirm that the requirements affecting water pollution were addressed and the Chief Inspector (CI) confirmed the requirements for health and safety were addressed before a closure certificate could be issued in terms of Section 43(5) of MPRDA. Section 43(2) made provision and considered that there could be liability and responsibility transfer (as identified by the environmental management plan) from the original holder to a third party.

The MPRDA was gazetted as a mechanism to assist the Department of Mineral Resources and the South African Government to ensure that the holders of the mining rights were committed to the development of the communities and the environment. The South African Government had to manage these regulations to ensure that the holder of the mining right complied where required (Swart, 2003). The MPRDA was considered as the primary legal instrument that regulated the mining industry and aimed to uphold the sustainable development of the nation's mineral resources (Cawood & Minnitt, 1998). With this said, it had several weaknesses and discrepancies and was currently being reviewed. For example, it was not clearly articulated in the MPRDA as to how the communities in the mining regions should be empowered. The concept of promoting sustainable development at the level of the affected community gained interest over the past decade and a key question was how these efforts should be funded. Increasingly Government investigated allocating a portion of the monetary benefits that arise from a mine to effected surrounding communities (Coetzee, 2002).

The MPRDA function was to place an obligation on the Government to protect the environment, to ensure ecologically sustainable development and to promote economic and social development when it came to mine closure. The only way these requirements set out by the MPRDA could be met was by integrating social, economic and environmental factors into the planning, implementation, closure and post closure management of prospecting and mining operations. The MPRDA also considered the application of integrated environmental management and the responsibility to remedy. This meant that directors of companies (natural persons) and mining companies (juristic persons) could be held liable for any damage caused to the environment. The MPRDA was about the planning process where the correct objectives for mine closure were clearly stipulated and enough financial provision made for remediation of environmental damage when mine closure occurred. Further to this it could be said that the MPRDA had one specific end goal in mind and that was to issue the closure certificate after all principles and pre-requisites were met (Swart, 2003).

4.7 The Companies Act No. 55 of 1998

The primary objective of the Companies Act No. 55 of 1998 as stated in Section 7 of the Act: “*the purpose of this Act is to a) promote compliance with the Bill of Rights as provided for in the Constitution, in the application of company law; b) promote the development of the South African*

economy; c) promote innovation and investment in the South African markets; d) reaffirm the concept of the company as a means of achieving economic and social benefits; e) continue to provide for the creation and use of companies, in a manner that enhances the economic welfare of South Africa as a partner within the global economy; f) promote the development of companies within all sectors of the economy, and encourage active participation in economic organization, management and productivity; g) create optimum conditions for the aggregation of capital for productive purposes, and for the investment of that capital in enterprises and the spreading of economic risk; h) provide for the formation, operation and accountability of non-profit companies in a manner designed to promote, support and enhance the capacity of such companies to perform their functions; i) balance the rights and obligations of shareholders and directors within companies; j) encourage the efficient and responsible management of companies; k) provide for the efficient rescue and recovery of financially distressed companies, in a manner that balances the rights and interests of all relevant stakeholders; and l) provide a predictable and effective environment for the efficient regulation of companies.”

Further to this Section 22(1) of the Companies Act stated: *“a company must not carry on its business recklessly, with gross negligence, with the intent to defraud any person or for any fraudulent purpose.”* By ignoring the principles and guidelines of NEMA, the MPRDA and the Constitution, mining companies were conducting their business recklessly and in breach of the first part of Section 22(1) and this could be due to gross negligence or the intent to defraud any person. A mining company was normally managed by shareholders and directors and these shareholders and directors had certain rights and obligations towards companies and their responsibilities to manage and maintain an acceptable environment for the legal entity to function in (Krause & Snyman, 2014).

Should the shareholders or directors not fulfill these rights and obligations in the correct manner Sections 77(2) of the Companies Act stated that *“a director of a company may be held liable a) in accordance with the principles of the common law relating to breach of a fiduciary duty, for any loss, damages or costs sustained by the company as a consequence of any breach by the director of a duty contemplated in section 75, 76(2) or 76(3)(a) or (b); or b) in accordance with the principles of the common law relating to delict for any loss, damages or costs sustained by the company as a consequence of any breach by the director”*

Section 77(6) of the Companies Act stated *“that the liability of a person in terms of this section is joint and several with any other person who is or may be held liable for the same act”*. Thus, directors of a company were jointly and severally liable for any unacceptable negative impact on the environment, including damage, degradation or pollution advertently or inadvertently caused by the company they represent. This Section of the Companies Act created unlimited and strict liability on the part of directors of a company. On the face of it, anyone, including Government, in the context of residual liability after mine closure, would be able to proceed against a director of a mine, which may have been closed improperly or which had received a closure certificate, but impacts occur on the environment, notwithstanding all efforts taken to address them (Madalane, 2012).

Section 214(1)(b) of the Companies Act focused on the reckless conduct of a director and stated *“with a fraudulent purpose, knowingly provided false or misleading information in any circumstances in which this Act requires the person to provide information or give notice to another person”* When a director of a company willingly and knowingly breached any rules or legislation on the companies’ behalf, made the director guilty of an offence which was penalized by Section 216 of the Companies Act which stated further *“any person convicted of an offence in terms of this Act, is liable a) in the case of a contravention of section 213(1) or 214(1), to a fine or to imprisonment for a period not exceeding 10 years, or to both a fine and imprisonment; or b) in any other case, to a fine or to imprisonment for a period not exceeding 12 months, or to both a fine and imprisonment”*. This meant mining companies and their directors should be held liable for environmental damage caused. The damage caused could be penalized with either imprisonment or a fine that assured a portion of the funds for rehabilitation was collected.

It was important to also clarify what happened to mines where the mining companies or mining company’s directors/ shareholders did not admit guilt for environmental damages caused due to gross negligence, or the Mining Company liquidated, or directors sequestered or left the country? In this case Section 222 of the Companies Act was the best alternative, namely that liability would revert to Government. Section 222 of the Companies Act stated *“the state, the commission, the commissioner, the company’s tribunal, the panel and inspector or any state employee or similar person having duties to perform under this Act, were liable for any loss sustained by or damage caused to any person as a result of any bona fide act or omission relating to performance of any*

duty under this Act, unless gross negligence was provided". Thus, the Government needed to act against companies or directors to prevent the Government from having to shoulder the full burden.

The purpose of the Companies Act was to promote compliance and development with the Bill of Rights as provided for in the Constitution, with the application of company law. This meant that should any outcomes of Section 7 and its subsections be infringed or not adhered to by any mining company or directors of mining companies due to recklessness or negligence with mine closure and led to damage because of mine closure, accountability would remain with the parties at fault.

Thus, the Companies Act re-assured that any party that caused damage to the environment be held accountable for their actions and not just be shifted over to the South African Government without any consequences or punishment. Thus, directors of a company should be jointly and severally liable for any unacceptable negative impact on the environment, including damage, degradation or pollution advertently or inadvertently caused by the company they represent.

4.8 Legislative comparison between the NEMA, the NWA and the MPRDA

Although the MPRDA played a leading role in the mining sector, persons / companies / institutions had to comply with NEMA, the NWA and the Companies Act. This meant that any person / company / institution proven to have fallen foul of Section 19 of the NWA, Section 28 of NEMA and Section 38 of the MPRDA were then legally liable for damages or the negative impacts caused to the environment through their mining activities.

NEMA provided the framework and principles for sustainable development and set national norms and standards for Integrated Environmental Management (Section 24) where all spheres of Government and all Organs of State had to co-operate, consult and support one another (Coopers, 2012). Section 28(1) to (3) of NEMA stated "(1) *that every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorized by law or cannot reasonably be avoided or stopped, to minimize and rectify such pollution or degradation of the environment: (2) without limiting the generality of the duty in subsection (1), the persons on whom subsection (1) imposes an obligation to take reasonable measures, include an owner of land or premises, a person in control of land or premises or a person who has a right to use the land or premises on which or in which—(a) any*

activity or process is or was performed or undertaken; or (b) any other situation exists, which causes, has caused or is likely to cause significant pollution or degradation of the environment and (3) the measures required in terms of subsection (1) may include measures to (a) Investigate, assess and evaluate the impact on the environment; (b) inform and educate employees about the environmental risks of their work and the manner in which their tasks must be performed in order to avoid causing significant pollution or degradation of the environment; (c) cease, modify or control any act, activity or process causing the pollution or degradation; (d) contain or prevent the movement of pollutants or the causant of degradation; (e) eliminate any source of the pollution or degradation; or (f) remedy the effects of the pollution or degradation” These sections imposed a duty of care and remediation for environmental damage on any person who causes, has caused or may cause significant pollution or degradation of the environment.

Furthermore, Sections 32 and 33 of NEMA provided for a legal standing to enforce environmental laws and private prosecution respectively for the mining companies or directors of such companies at fault. Section 3 of NEMA clearly stated *“that any person or group of persons may seek appropriate relief in respect of any breach or threatened breach of any provision of this Act, including a principle contained in Chapter 1, or of any provision of a specific environmental management Act, or of any other statutory provision concerned with the protection of the environment or the use of natural resources”*.

Further to this Section 33 clearly stated *“any person may - (a) in the public interest; or (b) in the interest of the protection of the environment, institute and conduct a prosecution in respect of any breach or threatened breach of any duty, other than a public duty resting on an Organ of State, in any national or provincial legislation or municipal bylaw, or any regulation, license, permission or authorization issued in terms of such legislation, where that duty is concerned with the protection of the environment and the breach of that duty is an offence”*.

The sharing of liability was provided for under Section 28(8) of NEMA. The sharing of liability was normally with (a) the person directly or indirectly responsible for the pollution or degradation; (b) the owner of the land at the time of pollution or degradation (c) the person in control of the land or any other person whom had the right to use the land and (d) any person who negligently failed to prevent i) the activity or the process being performed or ii) the situation to come about. One could maintain that NEMA explicitly indicated parties involved could be mining companies,

directors; the South African Government had to implement and manage sensible processes to prevent the pollution and degradation of the environment within the mining industry.

NEMA and the NWA both aimed to prevent pollution. NEMA also focused on the polluter being responsible for the rehabilitation. The MPRDA's primary objective was to make provision for fair access to mining resources and to maintain sustainable development within the mining sector. The objective of the MPRDA was to balance the mining industry's ability to create wealth from the mineral resources with the environmental and social needs of society. The MPRDA was also responsible for the managing of mining operations in South Africa and required all mines to conduct an Environmental Impact Assessment (EIA) and submit an Environmental Management Plan (EMP) to the South African Government. This read in conjunction with NEMA confirmed that it was the responsibility of the mineral rights holder to ensure that such a submission was made and that compliance was taken in to consideration.

The MPRDA shifted the attention of top management of mining companies onto environmental issues and facilitated approvals of necessary budgets that ensured financial provisions were put in place for mines to be rehabilitated and closed (Miller, 2005). Regular improvements were required on mandatory Environmental Impact Assessments (EIA) to assure improved and substantial mining authorization took place within the mining sector.

These assessments had to be monitored on a more frequent basis that assured that the mining guidelines were adhered to for sustainable development to successfully take place within the South African mining sector (Sellers & Vogel, 2015).

4.9 Inconsistencies in the mining legislation

There is a significant challenge is the delegation of powers between different Government Departments at national, provincial and municipal levels. This means that it is not clear who must do what. Thus, institutional roles and responsibilities are fragmented, overlapping and vaguely defined. The fragmented delegation of powers leads to shortfalls in terms of the power of duties, liabilities and rights of South African Government and Government Departments. The fragmented delegation of powers effects the transfer of mining rights, the winding up of mining companies and the apportioning liability. There is also a shortfall in terms of the apportionment of liability (Le Roux, 2011). This remains a big concern in the mining industry and none of the investigated

Acts are clear on apportionment of liability. In addition, the current legal and policy context of the mining legislation does not draw a clear distinction between the handling and regulation of new active mines versus historic mines (Le Roux, 2011).

Further to this, it could be said that the current legal and policy context of the mining legislation does not impose special or stricter measures on mines that have a major impact on the environment. Additionally, the requirements for financial risk assessments are unclear. So, mining companies new to the mining industry need to be guided and assisted by the South African Government to generate adequate provisions for environmental management and set sufficient monies for rehabilitation aside. Therefore, if mining guidelines and financial risk assessments were to be aligned with the relevant legislation this would be useful to the mining sector and will assist with mine closure and rehabilitation post mine closure.

4.10 The application of Environmental Law, Mining Law, Equity Law and Company Law to the two gold mines: Grootvlei and Blyvooruitzicht

South Africa has rigorous legislation and legal regimes that promote environmental responsible mineral extraction and mine closure (McKay & Milaras, 2017). This included the MPRDA enforced by the Department of Mineral Resources (DMR), NEMA enforced by the Department of Environmental Affairs (DEA), the NWA enforced by the Department of Water and Sanitation (DWS), the Companies Act enforced by the Department of Justice and the B-BBEE Act enforced by the B-BBEE Commissioner.

Both NEMA and the NWA demand reasonable pollution prevention measures be undertaken by the owners, managers and land occupiers of a mine and this process should be managed by the relevant National Government Department. NEMA further makes provision for the “polluter pays” principle whereby the polluter responsible for the pollution must pay for rehabilitation. The MPRDA also makes provision for mines to manage mine-related pollution, for mines to pay for rehabilitation if pollution is caused and the MPRDA also dictates what should happen in the event of mine closure (McKay & Milaras, 2017). The Companies Act makes provision in terms of who should be held accountable for damages caused through pollution. Thus, South African legislation

imposes a duty of care, legal and financial responsibility and remediation of environmental degradation on mine owners, managers and land owners.

The Paterson and Kotze (2009) study shows that the State has key compliance tools such as permits, compliance notices and directives that can be used to enforce compliance with Environmental Law, Mining Law, Equity Law and Company Law. Non-enforcement of these compliance tools by the relevant Government Departments and failure by mine owners, managers and land owners to act with due diligence and care for the rights of others are actually criminal offences. However, it is claimed by Liefferink and Van Eeden (2010), that the relevant Government Departments do not seem to mine closure and the enforcement of the legislation as an urgent problem. This leads to the mismanagement of mines, such as the case of Grootvlei and Blyvooruitzicht. Overall, South Africa's poor record of compliance and enforcement of legislation can be variously blamed on the various National Government Departments, the courts and public and private institutions (mining companies) who seldom work together to ensure compliance and enforcement of mining law (Paterson & Kotze, 2009).

Both the Grootvlei and Blyvooruitzicht cases show that there is poor alignment between mining legislation, environmental legislation, the Companies Act and legislation that pertained to liquidation. The legislative dispensation does not provide for safety nets during these complexities and this led to both social decay and environmental degradation at the two mines. All stakeholders did not collaborate with one-another as required. In addition, both Grootvlei and Blyvooruitzicht ownership changed constantly which may have helped to create confusion as who should be held accountable for the damage caused to the environment (Humby, 2014).

4.11 The processes that resulted in both Grootvlei and Blyvooruitzicht undergoing forced Closure

South Africa has a troubled history when it comes to mine closure, with the environmental and social impacts felt long afterwards (Krause & Snyman 2014). Thus, legislation such as the MPRDA, the NWA, NEMA, the Companies Act were put in place by the South African legislature (Government) to manage mine closure and mine rehabilitation. Importantly all this legislation must be interpreted in a manner consistent with the spirit, objective and purpose of the Bill of

Rights. In particular, the State must take reasonable measures to ensure rights are realised (Currie & De Waal, 2005).

Mine closure commences with the applicant's preparation of an EMP prior to authorization, continues through the operational phase and is concluded with the issuing of a closure certificate by the Minister of Mineral Resources (Humby, 2014). Applicants that apply for the mining right have to adhere to the mine closure standards and disclose and confirm i) forward planning for mine closure; ii) financial provisions for mine closure; iii) flexible monitoring and oversight; iv) approved final closure and v) transfer of environmental risks and liabilities in their EMP, social and labour plans. These mine closure standards are managed and monitored by the State through the enforcement of the law. This enforcement did not occur in both Grootvlei and Blyvooruitzicht, and this led to both sites undergoing forced closure.

The situation at Blyvooruitzicht mine moved rapidly from a situation of compliance with relevant legislation to a situation of rampant disorder (Humby, 2014). It seems that this was because flaws in the legislation allow mining companies to evade closure obligations through i) the transfer of mining rights and ii) the winding up of mining companies. Further to this the lack of State responsiveness, weak institutional capacity and political influences also contributed to the rampant disorder at Blyvooruitzicht mine site. In Blyvooruitzicht case there was an undertaking to comply with the provision of the MPRDA in the EMP, duly signed by an authorized officer of Blyvooruitzicht Gold Mining Company but this was not approved by Government. This meant that the mining right could not be converted, and a closure certificate could not be issued to successfully close Blyvooruitzicht.

Further to this, the provisions for mining right transfer also added "insult to injury" to the chaotic situation at Blyvooruitzicht. This meant that mining rights could be transferred indefinitely and thus grounded any liquidation strategies Blyvooruitzicht tried to implement. With the outdated winding up provisions in the Companies Act, mining companies or the holder of the mining right could be dissolved as a legal entity without protecting the financial provision for rehabilitation and this makes it impossible for Government to institute the provisions of NEMA, the MPRDA and the NWA. With the liquidation strategies impaired this meant the Government could not access the financial provisions made in the forms of Trust Funds to proceed with the successful mine closure of Blyvooruitzicht (Humby, 2015)

Grootvlei was forced to close due to mismanagement of the mine itself (McKay & Milaras, 2017). In particular, Grootvlei was at a stage simply sold to the highest bidder with no consideration given to bidders requiring the relevant experience and skills to manage a gold mine (Plaut, 2013). Grootvlei mine was not properly run, despite the liquidator's legal obligation to preserve the asset to the best of their ability (Van der Merwe & Lea, 2003). Closure then occurred without dealing with the Acid Mine Drainage (AMD) (McCarthy, 2010). In the case of Grootvlei it seems that the lack of enforcement of legislation led to forced mine closure. Despite State officials being aware of the Grootvlei's challenges, despite the legislative backing to act against mining companies, despite being the guardian of the environment and promoter of sustainable development, these officials did not fulfil their duties with regards to Grootvlei (Swart, 2003).

4.12 Conclusion

The mining industry of South Africa is governed and regulated by Section 24 of the South African Constitution, NEMA, MPRDA, the NWA and the Companies Act. The importance of the South African Constitution and its involvement in the mining sector is such that mines should conduct their mining activities with due diligence and care for the rights of others. Better developed mine closure strategies and stern following of legislative guidelines would lead to a stronger and improved overarching mining framework within the mining sector. Better regulation and stringent enforcement of the environmental regulatory framework from the South African Government and various Government Departments could result in the improved management of mining sites; the risk of mine closure can be better managed to the advantage of the environment and all parties involved.

There is a duty that rests with the State to enforce the law. Thus, effective administration of environmental quality control is hindered by the lack of clear policy direction from the South African National Government and Government Departments. As found by Currie and De Waal (2005), enforcement of the law in South Africa is weak and the penalties for environmental damage seldom severe enough to deter polluters. In addition, there are few incentives to encourage sustainable mining practices, especially mine closure.

Chapter 5: Findings - In-depth Interviews / Results

5.1 Introduction

This chapter presents the findings of the in-depth interviews with stakeholders which included: SHEQ Managers, Environmental Control Officers, Environmental Lawyers, Environmental Specialists/Researchers, and B-BBEE Specialists by setting out the results of the questionnaires posed and completed by the selected respondents. The primary purpose of the in-depth interviews was to collect as much detailed data as possible from the individuals involved, to gather a better understanding of the current mining situation and the respondent's participation with both study sites Grootvlei and Blyvooruitzicht. The key findings that emerged from the in-depth interviews conducted with the nine respondents were presented here.

5.2 Who is responsible for mine closure?

In terms of who should be held accountable for mine closure, most of the respondents believed both the Government and owners/licensees of the mining companies are accountable. Respondent 5 believed *“mining companies jointly with State departments should have been held accountable for any damage caused to the environment and provision had to be made for improved compliance that assured that all regulatory responsibilities were adhered to”*. According to the respondents, the State is the custodian of the environment through the South African Constitution. Thus, the various Organs of State have a responsibility to serve and protect the public and tax payers by ensuring the upkeep of a safe and healthy environment. Further to this, the respondents also felt that the State has a commitment to uphold sustainable development within the mining industry. Thus, the State is also a supervisory body and the final inheritor of all mining related issues. Therefore, the State must regulate all Environmental Management Plans (EMPs) and Environmental Impact Assessments (EIAs) together with the relevant departments to assure mine closure materialises as per the legal compliance and principles.

The responsibilities first lie with the holder of the prospecting and mining right (such as mining companies and their directors) and the South African National Government, as the State is the custodian of all mining rights. According to the respondents, the holder of the mining right must comply with all the relevant provisions of the Mineral Act of 1991 as well as all other applicable environmental legislation, and adhere to the principles of the South African Constitution. The

respondents agreed that “the polluter pays principle” is a valid legal obligation and must be recognized and adhered to. The regulations promulgated in terms of the Minerals Act, 1991 were designed to ensure that financial provision was made by a mine (in the form of guarantees) for the execution of an Environmental Management Plan (EMP) upon mine closure. Respondent 2 believed *“risk assessments had to be done by the new and existing mining companies to establish their current position with the mine and to establish the environmental liability before the next mining started”*. This could minimize the risk factor for damages caused by liquidated and decommissioned mines. Further to this Respondent 2 stated that *“Sustainable development was possible if the South African Government and applicable stakeholders applied their thought differently and co-operated with the relevant legislation already in place to govern the mining industry”*.

Financial provision should have been made to assist both Government and the mining right holders with mine closure but was often realised too late. Respondent 3 further stated that *“Government Departments should have laid down the guidance and minimum requirements and searched for constructive solutions for effective mine closure for Grootvlei and Blyvooruitzicht”*. In addition, Respondent 4 stated *“that the Department of Water Sanitation (DWS) and the Department of Environmental Affairs (DEA) should have implemented the law, claimed damages and rehabilitation costs and assured that criminal prosecution took place. In the end the taxpayer would carry the burden as the regulator did not do its job correctly and adhered to all the guidelines and requirements as stipulated”*. Different and more updated coherent approaches should have been applied to ensure liquidated and decommissioned mines do not produce recurring environmental damage (Respondent 9).

Respondent 4 further stated that: *“Political influence could also be seen as the downfall of the Grootvlei and Blyvooruitzicht mines”*. Political influence was seen by the respondents as companies acquiring ownership of mines due to B-BBEE credentials but not having the capital and expertise to fulfil requirements relating to mine closure. Respondent 4 further stated *“an incompetent company received ownership of the Grootvlei mine through the B-BBEE process (political influence), mining had taken place without any rehabilitation taking place as these companies were liquidated before they could correct their wrongs such was the case with Blyvooruitzicht as well.”*

Respondent 5 further stated *“the primary focus was the improvement of controls and processes that had to be put in place during the life of Grootvlei and Blyvooruitzicht mines. Planned mine closure could better assist the mining industry as this would provide a functioning industry with a better success rate when it came to mine closure. Dependent on the cost that needed to be carried with mine closure and rehabilitation one could confirm that the mine owners or licensees and or company directors could be held accountable for the cost incurred. Even though these mentioned entities and individuals played an important role within the mining industry, it could be stated and confirmed that in the end there should always be one party held accountable and take responsibility for these actions and this being the State or as we know them the South African Government, due to the fact that the polluter pays principle was not enforced as it should be daily and mining companies and their directors got away too easy with the damage caused to the environment with only a slap on the wrist”*. As confirmed by Respondent 5 in both Grootvlei and Blyvooruitzicht mining situations accountability should have been enforced to assure the correct parties were held accountable for any damage caused. This led to rehabilitation of the environment and adherence to the relevant legislation,

Respondent 1 confirmed that National Government Departments had to make sure that sufficient financial provisions were made for both planned and unplanned closures. The financial aspects had to be under control; during operations with funds kept aside to assist with future planned or unplanned mine closure (Respondent 2). Respondent 6 stated that *“if benefit was received from any of the mines, the companies or licensees had to be responsible for the mine closure and rehabilitation”*. Respondent 4 suggested that the costs for mine closure be built into the operational costs and a portion of the profits made used to assist Government with any planned or unplanned mine closure.

Thus, Government could have been given compulsory shareholding within the mines, as this could have contributed to the closure costs or funds that were not paid for by the mining company (Respondent 9).

A lot of deliberation was given to the “polluter pays principle” with emphasis on mine closure planning forming part of the initial approval stage right at the beginning when the EIA’s (Environmental Impact Assessments) and EMP’s (Environmental Management Plans) approvals took place (Respondent 7). In Grootvlei’s case this could be pre-dated. When EIA’s and EMP’s

were approved, permit holders should have been identified and stated as accountable for any damages caused. Respondent 7 stated *“if the mining companies had plans or strategies in place, the risks with mine closure could have been monitored and maintained according to law and should there be any damages caused to the mines the polluter should be held responsible this being mining companies, SMME mining companies, and directors of companies. Long-term plans had to be put in place by the mining companies and their directors, stakeholders and monitored by the South African Government that assured the mine closure planned or unplanned and mine rehabilitation took place accordingly and that the polluters were held accountable for damage caused to the environment”*. It could be said that inadequate provision was made by the South African Government due to not enforcing compliance with all the applicable mining requirements and not planning with the relevant parties within the mining industry. This was the biggest problem regarding Grootvlei and Blyvooruitzicht according to Respondent 8.

Guideline policies and legal frameworks do not automatically ensure “responsible” mining in South Africa. The Minerals and Mining Policy for South Africa, 1998 confirmed that the Government, as guardian of the nation’s natural resources should have supported mining developments for both Grootvlei and Blyvooruitzicht. This meant upholding the enhancement of environmental attentiveness of the mining industry in accordance with national environmental policies (Respondent 6). Respondent 9 stated *“the main aim was for the environmental attentiveness to lead to the principles of sustainable mining being governed and managed”*. Consideration also had to be given to the effect of liability and accountability on Grootvlei and Blyvooruitzicht mine sites (Respondent 7). The focus had to shift to the highlighted key provisions of four statutes concerning the nature of liability in respect to mining pollution: The Constitution, NEMA, MPRDA and NWA.

Respondent 4 stated *“When it came to mine closure, mines in South Africa had to act in accordance with the Constitution and common laws of South Africa this was reiterated by Section 24 of the South African Constitution. Mine closure actions had to be done with due diligence and care. Section 24(a) - “of the Constitution clearly stated that everyone had the right to an environment, which was not harmful to his or her health and well-being”. The South African Constitution of 1996 superseded all other relevant legislation. This meant that the South African Constitution of*

1996 was the primary source that could be used and interpreted as the most important legislation within the mining industry and South Africa”.

Thus, at the onset, mine closure funds or working procedures already had to be in place to assist, maintain and prevent any problems regarding mine closure (Respondent 8). Legal liability had to be regulated and administrated so that environmental principles and guidelines are followed. This meant that the polluter pays principle must be enforced (where relevant) and a duty of care must be applied where applicable, mine closure should have taken place successfully and any rehabilitation required for damage caused should have been funded (Respondent 7). Respondent 7 reiterated and stated further that *“the principles served as binding guidelines in respect to the liability regime and because these principles and laws were binding, they were enforceable and justiciable. The existence of a liability regime may have led to a cautious approach in the activities, processes and daily operations of mining industries and liability regimes to serve the determination of prevention to avert imposition of liability”*. A responsible regime advocated compliance with environmental regulatory measures and as such served to enforce environmental laws and the achievement of the objectives of laws (or their purpose). But in both cases of Grootvlei and Blyvooruitzicht a liability regime was operation that served a reparative function which shifted the detrimental costs of harmful conduct in whole or in part from the polluter to the victim. Identifying the exact extent of responsibilities and corresponding potential liabilities in respect of mining, required not only an assessment of relevant legislative provisions, but a decision to actively enforce that legislation (Vorster, 2011).

5.3 Adherence to the law is a primary duty of mine companies

Another theme that emerged was that most respondents believed that it was the duty of mining companies to adhere to the law. Apart from the South African Constitution there was more legislation that needed to be adhered to at Grootvlei and Blyvooruitzicht (Respondent 9). The National Environmental Management Act (NEMA) (*Act No. 107 of 1998*) provided the outline and ideologies for sustainable development and set national norms and standards for Integrated Environmental Management (Section 24) where all spheres of Government and all organs of state had to co-operate, consult and support one another (Respondent 4). Section 28 of NEMA also imposed a burden of maintenance and remediation of environmental damages on any person who caused, had caused or may cause significant contamination or degradation to the environment.

Thus, in the opinion of the respondents, the State needs to hold the mining companies fully liable for due processes not being followed. However, this was not the case (Respondent 5). Furthermore, Sections 32 and 33 of NEMA were never implemented, managed nor monitored by the South African Government with respect to the two mines.

Respondent 4 stated that *“Section 32 of the National Environmental Management Act and Section 33 of the National Environmental Management Act provided a legal standing that enforced environmental laws and private prosecution, but these Acts were never enforced to Act as guidelines. Section 32 of NEMA focused on the legal standings to enforce environmental laws, in certain cases Courts decided not to award costs against an individual or group if the Court believed the individuals or group operated reasonable and in the interest of the public or in the interest of the environment. Section 33 of the National Environmental Management Act (NEMA) focused on private prosecution of individuals and groups within the mining industry”*. The National Environmental Management Act (NEMA) administrated the preparation, operation and remediation at closure and post closure management within the Gold mining industry which included Grootvlei and Blyvooruitzicht. NEMA was also seen as the further controlling measure that assisted Organs of State and Government with implementation and monitoring of the applicable legislation which never occurred as planned (Swart, 2003). Section 34(7) of NEMA specifically focused on the accountability of the executives within their personal capacity within the relevant mining corporation. This had to be read together with the Companies Act that focused on the same accountabilities (The Institute of Directors in South Africa (IODSA), The Companies Act, Act No. 71 of 2008).

Furthermore, as confirmed by Respondent 3 the MPRDA was the breakthrough Act in the mining industry. This Act specifically provided a complete cradle-to-grave approach for the mining industry that measured public, economic and environmental expenses that managed sustainable development. Respondent 3 further stated that *“what was meant by this method was that it had a reference to perception on the environmental impact created by mining products or mining activities from the beginning of the mines life cycle to its end or disposal.”* Respondent 6 was of the opinion *“that by improving the current legislative position surrounding mine closure due to liquidation, either forced or planned within the mining industry, meant that shareholders and directors of mining companies had certain rights and obligations within companies to adhere to*

and to apply with care and due diligence". Thus, the mines also had certain responsibilities to manage and maintain, an acceptable environment (Snyman, 1998). Just as stated in Section 76(2) of the Companies Act, directors that not knowingly caused harm to the environment and Section 77(2) of the Companies Act that focused on the liability of directors (a) in accordance with the principles of common law relating to breach of a fiduciary duty, for any loss, damages or costs sustained by the company as a consequence of any breach by the director (b) in accordance with the principle of the common law relating to delict for any loss, damages or costs sustained by the company that eliminated the risk factor.

5.4 Enforcement and an active State is essential

An improved understanding was formed regarding the legal position to improve the current situation within the mining industry when it came to mine closure (Respondent 9). The respondents questioned if the South African Government lost control over the mining industry (Respondent 6).

Respondent 1 was of the opinion *"that the current situation at Grootvlei and Blyvooruitzicht and the mining industry created a legal mess within the industry and it was beyond the point of adjusting or immediate fixing up. With time and the following of relevant guidelines, legislation and the correct financial provisions made this legal mess or situation could have been be corrected for future generations"*. Respondent 2 believed *"the mining industry felt the pressure even more and had to plan correctly to improve the mine closure situation"*. With the mining industry in its current dilemma, improved adherence to the procedures required to address mining issues. Mine operators were forced by regulators to plan ahead (begin with the end in mind) and make sufficient financial provisions which in turn forced the operators to conduct proper studies which were called a systems-thinking-approach (Respondent 3).

Respondent 4 stated that *"all the responsibilities came back to one party, the tax payer. The reason for this recurring problem was that not the mining companies nor its directors or the South African Government where prepared to accept the damage caused and to assist with the rehabilitation process and somebody had to fit the bill to rehabilitate, whom better than the taxpayer. As the general feeling was that the South African Government abandoned its role and liability as it did not take full responsibility for the aftershocks created by the mining industry as the mining regulators did not take any responsibility to assist"*. Accountability was neglected as the

Government did not implement or regulate the relevant guidelines associated with mine closure. The lack of environmental management systems and the lack of monitoring at the two mines also did not help the current situation (Respondent 1). Further to this Respondent 2 believed *“the South African Government and its State Departments had to address mining challenges and enforce better compliance systems to regulate and dismiss the current mining challenges faced”*.

The law always identified specific parties to carry the burden of environmental damage after mine closure. Responsible persons commonly included the mining companies and owners, the South African tax payer or a Department of the State (Respondent 4). If nothing is done to address the mining and mine closure challenges faced, the whole burden shifted to the South African Government and taxpayers, who then had to cover majority of the cost. This could be deemed unfair (Respondent 6). Respondent 6 *“felt that if you joined in the benefits of gold mining and you joined with the intent to share in the mining benefits this was considered to be reasonable, the mining company and or Government should have been held responsible to have dealt with the problem as it deemed fit”*.

5.5 New miners and the need to transform the industry

The mining industry of South Africa was seen as a key sector to yield radical economic transformation to assist with the reduction of inequality. For radical economic transformation to take effect, fundamental changes had to be implemented such as systems, institutions and patterns of ownership, management and control of mines were also essential (Moraka & Jansen van Rensburg, 2015). Most of the respondents interviewed were of the view that South Africa’s mining industry was unsustainable and a radical shift was needed for the country to maximise the benefits of resource extraction to benefit the mining communities and the country at large. They were of the view that unregulated mining activities and ineffective implementation of environmental legislation caused immeasurable socio-economic and environmental destruction. Meaningful community engagement (such as with the trade unions and mining professionals) alongside holding the private sector accountable could help solve some of these problems.

B-BBEE (Broad Based Black Economic Empowerment) the general term used for Equity law in the mining industry advocated primarily through the Mining Charter, promulgated under Section 100 of the MPRDA to transform the mining industry. Transformation of the mining industry using

B-BBEE brought its own challenges. Particularly, the over-emphasis on ownership of mines and reaching the goals of implementing 26% Black shareholding. This led to the continued promotion of “narrow” black economic empowerment, a form of crony capitalism that enriched a well-connected few, rather than empowering workers and marginalised communities who should have been the principal beneficiaries of the black economic empowerment (Leon, 2012). Respondent 4 believed *“equity law was also considered as the major concern within the mining industry which included mine sites such as Grootvlei and Blyvooruitzicht”*.

Respondent 8 stated that *“the primary aim with equity law was to redress the past imbalances and to provide for greater involvement by previously disadvantaged groups in the new dispensation”*. Respondent 1 furthered the discussion by adding that *“Government viewed Equity law as central to its economic transformation agenda”*. Equity law focussed on social upliftment and empowerment of previously disadvantaged individuals within the Mining Sector (Marais, 2013). Respondent 9 stated *“the issue of Equity law was a controversial matter in South Africa but was measured to be indispensable if South Africa was to fully shed all the vestiges of its apartheid past”*.

B-BBEE should be about the empowerment of disadvantaged communities not the enrichment of a small elite or political well-connected mining companies as was the case with Grootvlei and Blyvooruitzicht. The idea behind B-BBEE was direct empowerment and not enrichment. However, with Grootvlei and Blyvooruitzicht, the new owners neglected their duties and did not follow the correct procedures to protect the environment. Finally they abandoned their responsibilities (Leon, 2012). Mismanagement, exploitation and negligence of Grootvlei and Blyvooruitzicht caused significant damage to the environment and impacted negatively on the surrounding mining communities. According to the respondents this could have been avoided if the South African Government was clear and faithfully enforced the environmental regulatory framework.

The sensitivities associated with mining suggested that B-BBEE initiatives be undertaken with sufficient caution, and not to focus solely on ownership, but also capabilities to manage a mine. Respondent 7 stated that *“Equity law can have a positive outcome if applied correctly and with caution”* Respondent 9 agreed with Respondent 7 and stated that *“equity law can have a positive outcome on mine sites if less forced by the South African Government and have a natural flow with*

buy in from all participants in the economy". Transformation of the South African economy was centralised in the hands of a wealthy few, an immediate and demanding imperative that referred to ownership and control. Even though transformation could not take place overnight through the divestiture of ownership to strategic empowerment partners, it was important to develop more broad-based forms of empowerment through the promotion and development of ownership scheme and through an amended system of corporate governance in the mining industry.

The South African Government, business community and civil society needed to continue their search for and development of new and innovative ways in which the benefits of South Africa's economic wealth might be more broadly and evenly shared, and the disadvantaged sectors of society uplifted. Not only was the promotion of equality one of the foundational imperatives of our supreme Constitution, it was also attainment of a peaceful, stable and flourishing South Africa with an operational and functional mining industry with an economy competitive with international markets. The B-BBEE legislation required every Organ of State and public entity to give due consideration to the Act when issuing licenses, concession or other authorisations. The general accepted position was that B-BBEE, particularly B-BBEE in relation to companies held rights granted and issued under the MPRDA not within the jurisdiction of the Department of Trade and Industry (DTI), but rather within that of the Department of Mineral Resources (DMR). This meant that transformation in the mining industry was regulated by the environmental regulatory framework the MPRDA.

In conclusion being a part of the Southern African Development Community (SADC) and the African Union (AU), the Government has a responsibility to other member countries to keep them informed of the South African experience should they wish to also implement similar initiatives in a responsible manner. More resources should be made available for the educational component of B-BBEE to effect true empowerment. In the end the responsibility lays with the Government to create and develop a governing group to manage and monitor B-BBEE.

5.6 Conclusion

In this chapter the opinions of professionals in the field was used as the basis of the discussion to address the current mining challenges. Based on the in-depth interviews conducted, all the respondents had the same opinion. That is, South Africa has constitutional supremacy and a mining

hierarchy as well as the right legislation to implement successful mine closure and successful rehabilitation. Environmental management planning and regulation has to take place and mining companies and their directors should have understood what is expected of them. The South African State is also clear on its expectations. That is, applying the current guidelines and processes must be the primary objective. Monitoring and management of the environmental systems is important, and the South African State must make it clear that the polluter pays principle as this would assist with the accountability.

There was agreement amongst the respondents that South Africa's mining sector needs a strong and competent State which will lead from the front and by example. A State capable of implementing its own legislation and applying its mind to assure that laws were enforced and correctly complied with. The South African State has an obligation to manage and monitor the implementation of NEMA, MPRDA, NWA, the Companies Act and the Constitution to assure that all guidelines and principles were adhered to and successfully implemented. The South African State has an obligation to apply all relevant legislation equally. That is, to not give preference to any one specific piece of legislation or overlook a piece of legislation.

When it comes to mine closure, the South African State treats each mine site on its own merit. Thus relevant factors, challenges facing the mine site, communities effected and the socio-economic/environmental impacts must be incorporated into the mine closure plan. The State also needs to considering accountability for any damage done to the environment. But institutional failure within the different Government Departments was systemic. Support services were inadequate in both the Government and Non-Governmental sector. So, administratively, there is a lack of integrated planning and a non-alignment of mine closure with regional development plans. Thus, job creation is weak and the implementation of the closure plan often ineffective. Thus, the closure certification process is protracted, variable, and inexact.

The complexity associated with transforming the mining industry requires effective collaboration between Government and industry. Open dialogue and trust are key requirements for addressing current challenges and creating solutions that benefit not only individual stakeholders, but the country as a whole. There is a strong need for transformation, a more equitably sharing of mineral wealth. Thus, various B-BBEE initiatives were adopted. Transformation is regulated by the

MPRDA. B-BBEE is viewed as a major issue in the mining industry for the foreseeable future. However, transformation in the mining industry should be about community empowerment and the equitable distribution of economic wealth, not enrichment of only an elite few.

Chapter 6: Discussion of the Results

6.1 Introduction

Chapter 4 provided an analysis of the relevant legislation, while Chapter 5 provided the respondents views. This chapter examines the researcher's interpretation of the findings and presented conclusions drawn from both the analysis of the results from the previous two chapters, as well as the objectives of the study in consideration of the literature review in Chapter 2.

6.2 Impact of the environmental right on environmental law in the mining industry?

From an environmental perspective, one of the biggest changes brought about by the Constitution, was the inclusion of an environmental right into the Bill of Rights. The interim constitution provided that *"everyone shall have the right to and environment that is not detrimental to his or her well-being"* This was then later replaced by Section 24 of the Constitution which was said to embody the imperatives and constitutional mandate for compliance and enforcement. The primary objective was for good environmental governance and decision-making to contribute to transparency and accountability within the mining industry that led to sustainable development. This was made the responsibility of the South African Government that through good and reasonable governance and constant monitoring of sustainable development could be achieved.

The respondents viewed the South African State as the custodian of the environment through the South African Constitution, with the responsibility to uphold sustainable development within the mining industry. South Africa introduced an environmental management system which guided human actions towards sustainable environmental management, managed by the South African Government provided rules, procedures and mechanisms responsible for the implementation and enforcement of the environmental right.

With the South African Government seen as the supervisory body and final inheritor of mining problems, the obligation rested on the Government to regulate Environmental Management Plans (EMP), monitor Environmental Impact Assessments (EIA) and ensured that the application of legislation was clear and that the principles and guidelines set by legislation, clearly implemented and controlled.

Insufficient enforcement was the main reason for ineffective environmental protection through legislative measures. Further to this Currie and De Waal (2005) confirmed that South Africa was not short of environmental law, rather short of effective environmental law. It was confirmed by Currie and De Waal (2005) the ineffectiveness of environmental law was due to two primary causes highlighted in more detail in this paragraph. All the respondents agreed with Currie and De Waal (2005) findings. The ineffectiveness of the environmental right in environmental law was due to inadequate enforcement of environmental law by the South African Government. Further to the ineffectiveness of environmental law it was confirmed in this study that unclear policy direction from Government meant inadequate administration of environmental quality control.

As confirmed in this study, the South African Government played a major role in assuring effective compliance and enforcement of the environmental right in environmental law as stated in Section 24 of the Constitution, that assured an environment that was not harmful to any persons or individual's well-being or health. With mine closure the environmental law provided few incentives to encourage sustainable industrial practices. Government is seen as the legislative body responsible for enforcing and regulating environmental legislation. Weakly enforced legislation meant more unresolved challenges in the mining industry. The study found that majority of the respondents – who were all active in the mining industry – felt that the challenges the two mines faced were common ones and that they were liquidated or closed due to ongoing challenges small mines faced daily. These challenges were identified as: financial, technical, human and policy implementation.

6.3 Challenges facing the application and enforcement of mining legislation in the mining industry

Most of the respondents indicated that even though numerous environmental and social justice challenges were addressed in environmental legislation before 1994, the mining industry still struggles with the application and enforcement of mining legislation and with the application of standards, policies and procedures. This is true not only for mine closure, but also relates to day to day issues. These challenges normally relate back to the lack of enforcement and/or non-compliance with environmental legislation. This was confirmed by Humby (2014) who found that the challenges facing the mining environment and caused damage to the environment, was due to

the use of irregular mining activities by mining companies and the South African Government's failure to monitor and apply reasonable measures or any policies for remediation to protect the environment against pollution.

A further challenge is that mining companies avoid their responsibilities to remediate or rehabilitate, despite mining legislation being clear on its guidelines and principles for mine closure. Unfortunately, this places a lot of responsibility on the State in terms of acting to ensure the environment is protected. But, majority of the respondents in both Grootvlei and Blyvooruitzicht scenario's, confirmed that accountability was never enforced by the South African Government on either mine. Thus, the parties were not held accountable for the damage caused. The lack of enforcement meant that the mine did not adhere to environmental legislation.

The challenges that impacted on the application and enforcement of legislation was summarized by the research study of Stacey et al., (2010) as the legislative requirements being too broad and not being narrowed down to accommodate case by case merits. Insufficient guidance by the Government "shipwrecked" the whole process of successful application and enforcement of legislation when it came to mine closure. The respondents agreed in part with this research study. Stacey et al., (2010) further found that the mine closure and decommissioning challenges encountered, limited the application and enforcement of legislation due to environmental legislation not being clear on community expectations, mining companies being unable to deliver on their environmental management plans and Government policies and expectations being unclear.

The majority of the respondents agreed that if no regulating measures are put in place by the South African Government to manage the application and enforcement of environmental legislation in a clear and organized manner, then environmental hazards or impacts will continue to go unremediated and unrehabilitated. The expectations from the respondents interviewed was that if the South African Government - the current regulating body of environmental legislation – does not strongly enforce compliance with legislation, environmental outcomes and guidelines would not succeed as planned.

6.4 What problems exist relating to the application and enforcement of legislation in the mining industry?

Feris and Kotze (2014) in their research confirmed that governing the environment was an administrative function that needed to be administered by the South African State and all relevant Government Departments. In the judgment of Director: Mineral Development Gauteng Region vs Save the Vaal Environment and Others (1999) the presiding judge reiterated that with the implementation and advocating of a functional legislative framework, ironed out any limited challenges facing the mining industry from a legislative perspective. Most of the respondents agreed mine closure should be driven by the principles of sustainable economic growth, implementation of environmental management systems and legislative compliance.

NEMA, the NWA, the Companies Act and MPRDA were the governing legislation that assured strategic implementation of environmental management systems took place and progressed to a point of legislative compliance that was manageable, self-sustainable and regulated by the South African Government. Cliffe, Decker and Hofmeyr (2017) in their research report confirmed that the primary aim of the implementation of environmental management systems and legislative compliance was to avoid and alleviate shortfalls in the application of legislation and impacts on the environment, and to continuously improve on the precedents set by the current legislation in the mining industry. The research thus found some shortcomings related to the environmental legislation in the mining industry that was discussed in more detail in the sections below.

6.4.1 Application and enforcement of the MPRDA

The study of Nicholas (2013) confirmed that the MPRDA was enacted for the objective, to make provision for equitable access to and sustainable development of the nation's mineral and petroleum resources. To give effect to Section 24 of the Constitution by making sure the nations mineral resources were developed in an orderly and ecologically sustainable manner while promoting justifiable social and economic development. The respondents believed the problem with the MPRDA was due to the South African Government and various Government Departments not governing or regulating equitable access, not enforcing sustainable development and not adhering to the Constitution.

The Nicholas (2013) study identified three important factors the South African Government had to take in to consideration with the application and enforcement of the MPRDA; i) the integrity of the process; ii) the integrity of the officials administering the process and iii) clarity of the administration. With the South African Government giving effect to these factors and adhering to Section 24 of the Constitution would provide efficient and effective resource management. Further to this Nicholas (2013) confirmed that with the application and enforcement of the MPRDA the objective was to implement a strong governmental control in the mining industry. With the application and enforcement of the MPRDA the Government was the custodian of the mineral and petroleum resources and had control over all rights granted under this Act. But did the South African Government and Government Departments adhere to this, what was the integrity of officials administering the process and was the Government clear enough on the administration of the MPRDA? Most of the respondents agreed that the South African Government and the various Government Departments did not make good progress on these three factors.

Further to this, additional administrative problems relating to the MPRDA were highlighted. The lack of co-ordination and strategy alignment between key departments (Department of Mineral Resources (DMR) and Department of Trade and Industry (DTI)) which compromises the management and regulation of South Africa's mineral resources. In addition, the MPRDA was not clear on its objectives to maximise development impacts, particularly job creation. The MPRDA does not detail the specific rights afforded to mining communities affected by mining activities, such as to how they could lodge a claim for damages caused. Most of the respondents confirmed that the MPRDA did not go far enough to ensure full community participation, involvement and sustainable receipt of any benefits acquired through mining activities.

In both Grootvlei and Blyvooruitzicht cases, the biggest challenges faced to date was the development of legal frameworks to manage mining development and to include surrounding communities' participation in decision-making processes when it came to the closure of the mine sites. The Grootvlei and Blyvooruitzicht mines closed due to ineffective governance from the South African Government. This may be due to a lack of human resources, the promotion of mining for social and economic upliftment, collusion between the Government, Governmental Departments and the mining industry limiting co-operative governance.

6.4.2 Application and enforcement issues pertaining to the NWA

Schreiner (2013) stated that the NWA was considered as one the most advanced pieces of water legislation in the world and a significant step in the right direction, with the concept of an integrated water resources management into legislation. The concept of the integrated water resources management into legislation was to assist with the implementation of policies, plans and programmes to develop and implement strategies to assist or guide the application and enforcement of legislation in the mining industry.

Schreiner (2013) and majority of the respondents pointed out the following challenges of the NWA to be i) the establishment of catchment management agencies and water use associations to manage national water resources still had to be implemented; ii) unequal reallocation of water resources; iii) delays in the issuing of water licenses; iv) the South African Government and relevant Government Departments were seen as poor drivers of implementation and v) political influence caused departmental splits and proved to be ineffective. Political influence was more seen as the issue of the capacity of the Governmental Department to implement the new legislation being compounded by leadership challenges at both ministerial and director-general levels. Competency issues and internal departmental politics also contributed to the shortfalls of the NWA and the political splits between the various government departments.

Further to the effective implementation and enforcement of the NWA being behind decades, the South African Government and its various Government Departments such as the Department of Water and Sanitation (DWS) still felt the pressure to implement the regulations of the NWA as quickly as possible. The research studies of Bond and Stein (2017) and Cessford (2004) identified the shortfalls of the NWA to be i) no guidance from the DWS on how to formalise existing lawful water uses; ii) guidelines were outdated and the lack of insufficient information to assist both the applicant and DWS on the application process; iii) no mine specific minimum requirements and iv) difference in application and interpretation between DWS departments and national and provincial offices.

6.4.3 Application and enforcement shortfalls of NEMA

Bond and Stein (2017) found that NEMA's shortfalls were that of the acts principles being internally qualified and not stretching far enough to address distributional issues and not identifying the root cause of environmental damage and harm. NEMA was silent on numerous definitions and due to no elaboration or explanation on certain terminology, made the compliance and enforcement provisions of NEMA far-reaching and merely impossible to implement and monitor. For example, the "polluter pays" principle was fundamental requiring every person, who causes, has caused or may cause significant pollution or degradation of the environment, should take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring insofar as such harm to the environment was authorized by law or could not be avoided or stopped, to minimise and rectify such pollution or degradation.

Without clear explanation from NEMA on the terms reasonable or reasonable measures, one could say that this term could be invoked when there was any alleged economic hardship or job loss associated with pollution control measures. Moreover, those who were obliged to take reasonable measures included the *"owner of land and or premises, a person in control of land or premises or a person who had the right to use the land or premises on which or in which any activity was performed or undertaken."* In not being clear on reasonable or reasonable measure within NEMA one could say that there was very little prospect for prosecution of predecessors-in-title. The same could be said about the recovery of cost, without clear specification within NEMA regarding the term reasonable excluded indirect social costs that related to mining activities. The provisions dealing with the enforcement of rights were replicated from the South African constitution and given effect in NEMA to provide more clarity on the challenges facing NEMA.

This study confirmed that environmental and pollution control were responsibilities handed to the South African Government on national and provincial levels to monitor and regulate remediation and rehabilitation of the environment when it came to pollution pre-and post-mine closure. Without the set requirements and clarity from NEMA this led to integrated environmental management systems being implemented in an uneven, regulatory and administrative environment, that surrendered the socio-ecological regulatory power to non-environmental national and provincial departments. The environmental impact was significant as the polluters which were

normally the mines enjoyed protection from the legislation even though non-compliance with environment impact assessments (EIA) or Environmental Management Plans (EMP) didn't take place. The study of Stacey et al., (2010) provided the best possible example for the above stated situation and was discussed in more detail in the next paragraphs.

The study of Stacey et al., (2010) focused on Coaltech who commissioned two studies, which examined the closure dynamics of 36 mines in Mpumalanga and Kwazulu-Natal in 2006. The findings made were that the guidelines for mine closure were too wide and did not allow for any social or labour planning. Both projects cited problematic social aspects of closure; such as confusion in the management of social risk, the failure of job creation schemes and the uneven implementation and enforcement of integrated environmental management systems by the South African Government just to name a few. Both projects confirmed that the broad legislative requirements were insufficient to provide guidance on a case-to-case basis. It was also further confirmed that the relationship between stakeholders especially host communities, mining corporations and Government, lay at the heart of the problems encountered in implementing sustainable closure.

Both case studies proved that with the applying of current principles to historical situations were also a challenge, often resulting in significant costs of abandoned or improperly closed mines remaining unaddressed. Neither the National Government, nor mining companies wish to pay for problems relating to the implementation of historical law that now proved to be inadequate in relation to current performance expectations. Government responded by referencing mining for specific attention in policies on sustainable development and by issuing legislation and guidelines for mining.

The policy response was the development of the polluter pays principle through NEMA, as the difficulties with this principle was that little consensus was reached on how to apportion responsibility for environmental impacts of closure amongst the many stakeholders involved.

In conclusion the research confirmed NEMA's primary objective was to systematize procedures within the mining industry of South Africa. This meant submissions, processing and considerations of applications for environmental authorization. The idea behind the systematic procedures were

to avoid the impact on the environment, manage and mitigate any problematic areas and enhance positive environmental impacts within the mining sector.

6.4.4 Application and enforcement issues pertaining to the Companies Act

Krause and Snyman, (2014) confirmed that the objective of the Companies Act was to promote the Bill of Rights, meaning Section 24 of the South African Constitution that stated “*everyone has a right to an environment which is not harmful to their health or well-being and to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures that (i) prevent pollution and ecological degradation, (ii) promotes conservation and lastly (iii) secure ecologically sustainable development and use of natural resources, while promoting justifiable economic and social development*”.

Krause and Snyman (2014) found further that mining companies were normally managed by shareholders and directors and these shareholders and directors had certain rights and obligations with regards to companies and their responsibilities to manage and maintain an acceptable environment for the legal entity to function in. As confirmed by Van der Heever (2013) directors had wide sweeping powers to manage a company, but this power needed be regulated. The director of a company should act in “good faith”, in the best interests of the company, and with a duty of care, skill and diligence. Unfortunately, nowhere in the Act did it elaborate on what the impact would be if these duties weren’t adhered to. Further to this, the study found that the Companies Act was not clear on the powers vested in the South African Government to regulate and enforce non-compliance with these duties should damage be caused to the environment by mining companies.

With South Africa Government’s lack of enforcing the Companies Act, certain Sections of the Act stood out in this case study. Section 66 of the Act clearly granted directors the authority to make decisions and manage the company in any manner which they deemed fit subject to certain restrictions. It was unclear from this section if it placed a positive obligation on directors to manage the company or merely regulate the relationship between directors and shareholders. It was clear from Section 66 that directors had wide sweeping powers to manage the company, but such power had to be regulated. That’s why it was important for the South African Government to enforce

Section 66 of the Companies Act, that should a director of a company act negligently they could be held accountable for the damage caused to the environment.

Further to this, Section 76 of the Companies Act limited the powers granted to a director by Section 66. Section 76 of the Companies Act placed a duty of care on the director's powers towards the mining company. This meant the director/s should act/s in good faith and fulfil their duties with care and skill. This section provided the South African Government with the general tests for when the director's conduct was permissible. This meant that if a director did not pass the test he/she could be held liable for any loss or damage caused to the environment. South Africa's Government could with the enforcement of Section 76 assure that the mining companies act in good faith and with the relevant skill when it came to the closure of mines and the impact it had on the environment.

In conclusion the study of Swart (2003) and the respondents actively involved in the study sites at Grootvlei and Blyvooruitzicht found that the South African Government was seen as the "guardian" of the environment through the South African Constitution. The South African Government through the regulating of the Companies Act and South African constitution promoted innovation and investment in the South African markets and reiterated the concept of a company as a means of achieving economic and social benefits for the mining industry, for its stakeholders, surrounding communities or anyone doing business with a company in the mining industry. The South African Government's lack of enforcing the Companies Act was seen as the biggest shortfall with the application of this legislation currently and not being clear on the expectations of the directors of mining companies and the South African Government's role in regulating the Act.

6.5 Who should be held accountable / responsible for the damage caused to the environment due to mine closure?

All the respondents agreed that the biggest challenge facing the mining industry currently is the issue around who should be held accountable / responsible for the damage caused to the environment when it came to mine closure and decommissioning. Further to this the respondents interviewed noted that the South African Government wasn't nearly doing enough to adhere to

Section 24 of the constitution and were not enforcing and regulating the “Polluter pays” principle as they should. The “Polluter pays” principle was used in a lot of academic research currently and was generally accepted as an economic principle aimed at consumer protection and confirming accountability.

Research by Nabileyo (2009) focused on the meaning of the “polluter pays” principle and referred to Section 24 of the South African Constitution. The “principle’s” objective was to prevent pollution and environmental degradation and read together with Section 24(b)(ii) of the South African Constitution, directed the Government to take measures that ensured remediation of environmental damages. The South African Government was the custodian of the environment and the regulator of the mining industry. This read together with the research of Swart (2003) could be said that the South African Government was accountable and responsible as they were the final inheritor of the mining problems. However, it remained the Government responsibility to hold the holder of the mining or prospecting right who causes, has caused or will cause the damage to the environment accountable through the enforcing of the environmental legislation, which to date had not been done.

This study further aimed to investigate who should be held accountable according to NEMA, the NWA, MPRDA and the Companies Act. Madalane (2012) found that according to NEMA the responsible person should be the owner of, or person who had the right to use land or premises. Madalane (2012) further found that the people accountable according to the NWA were the owners, persons in control and those who occupied the land. The respondents agreed with this.

The MPRDA confirmed the person responsible was the owner of the mining and prospecting right. Further to the Companies Act, the directors of the company were jointly and severally responsible should their duties have an unacceptable negative impact on the environment. Mining companies and their representing directors or shareholders were generally seen as the holders of mining rights, the owner of or in control of the mining land with an obligation to rehabilitate and remediate as far as possible when it came to mine closure. The obligation to rehabilitate and remediate were rolled out to the South African Government as well, as they were seen as the custodian of the mining right and the final inheritor of the mining rights with the primary aim to enforce compliance with the application of legislation.

6.6 How can the mining legislation in the mining industry be improved?

Most of the respondents indicated that mining legislation had to be improved. This was in alignment with that of Currie and De Waal (2005). All government action and individual conduct that impacted on the environment had to be aligned with the constitutional right to a healthy environment to give effect to Section 24 of the South African Constitution. Mining activities have a detrimental effect on the environment and should be regulated. Therefore, it was important to improve the administration of legislation in the mining industry and for the mining to be regulated by the South African Government. Le Roux (2011) found that compliance and enforcement mechanisms were imposed on the South African Government to assist with the regulating and monitoring of mining legislation, in an organized and structured manner to assure responsible use of resources. The study now turns to how the mining legislation such as NEMA, the MPRA, the NWA and the Companies Act could be improved.

6.6.1 How NEMA as mining legislation can be improved

How could the mining legislation be improved in the South African mining industry and enforced by the South African Government and Government Departments? According to the feedback from the respondents and the study of Le Roux (2011) NEMA must allow for a permitting process that provides the South African Government with more time to make informed decisions regarding the current shortfall or limitation that they had to deal with. The South African Government seen as the regulating body of South Africa and the mining industry, and had to promote self-regulatory tools such as environmental management systems, provide more info sessions and education on mine closure and their effects on the environment to assure regulating governance proceeds as it should.

Le Roux (2011) further found - and most of the respondents agreed - that compliance monitoring was a must by Government. This meant more onsite inspections to assure that persons involved in mining activities adhere to the guidelines set by NEMA. This also included the reviewing of audit reports in more detail. The South African Government has to improve NEMA by being more stringent with the enforcing of administrative, criminal and civil measures of legislation that adhered to the “polluter pays” principle and this meant the person at fault had to understand the

outcome should they not tread with care or due diligence and cause damage to the environment as stipulated by Section 24 of the South African Constitution.

6.6.2 How the NWA as mining legislation can be improved

The NWA had fundamental principles of sustainability and equity to protect the use, development, conservation and management of water resources under regulation of the South African Government. Despite research studies confirming the high expectations from the NWA, it did not deliver and was not clear on its objectives. In the National Water Resources Strategy (2013) it was found and confirmed that the NWA needs clearly defined mandates, roles and responsibilities to maintain accountability. The NWA had to be adaptive with its approach and implementation, meaning that the Act regulated by the South African Government had to allow for changes to be made where no progress was made.

Majority of the respondents agreed with these findings above, but raised their biggest concern with the NWA and how this Act could be improved. Starting at the South African Government being the regulating body and responsible for the implementation of the NWA. The South African Government had to establish sufficient Government Departments and skilled individuals to manage and assist with the implementation and regulating of the NWA and management systems under this Act.

The study confirmed that for NEMA, the MPRDA, the Companies Act and the NWA to be successfully applied, accountability for the damage caused to the environment must be established and enforced by the South African Government. The respondents involved with Grootvlei and Blyvooruitzicht were all in agreement with NEMA and the NWA which were similar in stating that a responsible person should take all reasonable measures to prevent pollution when it came to mine closure. This was where the Companies Act needed to be more stringent and clear in its application of the legislation.

6.6.3 How the enforcement Companies Act can be improved

McGregor (2014) found that the South African Government through the enforcing of corporate governance in the form of the Companies Act set the precedent for accountability for mining companies to act as the responsible person through reasonable measures when it came to mine

closure and not to cause any harm or damage to the environment through their mining activities. The Companies Act also placed a responsibility on the South African Government to monitor and regulate the implementation of this act, to ensure that Government ensured all guilty parties such as mining companies or their directors were brought to book for the damage or harm caused to the environment due to mine closures.

Most of the respondents agreed with McGregor (2014) and made an important observation. Unless there were dedicated, committed collective political leaders at all levels of Government and mining companies and their directors focused on building a sound sustainable mining infrastructure any positive initiatives would be null and void. The Ministers through their political leadership needed to be more competent in directing and managing their departments. Mining companies and their directors needed to adhere to the guidelines set by the Companies Act and adhere to the policies and procedures set by NEMA, MPRDA and the NWA to assure the application of legislation succeeded in the mining sector of South Africa.

Further to this study, McGregor (2014) found that the Companies Act was aligned with Section 24 of the Constitution but required improvement. The academic research of Madalane (2012) read together with Swart (2013) and McGregor (2014) made the following findings as to how the Companies Act can be improved:

- The Companies Act should provide a corporate governance model and implementation model for South African Government and mining companies to abide to. This had to be added as specific separate sections to the Act to provide clarity and guidance as to what was meant by a corporate governance model and how the implementation model should be implemented and governed by all related parties.
- The Companies Act should make provision for feasible policies and strategies when it came to mine closure for all involved in any mining activities including mine closure.
- The Companies Act read together with other environmental legislation created a principle-based culture of integrity and professionalism.
- The Companies Act should provide for the regular upgrading of corporate standards for Government and mining companies overseen and regulated by a central cabinet of South Africa.

The respondents concluded and agreed that by improving the Companies Act this provided for a more effective working relationship between Government and mining companies, created a firm understanding of the principles and guideline of the application of legislation in the mining industry and confirmed the expectations between Government and mining companies.

6.6.4 How the MPRDA as mining legislation can be improved

Majority of the respondents interviewed agreed with the study of Swart (2003) which found that the MPRDA in its preamble confirmed that the South African Government had an obligation to protect the environment, ensure ecologically sustainable development and promote economic and social development. Swart (2013) further found that the MPRDA provided for integrated environmental management and a responsibility on mining companies and its directors to remedy, clearly regulated by the South African Government. The MPRDA was clear on its intent to develop principles for sustainable development, by integrating social, economic and environmental factors into the planning, implementation closure and post closure management of prospecting and mining operations.

With the MRDA being clear on its intent and expectations from mining companies and directors or shareholders involved and the South African Government as regulating body, the MPRDA still had to be improved.

The Deloitte (2014) report written by Andrew Lane, Energy and Resource leader at Deloitte made the following two stand-out suggestions to improve the MPRDA:

- Mining companies needed to consider a wide set of scenarios that might occur in the mining industry and develop strategies to face the uncertainty. Thus, it was important for mining companies to have a clear strategy for where they are going to play, how they are going to win, and a credible story about how to share the benefits with other stakeholders. Mining companies had to take an active role in building the mining industry, working proactively with stakeholders and proactively complying with mining legislation monitored by the Government. Consideration for wide set scenario's and strategy development had to be added to the MPRDA as a guiding principle. That should the mining companies not be clear on their strategies for successful mine closure or not take an active role in the mining industry as prescribed by the MPRDA or the Constitution, not be issued a mining or prospecting right.

- But if clear scenarios and strategies were provided from the start and the mining companies don't deliver or provide clear and reasonable updates regarding their progress the Government and governmental departments can see this as non-compliance and impose a penalty on the mining company at fault.
- Mining companies had to develop strategies to demonstrate how returns would be equitably created not just for the mining companies but for the South African economy. These strategies should be included in the planning phase, meaning that this would need to be included in the Environmental Management Plans (EMP) and Environmental Impact Assessments (EIA) when presented to the South African Government for approval. This presented the clear intent from mining companies and their directors or shareholders involved.

Further to this the Deloitte (2014) research report found and the respondents agreed that for the MPRDA to be improved, the Act had to clearly address and specify the Minister and Government department's powers. The obligation to assess environmental impacts, issue appropriate and lawful environmental authorisations, monitor compliance and take enforcement actions in the case of violations had to be clearly aligned to the MPRDA. In the past mines were indemnified from liability once a closure certificate had been issued, but this no longer will be the case. This meant that the MPRDA needed to be improved to stipulate the clear requirements, procedures and policies to ascertain a closure certificate.

In conclusion and with agreement between the respondents and research studies investigated in this case study, the improvement in the administration and enforcement of NEMA, the MPRDA, the Companies Act and the NWA, led to an effective, firm, clear and consistent regulation and implementation of corporate governance in the mining sector. When the South African mining sector provided clear guidelines, policies and procedures in the application and enforcement of legislation without the active involvement from all participating parties would impact on the economy. The South African Government had to follow a pro-active approach for implementation and regulation for legal governance to succeed and address any shortfalls when necessary, without impacting on the economy and taxpayer.

The mining companies and its directors need to understand that should their negligent actions impact on the environment and cause damage to the environment they would be jointly or severally accountable for the damage caused.

6.7 Conclusion

The South African Constitution and environmental regulatory framework had one objective and this was to achieve sustainable development within the mining sector. For sustainable development to be achieved it had to build on three pillars: i) sustainable utilization of natural resources; ii) the pursuit of equity in the use of allocation of natural resources and iii) the integration of environmental protection and economic development. Sustainable development even though clearly defined and explained in the South African Constitution and academic research. There was difficulty to achieve sustainable development due to the challenges that faced the South African mines when it came to mine closure.

The challenges were confirmed as financial, technical, human and policy implementation. These challenges occurred due to the mining legislation not being clear with its application and enforcement processes and the lack of governance from Government and various Government Departments. South Africa was regarded as a country with a sophisticated environmental regulatory framework, although this framework had some problems such being extremely fragmented and lacking enforcement and compliance mechanisms. South Africa was not short of environmental law, but short of effective administration of environmental law. Ineffective administration of environmental law was due to fundamental causes such as i) inadequate enforcement of environmental law by Government and ii) the lack of effective administration of environmental quality control due to the lack of clear policy direction from Government and that penalties for pollution caused to the environment was not that severe. Mine closure was a process in the mining industry, not a discrete event and without best practice applied by mining companies and directors or shareholders impact on the environment. Without regulation and enforcement of the environmental regulatory framework from Government, would further impact on the environment and have catastrophic outcomes as confirmed by Grootvlei and Blyvooruitzicht the two mine sites under study.

The results of this study concur with the scholarly studies outlined in Chapter 2, which suggested that the effective implementation of environmental regulatory legislation aligned with Section 24 of the South African Constitution would ultimately result in better regulated mining policies and processes with clear objectives to the South African Government to regulate and implement

compliance and enforcement of these regulatory legislation, to fulfil their role as regulatory body of the mining industry. In conclusion to this the South African Government has to be clear on its regulatory requirements to the mining industry, should the responsible person who has caused or will cause damage to the environment due to pollution and not rehabilitate or remediate accordingly, would be brought to book with criminal and civil prosecution.

Chapter 7 Conclusion & Recommendations

7.1 Introduction

The environmental impacts and financial burden associated with the unplanned, catastrophic or forced closure of these two mines negatively affected surrounding communities and placed a significant burden on the Government regarding environmental rehabilitation costs. The forced closures demonstrated that mine closure and the management of the risk associated with it was complicated. Thus, the way mining company's closed mines, required careful regulation by the South African Government and relevant legislation needed to be stringently enforced.

For mine closure to take place successfully, regulation systems had to be operational, accountable and proactively implemented. Responsibilities and procedures had to be clearly defined between the South African Government, mining companies and their directors. Further, the mine post-closure rehabilitation process had to be clear to all participating parties, allow for meaningful consultation and ensure accountability by all stakeholders (Krause & Snyman, 2014). In terms of legislation, the significant challenge was that all the pieces of governing legislation had a narrow focus. For example, company law focuses on the directors and their rights. Environmental law focuses on the environment: for example NEMA focused on the co-operative governance of promoting procedures and principles to co-ordinate environmental functions, the MPRDA focused on the redressing of historical inequalities by giving effect to Section 9 of the Constitution by making provision for equitable access to the mineral and petroleum resources and Equity law focused on the racial composition of owners (Rungan, et al., 2005).

The NWA focused on the safeguarding, utilizing, preserving and supervising of the nation's water resources this included i) meeting the human need for water, ii) promoting rightful water access, iii) facilitating social and economic development and iv) reducing and/or avoiding pollution and degradation of the water resources (Swart, 2003). In addition, although the laws formed a legislative framework, not all stakeholders adopted such a view, and the result adherence weak (Swart, 2003).

7.2 Overview of the methodology and challenges faced with the collection of research data

The primary objective of this study was to unpack how the various pieces of legislation, namely NEMA; the MPRDA; the NWA; the Companies Act and the B-BBEE Act interacted in the case of Grootvlei and Blyvooruitzicht. The secondary objective was to establish how and why these two mines underwent forced closure (without a closure certificate) despite all the legislation, which should have prevented such a situation (Plaut, 2011). Thirdly, the study hoped to make recommendations as to how the various Acts could be amended to prevent such events occurring in the future, in a response to the call by Marais (2013).

For this dissertation the case study approach was used, to investigate real world problems and difficult topics as were the mine sites of Grootvlei and Blyvooruitzicht. This was followed up by a comprehensive legal evaluation on the legislation (NEMA, the MPRDA, the Companies Act, the B-BBEE Act and the NWA) that played an important role in the mining industry and the legislation that affected both mine sites under study. The objective of the legal evaluation was to establish if the legislation was read in conjunction with one another, does the legislation overlap and support each other or were there gaps that needed to be filled to address the impact of mine closure on the environment.

In addition, the study made use of nine (9) respondents whom all agreed to conduct the interviews. The nine (9) respondents interviewed were all key mining personal who were familiar with the two mine sites or whom have dealt with both mine sites in the past, but only prepared to provide limited information as they all deemed fit. Both Grootvlei and Blyvooruitzicht mines were not accessible due to safety reasons, but access to both study sites were not required to conduct legal analyses. In some instances, there were fears concerning the ‘sensitivity’ of the mine closure matters at Grootvlei and Blyvooruitzicht due to the “political elite” status of some of the people involved in both mines. In addition, mine closure due to liquidation and the phenomenon of ownerless mines were sensitive topics.

In this case study a qualitative analysis was done on the interviews conducted. The primary focus of the qualitative analysis was to analyze the data collected and to attract themes that would best support the case study.

The research questions that needed to be addressed with the in-depth interviews conducted were:

- What were the requirements of Company Law, Environmental Law, Mining Law and Equity Law with regards to forced mine closure?
- What were the limitations/contradictions (with respect to each other) of each of these laws that could hinder both compliance and enforcement thereof?
- How can Company Law, Environmental Law, Mining Law and Equity Law be amended to address limitations and contradictions that arise in mine closure scenarios?

7.3 Addressing the research questions

7.3.1 Research Question 1: What were the requirements of Company Law, Environmental Law, Mining Law and Equity Law with regards to forced mine closure?

NEMA's requirement was to provide co-operative, environmental governance through the establishment of principles that assisted with decision-making on matters that affected the environment, as well as promoted procedures to co-ordinate environmental functions exercised by Organs of State. NEMA also referred to sustainable development in the preamble of the Act with the setting of national standards and principles regarding Integrated Environmental Management. This required Government, and the various Organs of State to support and consult one-another. Further to this NEMA was considered a regulating tool for the mining industry, via Environmental Impact Assessments (EIAs) and Environmental Management Plans (EMPs).

The requirement of the NWA was to safeguard, utilize, preserve and supervise the nation's water resources this included i) meeting the human need for water, ii) promoting rightful water access, iii) facilitating social and economic development and iv) reducing and/or avoiding pollution and the degradation of the water resources. Further to the NWA, the South African Government had a duty to act with due diligence and care towards water resources. The Government used its powers to protect water sources and courses as far as possible.

The MPRDA had fundamentally changed the regulating regime of the mining sector. This Act applied a cradle-to-grave approach, considering social, environmental and economic issues to achieve sustainable growth in the mining industry. In the preamble to the MPRDA, certain responsibilities were confirmed. For example, the Government had obligations to protect the environment, ensure ecologically sustainable development and promote social and economic development. The MPRDA was gazetted as a mechanism to assist the Government, through the Department of Mineral Resources to ensure that the holders of the mining rights were committed to the development of the communities and protecting the environment.

The requirement of the Companies Act was to ensure that any party who caused damage to the environment, be held accountable for their actions. Thus, company directors were jointly and severally liable for any violation of environmental law, this would include environmental damage, degradation or pollution both advertently and inadvertently caused by the company they were directors of. As with all Acts, Companies Act also had a requirement to promote the Bill of Rights (Section 24 of the South African Constitution). Thus, should this section be violated by any mining company, recklessness or negligence, accountability would remain with the parties at fault.

The requirement of Equity Law was to ensure that the application of the transformation initiatives in the mining industry was applied with sufficient caution and not to drive away foreign investor's particularly those who invested in development operations in South Africa already (Kohler, 2004; Leon, 2012). B-BBEE, however, should not be implemented with only transformation in mind. Ownership structures could not be the only applicable requirement for companies to join the mining industry. Consideration should also be given to: (1) Can they comply with the Environmental Impact Assessment (EIA) or Environmental Management Plan (EMP) requirements and (2) Can they provide the financial guarantees to rehabilitate mine site when it comes to mine closure.

7.3.2 Research Question 2: What were the limitations/contradictions (with respect to each other) of each of these laws that could hinder both compliance and enforcement thereof?

Feris and Kotze (2014) as well as the trade union Solidarity had argued that there were numerous inconsistencies or limitations between NEMA, the MPRDA, the NWA and the Company's Act. Institutional roles and responsibilities were fragmented, overlapping and vaguely defined. This

was a concern as none of the above-mentioned acts were clear on apportionment or even made any mention thereof. In addition, there was an omission in that the current legal and policy context of the mining legislation that did not draw a clear distinction between the handling and regulation of new, active mines versus historic mines. It was not clear who did what and who carried the responsibilities (Le Roux, 2011).

Further to this, it could also be said that the current legal and policy context of the mining legislation did not impose special and / or stricter measures on mines which had a major impact on the environment. Additionally, the requirements for financial risk assessments were unclear. It was argued here, therefore, that mining companies new to the mining industry should be guided and assisted by the South African Government such that they select mining sites that best fit their skills and experience set, and that they were guided in terms of how to adequately provision for environmental management. Unless this occurs then environmental liabilities may be unfairly passed either to the South African taxpayer or to B-BBEE Mining Companies.

However, the Government had to ensure compliance with the law (Sampson, 2008). The serious challenges regarding compliance and enforcement was the different focusses in the legislation. For example, Company law focused on the individuals or directors, Environmental law focused on the environment in the mining sector and BBBEE law focused on the company's racial composition, in terms of ownership.

7.3.3 Research Question 3: How can Company Law, Environmental Law, Mining Law and Equity Law be amended to address limitations and contradictions that arise in mine closure scenarios?

Most of the respondents agreed that mining legislation had to be improved through stronger alignment with Section 24 of the South African Constitution. Thus, all actions and conduct that impacted on the environment had to be aligned to the Constitutional right to a healthy environment.

NEMA could be improved by allowing for a clear and well-structured process that provided the South African Government with more time to make informed decisions regarding the current shortfall or limitation that they dealt with daily. Further to this the administration of NEMA had to be improved with greater government participation. That was, more onsite inspections by Government to assure that persons involved in mining activities adhered to the guidelines set by NEMA. Government had to review mining audit reports in more detail and be more stringent with

the enforcing of administrative, criminal and civil measures of legislation within the mining industry.

The NWA had to be improved through clearly defined mandates, roles and responsibilities to maintain accountability. The NWA should be allowed to be more flexible. Meaning that should the Government and Government Departments struggle with implementation and enforcement be allowed to change their approach for where no progress was made. The NWA could further be improved by being clear in its objectives to government departments and skilled individuals to manage and assist with the implementation and regulating of the NWA and management systems under this act.

The Companies Act could be improved through provisions being made for policies and strategies when it came to mines. Further to this the Companies Act could be improved by allowing for a principle-based culture of integrity and professionalism within the act. This would ensure that mining companies and directors maintained the upkeep of the mining infrastructure, keeping in mind operational efficiencies and the impact their outputs had on the mining environment. With the improvement of the Companies Act this led to effective and successful corporate governance within the mining industry.

This meant that senior officers from Government Departments understood what were expected from them and what standards had to be achieved. This also presented powers to Government Departments to clearly enforce the standards and strategies on mining companies to achieve these expectations set by the legislation. Effectively then ensuring that the South African Government, Government Departments and mining companies had an efficient working relationship. With the South African Government developing a firm leadership role by being responsible for the annual regulating and upgrading of the required standards and strategies and mining companies adhering to these standards and applying the strategies accordingly

The MPRDA in its preamble of the Act confirmed that the South African Government had an obligation to protect the environment, ensure ecologically sustainable development and promote economic and social development. With responsibilities on mining companies and its directors to remedy supervised by the Government. The MPRDA could be improved by considering a wider set of scenarios that might occur in the mining industry and develop strategies to face the

uncertainties within the mining industry. The MPRDA could further be improved by developing strategies in the Environmental Management Plans (EMP) and Environmental Impact Assessments (EIA) to demonstrate how returns would be equitably created not just for the mining companies but for the South African economy.

Clear examples included that mining companies had to have a credible plan indicating how they will be assisting stakeholders to meet their objectives. Indicating how the partnership would be built in the industry through social corporate investments, job creation and the upliftment of local communities. The impact on the environment through poor compliance and potential reckless behavior were eliminated through the setting of higher standards and proactively working to achieve these standards. Further to this a robust stakeholder engagement plan had to accompany the mine closure plan to reduce any closure disputes and to lower the open-ended costs at the end of the life of mine sites (Deloitte, 2014).

7.4 The way forward in the mining industry

Mines needed to coincide with the local surrounding communities to develop and deliver on assessment plans and management programmes. The mining industry also considered smaller or new mining companies to assist them to financial guarantees and deliver on their assessment planning and management programmes within the mining sector. The mining industry and South African Government needed to assure compliance with all environmental regulatory requirements and legislation.

In identifying appropriate mining companies from the start of the mining process, helped to ensure the correct processes were followed. In providing financial guarantees ensured mining companies and their directors / shareholders do right based on the financial guarantees provided. Through this the mining industry paved the way forward for an environment that focused on accountability and sustainable development, with everyone involved accepting their responsibilities.

The mining industry avoided the carrying over of any risks relating to mine closure by developing closure strategies in the planning phase to form a stronger overarching framework regulating and assisting the industry. Experience has taught us all that rehabilitation funds allocated for mine closure was inadequate and that these funds are not “ready money” to be used for environmental emergencies, and that certain environmental plans had to be in place to be effective within the

industry. Rehabilitation of the environment needed to be addressed urgently when it came to mine closure as this would snowball in to bigger problems for the South African mining industry (Durand, 2012).

South Africa's mining industry learnt a lot from the international countries when it came to mine closure and the environmental effects. This included being pro-active in their approaches to the challenges facing the mining industry, having mining communities actively involved throughout the mining process. In some countries, Governments go as far as concluding agreements between themselves and the mining companies to assure rehabilitation and remediation takes place.

This included holding the mining companies and their directors or shareholders solely responsible for any damage caused to the environment through their mining activities. In some cases, environmental legislation was centralized under each the country's constitution, closure processes were well defined with clear guidelines and policies to assist with the enforcement of environmental regulatory frameworks. Environmental Management Plans (EMP) and Environmental Impact Assessments (EIA) were compulsory and had to include financial guarantees and risk assessments that clearly stipulated the plan for rehabilitation and remediation for mine closures

Responsibility to regulate mine closure remained with National Governments, as they were the custodian of the mining right and final inheritor of the mining right after closure.

7.5 The obligations of mining companies

Mining companies had no choice but to follow the existing environmental regulatory framework set, guided by environmental standards to outline the precedent in the mining industry for compliance when it came to mine closure. The environment was seen as a functional area of concurrent national and provincial competence placing a responsibility on the directors and mining companies to plan and strategize successful mine closure but in the same breath also to ensure that all Government-spheres co-operate, consult and support one another. Mining companies had no option but, to balance the rights and obligations of shareholders / directors and find the correct balance pertaining to the mining environment to assure that all parties understand what was

expected ones involved in mine closure. Further to this mining companies established a predictable and effective environment that adhered to the overarching regulatory framework of South Africa.

Mining companies had an obligation to comply with legislation and this included all provisions regulating environmental rehabilitation when it came to mine closure. The obligation vested in the mining companies were comply with the environmental regulatory framework and interpreted in a manner consistent with ‘the spirit’, object and purport of the Bill of Rights.

This meant that these provisions had to be read in a manner capable of advancing Section 24 of the Constitution. Thus, mining companies had to undertake reasonable legislative and other measures to realise this right and to ensure successful mine closure throughout South Africa.

7.6 What was left for Government to do in the mining industry?

Mining always had to be appropriately and effectively regulated and enforced. The process of mining was detrimental to the environment and highlighted as a point of major concern within the mining industry. Not only was mining a form of unsustainable utilization of natural resources, but the process of extracting minerals created large scale generation of waste and pollution. If not managed and effectively governed, mining could leave a path of destruction in its wake, as it often did. When mining activities negatively affected the health and well-being of people and impacted adversely on the entire array of interests safeguarded by Section 24 of the Constitution, it was paramount that mining companies, its shareholders / directors be held liable for their activities, processes and procedures relating to future, present and historic pollution to prevent, minimize and/or remediate pollution caused.

The Minerals and Mining Policy for South Africa, 1998 confirmed that the South African Government, as guardian of the nation’s natural resources supported mining developments for both Grootvlei and Blyvooruitzicht. The South African Government was the custodian of the environment through the South African constitution. Making it the various Organs of State’s responsibility to serve and protect the public and tax payers by ensuring the upkeep of a safe and healthy environment. Thus, Government was also viewed as a supervisory body and the final inheritor of all mining related issues. Therefore, Government regulated the Environmental Management Plan (EMP) and Environmental Impact Assessments (EIA) together with the relevant departments to assure mine closure materializes as per the legal compliance and government

principles. Guideline policies and legal frameworks did not ensure “responsible” mining in South Africa. This meant upholding the enhancement of environmental attentiveness of the mining industry in accordance with national environmental policies governed by the Constitution of South Africa.

Section 24 of the Constitution embodied the imperatives and constitutional mandate for compliance and enforcement by the South African Government. The primary objective was for good environmental governance and decision-making to contribute to transparency and accountability within the mining industry that led to sustainable development. This was seen to be the responsibility of the South African Government that, through good and reasonable governance and constant monitoring, sustainable development could be achieved.

In terms of the two mines under study, it was clear that the South African Government was not doing enough to enforce the implementation of compliance with the environmental legislation when it came to mine closure. The South African Government un-involvement, lack of enforcement and not being clear on the guidelines, processes and policies governing the environmental regulatory framework contributed to the failure of the environmental governance of South Africa. This set the precedent that the polluter who causes, has caused or will cause damage to the environment will not be brought to book.

It was confirmed by this study that the existing body of environmental legislation was weakly enforced by the South African Government meaning that whatever deterrents or incentives there may be regarding good environmental management, all too often remained unenforced in practice. The onus still remained with the South African Government and Government Departments to develop good laws and effectively implement them and empower the relevant communities (Murombo, 2013).

7.7 Recommendations

To improve and protect the quality of the South African environment, the South African Government and mining companies had clearly stated their objectives to support effective environmental law and compliance therewith. Further to this show intent to support adequate enforcement of the legislation and effective administration of environmental control systems within the mining industry right from the start of the mining process. With the end goal being to

ensure the current and future generations continued to enjoy their constitutionally enshrined right; to an environment that was not harmful to their well-being. Non-compliance with existing environmental policies and legislation was primarily due to non-compliance with legislation and poor to little enforcement of policies and legislation by Government. The gap between the development of appropriate environmental legislation, implementation and enforcement had to be narrowed to ensure the successful closure of mines without any party being adversely effected.

Further to this case study, it was important to make recommendations as to how and why changes in the mining industry had taken place to address the challenges facing the mining industry daily:

- Incentivize compliance by all parties involved. Government should do this by levying taxes if compliance was lax. Government should cut taxes of industries and mining companies if they complied with all environmental regulatory frameworks. Government should create an incentive for sustainable behavior by providing funds to start up sustainable projects, create or update infrastructure to make industries or mining companies more sustainable.
- Accountable structures for monitoring of environmental impacts should be established by the South African Government. South African Government should explore the possibilities of developing specialized monitoring agencies. Monitoring agencies should be independent from the promotion function of government and provide monitoring staff that ensured the monitoring activities that impacted on the environment was prioritized. For example, a large taxpayer unit, where agencies could develop and focus on unique challenges of monitoring of large mining companies.
- Government and Government Departments should be more attentive to risks of corruption and institutional obstacles that could effect and impact on the environment. Supervisory mechanisms should be implemented, to limit unnecessary discretion and to include checks that eliminates the possibility of corruption and institutional obstacles. Government should enforce anti-corruption laws, by creating more awareness about the outcomes if found guilty on corruption and provide more information to all participants in the mining industry as to how one goes about submitting the corruption charges.
- Government and Government Departments should follow an active approach within the mining industry to identify and correct areas of non-compliance. This meant that through Government partnering with companies and communities assured public participation as confirmed by the

environmental legislation and enforce compliance through the establishing and ratification of environmental laws when suitable.

- A bigger obligation should rest on the mining companies, to, at the application of the mining right disclose contracts, permits, licenses, community development, environmental agreements, EIA'S and EMP's, to outline their legal obligations in more detail. This would develop a legal framework with effective governance from the South African Government and Government Departments that would establish the mining company's commitments. This would also enable the communities and Government to follow mining operations and monitor progress.
- More should be done from the industry associations such as the International Council on Mining and Metals and local mining chambers to encourage mining companies to disclose all required information and to enter participative monitoring structures with local communities. This would mean that areas of concern in the mining industry could be addressed successfully and that the South African Government and communities would always be aware of any current or future activities that would impact on the environment.
- The goal should be to have a well-structured legal framework that was well enforced. But also, to have a mining industry that was flexible to review EIA's and EMP's to ensure continued enforcement was contributing to the country's mining sector. A flexible approach would be deemed more effective. The responsibility still rests with Government to review and improve EIA's and EMP'S to ensure successful mine closure and eliminate environmental impacts that could occur. In doing so Government should be willing to look at recommendations or comments to improve the legal structure of the mining.
- With the South African Government as the custodian of the environment through the constitution, it should "do more" to ensure sustainable development and "do more" to ensure mining companies were held accountable or responsible to their mining activities that creates damage to the mining environment. Government should do more to educate the public and mining industry on sustainable development, good environmental governance and how this could be beneficial to the parties involved. Government needed to do more to create awareness regarding the issues that affected the country and the communities. Government needed to show their intent with the implementation and regulation of the legislation that they would

control pollution and regulate development and ensure the parties at fault would be held accountable for any damage caused to the environment.

- The “Polluter pays” principle should be stringently enforced by Government. This would ensure that should mining companies who did not adhere to the regulatory framework understood the consequences of their mala fide acts within the mining industries. Both mining companies and staff of the relevant Government Departments should be taken to court and made examples of to assure the precedent was set in the mining industry should one not comply or enforce environmental legislation. This could be another method of working to improve company and Government accountability and ensuring all parties involved deliver on their expectations and standards regulated by the South African Constitution.
- The regulatory legislation (NEMA, MPRDA, the NWA and the Companies Act) should be reviewed and assessed by the Government to ensure any non-compliance with the provisions of these pieces of legislation were addressed and amended accordingly. This included the environmental regulatory framework. This would ensure that any non-compliance with any legislation would be identified, the grey areas reviewed and amended accordingly, to ensure that the environmental law stays effective with a mining environment that was to the benefit of everyone’s well-being.

In conclusion the regulatory framework that governed the mining industry had to assure implementation of environmental management systems and enable legislative compliance. The primary objective of the implementation of the environmental legislation was to create environmental management systems and legislative compliance within the mining sector to avoid and alleviate adverse environmental impacts, but also to continuously improve on the precedents set by current legislation (Cliffe, Decker & Hofmeyr, 2017) Without clear monitoring and enforcement from Government and Government Departments and the environmental regulatory framework not being clear on its outcomes, sustainable development, accountability and successful mine closure would never be possible.

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Annexure A – Ethics Approval