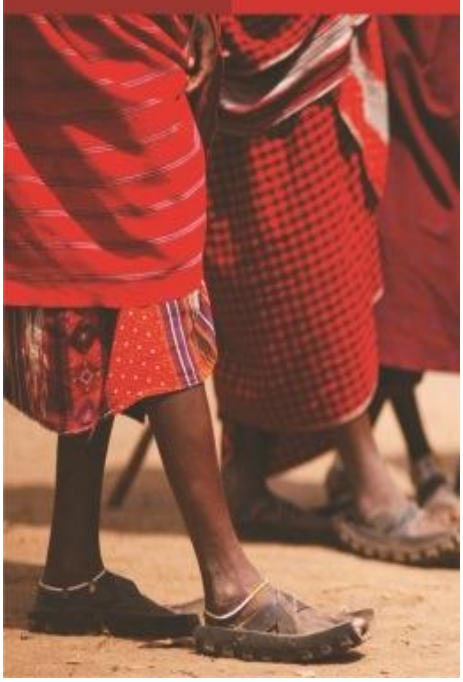

DIGBY WELLS
ENVIRONMENTAL

Mining Permit Application for the De Grooteboom Project

Social Impact Assessment Report

Project Number:

UAR2967

Prepared for:

De Groote Boom Minerals (Pty) Ltd

April 2015

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This document has been prepared by Digby Wells Environmental.

Report Type:	**Social Impact Assessment Report**
Project Name:	**Mining Permit Application for the De Grooteboom Project**
Project Code:	**UAR2967**

Name	Responsibility	Signature	Date
Lloyd Mcfarlane	Social Consultant		24/04/2014
Darren Dunne	Reviewer		28/04/2015

EXECUTIVE SUMMARY

Introduction

De Groote Boom Minerals (Pty) Ltd (De Groote Boom) are proposing to mine primarily chromite and associated minerals on the farm De Grooteboom 373 KT, near the town Steelpoort situated in the Limpopo Province (Local Setting Plan). Digby Wells Environmental (hereafter Digby Wells) has been requested by De Groote Boom to compile and submit an Environmental Management Plan (EMP), pursuant to an application for a Mining Permit, in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) to the Limpopo Department of Mineral Resources (DMR).

The Mining Permit Application has been accepted by the Regional Manager, Limpopo Region, of the DMR under Reference LP 10656 MP and De Groote Boom has been instructed to prepare an EMP, which will include various specialist investigations, and a Public Participation Process (PPP) will be undertaken.

Digby Wells is undertaking the environmental and social specialist studies as part of the EMP for the proposed De Grooteboom Project (the Project). This document presents the Social Impact Assessment (SIA) report for the Project.

The terms of reference (ToR) for the SIA are to:

- Describe the baseline socio-economic environment of the Project site and surrounding area; and
- Identify the potential socio-economic impacts that may arise as a result of the proposed Project, based on the activities and timeframes underpinned in the Mining Permit Application; and
- Assess the significance of the identified impacts and provide impact management measures aimed at mitigating negative social impacts and enhancing the positive impacts.

Methodology

The study was designed to comply with the relevant national legislative requirements, such as those stipulated in National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (Act No. 28 of 2002). The activities undertaken as part of the study comprised the following:

- Defining the research study areas;
- Data collection, including a desktop review, undertaking of an investigative site visit comprising interviews with key informants, and a review of information from other specialist studies and the public participation process;

- The compilation of a social baseline profile, including information on demographics, education, skills levels, employment, local and regional economic conditions, infrastructure and service delivery, spatial development and information pertaining to the prevalent concerns regarding and attitudes towards the proposed Project;
- Identification and assessment of social impacts (including cumulative impacts) on the basis of issues identified through specialist opinion, interviews with key informants and the public participation process.
- Rating of impacts was performed through the use of a rating scale/matrix. The impacts anticipated duration, extent and intensity were combined into a measure of an impact's expected consequence. Consequence ratings, in turn, were combined with probability ratings to give a measure of an impact's overall significance;
- The identification of appropriate mitigation measures was carried out to avoid or ameliorate negative social impacts and to enhance positive ones. The rating procedure was then repeated to assess the expected consequence, probability and significance of each impact after mitigation. This post-mitigation rating gives an indication of the significance of residual impacts, while the difference between an impact's pre-and post-mitigation ratings represents the degree to which the recommended mitigation measures are expected to be effective in reducing or ameliorating that impact; and
- Formulating of recommendations regarding the identified mitigation and enhancement measures, as well as other general recommendations that may aid the successful implementation of the proposed Project.

Baseline Socio-Economic Profile

The Project site is situated in Ward 31 of the Greater Tubatse Local Municipality (GTLM) which is part of the Greater Sekhunkhune District Municipality (GSDM) in Limpopo Province. The Project shares its border (eastern Project border) with Ward 5 of the Thaba Chweu Local Municipality (TCLM) in Mpumalanga Province. The assessment and presentation of the of the social baseline was carried out through the

The socio-economic characteristics of the Project area within the predetermined study areas are summarised below.

Population and Demographics

The highest concentration of people in the proposed Project's sphere of influence is in the town of Burgersfort. This town experienced a population boom due to an influx of job-seekers hoping to secure employment at Modikwe Platinum Mine and other nearby operations.

The population of Limpopo Province in 2011 was approximately 5.4 million (Stats SA, 2011). Limpopo Province is divided into five municipal districts: Capricorn, Sekhukhune, Waterberg, Mopani and Vhembe. Ward 31 of the GTLM and Ward 5 of the TCLM have similar surface areas while Ward 18 of the GTLM is much smaller. Each of these wards has similar

populations, highlighting the higher population density in the far smaller Ward 18. However, most of this population is accounted for by Burgersfort Town.

The GSDM demonstrate age distributions that are typical of populations with a high growth rate, in that the largest proportions of the population are found in the youngest age brackets.

The dominant language in both the local and regional study areas is Sepedi, with 89% of the GTLM speaking the language, and 75% of the population from Ward 31 (GTLM) speaking Sepedi (Stats SA, 2013).

Educational Status

According to Stats SA (2011), the Limpopo Province educational development is lagging behind those of other provinces. There are 247 schools (primary and secondary) situated in GTLM. Steelpoort and Ohrigstad each have one primary school, with Burgersfort having additional private primary schools and 15 Adult Basic Education and Training (ABET) institutions.

The average population within the GTLM show better education standards than that of the wider GSDM. This trend is reflected in Wards 31 (GTLM) as well. The best education levels exist in Ward 18 (GTLM) with only 5 % of this population having no access to schooling and as much as 27% completing secondary school. Ward 31 (GTLM) and Ward 5 (TCLM) on the other hand, more closely resembles the local and district municipal levels, in that most of the adult population is poorly educated (Stats SA, 2013).

Economic Background

The economy of GSDM depends largely on mining, agriculture, trade and government services. Although agriculture seems to dominate most land use, most of the land that is under cultivation is used for subsistence purposes, with only 30% of the land being under commercial farming. Mining is one of the more dominant economic activities in the GSDM.

Tourism and eco-tourism has the potential to boost the economy in the regional study area but has not been fully developed yet, requiring more attention and consideration (GTLM, 2014).

Employment and Household Income

Ward 31 and Ward 18 of the GTLM show substantially higher employment levels when compared to the regional study area. Ward 5 (TCLM) also shows better employment figures, however, it was indicated during the site visit, that most employment in the Lydenburg/Mashishing area is associated with agriculture and not mining (Stats SA, 2013).

The high unemployment rate in the regional study area (GTLM and the GSDM), is highlighted by the fact that as much as 88% of households in the GSDM survive on R6 400 or less per month, whilst 15% of households had no recorded income. In the GTLM, 85% of households find themselves in a similar position, with 16% having no recorded income. Wards 31 and 18 (GTLM) and Ward 5 (TCLM) show better income earnings than the regional statistics, with 69% of households in Ward 18 and 77% in Ward 31 surviving on

R6 400 a month. Although this shows an improvement to economic conditions in the local study area, these figures are still concerning.

Social Infrastructure and Services

The majority of residents at both the local and regional level have access to brick or concrete housing. Within the regional study area, the proportion of households with access to formal housing is higher than that of the local study area, with 89% of people in the GSDM having access to formal housing. Within Ward 31, around 63% of households have access to formal housing, whilst just less than a third (27%) of the population live in informal housing, and 4% live in traditional dwellings. These figures are similar to those wards in the remainder of the local study area.

When looking at the access to improved sanitation in the regional study area, only 9% of the population have access to formal sanitation. The ward level data (local study area) shows that a larger proportion of the population have access to formal sanitation with, Ward 18 and Ward 31 having more than 40% of their population with access to formal sanitation and in Ward 5 (TCLM) this figure is more than 60% (Stats SA, 2013).

Ward 18 of the local study area has the highest proportion of people with access to formal water services (76% of households). Regionally, the provision of water through formal schemes is improving in the GSDM and GTLM. Conversely, in Ward 31 there are a high percentage of people (41%) who obtain water through groundwater extraction (Stats SA, 2013).

The main source of energy in both the regional and local study areas, according to Census 2011 data, is electricity, followed by wood and coal. Approximately 50% of the regional study area use electricity as their main energy source (Stats SA, 2013).

Formal refuse removal is almost entirely absent in the district and local municipalities. Only Ward 5 (TCLM) displays a large proportion of formal refuse removal, although this only represents 55% of households in the ward.

Summary of Impacts and Recommended Mitigation Measures

As mentioned, impacts were identified in terms of a number of categories, related to physical intrusion resulting from project activities, economic pull factors, as well as indirect impacts. Impacts are discussed in detail in the report and appropriate mitigation measures are recommended to ameliorate negative impacts and enhance positive ones. A summary of potential impacts are tabled below:

Cause of Impact	Aspects	Impact
Effects on the local economy	Positive impacts	Sustained employment during construction and operation
		Short-term growth of the local economy
	Negative impacts	Dependency on the mine to provide extensive local economic development.

Cause of Impact	Aspects	Impact
Effects from impacts to the physical environment	Positive impacts	Improvements to local infrastructure
	Negative impacts	Physical Intrusion impacts
		Land acquisition and loss of grazing land.
Effects of Population influx	Negative impacts	Community opposition – arising from unmanaged expectations
		Increased social pathologies
		Increased pressure on local services/ resources.

The pre- and post-mitigation ratings assigned to the various impacts discussed in the report are summarised in Table A below. Adequate mitigation measures will reduce the significance of negative impacts to acceptable levels, while positive impacts will be enhanced to maximise benefits to surrounding communities.

Table A: Summary of Project impacts and recommended mitigation and enhancement measures

Impact	Pre-mitigation:						Recommended mitigation	Post-mitigation:					
	Duration	Extent	Intensity	Conse-quence	Probabi lity	Signifi-cance		Duration	Extent	Intensity	Conse-quence	Probability	Signifi-cance
Effects on the local economy													
Sustained Employment - Construction and Operation	Medium term	Limited	Moderately high - positive	Slightly beneficial	Likely	Minor - positive	- Maximise and monitor local recruitment where required - Consult local labour recruitment offices - Prevent nepotism/corruption in local recruitment structures - Promote employment of women and youth - Train locally-recruited construction workers for longer-term employment where possible	Medium term	Limited	High - positive	Moderately beneficial	Highly probable	Minor - positive
Short-term contribution to the local economy	Short term	Municipa l Area	Low - positive	Slightly beneficial	Probabl e	Negligible - positive	As for maximising employment benefits. Also: - Development of a register of local SMMEs - Linkages with skills development/ SMME development institutions - SMME skills development as part of mine LED initiatives - Explore opportunities for collaboration with other mining/electricity enterprises on LED/CSR projects	Medium term	Municipa l Area	Moderate - positive	Moderately beneficial	Likely	Minor - positive
Dependency on the mine to provide extensive local economic development	Medium term	Local	High - negative	Moderatel y detrimenta l	Likely	Minor - negative	- Support economic diversification through development of alternative markets - Proactively and effectively implement mine closure plan - Collaborate with adjacent mining companies to develop and implement sustainable community projects	Medium term	Local	Moderate - negative	Slightly detrimental	Likely	Minor - negative
Impacts related to the physical effect of mining activities													
Improvements to local infrastructure	Medium term	Local	Moderate - positive	Slightly beneficial	Probabl e	Minor - positive	- Integration with mine and local government plans - Collaboration with other mining companies in terms of infrastructure upgrades	Medium term	Local	Moderately high - positive	Moderately beneficial	Highly probable	Minor - positive

Impact	Pre-mitigation:						Recommended mitigation	Post-mitigation:					
	Duration	Extent	Intensity	Conse-quence	Probabi lity	Signifi-cance		Duration	Extent	Intensity	Conse-quence	Probability	Signifi-cance
Physical intrusion impacts	Medium term	Limited	High - negative	Moderatel y detrimenta l	Probabl e	Minor - negative	- Traffic control and signage to prevent speeding, and appropriate training for drivers/operators - Implementing continuous maintenance programme - Fencing of mine site - Community awareness raising/education - Establishment of Project Grievance Mechanism - Optimise mine plan to limit disruption of movement patterns - Inform communities of planned construction activities that would affect vehicle/pedestrian traffic	Medium term	Limited	Moderately high - negative	Slightly detrimental	Probable	Minor - negative
Land acquisition and loss of grazing land	Permanent	Very limited	High - negative	Moderatel y detrimenta l	Highly probabl e	Moderate - negative	- Optimise project design to avoid/limit displacement/loss of land - Adequate compensation to displaced farmers where losses occur - Where required (through change of mine plan) develop a resettlement planning document to guide any displacement	Permanent	Very limited	Moderately high - negative	Moderately detrimental	Likely	Minor - negative
Impacts related to population influx													
Community opposition – arising from unmanaged expectations	Medium term	Local	High - negative	Moderatel y detrimenta l	Probabl e	Minor - negative	- Maximise local employment - Clearly communicate preferential local employment policy to discourage influx - Implement effective communication strategy to discuss project plans, thus managing expectations - Enforce code of conduct for contractors & employees in terms of interaction with local communities	Medium term	Local	Moderately high - negative	Moderately detrimental	Unlikely	Negligible - negative
Increased social pathologies	Medium term	Local	Very high - negative	Moderatel y detrimenta l	Probabl e	Minor - negative	- Implement HIV/AIDS and substance abuse awareness - Make HIV/AIDS/STD prevention programmes a condition of contract for suppliers/sub-contractors - Control access at site to prevent the presence of sex workers - Establish clear rules and regulations for access to the mine site - Work with local health service providers to provide services and health surveys also on	Medium term	Local	High - negative	Moderately detrimental	Unlikely	Negligible - negative

Impact	Pre-mitigation:						Recommended mitigation	Post-mitigation:					
	Duration	Extent	Intensity	Conse-quence	Probabi lity	Signifi-cance		Duration	Extent	Intensity	Conse-quence	Probability	Signifi-cance
							substance abuse - Establish liaison structures with local police and local community policing forums						
Increased pressure on local services/resources	Medium term	Local	High - negative	Moderatel y detrimenta l	Likely	Minor - negative	- Discourage influx of job-seekers by prioritising employment of unemployed local community members - Liaise with local municipality to ensure that expected population influx is taken into account in land management strategies - Create synergies with local government IDP and other companies in potential community projects	Medium term	Local	Moderately high - negative	Moderately detrimental	Probable	Minor - negative

Cumulative Impacts

Development of the proposed De Grooteboom Project, together with other developments in the area (including those current and within the foreseeable future), could result in large-scale economic development in the broader project area. The impacts that would result from a combination of the project and other future developments in the broader project area are likely to have a significant cumulative effect in the region. These are discussed in Section 6.5 of the report, and include the following:

- Job creation and the cumulative multiplier effect;
- Impacts related to population influx; and
- Dependency on mining to sustain the local economy.

Conclusion

The investigations into the baseline conditions of the local and site-specific study areas, and the social impacts related to the proposed Project highlight the development needs and challenges of local communities, as well as the potentially positive impact that the proposed project could have on the development of the local economy.

It is recommended that the mitigation measures described in the report be incorporated into the Environmental Management Programme for the proposed Project and, where relevant, into the contract conditions to be issued to the contractors. Measures should also be put in place to monitor and assess the implementation of these mitigation measures and to take corrective action where necessary.

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ABBREVIATIONS AND ACRONYMS

ABET	Adult Basic Education and Training
AsgiSA	Accelerated and Shared Growth Initiative for South Africa
BEE	Black Economic Empowerment
CRDP	Comprehensive Sustainable Rural Development Programme
CSI	Corporate Social Investment
Digby Wells	Digby Wells Environmental
DMR	Department of Mineral Resources
EIA	Environmental Impact Assessment
EMP	Environmental Management Programme
ESTA	Extension of Security of Tenure Act
GDP	Gross Domestic Product
GTLM	Greater Tubatse Local Municipality
GSDM	Greater Sekhunkhune District Municipality
Ha	Hectare
HDSA	Historically Disadvantaged South Africans
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
IDP	Integrated Development Plan
IFC	International Finance Corporation
Km	Kilometre
km^2	Square Kilometre
LED	Local Economic Development
LM	Local Municipality
LoM	Life of Mine
LSDF	Limpopo Spatial Development Framework
LUSM	Land Use Management Scheme
MPRDA	Mineral and Petroleum Resources Development Act
MRA	Mining Right Application
Mt/a	Million tonnes per annum
MWP	Mining Works Programme
NCD	Non-communicable diseases
NDP	National Development Plan
NEMA	National Environmental Management Act
NGOs	Non-governmental Organisation
NSDP	National Spatial Development Plan
PGDS	Provincial Growth and Development Strategy
PGMs	Platinum Group Metals

PPP	Public participation process
PS	Performance Standards
RAP	Resettlement Action Plan
RoM	Run of Mine
SA	South Africa
SDF	Spatial Development Framework
SIA	Social Impact Assessment
SIPs	Strategic Integrated Projects
SLP	Social and Labour Plan
SMMEs	Small, Medium and Micro-sized Enterprises
SMP	Social Management Plan
StatsSA	Statistics South Africa
STD	Sexually Transmitted Diseases
TB	Tuberculosis
TCLM	Thaba Chweu Local Municipality
ToR	Terms of Reference

1 Introduction

De Groote Boom Minerals (Pty) Ltd (De Groote Boom) are proposing to mine primarily chromite (chrome ore and all associated minerals) covering an extent of not more than 5 ha on the Remaining Extent and portion 1 of the farm De Grooteboom 373 KT, near the town Steelpoort situated in the Limpopo Province (Local Setting Plan). Digby Wells Environmental (hereafter Digby Wells) has been requested by De Groote Boom to compile and submit an Environmental Management Plan (EMP), pursuant to an application for a Mining Permit, in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) to the Limpopo Department of Mineral Resources (DMR).

The Mining Permit Application has been accepted by the Regional Manager, Limpopo Region, of the DMR under Reference LP 10656 MP and De Groote Boom has been instructed to prepare an EMP, which will include various specialist investigations, and a Public Participation Process (PPP) will be undertaken.

Digby Wells is undertaking the environmental and social specialist studies as part of the EMP for the proposed De Grooteboom Project (the Project). This document presents the Social Impact Assessment (SIA) report for the Project.

1.1 Terms of Reference

The terms of reference (ToR) for the SIA are to:

- Describe the baseline socio-economic environment of the Project site and surrounding area; and
- Identify the potential socio-economic impacts that may arise as a result of the proposed Project, based on the activities and timeframes underpinned in the Mining Permit Application; and
- Assess the significance of the identified impacts and provide impact management measures aimed at mitigating negative social impacts and enhancing the positive impacts.

1.2 Structure of the Report

This report is structured as follows:

- **Section 2** provides details of the proposed Project, including the Project description available during the undertaking of the SIA.
- **Section 3** details the methodology employed for this study and includes details on the study areas, data collection activities, completion of the baseline profile, and the identification and assessment of social impacts.
- **Section 4** provides a description of the legal and policy framework applicable to the Project.

- **Section 5** provides a baseline description of the study area, and includes the socio-economic context of both the regional, local and site-specific study areas.
- **Section 6** provides a preliminary description of potential socio-economic impacts that could likely be triggered by the proposed Project activities.
- **Section 7** concludes with recommendations and summarised findings of the SIA.

2 Project Description

This Section provides a description of the Project in terms of its geographic location and proposed activities, including timing thereof.

2.1 Project Location

The Project site is situated in Ward 31 of the Greater Tubatse Local Municipality (GTLM) which is part of the Greater Sekhukhune District Municipality (GSDM) in Limpopo Province. The Project shares its border (eastern Project border) with Ward 5 of the Thaba Chweu Local Municipality (TCLM) in Mpumalanga Province.

Regionally, Ward 18 of the GTLM is approximately 40 km to the north east of the Project site; this is included in the study area as it is likely that the project could have influence on this ward. The closest towns are Steelpoort (approximately 15 km to the north), Lydenburg (Mashishing) in the Mpumalanga Province (approximately 30 km south-east of the Project and Burgersfort (approximately 40 km north-northeast of the Project).The Projects regional location can be seen in Appendix A, Plan 1.

2.2 Description of Activities

De Groote Boom currently holds an approved Prospecting Right valid for three years (with the right to take a Bulk Sample). It now proposes to mine primarily chromite (chrome ore and all associated minerals) covering an extent of not more than 5 ha on the Remaining Extent and portion 1 of the farm De Grooteboom 373 KT. It is possible that after competing work under the Mining Permit (which is valid for two years), De Groote Boom will commence with full scale mining of Chrome and associated minerals in terms of a Mining Right that would be applied for at that stage.

Proposed mining (under the Mining Permit) will be undertaken by open cut methods and the ore may be transported to a portable plant for crushing and screening. The ore will be stockpiled until transported off site by truck. The Mining Permit area is adjacent to the Bulk Sample area and the operational and related infrastructure areas are depicted on the infrastructure plan in the main EIA/EMP report.

The Project entails a construction phase, mining phase and possibly a decommissioning phase. The decommissioning phase will only be applicable if the project does not proceed to a longer term mining operation.

With the above in mind, the following list of activities is proposed as part of the Project.

Table 2-1: List of Activities for the De Grooteboom Project

Activity	Description
Construction phase	
1	Augmenting existing roads
2	Construction of pollution control dam (PCD)
3	Transport of construction material, mobile plant and equipment to the site; and movement of haul trucks and excavator on haul roads
4	Storage of material / diesel at site in temporary facilities
5	Site clearing and topsoil removal for mining operation area; and construction of mining cut
6	Preparing an area of approximately 2-3 ha for portable plant and infrastructure (crushing, screening, workshops, ablution and offices etc.) and stock piling
7	Use of existing drilled / new boreholes
Operational phase	
8	Storage of fuel and lubricants in temporary facilities
9	Topsoil removal and stockpiling; and extraction and transportation of mined material
10	Vehicular activity on haul roads; and operation of mining equipment
11	Crushing and screening of ore in mobile plant
12	Stockpiling material
13	Water management
14	Waste generation and disposal (including sewage)
Decommissioning phase	
15	Demolition / removal of portable and related infrastructure (if applicable)
16	Vehicular activity: removal of mobile plant / equipment and vehicles
17	Rehabilitation of site (As per surface use agreement roads, buildings etc. need not be rehabilitated)
It should be noted: There may be no decommissioning phase as the mining area will remain for subsequent mining should the project be viable.	

2.3 Workforce and Expenditure Forecasts

The workforce and Project expenditure are important aspects in assessing the impact a project has on the social environment. Employment and job creation are often among the largest positive impacts associated with development projects.

The De Grooteboom Project is not expected to provide significant employment opportunities. Due to the nature of the Mining Permit Application, the Project will not comprise a full-scale mining operation.

In terms of workforce requirements, the Project will utilise the current contractors carrying out prospecting activities. These contractors and their staff compliment will carry out the activities proposed under the Mining Permit Application.

Project expenditure will be limited to activities proposed as part of the Mining Permit.

During the undertaking of proposed activities within the two-year period of the Mining Permit, the proponent will assess the feasibility of submitting a full Mining Right Application, where after workforce and expenditure forecasts will be evaluated.

3 Methodology

The SIA was designed to comply with the relevant national legislative requirements, such as those stipulated in Section 4, in particular, Section 4.1.2 and 4.1.3. The activities undertaken as part of the study are described in turn below.

3.1 Definition of the Study Areas

The study areas defined during the undertaking of an SIA must be useful for the effective assessment of social impacts. The study area for an impact assessment is generally defined as the area that is likely to experience the impacts arising from or to exert an influence on, the Project or activity being assessed (IFC, 2012). In the case of socio-economic impact assessment, this task is complicated by the fact that different types of socio-economic impacts make themselves felt over different geographical areas. Generally such impacts of a Project can be divided into three broad categories:

- Impacts related to the ***physical intrusion*** of Project infrastructure and Project-related activities on the surrounding environment (which may include socio-economic impacts arising from land acquisition, noise, dust, vibration and changes in the visual characteristics of the landscape). Such impacts typically extend to land uses and households within a few hundred metres from the edges of a project's footprint;
- Impacts related to the ***"economic pull"*** exerted by the Project (including job creation, an influx of workers and job-seekers into the Project area, increased pressure on services, as well as the concomitant risk of increased social pathologies and community conflict). Such impacts usually extend to the settlements or small towns

located closest to the project – which may be up to a few kilometres from the edges of the project footprint; and

- ***Indirect or induced impacts*** that are by-products or ripple-effects of the impacts in the foregoing two categories. These could include multiplier effects in the local and regional economy (as a result of the creation of new jobs and Project-related expenditure), macroeconomic benefits of the Project and benefits derived from corporate social investment by the Project proponent. The geographical reach of such impacts tend to include the larger towns or cities in the vicinity of the project site – which could be up to fifty kilometres away.

The relevance of this distinction for the definition of the study area stems from the fact that the type and level of baseline information required for an adequate prediction of socio-economic impacts differs between these three categories. Accordingly, three concentric and interdependent study areas were identified for the purposes of this study. Each study area roughly corresponds to the geographical extent of one of the three categories of impacts defined above. The three study areas are as follows:

- The ***site-specific study area*** – the area likely to experience impacts related to the physical intrusion of Project infrastructure and Project-related activities (i.e. up to a few hundred metres from the edges of a project's footprint). This study area is defined as the extent of the farm portions (De Grooteboom 373 KT) comprising the footprint of Project infrastructure and a 500m buffer surrounding it, as well as farm portions neighbouring this area (see Appendix A, Plan 3 and Table 3-1).
- The ***local study area*** – the area likely to experience impacts related to the "economic pull" exerted by the Project (i.e. up to a few kilometres from the edges of the project footprint). This area was approximated as the geographical extent of the municipal wards that encompass and surround the proposed Project footprint – namely, Wards 31, and ward 18 of the Greater Tubatse Local Municipality (GTLM) in the Limpopo Province and Ward 5 of Thaba Chweu Local Municipality (TCLM) in the Mpumalanga Province comprise this study area (see Appendix A, Plan 2).
- The ***regional study area*** – the area likely to experience the indirect or induced impacts of the proposed Project. The typical reach of such impacts mentioned above (i.e. an area circumscribed by a radius of up to a fifty kilometres) includes most of the GTLM as well as a small part of neighbouring TCLM (Mpumalanga Province). However, due to the fact that the project falls within GTLM, and also because the largest nearby settlements (Burgersfort and Steelpoort) are located in this municipality, the regional study for the purposes of this baseline is defined so as to include only GTLM (see Appendix A, Plan 1). For purposes of regional statistical comparison, socio-economic figures from the Greater Sekhukhune District Municipality (GSDM) were assessed and included in the regional study area.

Table 3-1: Farms and farm portions identified as part of the site-specific study area

Farm	Portion	Landowner/ Representative
Directly affected farms (Current prospecting right area)		
De Grooteboom 373	0	Private Person
	2	4U2 Farm 002 CC
	3	Xstrata South Africa (Pty) Ltd
	1	Willem Johannes Steenkamp Testamentere Trust
	4	Assmang LTD
Adjacent farms		
Rietfontein 375	7	Private Person
	8	Van Niekerk Stene CC
	9	Zeburaba Cattle Enterprises Pty Ltd
	12	Private Person
	13	BAKONI BA SHAGA Community Development Trust
	15	Zeburaba Cattle Enterprises Pty Ltd
Zwakwater 377	0	National Government of the Republic of South Africa
Dwars Rivier 372	0	Assmang LTD
	1	Assmang LTD
Frischgewaagd 359	0	National Government of the Republic of South Africa
Tweefontein 360	1	Samancor Chome LTD
Thorncliffe 374	3	Xstrata South Africa Pty Ltd
	4	Private Person
	0	Xstrata South Africa Pty Ltd
	2	Didingwe River Lodge CC

3.2 Data Collection

The information presented in this document was obtained through the following data collection activities:

- A desktop review of available documents to obtain relevant socio-economic baseline information on the defined study areas. Documents reviewed include:
  - Municipal Integrated Development Plans (IDPs), Local Economic Development (LED) Plans and Spatial Development Frameworks (SDFs);
  - Socio-economic and demographic statistics sourced from Statistics South Africa's (StatsSA) Census 2011 and Community Survey 2007 data;
  - Previous studies and reports concerning the proposed Project, specifically the prospecting reports previously compiled for the proposed Project; and
  - Available maps and satellite imagery.
- An investigative site visit was undertaken between 15 and 17 April 2015. The aim of this site visit was to gain an appreciation of the physical characteristics of the area in which the proposed Project is located, including immediate surrounds and determine the probability of physical or economic displacement, and to verify information obtained from secondary sources on the socio-economic characteristics of the receiving environment.
- Interviews with key informants (see Table 3-2) were carried out during the investigative site visit and through telephonic conversations in order to
  - Assess stakeholders' perceptions, concerns and expectations regarding the Project;
  - Verify baseline socio-economic information collected during the desktop review;
  - Gain insight into local experiences, perceptions and feelings about the Project; and
  - Identify potential impacts of the proposed Project on the socio-economic environment.

Table 3-2: Key informant interviews undertaken for the Project

Date	Key Informant	Entity/stakeholder group
April 16th 2015	Louis Fourie	Lodge owner
April 16th 2015	Jolene Besuidenhout	Land Owner
April 23rd 2015	Jacob Ryno le Grange	Land Owner
April 24th 2015	Remember Mmabengwa	Dwarsrivier Mine Community Liaison Officer

3.3 Compilation of a Socio-economic Baseline Profile

On the basis of the information collected through the desktop review and interviews with key informants, a socio-economic baseline profile was compiled for the respective study areas defined in Section 3.1. Topics considered as part of this profile include demographics, (including population size and growth, and population distribution data), economic conditions and development, levels of employment, spatial development and land use, infrastructure and services availability, and community needs.

3.4 Identification and Assessment of Socio-economic Impacts

A range of potential social impacts of the proposed Project were identified based on information obtained from the public consultation process, interviews that took place for the purposes of the SIA, as well as specialist opinion. Impacts were grouped into four broad categories:

- Effects on the local economy;
- Effects from impacts to the physical environment;
- Effects of population influx; and
- Cumulative impacts.

The impact assessment and rating process is designed to provide a quantitative rating of the identified social impacts, whilst still allowing for the subjective assessment of said impacts. The significance rating follows an established impact/risk assessment formula, as shown below:

***Significance** = **consequence** of an event x **probability** of the event occurring*

where

Consequence** = Type of impact **x (Intensity + Spatial Scale + Duration)

and

Probability** = **Likelihood of an impact occurring

In the formula for calculating **consequence**:

Type of impact **= +1** (for positive impacts) ***or* -1** (for negative impacts)

The weight assigned to the various parameters for positive and negative impacts in the formula is presented in Table 3-3 to Table 3-6 below.

Table 3-3: Rating options: Intensity

Rating	Negative impacts (Type of impact = -1)	Positive impacts (Type of impact = +1)
7	Irreparable damage to highly valued items of great cultural significance or complete breakdown of social order.	Noticeable, on-going social benefits which have improved the livelihoods and living standards of the local community in general.
6	Irreparable damage to highly valued items of cultural significance or breakdown of social order.	Great improvement to livelihoods and living standards of a large percentage of population.
5	Very serious widespread social impacts. Irreparable damage to highly valued items.	On-going and widespread positive benefits to local communities which improves livelihoods.
4	On-going serious social issues. Significant damage to structures / items of cultural significance.	Average to intense social benefits to some people.
3	On-going social issues. Damage to items of cultural significance.	Average, on-going positive benefits, not widespread but felt by some.
2	Minor medium-term social impacts on local population. Mostly repairable. Cultural functions and processes not affected.	Low positive impacts experience by very few of population.
1	Minimal social impacts, low-level repairable damage to commonplace structures.	Some low-level social benefits felt by very few of the population.

Table 3-4: Rating options: Spatial scale

Rating	Definition
7	**International:** The effect will occur across international borders
6	**National:** Will affect the entire country
5	**Province/ Region:** Will affect the entire province or region
4	**Municipal Area:** Will affect the whole municipal area
3	**Local:** Extending across the site and to nearby settlements
2	**Limited:** Limited to the site and its immediate surroundings
1	**Very limited:** Limited to specific isolated parts of the site

Table 3-5: Rating options: Duration

Rating	Definition
7	**Permanent:** The impact will remain long after the life of the Project
6	**Beyond Project life:** The impact will remain for some time after the life of the Project
5	**Project Life:** The impact will cease after the operational life span of the Project
4	**Long term:** 6-15 years
3	**Medium term:** 1-5 years
2	**Short term:** Less than 1 year
1	**Immediate:** Less than 1 month

Table 3-6: Rating options: probability

Rating	Definition
7	**Certain/Definite:** There are sound scientific reasons to expect that the impact will definitely occur
6	**Almost certain/ Highly probable:** It is most likely that the impact will occur
5	**Likely:** The impact may occur
4	**Probable:** Has occurred here or elsewhere and could therefore occur
3	**Unlikely:** Has not happened yet but could happen once in the lifetime of the Project, therefore there is a possibility that the impact will occur
2	**Rare/ improbable:** Conceivable, but only in extreme circumstances and/ or has not happened during lifetime of the Project but has happened elsewhere. The possibility of the impact materialising is very low as a result of design, historic experience or implementation of adequate mitigation measures
1	**Highly unlikely/None:** Expected never to happen.

Impacts are rated prior to mitigation and again after consideration of the proposed mitigation measures. The impact is then determined and categorised into one of eight categories, as indicated in the Table 3-7 below. The relationship between the consequence, probability and significance ratings is graphically depicted in the Figure 3-1 below.

Probability \ Significance	-21	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
7	-147	-140	-133	-126	-119	-112	-105	-98	-91	-84	-77	-70	-63	-56	-49	-42	-35	-28	-21	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140	147
6	-126	-120	-114	-108	-102	-96	-90	-84	-78	-72	-66	-60	-54	-48	-42	-36	-30	-24	-18	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	126
5	-105	-100	-95	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105
4	-84	-80	-76	-72	-68	-64	-60	-56	-52	-48	-44	-40	-36	-32	-28	-24	-20	-16	-12	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84
3	-63	-60	-57	-54	-51	-48	-45	-42	-39	-36	-33	-30	-27	-24	-21	-18	-15	-12	-9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63
2	-42	-40	-38	-36	-34	-32	-30	-28	-26	-24	-22	-20	-18	-16	-14	-12	-10	-8	-6	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
1	-21	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

Consequence

Figure 3-1: Relationship between consequence, probability and significance ratings

Table 3-7: Significance ratings

Score	Description	Rating
109 to 147	A very beneficial impact which may be sufficient by itself to justify implementation of the Project. The impact may result in permanent positive change.	Major (positive)
73 to 108	A beneficial impact which may help to justify the implementation of the Project. These impacts would be considered by society as constituting a major and usually a long-term positive change to the (natural and/or social) environment.	Moderate (positive)
36 to 72	An important positive impact. The impact is insufficient by itself to justify the implementation of the Project. These impacts will usually result in positive medium to long-term effect on the social and/or natural environment.	Minor (positive)
3 to 35	A small positive impact. The impact will result in medium to short term effects on the social and/or natural environment.	Negligible (positive)
-3 to -35	An acceptable negative impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. These impacts will result in negative medium to short term effects on the social and/or natural environment.	Negligible (negative)
-36 to -72	An important negative impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the Project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in negative medium to long-term effect on the social and/or natural environment.	Minor (negative)
-73 to -108	A serious negative impact which may prevent the implementation of the Project. These impacts would be considered by society as constituting a major and usually a long-term change to the (natural and/or social) environment and result in severe effects.	Moderate (negative)
-109 to -147	A very serious negative impact which may be sufficient by itself to prevent implementation of the Project. The impact may result in permanent change. Very often these impacts are immitigable and usually result in very severe effects.	Major (negative)

3.5 Mitigation Measures and Recommendations

Appropriate management and mitigation/enhancement measures are recommended to avoid or ameliorate negative social impacts and to enhance positive impacts. The criteria for the selection of mitigation measures included the following:

- That measures should be effective in ameliorating the impact without having severe negative secondary consequences; and
- That they should be practically feasible and cost-effective.

After suitable mitigation measures were identified for each impact, the rating procedure described in Section 3.4 was repeated to assess the expected consequence, probability and

significance of each impact after mitigation or enhancement. This post-mitigation rating gives an indication of the significance of residual impacts, while the difference between an impact's pre- and post-mitigation ratings represents the degree to which the recommended measures are expected to be effective in reducing or ameliorating that impact.

In addition to recommending mitigation and enhancement measures, the study makes general recommendations that could aid the successful mitigation of Project-related risks.

3.6 Assumptions and Limitations of the Study

Although all reasonable efforts were made to provide an updated and representative picture of socio-economic impacts relevant to the study areas, this report is still subject to some assumptions and limitations:

- This report is based on available information obtained from the client, secondary sources, other specialists and stakeholders consulted during fieldwork. The sources consulted are in no way exhaustive, although deemed sufficient to meet the ToR for the current study. No information has been deliberately excluded from this report, and it is assumed that no party withheld relevant information from the specialists.
- The social specialists acknowledge the importance and value of local knowledge obtained through consultation with a variety of local stakeholders. As such, efforts were made during the consultation process to elicit the relevant knowledge required for a comprehensive and accurate impact assessment of the social environment. It should be noted that although several key informant interviews were planned for the data collection phase, some of these discussions did not materialise as stakeholders were not available. Despite this, the author is confident that in all respects where the nature or magnitude of potential socio-economic impacts is dependent on accurate and current baseline data, these have been sufficiently updated from individual interviews with key informants, combined the appropriate data collected during the public participation process.
- Socio-economic impacts associated with the eventual decommissioning phase of the mine are briefly discussed but are not subject to detailed assessment due to the nature of the Mining Permit being short-term (two years). Should further mining prove feasible (through the application of a full Mining Right), a revision of the social baseline and socio-economic impacts should be carried out once detail of the timing and characteristics of mine closure are known.

4 Legal and Policy Framework

From an environmental and social perspective, the proposed Project needs to comply with all requirements in terms of the provisions of the National Environmental Management Act, 107 of 1998 (NEMA), including its amendments; the Minerals and Petroleum Resources Development Act, 28 of 2002 (MPRDA) and its amendments; and the National Water Act, 36 of 1998 (NWA).

Currently the legislation in South Africa applicable to mining and the protection of the environment has no direct reference to SIAs. There is however, legislation detailing the type, extent and timeframes for public participation and stakeholder engagement during the undertaking of an EIA and EMP for a project.

This section summarises various portions of national legislation that are relevant to a socio-economic assessment for a South African mining Project.

4.1 National Legislation and Policies

4.1.1 The South African Constitution, 108 of 1996

Section 24 of the South African Constitution (the Constitution) provides that everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures, that –

i. Prevent pollution and ecological degradation;
ii. Promote conservation; and
iii. Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

Section 25 of the Constitution provides that expropriation of property is permissible to effect land redistribution, or in order to achieve some other public purpose or for the public interest. However, Section 25 prohibits arbitrary deprivation of property as well as the expropriation of property without payment of just and equitable compensation, which has either been agreed upon or which has been decided by a court of law.

4.1.2 National Environmental Management Act

This Act provides that sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions so as to ensure that development serves present and future generations. The Act further sets out the process for public participation.

4.1.3 Mineral and Petroleum Resources Development Act

Upon the acceptance of an application for a mining right or mining permit, the applicant is required to prepare an EMP in accordance with requirements of the MPRDA, to mitigate both bio-physical and social impacts of the proposed development. The MPRDA furthermore requires that mining companies assess the social impacts of their activities from start to closure and beyond. Companies must also develop and implement a comprehensive Social and Labour Plan (SLP) in conjunction with the application of a Mining Right to promote socio-economic development in their host communities and to prevent or lessen negative social impacts. Although this SIA is being prepared for the application of a Mining Permit, it is worth noting this requirement.

The mine SLP shall ensure, amongst others, training and career progression of its employees, and in particular, Historically Disadvantaged South Africans (HDSAs), as well as the participation of women in mining. The MPRDA furthermore requires that the SLP provide strategies and measures that could prevent job loss in the event of circumstances threatening guaranteed employment.

4.1.4 South African Mining Charter

The Mining Charter focuses on sustainable transformation of the mining industry. Social management and mitigation measures to be developed as part of the SIA will be aligned to the Mining Charter. Amongst other objectives, the Mining Charter seeks to promote equitable access to the nation's mineral resources to all the people of South Africa, meaningfully expand opportunities for HDSAs to enter the mining and minerals industry and to benefit from the exploitation of the nation's mineral resources, utilise and expand the existing skills base for the empowerment of HDSAs and to serve the community, and promote employment and advance the social and economic welfare of communities and major labour sending areas.

4.1.5 The Department of Mineral Resources Consultation Guidelines

The above Guidelines were compiled for use by applicants for prospecting and mining rights. It provides that Interested and Affected Parties include, amongst others, host (or receiving) communities, land owners, traditional authorities, land claimants, lawful occupiers, any other person whose socio-economic conditions may be directly affected by proposed prospecting or mining activities.

4.1.6 Mine Health and Safety Act, 29 of 1996

This Act is administered by the Mine Health and Safety Inspectorate of the DMR. The sections of the Act applicable to socio-economic aspects are sections 2 and 5, which provide that employers must ensure and maintain a safe and healthy environment at the mine during construction, operation, decommissioning and closure.

4.1.7 White Paper on Local Government, 1998

This White Paper sets the framework for a developmental local government system that is committed to working with citizens, groups and communities to create sustainable human settlements, which provide for a decent quality of life and meet the social, economic and material needs of communities in a holistic fashion.

4.1.8 Municipal Systems Act, 32 of 2000

The Municipal Systems Act provides for the principles, mechanisms and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of local communities, and to ensure universal access to essential services that are affordable to all.

4.1.9 Municipal Structures Act, 117 of 1998

This Act states that district and local municipalities must support and co-operate with one another. The division of functions between local and district may also be adjusted according to the Act. This allows local municipalities to take on more roles and responsibilities from district municipalities, such as service provision.

4.1.10 The Development Facilitation Act (DFA), 67 of 1995

This Act sets out the principle that policy, administrative practice and laws should support effective integrated planning, optimal use of existing resources, the promotion of sustainable development, and the requirement that land use should be judged on its merits.

4.1.11 Extension of Security of Tenure Act (ESTA), 62 of 1997

This Act confers certain rights to non-landowning residents of a property, where such rights are linked to the period of time in which persons have been resident on the land. The Act applies to all rural areas in South Africa, regardless of whether the land is used for farming or mining purposes. No occupier can be evicted unless the provisions of ESTA have been strictly followed and a Court Order has been obtained.

4.1.12 Restitution of Land Rights Act, 22 of 1994

This Act provides for the restitution of rights in land, for which people and communities were dispossessed of under any racially based discriminatory law; to establish a Commission on Restitution of Land Rights and a Land Claims Court.

4.1.13 Traditional Leadership and Governance Framework Amendment Act, 2003 and Council of Traditional Leaders Act, 1997

These two acts provide for the recognition and establishment of traditional communities and councils, and provide a framework for traditional leadership and the roles and responsibilities of this leadership.

4.1.14 Labour legislation

The following acts will be applicable with regard to employment policies at the proposed Project where recruitment takes place:

- Employment Equity Act, 55 of 1998;
- Basic Conditions of Employment Act, 75 of 1997;
- Labour Relations Act, 66 of 1995; and
- Skills Development Act, 97 of 1998 as amended.

4.1.15 The Department of Mineral Resources Consultation Guidelines

The above Guidelines were compiled for use by applicants for prospecting and mining rights. It provides that Interested and Affected Parties include, amongst others, host (or receiving) communities, land owners, traditional authorities, land claimants; lawful occupiers, any other person whose socio-economic conditions may be directly affected by proposed prospecting or mining activities.

4.2 Development Policies

This section provides a list of key initiatives and plans guiding national, provincial and district development, including plans pertaining to spatial and economic development.

- *National Development Plan (NDP):* The Plan aims to ensure that all South Africans attain a decent standard of living through the elimination of poverty and the reduction of inequality.
- *Accelerated and Shared Growth Initiative for South Africa (AsgiSA):* Launched in 2003 with the vision to halve poverty and unemployment among the country's population by 2015.
- *Comprehensive Sustainable Rural Development Programme (CRDP):* Aims to reduce/eliminate rural poverty and food insecurity by maximising the use and management of natural resources to create vibrant, equitable and sustainable rural communities.
- *The New Economic Growth Path Framework (New Growth Path):* Aimed at enhancing and facilitating growth, employment creation and equity. The policy's principal target is to create five million jobs over the next decade.
- *National Infrastructure Plan:* objective is to transform the country's economic landscape, while simultaneously creating significant numbers of new jobs, strengthen the delivery of basic services, and promoting integration with other African economies.
- *Extended Public Works Programme (EPWP):* Aims to improve service delivery by integrating the efforts of all spheres of government, non-governmental organisations, community organisations, governmental departments and other development role players.
- *Provincial Growth and Development Strategy (PGDS):* Aligned with the NDP, NSDP, National Infrastructure Plan and all provincial policies that have bearing on development.
- *National Spatial Development Plan (NSDP):* The SDF is a core component of a municipality's economic, sectorial, spatial, social, institutional and environmental vision. It is a tool to achieve the desired spatial form of the municipality.

- *Integrated Development Plans:* They serve to guide developmental planning and community development for district and local municipalities, highlighting local needs and priorities

5 Socio-economic Baseline Profile

This section presents the baseline profile of the receiving socio-economic environment. The first subsection focuses on the socio-economic characteristics of the regional and local study areas, while the final section describes the site-specific study area as defined in Section 3.1. Where necessary the socio-economic trends in the respective study areas are compared against trends in larger administrative areas, which provides additional context for interpretation.

5.1 Regional and local profile

As discussed in Section 3.1, the regional area has been defined as the GTLM, whilst the local study area is defined as Wards 31, 18 and 5 of the GTLM and Ward 5 of the TCLM. Where appropriate, for purposes of wider statistical comparison, data from the GSDM are drawn into the socio-economic baseline analysis.

The baseline social statistics presented in this section are based on the results of the 2011 National Census, which were retrieved from the website of Statistics South Africa. These statistics were disaggregated for the areas identified as being the most impacted by the Project, with focus on the local study area.

5.1.1 Project context

The highest concentration of people in the proposed Project's sphere of influence is in the town of Burgersfort. This town experienced a population boom due to an influx of job-seekers hoping to secure employment at Modikwe Platinum Mine and other nearby operations. Due to the location of this settlement, an understanding of its socio-economic characteristics is relevant for this study. For this reason, statistics on this settlement are provided alongside statistics for areas situated within the Project's local study area (Ward 31 in particular).

Ward 5 of the TCLM (Mpumalanga Province) is directly adjacent to the eastern border of the Project site (refer to Appendix A, Plan 2). Due to its location in relation to the Project, statistics for this ward are presented alongside data from the GTLM and GSDM of the Limpopo Province.

It should be noted that the socio-economic environment is likely to have undergone some changes since 2011; consequently, the statistics presented in this section may be slightly dated and should be regarded as indicative rather than an accurate reflection of current reality.

5.1.2 Demographics

This sub-section outlines the basic demographic attributes of the regional and local study areas: including population size and density, age and gender distribution, and breakdown of population and language groups.

As shown in Table 5-1 below, the population of Limpopo Province in 2011 was approximately 5.4 million (Stats SA, 2011).

The GSDM is located in the southern part of the province and has Mpumalanga as its provincial neighbour. The district municipality accounts for approximately 20% of the population of the province. The GSDM comprises of five local municipalities; namely the Greater Tubatse, Makhuduthamage, Elias Motsoaledi, Greater Marble Hall, and Fetakgomo Local Municipalities. The GTLM is situated in the eastern part of the GSDM and accounts for approximately 31% of its population. The GTLM includes the towns of Steeploort, Burgersfort, Ohgrigstad and Tubatse (GTLM, 2014).

The proposed Project site is situated in Ward 31 in the south eastern part of the GTLM, where it borders with Ward 18 of the GTLM and Wards 5 of the TCLM in Mpumalanga.

Ward 31 of the GTLM and Ward 5 of the TCLM have similar surface areas while Ward 18 of the GTLM is much smaller. Each of these wards has similar populations, highlighting the higher population density in the far smaller Ward 18. However, most of this population is accounted for by Burgersfort Town.

Table 5-1: Population and average household size (2011)

Area	Population in 2001	Average household size
Limpopo Province	5 404 868	3.8
Greater Sekhukhune DM	1 076 839	4.1
Greater Tubatse LM	335 676	4.1
Ward 18 (Limpopo)	11 948	3.1
Ward 31(Limpopo)	13 151	3.8
Ward 5 (Mpumalanga)	10 092	4.1

The age distributions of the populations within the regional and local study areas are illustrated in Figure 5-1 below. The figure (Figure 5-1) shows the GSDM as a whole, demonstrate age distributions that are typical of populations with a high growth rate, in that the largest proportions of the population are found in the youngest age brackets.

Table 5-2 highlights the age and racial distribution in the regional and local study areas. The population of Black Africans in the GSDM, GTLM and Ward 31 have experienced a higher fertility rate than the combination of White, Asian and Coloured populations. This is likely to

be attributed to a reduction in infant mortality in the population groups experiencing lower fertility rates which is usually as a result of an improvement in living standards. This is not an uncommon trend in the Limpopo and Mpumalanga Provinces, therefore improving the survival of children aged 0-4 is essential to prevent unsustainable population growth in the various study areas (Stats SA, 2013).

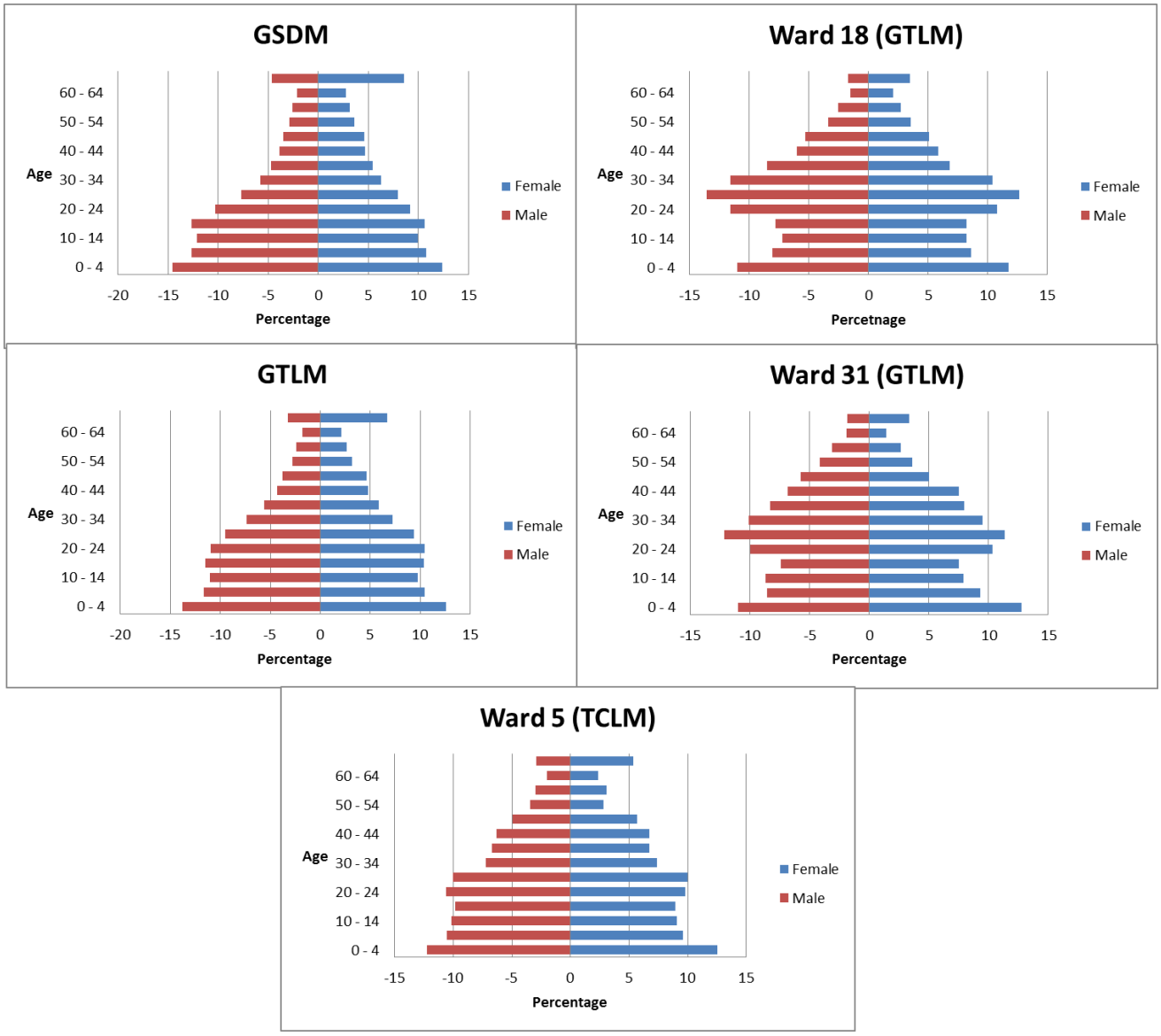

Figure 5-1: Age and gender distributions (Stats SA, 2011)

Table 5-2: Age and Racial Distribution (Stats SA, 2011)

	Regional Study Area				Local Study Area					
	GSDM		GTLM		Ward 18 (GTLM)		Ward 31(GTLM)		Ward 5 (TCLM)	
Age	Black African	Other	Black African	Other	Black African	Other	Black African	Other	Black African	Other
0 - 4	13%	9%	13%	10%	11%	12%	12%	10%	13%	10%
5 - 9	12%	7%	11%	8%	8%	8%	9%	8%	10%	10%
10 - 14	11%	6%	10%	7%	8%	7%	8%	8%	10%	8%
15 - 19	12%	7%	11%	7%	8%	7%	8%	6%	10%	8%
20 - 24	10%	8%	11%	9%	12%	9%	10%	9%	11%	8%
25 - 29	8%	10%	9%	10%	14%	11%	12%	11%	10%	8%
30 - 34	6%	8%	7%	9%	11%	10%	10%	9%	7%	6%
35 - 39	5%	8%	6%	8%	8%	8%	8%	9%	7%	7%
40 - 44	4%	7%	5%	8%	5%	8%	7%	11%	6%	7%
45 - 49	4%	7%	4%	7%	5%	6%	5%	7%	5%	8%
50 - 54	3%	6%	3%	6%	3%	6%	4%	4%	3%	5%
55 - 59	3%	5%	3%	5%	2%	5%	3%	4%	3%	5%
60 - 64	2%	4%	2%	3%	2%	2%	2%	3%	2%	5%
65 - 120	7%	8%	5%	3%	3%	2%	3%	2%	4%	7%

The language distribution of Ward 18 and 31 of the GTLM and Ward 5 of the TCLM are illustrated in Table 5-3, compared to that of the regional study area. The data shows the language distribution of the local study area is different to that of regional study area, in that Afrikaans and English are more widely spoken in the local study area as opposed to that of the regional study area. This is particularly relevant in Ward 18 (GTLM) with a combined 28% of the population speaking English and Afrikaans. The dominant language, however, in both the local and regional study areas is Sepedi, with 89% of the GTLM speaking the language, and 75% of the population from Ward 31 (GTLM) speaking Sepedi (Stats SA, 2013).

Table 5-3: Language composition (Stats SA, 2011)

	Regional Study area		Local Study Area		
Language	**GSDM**	**GTLM**	**Ward 18 (GTLM)**	**Ward 31 (GTLM)**	**Ward 5 (TCLM)**
Afrikaans	1%	2%	17%	11%	12%
English	1%	1%	10%	3%	4%
IsiNdebele	4%	1%	1%	1%	10%
IsiXhosa	0%	1%	1%	1%	1%
IsiZulu	3%	2%	4%	2%	7%
Sepedi	83%	89%	57%	75%	50%
Sesotho	1%	0%	1%	1%	2%
Setswana	2%	1%	2%	1%	1%
SiSwati	2%	3%	2%	3%	10%
Tshivenda	0%	0%	1%	1%	0%
Xitsonga	2%	1%	4%	2%	3%

5.1.3 Education

According to Stats SA (2011), the Limpopo Province educational development is lagging behind those of other provinces. There are 247 schools (primary and secondary) situated in GTLM. Steelpoort and Ohrigstad each have one primary school, with Burgersfort having additional private primary schools and 15 Adult Basic Education and Training (ABET) institutions. Generally in rural or semi-rural areas such, the predominance of primary schools as opposed to secondary schools is not unusual as many pupils leave school at the earliest possible time to find employment to assist and support the family (GTLM, 2014).

Figure 5-2 shows the highest education levels attained by persons in the regional and local study areas during the 2011 Census. The population of the GTLM is somewhat better educated than that of the GSDM. This trend is reflected in Wards 31 (GTLM) as well. The best education levels exist in Ward 18 (GTLM) with only 5 % of this population having no access to schooling and as much as 27% completing secondary school. Ward 31 (GTLM) and Ward 5 (TCLM) on the other hand, more closely resembles the local and district municipal levels, in that most of the adult population is poorly educated (Stats SA, 2013).

The expansion of the mining activities in the GTLM presents an opportunity to address unemployment in the area. However, the low skill levels pose a threat in this regard. Education should be geared towards meeting the skills shortages of the growing economy

with mining-related skills providing an opportunity. The FET (Further Education and Training) facility at Dr CN Phatudi College (Sekhukhune FET College in the City of Praktiseer) is assisting many young people in acquiring different skills in the area. There are no tertiary education facilities like technical colleges and universities in the areas of GTLM. Plans are underway to develop a technical high school, being facilitated by several mining houses, in consultation with the local municipality and the Limpopo Department of Education (GTLM, 2014).

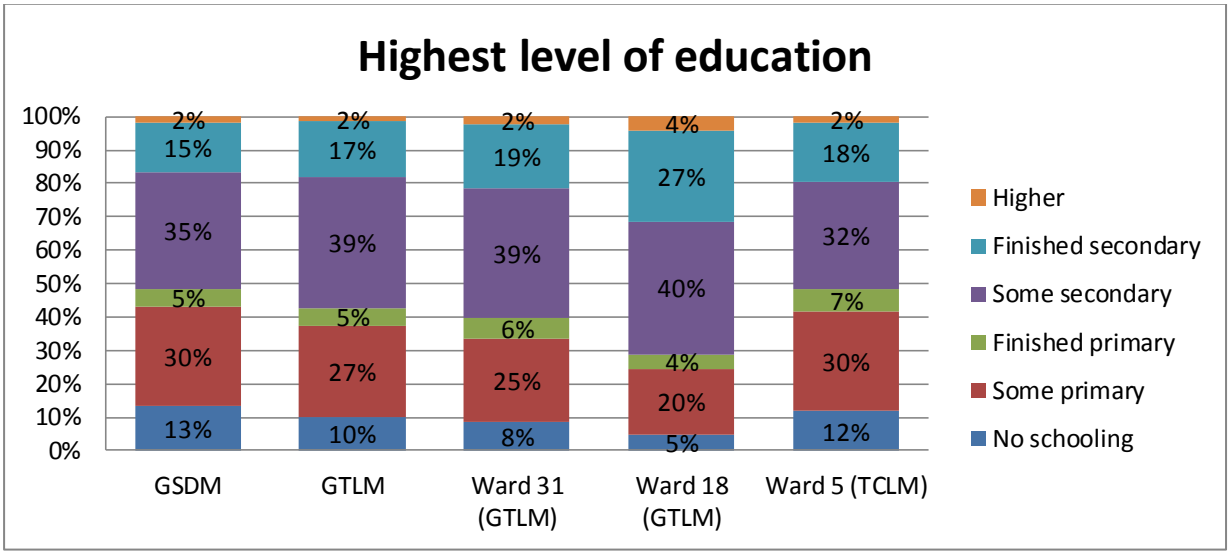

Figure 5-2: Level of education (Stats SA, 2011)

5.1.4 Economic activity

The economy of GSDM depends largely on mining, agriculture, trade and government services. Although agriculture seems to dominate most land use, most of the land that is under cultivation is used for subsistence purposes, with only 30% of the land being under commercial farming. Farmers note the scarcity of water as the main reason for agriculture being the lesser contributor to the gross domestic product (GDP) of the province. Moreover the status of land ownership and the fact that 75% of the land in Sekhukhune is under land claims hampers the development of the agriculture sector.

Assessing the agricultural potential in the district could help to address some of the factors that inhibit the usage of the land to its full potential. The district had invested R25 million in the last financial year (preceding the national census) to revamp the irrigation schemes, which will go a long way in securing the livelihoods of most of the rural poor and marginalised communities. The following products are produced in the region: fruit, vegetables, grain, cotton, citrus, maize, tobacco and meat. The areas that are conducive to agricultural production are the Olifants, Steelpoort and Spekboom Rivers, which provide water to the region. These sources of water are essential for present and long term irrigation of crops. There are high rates erosion and desertification in the GTLM as a result of overgrazing and a general lack of land management by rural populations. Their lack of skills

prevents them from managing their resource for long-term production. This type of farming makes the region vulnerable to periodic droughts that affect both the regional resources and the potential to generate work opportunities (GTLM, 2014).

Mining is one of the more dominant economic activities in the GSDM. This can be highlighted through the multiplier effect within the other economic sectors, for instance the increase in demand for housing and improved infrastructure services for the area are often associated with large-scale mining activities requiring an array of services and infrastructure to support the mines and their employees. The intrusion of the Volcanic Bushveld Igneous Complex into the sedimentary rock of the Transvaal system has resulted in metamorphic rock formations, which deposited many minerals including chrome, vanadium, platinum, asbestos and magnetite in the area. As a result there are various mining operations that have since been developing. The highest level of mining activity is currently within the GTLM, followed by the Fetakgomo Municipality, with Groblersdal and Marble Hall recording the lowest mining-related activities. Although there are several mines in the region, the existing resources remain unexploited. Investment in this sector is important in terms of the potential investment it can derive, including infrastructure development, creation of job opportunities and many other economic spin-offs (GTLM, 2014).

Besides agriculture and mining, the trade industry is a large contributor to the regional economy. This includes the housing, construction and retail sectors.

Tourism and eco-tourism has the potential to boost the economy in the regional study area but has not been fully developed yet, requiring more attention and consideration (GTLM, 2014).

5.1.5 Employment

Figure 5-3 shows the proportion of the population in the both the regional and local study areas (between the ages of 19 and 65) who are gainfully employed. This figure shows the positive economic impact that mining and other labour-intensive industries are having on the surrounding areas, particularly within the local study area.

Ward 31 and Ward 18 show substantially higher employment levels than that of the regional study area. Ward 5 (TCLM) also shows better employment figures, however, it was indicated during the site visit, that most employment in the Lydenburg/Mashishing area is associated with agriculture and not mining (Stats SA, 2013).

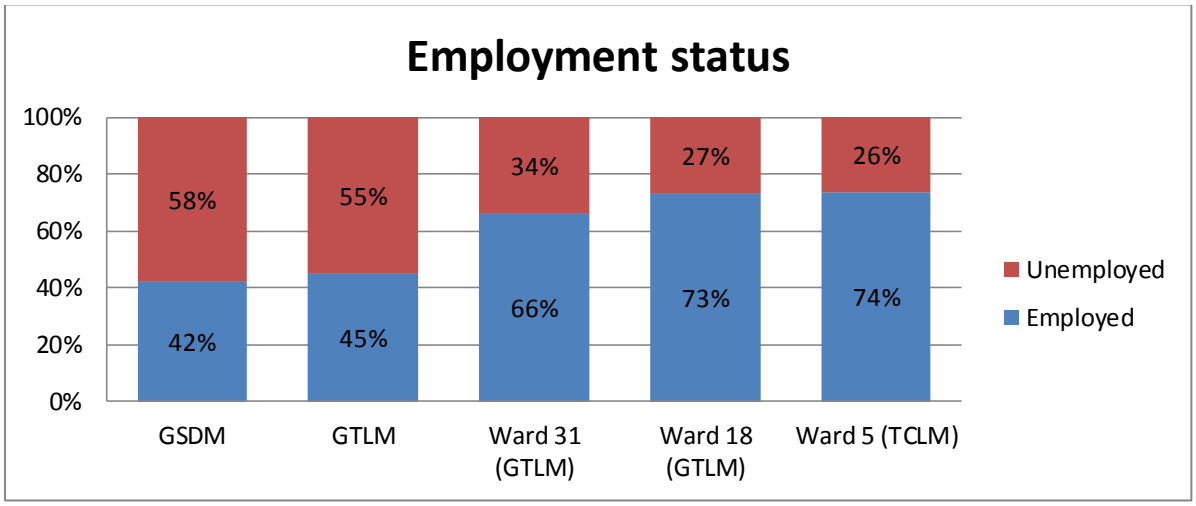

Figure 5-3: Proportion gainfully employed (aged 19 to 65 years) (Stats SA, 2011)

Monthly household incomes as recorded during the 2011 census are shown in Figure 5-4. The chart shows the consequences of such a high unemployment rate in both the regional study area (GTLM and the GSDM), with as much as 88% of households in the GSDM having to survive on R 6 400 or less per month, whilst 15% of households had no recorded income. In the GTLM, 85% of households find themselves in a similar position, with 16% having no recorded income. Wards 31 and 18 (GTLM) and Ward 5 (TCLM) show better income earnings than the regional statistics, with 69% of households in Ward 18 and 77% in Ward 31 surviving on R6 400 a month. Although this shows an improvement to economic conditions in the local study area, these figures are still concerning. Such poverty can have additional side effects such as lower life expectancies, high birth rates (often through seeking of child grants) and environmental degradation (Stats SA, 2013).

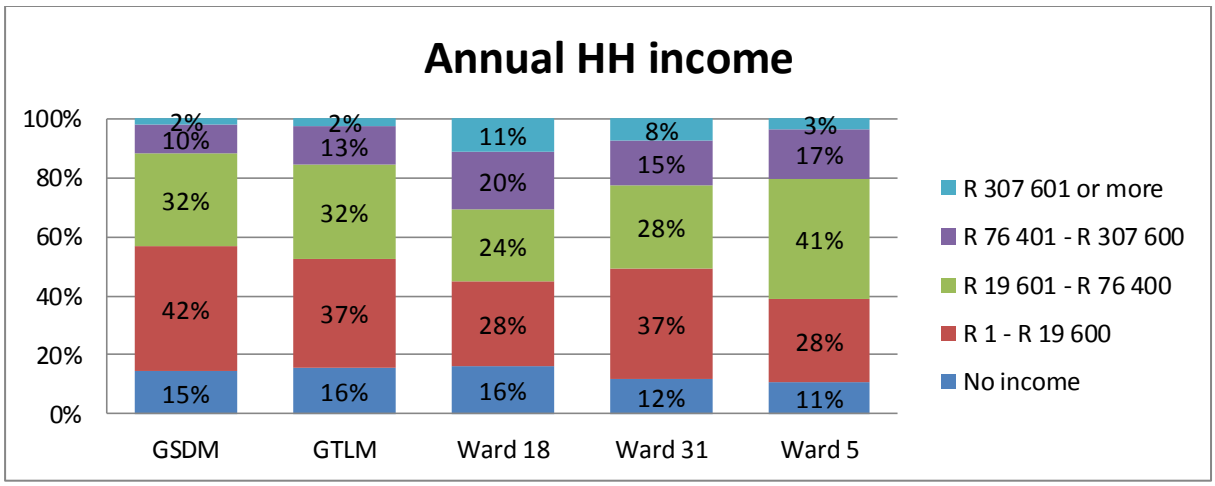

Figure 5-4: Annual household income

5.1.6 Housing and services

Infrastructure plays an important role in the social and economic development of communities. Areas without access to infrastructure are characterized by high levels of poverty whilst those with access are well off. Local municipalities therefore deal with two challenges in this regard. First is the issue of extending access to basic municipal services (water, sanitation, electricity and solid waste removal) to communities without access to such services. The second issue relates to the general provisioning and regular maintenance of infrastructure and services over these areas.

Figure 5-5 below illustrates the access to housing in the various areas study areas under consideration. The majority of residents at both the local and regional level have brick or concrete houses. Within the regional study area, the proportion of households with access to formal housing is higher than that of the local study area, with 89% of people in the GSDM having access to formal housing. Within Ward 31, around 63% of households have access to formal housing, whilst just less than a third (27%) of the population live in informal housing, and 4% live in traditional dwellings. These figures are similar to those wards in the remainder of the local study area. The relatively high levels of informal housing suggests that population influx has occurred as a result of prospective job seekers moving to the area (Stats SA, 2013).

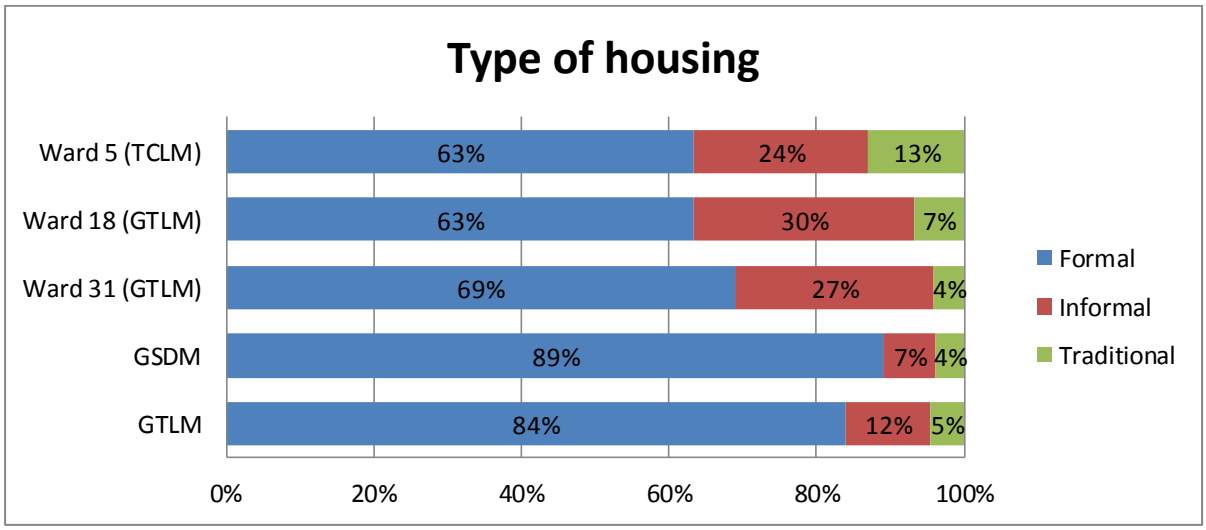

Figure 5-5: Access to formal housing (Stats SA, 2011)

Over-population and unmanaged human settlement has been cited as a reason for environmental degradation and general poor quality of life. Ensuring one has a place to live (security of tenure) can often result in people settling in areas that do not have the necessary services and infrastructure to support such growth. People who are renting their properties/land tend to view their situation as a temporary one, and are not worried about their immediate surroundings. Increasing tenure status encourages people to make their surroundings more appealing. It also results in less abuse of natural resources and local services.

Table 5-4 below shows that in Ward 18, 53% of households are rented, whilst in Wards 31 and Ward 5 (TCLM), 46% and 43% of the households respectively, are renting. This is a much higher proportion of rented housing than the regional study area. This is likely to be as a result of the relatively large mining workforce situated there. Most of these residents are likely to have other homes elsewhere in the province or the rest of South Africa (Stats SA, 2013).

Table 5-4: Tenure status

	Area	Occupied rent-free	Owned and fully paid off	Owned but not yet paid off	Rented
Regional Study Area	GSDM	28%	57%	4%	11%
	GTLM	28%	51%	5%	17%
Local Study Area	Ward 18 (GTLM)	11%	30%	6%	53%
	Ward 31 (GTLM)	24%	28%	2%	46%
	Ward 5 (TCLM)	27%	24%	7%	43%

5.1.7 Sanitation

The availability of sanitation facilities not only promotes human dignity, but also promotes good health conditions. Areas without proper sanitation systems give rise to water borne diseases like cholera, diarrhoea, and typhoid.

Table 5-5 below shows the sanitation facilities available in the regional and local study areas. The Limpopo Province as a whole typically fails to provide formal sanitation; with about one in four households having access to formal sanitation. It is important to note that the average for Southern Africa is substantially higher at 70%.

In the regional study area only 9% of the population have access to formal sanitation. The ward level data (local study area) shows that a larger proportion of the population have access to formal sanitation with, Ward 18 and 31 having more than 40% of their population with access to formal sanitation and in Ward 5 (TCLM) this figure is more than 60% (Stats SA, 2013).

Table 5-5: Sanitation (Stats SA, 2011)

	Area	Formal	Informal	None
Regional Study Area	GSDM	9%	86%	5%
	GTLM	9%	84%	7%
Local Study Area	Ward 18 (GTLM)	40%	54%	7%
	Ward 31 (GTLM)	45%	48%	6%
	Ward 5 (TCLM)	64%	27%	9%

5.1.8 Water sources

Water is life; it is a Constitutional right and humans cannot survive without it. Table 5-6 below shows where water is accessed from in both the regional and local study areas. The data indicates that potable water is largely provided through formal mechanisms implemented by municipal services.

Ward 18 of the local study area has the highest proportion of people with access to formal water services (76% of households). Regionally, the provision of water through formal schemes is improving in the GSDM and GTLM. Conversely, in Ward 31 there are a high percentage of people (41%) who obtain water through groundwater extraction (Stats SA, 2013).

Table 5-6: Water source (Stats SA, 2011)

	Area	Formal water scheme	Surface water	Groundwater
Regional Study Area	GSDM	61%	22%	17%
	GTLM	55%	26%	19%
Local Study Area	Ward 18 (GTLM)	76%	15%	9%
	Ward 31 (GTLM)	52%	8%	41%
	Ward 5 (TCLM)	60%	21%	19%

5.1.9 Electricity

The supply of electricity to households throughout the country is central to the government's aim of improving quality of life. The cost of energy in South Africa is amongst the lowest in the world (as a result of a heavy reliance on coal power), however, the demand is growing due to increase in macro-economic activities, industrialisation and a general increase in the population. The demand for electricity is expected to double over the next 20 years, which requires infrastructure upgrades and development. As part of Eskom's approach to reaching

these needs, they have implemented a higher annual increase in the cost of electricity over the next few years, likely making access to electricity unaffordable for a number of impoverished households.

The main source of energy in both the regional and local study areas, according to Census 2011 data, is electricity, followed by wood and coal (as seen in Figure 5-6 below). Approximately 50% of the regional study area use electricity as their main energy source (Stats SA, 2013).

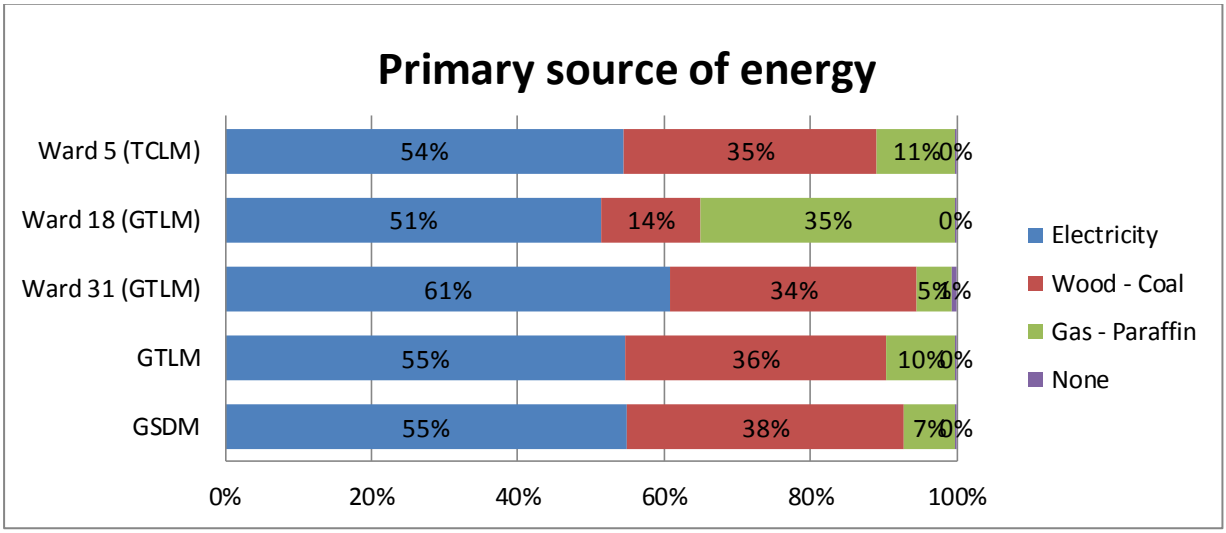

Figure 5-6: Sources of energy (Stats SA, 2011)

In general there exists a larger dependence on electricity for lighting than cooking at both study areas, although it is significantly lower for GTLM (76%). The GSDM comes close to the provincial figure of 87% (Stats SA, 2013). In Ward 18 there is larger tendency to use gas or paraffin as opposed to wood while in Ward 18 and 5 a similar proportion of the population use make use of wood or charcoal as in the GSDM an GTLM.

5.1.10 Refuse removal

According to Section 24 of the Constitution, all South Africans have the right to an environment that is not harmful to a person's health and wellbeing. The pollution and waste management act gives local municipalities the responsibility on waste removal.

As shown in Figure 5-7, formal refuse removal is almost entirely absent in the district and local municipalities. Only Ward 5 (TCLM) displays a large proportion of formal refuse removal, although this only represents 55% of households in the ward.

Improving refuse removal services, alongside active environmental awareness can increase the likelihood of improved community health and general waste management (Stats SA, 2013).

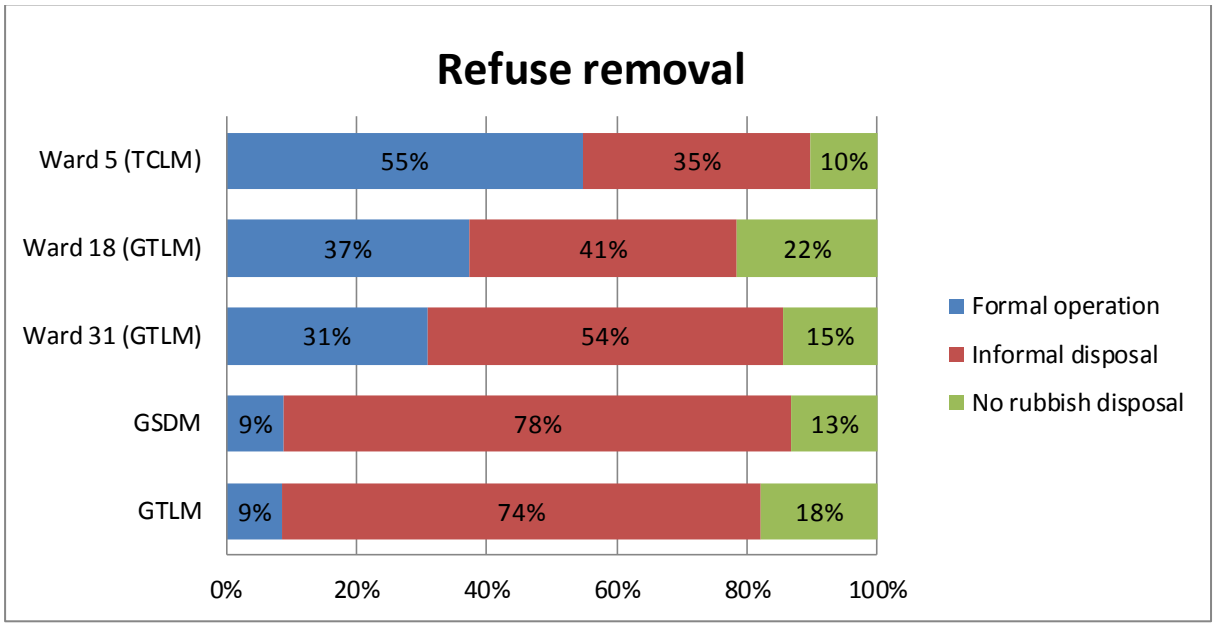

Figure 5-7: Refuse removal (Stats SA, 2011)

5.1.11 Conclusions and development planning

The IDP of GTLM (2013) lists the following as priority development issues for the municipal area:

- Unemployment;
- Poverty Alleviation;
- Services delivery;
- HIV/AIDS and Healthcare;
- Local Economic Development;
- Good governance;
- Institutional Development;
- Skills Development; and
- Financial Viability.

These issues reflect the socio-economic characteristics of the area as outlined in the preceding sections – namely, the fact that a large proportion of persons in the regional and local study areas are unemployed, have little or no income, with limited access to sufficient basic services (GTLM, 2014).

The implementation of effective measures to address these issues is, however, constrained by the proliferation of small settlements (such as Ga-Mampuru) in the area. Challenges associated with such settlements include the fact that they are functionally inefficient and

often costly. If such settlements are not managed, they reduce the availability of land for development initiatives, and they are often very difficult to relocate/re-establish once they have become established.

5.2 Site-specific Study Area

The site-specific study area has been defined as the Project boundary, including a one kilometre buffer (as illustrated in Appendix A, Plan 3). This includes the directly affect portions of the De Grooteboom Farm.

Situated within the site-specific study area are: land owners dwellings, tenants, a lodge (largely accommodating employees from surrounding mines), and a compound for employees of the lodge. These areas are expected to experience direct and indirect Project-related impacts, given the proximity to the Project's proposed infrastructure and its associated activities. The information presented in the following section should be considered in light of the preceding census information about the regional and local study areas.

5.2.1 Project site and surrounding areas

The land on which the proposed mining site is located is not used for any agricultural purposes, with the exception of limited cattle grazing. Prior to the surrounding mining operations being established, the land was used for game ranching. Blasting and other mining related nuisances are said to have caused much of the game to relocate to quieter areas. Currently the primary activity of the farm is to provide lodging for contractors working on the surrounding mines. There is also a restaurant that mostly serves contract workers from the surrounding mines.

The land owner (on which the lodge is located) allows livestock owners (mostly tenants on the land) to use the farm for grazing purposes and they maintain the fences in return for this. Most of the employees working in the lodge reside in a nearby compound and are engaged in various activities for the lodge such as gardening, cooking, cleaning and security.

In close proximity to the proposed Project is the existing Dwarsrivier Mine. Employees from this mining operation are reportedly renting rooms at the lodge within the Project boundary. Although the population within the site-specific study area is limited, they will experience the direct Project impacts, whereas the nearby town of Kalkfontein (6 km to the north west of the proposed site) will experience some of the indirect impacts. This settlement has approximately 200 households and is largely rural in nature with limited access to formal services and infrastructure.

5.2.2 Economic overview

The local residents interviewed during the site assessment agree that the mines in the area have contributed positively to the local economy in the sense that there is generally a greater flow of cash in the surrounding area as a result of the employment created. This

corresponds to the findings of the local study area as indicated in section 5.1.4, the levels of employment at ward level are substantially more than the regional study area and this is reflected in the income earning capability of residents. The lodge manger acknowledged that without the presence of mining in the area, their business would be non-existent.

Substance agriculture is more prominent in the Kalkfontein settlement than on the De Grooteboom Farm.

In terms of nearby services, many people in the area make use of shops situated in Steelpoort for daily items. This suggests that there is potential for SMMEs to be set up in the area, currently some exist such as transport companies and “spaza” or tuck shops. There is potential for the mining companies to assist in the growth and development of these businesses through capital investment and guidance in the form of business planning financial management. Such interventions could assist entrepreneurs to create employment around them thus raising the income levels of the surrounding areas.

5.2.3 Stakeholders Concerns

This section provides a summary of the main concerns raised by key informants during the site visit.

The main concerns raised by stakeholders relate to the potential increase in pollution (largely air-borne) and the potential for increased social pathologies as a result of the additional mining activities. Land owners are concerned about the potential increase in the presence of unidentified personal associated with surrounding mines. This increase in human activity (associated with population influx) presents opportunities for crime and criminal elements to increase as a result of more and more people.

Most informants interviewed during the site visit were concerned about the additional visual impact the Project will have, as well as nuisance impacts such as noise from blasting. Traffic was stated as a further concern as the roads are deteriorating faster than what the municipalities can keep up with. There is concern that the proposed Project will increase traffic in the area and contribute to further deterioration of these roads.

The sustainability of mining in general (not necessarily targeted at the Project) was questioned. Whilst farm workers consider it an opportunity for employment, the limited timeframes associated with the mining may have negative impacts after closure.

The general expectations of surrounding communities such as Kalkfontein with regards to the presence of the mines are high, largely related to potential employment and business opportunities. Following discussions with surrounding mines, it was established that the community does not create many problems. Generally, if mines adhere to the SLP requirements and actively seek to improve the lives of local people, there is generally little opposition to such mining developments. However, if the perception amongst the communities is that mining companies are abusive rather than providing community benefit, they are capable of making it difficult for mines to operate.

6 Impact Assessment and Management

6.1 Introduction

The organisation and presentation of socio-economic impacts expected to arise because of a proposed project are challenging. Potential impacts and the elements that combine to determine the socio-economic status of affected populations are generally multi-dimensional and interrelated. For example insufficient access to services such as water, sanitation and healthcare is both a cause and an effect of poverty.

For instance, on the one hand, a lack of access to such services impacts negatively on health status, the opportunity to acquire market-related skills and the amount of time available for productive activities. On the other hand, individuals in a low-income bracket are regularly forced to live in areas where service delivery is limited or absent. Hence, if a project increases the availability of services in an area, the ability of surrounding communities to take advantage of these services may to some extent depend on their current socio-economic status.

In this section, impacts have been grouped into the following categories:

- Impacts on the local economy;
- Effects from impacts to the physical environment; and
- Impacts associated with population influx.

Each category is further subdivided into positive and negative impacts. The discussion of each impact is structured as follows:

- Description of the impact;
- Description of mitigation and/or enhancement measures; and
- A table presenting the rating of the impact, and repeating the rating exercise after the application of mitigation/ enhancement.

Finally, assessing which Project activity will generate a specific social impact is not entirely possible as social impacts tend to manifest (or be more prevalent) during specific stages of the mining process (i.e. many impacts are identifiable during construction phase, but may increase in intensity throughout operation). For this reason, impacts are presented as arising within a Project phase, rather than due to a Project activity (or activity number as per Table 2-1).

6.2 Effects on the Local Economy

This section deals with social impacts derived from the Project's effect on the local economy (both positive and negative). The effect a mining project can have on the local economy has the potential to generate positive growth. The positive change to a growing economy is often

achieved over a number of years. The assessment of the social effects on the local economy cannot be fully assessed for the Proposed Project as the nature of activities associated with a Mining Permit is short-lived.

Impacts identified in this category include:

- Positive impacts:
  - Sustained employment during both construction and operation; and
  - Short-term growth of the local economy.
- Negative impacts:
  - Dependency on the mine to provide extensive local economic development

6.2.1 Positive Impacts

6.2.1.1 Sustained employment during construction and operation

6.2.1.1.1 Impact description

Consultations with stakeholders have confirmed that there is mining developments in the area foster expectations of employment. The high levels of unemployment in the local study area indicate the need for additional employment opportunities to be created.

Generating new employment opportunities is for a development such as that proposed for the De Grooteboom Project is a difficult task due to the nature of the activities and the short-timeframes within the allowances of a Mining Permit, as opposed to a Mining Right. It is therefore difficult to assess the true extent of employment benefits for the Project at this stage. Should the proponent facilitate the application to obtain a full Mining Right, the extent and intensity of the impact can be reassessed. For the purposes of this impact assessment, employment benefits have been evaluated against the provision of a Mining Permit.

The proposed Project will include the expansion of current activities associated with the prospecting right to include increased mining of the area where the bulk sample was taken. This proposed short-term mining operation will require limited resources and will not create many new employment opportunities. As such, the proponent anticipates retaining the services of the current contractors appointed to undertake prospecting activities. Their terms of service will be reassessed and expanded to include activities within the ambit of the Mining Permit. The contractors will largely make use of their existing workforce and may appoint additional resources should the need arise.

The significance of this positive impact lies in the fact that the Project will allow for the sustained/continued employment of existing employees. If the Project were not to proceed, some of these persons would likely lose their jobs. Its significance is further increased by the fact that new skills gained in the further development of the Project will make people more employable in the future.

6.2.1.1.2 Recommended enhancement measures

Given that communities in the site-specific and local study areas will be most affected by the Project, it is consistent with best-practice that these communities should derive some benefit from the proposed Project. These benefits may include local employment opportunities. However, experience has shown that contractors routinely make use of an existing workforce, many of which does not originate from the respective project areas.

In order to enhance potential employment benefits for host communities, it is recommended that the following measures be implemented:

- Where recruitment for new positions is required, this should not take place on site but should be coordinated through the appropriate institutions (local labour unions, municipal labour offices etc.). Care must be taken to ensure that recruitment practices are fair, transparent and are not unduly influenced by pressure groups (either in the communities or within labour unions and local government);
- In order to promote the creation of employment opportunities for women and youth during construction, it is proposed that wherever possible, a percentage of employment opportunities be reserved for women and younger persons, respectively. These positions should be filled with persons outside of these categories only when no suitable persons are available locally;
- Where possible and economically sensible, labour-intensive methods of mining (construction and operational activities) should be used;
- Where current employees are from the surrounding communities, priority should be given to these persons in maintaining employment during the ongoing development of the Project;
- Conditions of local employment should be included in the contracts of any appointed contractors. A monitoring system should be established to ensure that all contractors honour the employment policy; and
- Local employees benefiting from the Project should be provided with reference letters (should the Project not continue following the expiration of the Mining Permit) to assist them in gaining further employment elsewhere. Also, certificates of completion should be provided for in-house (on-the-job) training provided.

6.2.1.1.3 Impact rating

Activity No/project phase: Construction and Operation					
Criteria	**Details / Discussion**				
Description of impact	Sustained employment during construction and operation				
Enhancement required	■ Maximise and monitor local recruitment where required ■ Consult local labour recruitment offices ■ Prevent nepotism/corruption in local recruitment structures ■ Promote employment of women and youth ■ Train locally-recruited construction workers for longer-term employment where possible"				
Parameters	*Spatial*	*Duration*	*Intensity*	*Probability*	*Significant rating*
Pre-Enhancement	2	3	(+) 4	5	45
Post-Enhancement	2	3	(+) 5	6	60

6.2.1.2 Short-term growth of the local economy

6.2.1.2.1 Impact description

Although not deemed to be a substantial impact for the development of the Project as a standalone development, the proposed Project in combination with surrounding mines will likely result in further economic benefits for local communities through multiplier effects stimulated by capital expenditure through the development of the Project. The short timeframes associated with the Project will, however, not allow long-term economic growth and development through the multiplier effect.

The benefits anticipated to arise from the Project include the following:

- Although short-term, the Project itself will require the procurement of goods and services during construction and operation. These procurement requirements may open opportunities for the local manufacturing and service providers. Impacts in this category are referred to as indirect economic impacts.
- The Project may create opportunities for small and medium size businesses (SMME's) and entrepreneurs to provide services to the mine and its contractors, provided they are formalised and able to meet the procurement requirements of the Project. Revenue accruing to local service providers will produce beneficial downstream impacts on the local economy. Impacts in this category are referred to as induced economic impacts.

- Population influx often occurs during the establishment of new mining operations, and although this is a small/short-term operation, there will still be a limited number of people moving into the area in search of employment. This influx of job seekers will create increased demand for consumable items such as food, entertainment, clothing and accommodation. This will create further opportunity for local service providers and entrepreneurs to benefit. For example, residents in the local study area with extra rooms or houses can rent these out, thereby increasing their income production. Guest house owners may see an opportunity to build additional rooms to accommodate short- to medium term workers and/or service providers.
    - Thus, while many of the social consequences of population influx are negative, there are positive effects to the local economy.
- Salaries earned from the mine or its contractors will strengthen the spending power of those employed on the mine. Given that a proportion of monies derived from wages earned would likely be spent in the vicinity of the Project, it is anticipated to create increased flows of revenue within the local study area, thus acting as a catalyst for growth in the formal and informal economy.

At the time of writing, there was limited Project information available to assess the extent of the Projects influence on the local economy, either in terms of total value of business sales leveraged by the Project's capital investment, or through indirect and induced employment creation. It is, nevertheless, expected that the Project will have an influence on the local economy.

6.2.1.2.2 Recommended enhancement measures

The measures recommended above to maximise local employment will also serve to maximise the positive impacts the Project will have on the local economy. In addition, the following measures are recommended to maximise this positive impact:

- Establishment and/or upgrading of services and infrastructure, where feasible. The Project will need to liaise with the Directorate: Development Planning of the GTLM, (which is responsible for integrated development planning, land use management, local economic development, tourism development, as well as coordinating SMME development);
- Creation of improved economic opportunities through entrepreneurship development and the development of skills supporting employment and economic development;
- Empowering local Historically Disadvantaged South African (HDSA) businesses, and undertaking and/or supporting development initiatives in the mine's labour sending areas and affected communities, where these are feasible/appropriate;
- Developing a register of local SMMEs, recording the types of goods and services they provide. This can be done in conjunction with surrounding mining operations and local municipal representatives;

- Creating synergies with other mining companies' LED and corporate social investment (CSI) Projects;
- Addressing the priority needs of local (site-specific) communities, i.e. through the provision/upgrading of basic services, housing, road infrastructure; etc.; and
- It is further suggested that: should community development initiatives be proposed, these are assessed in conjunction with local municipal representatives, Ward councillors and community representatives. Similarly, these initiatives should make provision for including vulnerable groups aimed at improving living conditions and their environment.

6.2.1.2.3 Impact rating

Activity No/project phase: Construction and Operation					
Criteria	**Details / Discussion**				
Description of impact	Short-term growth of the local economy				
Enhancement required	As for maximising employment benefits. Also: ■ Development of a register of local SMMEs ■ Linkages with skills development/ SMME development institutions ■ SMME skills development as part of mine LED initiatives ■ Explore opportunities for collaboration with other mining/electricity enterprises on LED/CSR projects				
Parameters	*Spatial*	*Duration*	*Intensity*	*Probability*	*Significant rating*
Pre-Enhancement	4	2	(+) 2	4	32
Post-Enhancement	4	3	(+) 3	5	50

6.2.2 Negative Impacts

6.2.2.1 Dependency on the mine to provide extensive local economic development

6.2.2.1.1 Impact description

Dependency of the local economy on mining is the result of two interdependent factors:

- The "pull" factor (in that the significant economic opportunities in mining reduces the incentive to develop other sectors of the economy, thus leaving it vulnerable to severe negative effects in the event of eventual mine closure); and

- The "push" factor (in that the loss of arable and grazing land to mining inevitably has a negative effect on the local agricultural and tourism economy; a shrinking agricultural and game farming/tourism sector by default increases the relative economic contribution of the largest competing sectors – namely, mining and power generation).

These two complementary processes are discussed in turn below.

In terms of the ***"pull" factor***, mining and mining-related activities are generally high income-producing practices, and the local economy benefits from the revenue, employment, economic investment and local development created by this sector. The negative aspect of these benefits resides in the fact that mining is not a permanent activity. In the case of the proposed Project, this is even more apparent.

When the mining activities are concluded at the expiration of the Mining Permit (assuming the mine does not continue its development in the acquisition of a full Mining Right), there will be a loss of employment together with various downstream effects resulting in a negative impact on the local economy. When economic opportunity arises, people often lose sight of a diversification. Placing too much reliance on the Project may have negative consequences for when the Project ceases. Although people differ in terms of their ability to adapt to economic changes, there are those that will not have the same level of adaptability.

This impact will be felt most intensely by mine employees and their dependents. Many of those employed on the mine are likely to have specific skills (related primarily to mining) and may be less employable than their multi-skilled counterparts. It will be more difficult for them to secure jobs (outside of the mining industry) once they have been retrenched. If they have accumulated sufficient work experience and have benefitted from training and mentorship, they may be more employable and more likely to obtain similar work elsewhere, possibly at another mine. If however they are unable to secure alternative employment, the loss of work will mean the loss of a stable income source for their families.

It should be noted that this impact cannot be fully discussed in relation to the Project as a stand-alone development, as dependency on mining is a cumulative impact arising from the combined effect of the large number of mines in the region. This cumulative effect is revisited in Section 6.5 below.

In terms of the ***"push" factor*** (increased dependency on mining due to the loss of active commercial agricultural and grazing/livestock land), there is a history of tension between the agricultural and game/tourism industry versus the mining industry in Limpopo.

A Project-induced loss of land will add to the impact of other mining projects in the area, reducing the ability of the local agricultural and game farming sector to contribute to the local economy. This cumulative impact is revisited in Section 6.5 below.

6.2.2.1.2 Recommended mitigation measures

An important approach to mitigating economic dependency on the mining is to develop alternative and sustainable livelihoods/opportunities so that, by the time mining ceases, local

communities and businesses are able to support themselves through other economic sectors.

The proposed Project, together with other mines and energy producers, should work through the GTLM and relevant provincial and national government agencies to support the diversification of the local economy.

Although not a requirement when applying for a Mining Permit, the MPRDA requires that the mine's SLP provide strategies and measures that could prevent job loss in the event of circumstances threatening guaranteed employment. These include the establishment of Future Forums to manage downscaling and retrenchments. The Project should aim to develop similar systems/strategies to prevent job loss. Assistance should be afforded to retrenched employees in finding alternative employment or economic opportunity. The focus of this approach is important where workers are not able to be integrated or redeployed to other mining operations, or where they are not of a retirement age.

The Project proponent should make every effort to proactively assess and mitigate/manage the social and economic impacts on individuals, other economic contributors, regions and economies where retrenchment and/or closure/cessation of the mining is certain.

In an attempt to ensure that there is no misperception around the Project, the proponent must ensure that all necessary steps are put in place to communicate the Project activities, timeframes, labour requirements etc. to the wider community. Where changes to the Project plans are made, this should be duly communicated to all interested stakeholders, particularly those who may seek for opportunity where none exists. This communication will ensure that any misguided expectations are clarified.

6.2.2.1.3 Impact rating

Activity No/project phase: Construction and Operation					
Criteria	**Details / Discussion**				
Description of impact	Dependency on the mine to provide extensive local economic development				
Mitigation required	■ Support economic diversification through development of alternative markets ■ Proactively and effectively implement mine closure plan ■ Collaborate with adjacent mining companies to develop and implement sustainable community projects"				
Parameters	*Spatial*	*Duration*	*Intensity*	*Probability*	*Significant rating*
Pre-Mitigation	3	3	(-) 5	5	(-) 55
Post-Mitigation	3	3	(-) 3	5	(-) 45

6.3 Effects from Impacts to the Physical Environment

The Project will have several effects on the physical environment that will give rise to associated social impacts. Impacts identified under this category include:

- A positive effect, including improvements to local infrastructure, such as roads, that may provide a benefit for local populations; and
- Negative effects,
  - Including physical intrusion impacts: visual, noise, vibration and air quality impacts, as well as disruptions to daily movement patterns; and
- Land acquisition and loss of grazing land.

6.3.1 Positive Impacts

6.3.1.1 Improvements to local infrastructure

6.3.1.1.1 Impact description

Mining and development projects often require the improvement of surrounding services and infrastructure to accommodate their operations/activities. As an example, surrounding roads will likely need to be upgraded to provide improved access to the Project site during both construction and operation. This improvement in roads could have positive spin-offs for neighbouring farms and communities who make use of these roads, leading to reduced travelling time and improved access to nearby services.

The limited scale/extent and timeframes of the Project will likely not provide any long-term benefits to local services and infrastructure. However, through the implementation of certain enhancement measures (described below), the likelihood of such benefits arising will increase.

6.3.1.1.2 Recommended enhancement measures

The extent and degree to which local services and infrastructure are improved is largely dependent on the technical requirements of the Project, and to a certain extent on the mine's commitments to carrying out community development initiatives. It is recommended that the Project proponent consult other/similar business enterprises in the broader local study area to determine opportunities for collaboration on infrastructure Projects.

It is further recommended that:

- Road delineations (including haul road and secondary light vehicle roads) be finalised in consultation with local land users so that their daily movement patterns are not disrupted;
- The Project proponents collaborate with other mines/developers for the possible upgrading of public amenities (and access to these amenities). Although the

proponent is not required to develop an SLP (with associated LED initiatives), it will be beneficial for the Project (in reducing the risk of community resistance through a lack of benefits) to investigate the possibility of providing or contributing towards the development and or improvement to local services and infrastructure; and

- In order to maximise the positive impact of proposed development initiatives, it is recommended that the local municipality be consulted in terms of infrastructure needs (as captured in the municipal IDP) that could be addressed once the Project reaches the required profit margins.

6.3.1.1.3 Impact rating

Activity No/project phase: Construction and Operation					
Criteria	**Details / Discussion**				
Description of impact	Improvements to local infrastructure				
Enhancement required	■ Integration with mine and local government plans (for infrastructure maintenance and development) ■ Collaboration with other mining companies in terms of infrastructure upgrades				
Parameters	*Spatial*	*Duration*	*Intensity*	*Probability*	*Significant rating*
Pre-Enhancement	3	3	(+) 3	4	36
Post-Enhancement	3	3	(+) 4	6	60

6.3.2 Negative Impacts

6.3.2.1 Physical Intrusion impacts

6.3.2.1.1 Impact description

Impacts related to physical intrusion can be distinguished into different areas. These impacts are often as a result of the physical activities associated with the construction and operation of the Project.

Disruption in movement patterns

Construction and operational activities will likely disrupt normal vehicle and pedestrian traffic on the roads surrounding the immediate development areas (infrastructure and active mining areas). It was noted that the incumbent land users make use of these roads. The increased activity of mine vehicles will restrict/disrupt the movement of people who make use of these roads.

Increased nuisance impacts and associated risk to community health and safety

The Project will be required to adhere to national and regional safety and health standards. The scope of these requirements covers all operational activities that have the potential to affect the safety and health of employees and contractors.

An assessment of socially-related safety and health impacts (e.g. noise and air quality impacts) is provided in separate specialist studies to the EIA/EMP report, with the findings utilised in the compilation of this SIA. It is important that these impacts are mentioned in the context of this social impact study, as increased risks of these occurring could pose health and safety issues to surrounding land users and generate increased opposition to the Project. The traffic and movement of heavy vehicles associated with the Project could pose increased safety risks to surrounding land users. Insofar as traffic impacts affect the lives and well-being of people, it thus qualifies as a social impact.

Other safety and health-related risks (nuisance impacts) associated with the proposed Project include the following:

- Air quality and dust: The mining activities will increase the amount of dust emitted to the environment. This which could negatively affect respiratory health to those who inhale this dust. Due to the livestock grazing in the area, livestock may consume vegetation contaminated with dust produced though mining, increasing the risk of animal health;
- Surface and groundwater quality: Leakage of contaminants (i.e. hydrocarbons) associated with mining facilities. This was identified in the surface water report as being an impact, with potential risk, particularly if communities make use of surrounding streams;
- Noise impacts: Those living in the vicinity of the Project may be affected by noise levels associated with traffic and the mining activities. Although the cumulative effects of this will be far greater than looking only at the effects of the proposed Project;
- Unauthorised access: If members of surrounding communities gain unauthorised access to the Project site, they could be at risk of injury; and
- Blasting: Although mining/sampling activities are not expected to incorporate significant blasting. Any blasting will result in nuisance impacts to surrounding land users.

The above points each contribute to a change in the sense of place experienced by those residing near the Project. Key informants noted, during interviews undertaken, that the mining activities in the area have resulted in a change in the landscape and general tranquillity of the area. The development of another operation will further alter the sense of place.

6.3.2.1.2 Recommended mitigation measures

The following measures are recommended to mitigate potential impacts described above:

Disruption in movement patterns

- Optimise the mine plan to minimise disruption of movement patterns. Ensure that disturbances to roads occur during low peak times and are communicated to land users timeously;
- Road upgrading measures should be investigated and implemented in conjunction with the landowners and relevant government departments; and
- The mine Community Liaison Officer (CLO) (or similar appointment) should ensure that local residents are kept informed on an on-going basis of construction progress and when access will be affected in certain areas.

Increased risk to community health and safety

Air quality, dust and noise: the measures presented by the relevant specialist studies should be implemented in order to avoid the creation of induced social impacts.

- Traffic:
  - Safe travelling speeds must be determined for access routes close to populated areas, and measures implemented to ensure that these restrictions are enforced. Such measures may include monitoring vehicle speeds, erecting speed limit signs and installing speed bumps;
  - Roads must be adequately maintained to prevent deterioration of roads surfaces due to heavy vehicle traffic. When damage to roads is noticed this should be fixed as soon as possible to prevent further damage; and
  - The mine's Health and Safety Management Plan should include exact measures to manage/promote road safety and traffic control, taking into account the cumulative effects of traffic generated by multiple development Projects in the area.
- Unauthorised access: Unauthorised access to the mine site should be prevented through appropriate fencing and security (this will include access for animals).
- Community awareness:
  - It is recommended that communities and land users are made aware of the safety risks associated with an operational mine, and the need to prevent children and animals from wandering into the active mine areas. This can be done through community meetings and notices around the operation;
  - Mechanisms must be established to ensure that problems are dealt with promptly. In this regard, it is proposed that a community liaison officer be the primary resource.

In accordance with best practice requirements, the Project should ensure that a grievance mechanism is established to address community concerns and build/improve community relations. It is recommended that this grievance mechanism also record and address traffic and safety related concerns/claims.

6.3.2.1.3 Impact rating

Activity No/project phase: Construction and Operation					
Criteria	**Details / Discussion**				
Description of impact	Physical Intrusion impacts				
Mitigation required	■ Traffic control and signage to prevent speeding, and appropriate training for drivers/operators ■ Implementing continuous maintenance programme ■ Fencing of mine site ■ Community awareness raising/education ■ Establishment of Project Grievance Mechanism ■ Optimise mine plan to limit disruption of movement patterns ■ Inform communities of planned construction activities that would affect vehicle/pedestrian traffic				
Parameters	*Spatial*	*Duration*	*Intensity*	*Probability*	*Significant rating*
Pre-Mitigation	2	3	(-) 5	4	(-) 40
Post-Mitigation	2	3	(-) 4	4	(-) 35

6.3.2.2 Land acquisition and loss of grazing land

6.3.2.2.1 Impact description

New mining developments often require the acquisition of large tracts of land. Within the current Prospecting Rights area, there are several land owners and users. This includes lodge owners and farm employees. Based on the activities proposed as part of the Mining Permit Application, these the Project will not result in significant involuntary displacement. The location of the areas to be mined, including the proposed infrastructure areas will not result in physical displacement. It is, however, worth noting that the area earmarked for the placement of mine infrastructure is utilised as grazing land for cattle belonging to local land users. The acquisition of this land (although relatively small in extent) will reduce the amount of land available for grazing. Similarly, the active movement of mine vehicles may result in cattle not wanting to venture near this infrastructure, further limiting the land available for grazing.

Although it is important to note such impacts; in reality it is not expected to be an intensely negative impact due to the generally wide availability of grazing land away from the infrastructure area. However, in the unlikely event that grazing animals venture near/on active (unprotected) haul roads, this may result in the loss of these animals. This will result in a loss of assets and source of income for local cattle owners/herders.

6.3.2.2.2 Recommended mitigation measures

Measures to control the impacts associated with displacement (voluntary or involuntary) are an essential factor in ensuring that the affected landowners and land users are not left worse-off as a result of the Project. The following measures are recommended:

- Optimise Project design to avoid/limit loss of grazing land where feasible;
- Ensure active areas (i.e. haul roads, stockpile areas etc.) are enclosed to avoid cattle and other animals from venturing near these areas;
- Where loss of income producing assets does occur, ensure adequate compensation and discussion is carried out with affected parties. Procedures should be put in place prior to the Project being developed in anticipation of unwanted events (any physical or economic losses) occurring; and
- In the likelihood of the Project expanding into areas that may be occupied by people, (either legal or illegal occupiers), this should include the development of a Resettlement Action Plan (RAP) or similar action plan/programme deemed appropriate by national and provincial legislation.

6.3.2.2.3 Impact rating

Activity No/project phase: Construction and Operation					
Criteria	**Details / Discussion**				
Description of impact	Land acquisition and loss of grazing land				
Mitigation required	■ Optimise project design to avoid/limit displacement/loss of land ■ Adequate compensation to displaced farmers where losses occur ■ Where required (through change of mine plan) develop a resettlement planning document to guide any displacement"				
Parameters	*Spatial*	*Duration*	*Intensity*	*Probability*	*Significant rating*
Pre-Mitigation	1	7	(-) 5	6	(-) 78
Post-Mitigation	1	7	(-) 4	5	(-) 60

6.4 Effects of Population Influx

As news regarding the proposed Project spreads or when mining-related activities increase, expectations regarding possible employment opportunities at the mine will increase. Consequently, the area surrounding the site and neighbouring settlements may experience an influx of job seekers and opportunists. The magnitude of this impact will, amongst others, be influenced by the severity of poverty and unemployment in surrounding areas, coupled with the history of observable influx that has occurred over the last number of years.

Poverty and unemployment are major challenges for communities, particularly in a municipality with low levels of employment. The regional social profile indicates that poverty and unemployment are widespread throughout the primary and secondary zones of influence. It can be expected that job seekers (and often whole families), as well as entrepreneurs and opportunists, will migrate to the broader Project area. This impact may commence prior to construction, and is likely to continue after construction has been completed.

Due to the low levels of employment required for the Project, there will be negligible influx of Project workforce into the area. However, unsuccessful job seekers from outside the Project area may decide to settle in the Project area in the hopes of securing employment.

The following impacts have been identified and are described below:

- Negative Impacts:
  - Community opposition – arising from unmanaged expectations;
  - Increased social pathologies; and
  - Increased pressure on local services/resources.

6.4.1 Negative Impacts

6.4.1.1 Community opposition – arising from unmanaged expectations

6.4.1.1.1 Impact description

Opposition from communities against mining projects is an increasingly challenging aspect facing mining companies in South Africa. Community perceptions and unmet expectations are at the centre of this resistance. Expectations relate largely to the receiving of project benefits, either through direct employment on the mine, or through indirect economic benefit and/or development. This impact highlights the potential resistance (and possible) conflict that can arise as the result of the Project.

It is anticipated that due to the limited scale of the Projects activities; the number of employment opportunities will be limited. The development of mining developments (even one such as the De Grooteboom Project) results in expectations being created amongst local communities, local government, NGOs and labour unions. Many of these stakeholders

have varying levels of understanding of mining legislation, including the requirements for mining companies to deliver community benefit. This can lead to communities having the expectation that all mining companies will have to provide community benefit. Where these expectations are not met (or believed to not be prioritised) this can lead to anger and resentment towards the Project.

The general lack of performance of the SLP requirements by many mining companies has resulted in mistrust amongst many communities. Although not directed at De Grooteboom, this historical mistrust may have implications around the creation of expectations and subsequent opposition to the Project.

6.4.1.1.2 Recommended mitigation measures

In order to mitigate this impact, the following measures are recommended:

- Ensure that the Project description and related Permit conditions are communicated to all stakeholders, particularly nearby communities and local authorities;
- Involve local community structures (e.g. ward councillors and/or ward committees and local leadership structures) to assist in communicating the Project details (including potential labour requirements) to communities and other Project stakeholders;
- Maintain regular and open communication with the community, ensuring that any expectations are voiced, so as to manage these appropriately and realistically;
- Establish a grievance mechanism that is accessible to aggrieved members of the surrounding communities. Ensure that any grievances are handled timeously and effectively, thus avoiding further tensions; and
- Comply with the international 'Voluntary Principles on Security and Human Rights', for extractive industry, which emphasises the need for, and value of, effective risks assessment to address human rights issues, and establish appropriate relations with public and private security structures.

6.4.1.1.3 Impact rating

Activity No/project phase: Construction and Operation					
Criteria	**Details / Discussion**				
Description of impact	Community opposition – arising from unmanaged expectations				
Mitigation required	■ Maximise local employment ■ Clearly communicate preferential local employment policy to discourage influx ■ Implement effective communication strategy to discuss project plans, thus managing expectations ■ Enforce code of conduct for contractors & employees in terms of interaction with local communities				
Parameters	*Spatial*	*Duration*	*Intensity*	*Probability*	*Significant rating*
Pre-Mitigation	3	3	(-) 5	4	(-) 44
Post-Mitigation	3	3	(-) 4	3	(-) 30

6.4.1.2 Increased social pathologies

6.4.1.2.1 Impact description

In addition to contributing to community tensions, Project-induced population influx may also cause an increase in social pathologies. Such pathologies often include increased substance abuse, prostitution, domestic violence, teenage pregnancies, crime (including violent crime) and the incidence of sexually transmitted diseases (STDs). Many of these pathologies are already present in communities within the local study area; however, uncontrolled population influx may worsen the situation.

It is reasonable to expect that an increase in social pathologies will impact on the social fabric/social cohesion of local communities. This impact could be aggravated in situations where community leadership structures no longer play a unifying or controlling role.

The regular influx of people into the area and the associated increase in social ills also place strain on the operational status of local business and agricultural operations. Due to the increase in crime often associated with an influx of people, local business suffer losses through theft, as well as having to increase operational costs (through the replacement of stolen/damaged goods etc.).

6.4.1.2.2 Recommended mitigation measures

The following measures are recommended to address the aforementioned impacts related to population influx and related social ills:

- Measures to combat substance abuse and the spread of STDs:
  - Implement HIV/AIDS and alcohol abuse campaigns in the communities;
  - The proponent and contractors should make HIV/AIDS and STD awareness and prevention programmes a condition of contract for suppliers and sub-contractors;
  - Access at the mine site(s) must be controlled to prevent sex workers and petty traders from visiting and/or loitering at, or near, the construction camp/mine site; and
  - The proponent should consider providing financial support for appropriate government agencies, local clinics and NGOs involved in raising community awareness and education with regard to STDs and substance abuse.
- Measures to address crime in the Project site area:
  - The mine should strictly enforce rules and regulations for access to the mine site and mine offices to control loitering and unauthorised access;
  - Formal liaison structures must be established with the local police to monitor local social dynamics during both construction and operation; and
  - Continued liaison should be maintained with existing crime control organisations, such as bona fide Community Policing Forums and Farm Watch organisations.

6.4.1.2.3 Impact rating

Activity No/project phase: Construction and Operation					
Criteria	**Details / Discussion**				
Description of impact	Increased social pathologies				
Mitigation required	■ Implement HIV/AIDS and substance abuse awareness ■ Make HIV/AIDS/STD prevention programmes a condition of contract for suppliers/sub-contractors ■ Control access at site to prevent the presence of sex workers ■ Establish clear rules and regulations for access to the mine site ■ Work with local health service providers to provide services and health surveys also on substance abuse ■ Establish liaison structures with local police and local community policing forums				
Parameters	*Spatial*	*Duration*	*Intensity*	*Probability*	*Significant rating*
Pre-Mitigation	3	3	(-) 6	4	(-) 48
Post-Mitigation	3	3	(-) 5	3	(-) 33

6.4.1.3 Increased pressure on local services/resources

6.4.1.3.1 Impact description

An influx of job-seekers into the area, combined with the incumbent local population, will place increased pressure on local infrastructure and services, such as housing, schools, police, clinics, sewage systems, electricity etc. This impact will be compounded by the fact that the municipality is already experiencing backlogs in the provision of services due to the growing population and lack of funding.

The shortage of public services and infrastructure described above includes a shortage of housing and associated services. This issue deserves special mention, as it underlies one of the most pressing social problems in the area. Unless properly managed, the influx of job-seekers (although not expected to be extensive due to the limited timeframes associated with the Project) will contribute to the continued growth of informal settlements, and possibly. This anticipated effect of the Project qualifies as a cumulative impact, since it will combine with the effects of surrounding mining operations and the general lack of formal housing in the region.

It should be noted that it is not the responsibility of the Project proponent to control informal settlement or provide public services and facilities in these areas. However, the existence of informal settlements in close proximity to the mine may pose a risk to the Project in terms of political stability and community relations/support.

6.4.1.3.2 Recommended mitigation measures

In order to address this impact, it is recommended that:

- Measures are implemented to ensure that contractors prioritise employment of local community members where required; and
- It is strongly recommended that the mine liaise with the local municipality to ensure that any anticipated or evident population influx is taken into account in infrastructure development planning and land management within the local municipality.

Measures to mitigate and/or control informal settlement near the mining operation will have to be implemented with considerable sensitivity so as not to infringe on people's constitutionally guaranteed right to freedom of movement. It will be the responsibility of local government, alongside landowners and the mine to control illegal settlement. The mine could assist with monitoring and reporting such activities by means of frequent monitoring of the broader area to detect the establishment of informal settlement.

6.4.1.3.3 Impact rating

Activity No/project phase: Construction and Operation					
Criteria	**Details / Discussion**				
Description of impact	Increased pressure on local services/resources				
Mitigation required	■ Discourage influx of job-seekers by prioritising employment of unemployed local community members ■ Liaise with local municipality to ensure that expected population influx is taken into account in land management strategies ■ Create synergies with local government IDP and other companies in potential community projects				
Parameters	*Spatial*	*Duration*	*Intensity*	*Probability*	*Significant rating*
Pre-Mitigation	3	3	(-) 5	5	(-) 55
Post-Mitigation	3	3	(-) 4	4	(-) 40

6.5 Cumulative Impacts

Cumulative impacts are defined as impacts arising from the combined effects of two or more Projects or actions. The aim of this section is to highlight the nature of the cumulative socio-economic impacts that are expected to occur as result of the combined effect of the proposed Project and other current or planned operations in the region. The following cumulative impacts were identified.

6.5.1 Job creation and multiplier effects on the local economy

Several nearby mining and industrial operations employ substantial numbers of people; other mines planned for the area will also potentially add to the number of people employed in the mining sector. The contribution of mining to job creation (short-term) will therefore be enhanced through the proposed Project.

Secondly the proposed Project, together with other existing and planned mining operations, will result in several economic benefits for local communities through direct and multiplier effects. These effects are usually stimulated by wage bills, local and regional procurement spend, and investment into LED and skills development. The proposed Project will likely contribute somewhat, in the short-term, to the existing positive effect of mining on local economic development by applying national principles in terms of local employment and procurement, as well as LED.

6.5.2 Impacts related to population influx

The area has experienced significant influx of people in search of work at nearby industrial and mining operations. It is likely that this existing impact will be aggravated once the Project is initiated (even where recruitment is limited). Population influx is also likely to exacerbate pressure on existing infrastructure and services, the growth or establishment of informal settlements and changes in property value.

The capacity of service delivery infrastructure in the local municipality is under threat. The further influx of job-seekers into these areas will place increased pressure on local infrastructure such as roads, water supply and energy.

Influx will continue to place pressure on the already limited and expensive housing and land in the area.

6.5.3 Dependency on mining to sustain the local economy

As mentioned earlier in this report, economic activities in the area are dominated by mining, industrial and game farming sectors. Because mining creates a much larger number of jobs than the services sector, and because mine workers tend to earn better salaries than those employed in most other sectors, it is fair to deduce that the local economy is heavily dependent on the mines or mining related industry. All mines have a finite lifespan. Inevitably, mining operations in the area will at some point in the future begin to scale down and close. Unless significant investment is made into economic diversification, the area is destined for a considerable economic slump once this process commences.

6.6 Social Management Plan

The social management plan (SMP) is illustrated in the table below. The table highlights the mitigation measures associated with the identified impacts and the objectives thereof. Where appropriate, the relevant responsible persons have been identified.

Table 6-1: Social Management Plan

Project Activities	Receiving Environment	Impact	Objectives	Management and Mitigation Measures	Frequency	Legal Requirements	Recommended Action Plans	Duration	Responsible Person
Construction and Operational Phase									
Construction and operational activities	Socio-economic	Sustained Employment (Construction and Operation)	Maintain employment. Where possible, increase local employment during construction and operation	-Maximise and monitor local recruitment where required -Consult local labour recruitment offices -Prevent nepotism/corruption in local recruitment structures -Promote employment of women and youth -Train locally-recruited construction workers for longer-term employment where possible	Initiate during construction	Employment Equity Act, 55 of 1998; Basic Conditions of Employment Act, 75 of 1997; Labour Relations Act, 66 of 1995; and Skills Development Act, 97 of 1998 as amended	Review of HR and recruitment procedure	Construction Phase Operational Phase	Environmental and Social Manager HR manager
		Short-term contribution to the local economy	Maximise local economic development and growth	-As for maximising employment benefits. Also: -Development of a register of local SMMEs -Linkages with skills development/ SMME development institutions -SMME skills development as part of mine LED initiatives -Explore opportunities for collaboration with other mining/electricity enterprises on LED/CSR projects	Initiate during construction	MPRDA South African Mining Charter	Procurement policies and CSI initiatives	Construction Phase Operational Phase	Environmental and Social Manager Procurement officer/manager
		Dependency on the mine to provide extensive local economic development	Reduce over-reliance on mine to sustain livelihoods	-Support economic diversification through development of alternative markets -Proactively and effectively implement mine closure plan -Collaborate with adjacent mining companies to develop and implement sustainable community projects	Initiate during construction	-	Grievance Management Plan Stakeholder Engagement	Construction Phase Operational Phase	Environmental and Social Manager

Project Activities	Receiving Environment	Impact	Objectives	Management and Mitigation Measures	Frequency	Legal Requirements	Recommended Action Plans	Duration	Responsible Person
							Plan		
		Improvements to local infrastructure	Maximise usage of improved infrastructure	-Integration with mine and local government plans -Collaboration with other mining companies in terms of infrastructure upgrades	Initiate during construction Monitor during operation	-	-	Construction Phase	Environmental and Social Manager Mine Planner
		Physical intrusion impacts	Reduce significance of physical intrusion and nuisance impacts to surrounding settlements	-Traffic control and signage to prevent speeding, and appropriate training for drivers/operators -Implementing continuous maintenance programme -Fencing of mine site -Community awareness raising/education -Establishment of Project Grievance Mechanism -Optimise mine plan to limit disruption of movement patterns -Inform communities of planned construction activities that would affect vehicle/pedestrian traffic	Initiate during construction Monitor throughout operation	-	Environmental Monitoring Programmes	Construction Phase Operational Phase	Environmental and Social Manager
		Land acquisition and loss of grazing land	Reduce extent land to be acquired by mine. Reduce effects of lost land on grazing	-Optimise project design to avoid/limit displacement/loss of land -Adequate compensation to displaced farmers where losses occur -Where required (through change of mine plan) develop a resettlement planning document to guide any displacement	Prior to construction and monitor throughout construction	ESTA	Resettlement mitigation document (i.e. Resettlement Action Plan)	Initiate prior to construction and throughout operation	Environmental and Social Manager Mine Planner
		Community opposition –	Avoid	-Maximise local employment	Prior to	MPRDA	Grievance Management	Throughout life of	Environmental and Social

Project Activities	Receiving Environment	Impact	Objectives	Management and Mitigation Measures	Frequency	Legal Requirements	Recommended Action Plans	Duration	Responsible Person
		arising from unmanaged expectations	conflict/tensions Manage community expectations	-Clearly communicate preferential local employment policy to discourage influx -Implement effective communication strategy to discuss project plans, thus managing expectations -Enforce code of conduct for contractors & employees in terms of interaction with local communities	construction. Maintain throughout operations		Plan	operation	Manager Community liaison officer
		Increased social pathologies	Reduce negative impacts arising from an influx of people to the area	-Implement HIV/AIDS and substance abuse awareness -Make HIV/AIDS/STD prevention programmes a condition of contract for suppliers/sub-contractors -Control access at site to prevent the presence of sex workers -Establish clear rules and regulations for access to the mine site -Work with local health service providers to provide services and health surveys also on substance abuse -Establish liaison structures with local police and local community policing forums	Initiate during construction and maintain throughout operation.	-	Influx management plan	Throughout operations	Environmental and Social Manager HR manager
		Increased pressure on local services/resources	Reduce the effects of increased resources usage from more people migrating to the area	-Discourage influx of job-seekers by prioritising employment of unemployed local community members -Liaise with local municipality to ensure that expected population influx is taken into account in land management strategies -Create synergies with local government IDP and other companies in potential community projects	Construction and operational phases	-	Influx management plan	Throughout operations	Environmental and Social Manager

7 Conclusions

The findings of this report take into consideration the Project's proposed activities, location of the Project, the status of the existing socio-economic environment, and the ultimate effect that the Project will have on the social environment.

The pre- and post-mitigation ratings assigned to the various impacts discussed in the report are summarised in Table 7-1 below.

The investigations into the baseline conditions in the regional, local and site-specific study area, and the social impacts related to the proposed Project highlight the development needs and priorities of local communities. Although some positive impacts may arise, these are expected to be limited in nature, scale and intensity due to the short timeframes of the Project. Should the Project further develop into a full mine through the acquisition of a Mining Right, the positive impacts will increase (with appropriate enhancement measures).

Adequate mitigation measures are expected to reduce the significance of negative impacts to acceptable levels, while positive impacts will be enhanced in order to maximise benefits to surrounding communities.

It is recommended that the mitigation and enhancement measures described in the report be incorporated into the Environmental Management Programme and, where relevant, into the contract conditions to be issued to the contractors. Measures should also be put in place to monitor and assess the implementation of these mitigation measures and to take corrective action where necessary.

Table 7-1: Summary of socio-economic impacts

Impact	Pre-mitigation:						Post-mitigation:					
	Duration	Extent	Intensity	Conse-quence	Proba-bility	Signifi-cance	Duration	Extent	Intensity	Conse-quence	Proba-bility	Signifi-cance
Effects on the local economy												
Sustained Employment - Construction and Operation	Medium term	Limited	Moderately high - positive	Slightly beneficial	Likely	Minor - positive	Medium term	Limited	High - positive	Moderately beneficial	Highly probable	Minor - positive
Short-term contribution to the local economy	Short term	Municipal Area	Low - positive	Slightly beneficial	Probable	Negligible - positive	Medium term	Municipal Area	Moderate - positive	Moderately beneficial	Likely	Minor - positive
Dependency on the mine to provide extensive local economic development	Medium term	Local	High - negative	Moderately detrimental	Likely	Minor - negative	Medium term	Local	Moderate - negative	Slightly detrimental	Likely	Minor - negative
Impacts related to the physical effect of mining activities												
Improvements to local infrastructure	Medium term	Local	Moderate - positive	Slightly beneficial	Probable	Minor - positive	Medium term	Local	Moderately high - positive	Moderately beneficial	Highly probable	Minor - positive
Physical intrusion impacts	Medium term	Limited	High - negative	Moderately detrimental	Probable	Minor - negative	Medium term	Limited	Moderately high - negative	Slightly detrimental	Probable	Minor - negative
Land acquisition and loss of grazing land	Permanent	Very limited	High - negative	Moderately detrimental	Highly probable	Moderate - negative	Permanent	Very limited	Moderately high - negative	Moderately detrimental	Likely	Minor - negative
Impacts related to population influx												
Community opposition – arising from unmanaged expectations	Medium term	Local	High - negative	Moderately detrimental	Probable	Minor - negative	Medium term	Local	Moderately high - negative	Moderately detrimental	Unlikely	Negligible - negative
Increased social pathologies	Medium term	Local	Very high - negative	Moderately detrimental	Probable	Minor - negative	Medium term	Local	High - negative	Moderately detrimental	Unlikely	Negligible - negative
Increased pressure on local services/resources	Medium term	Local	High - negative	Moderately detrimental	Likely	Minor - negative	Medium term	Local	Moderately high - negative	Moderately detrimental	Probable	Minor - negative

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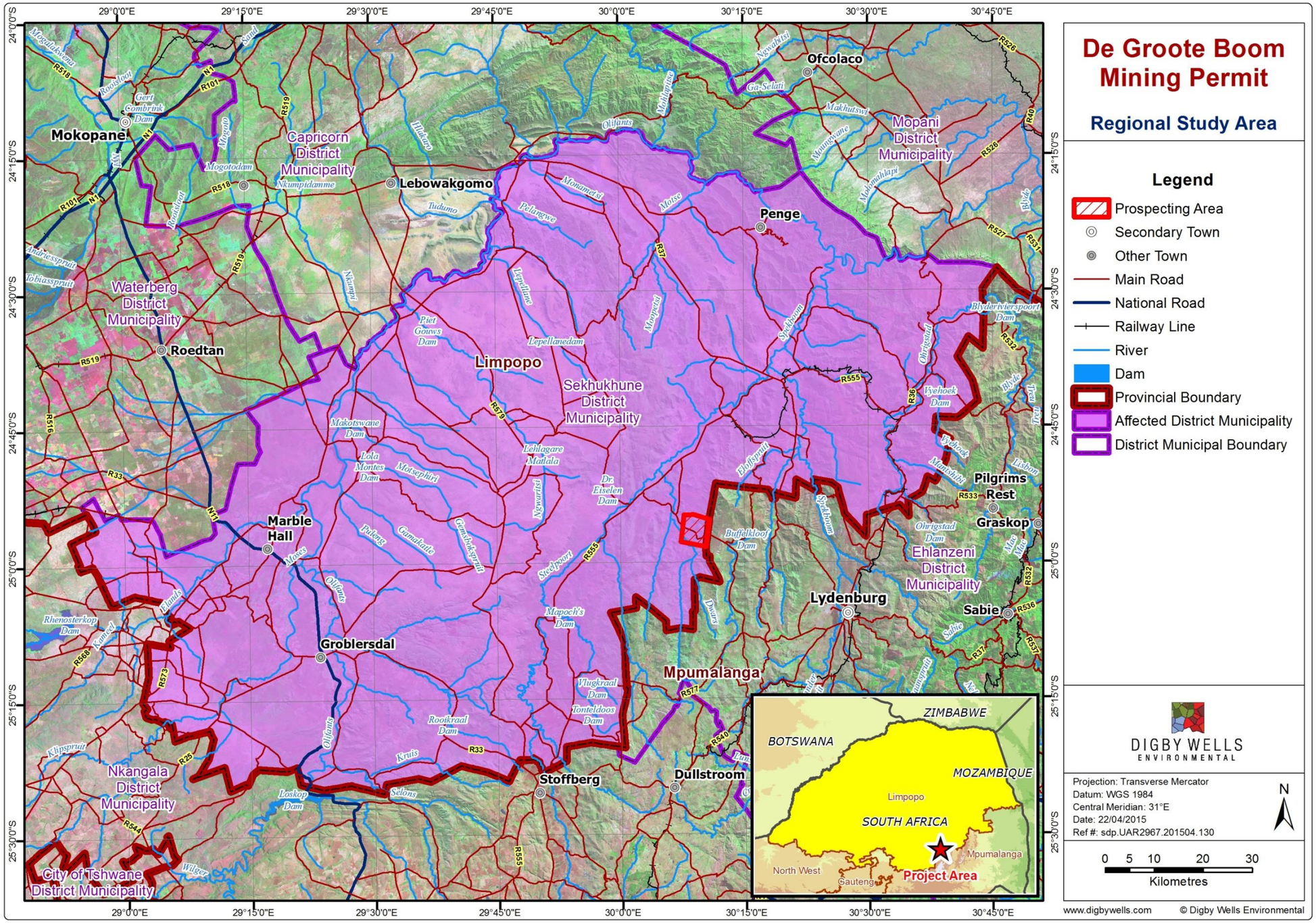
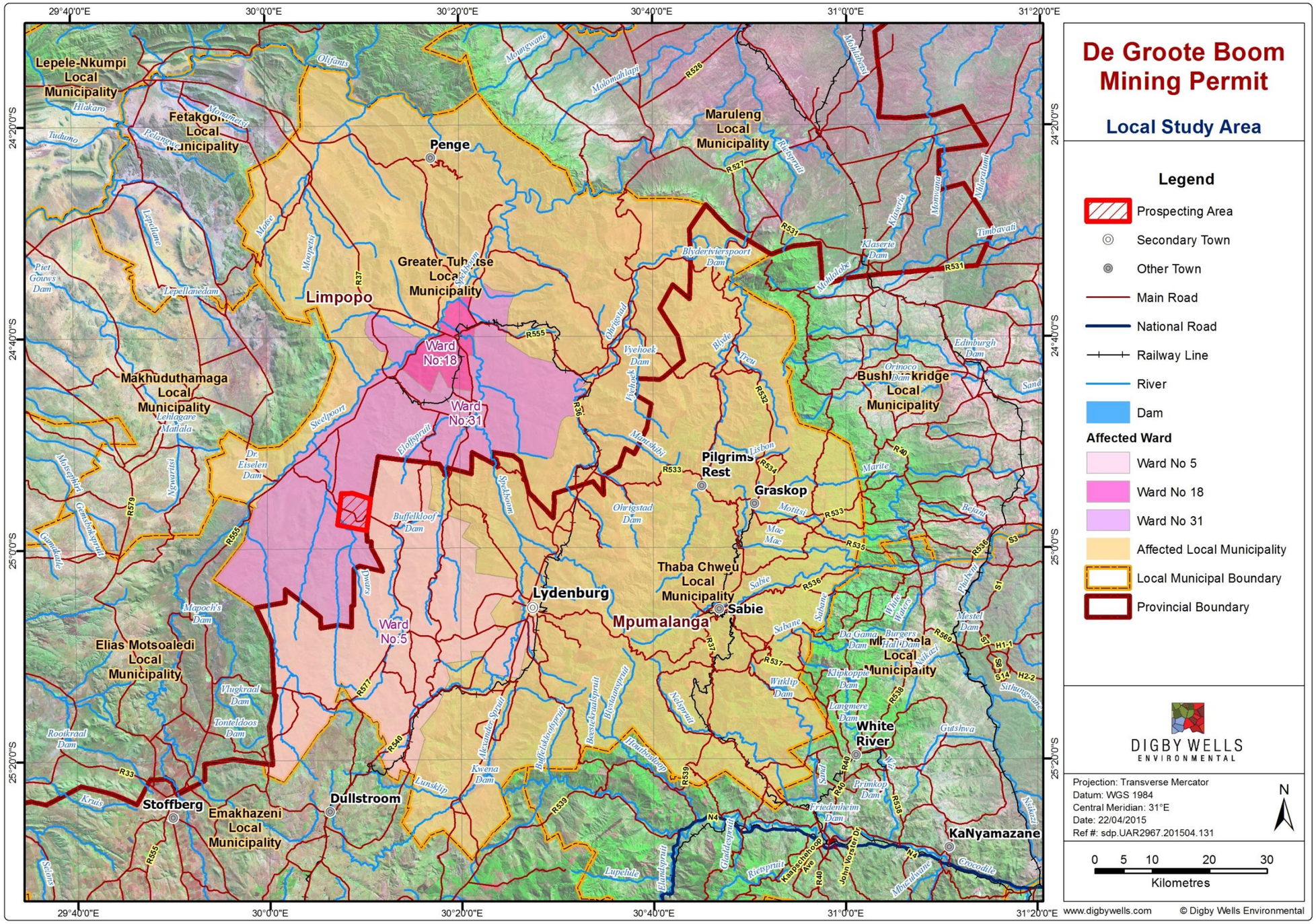
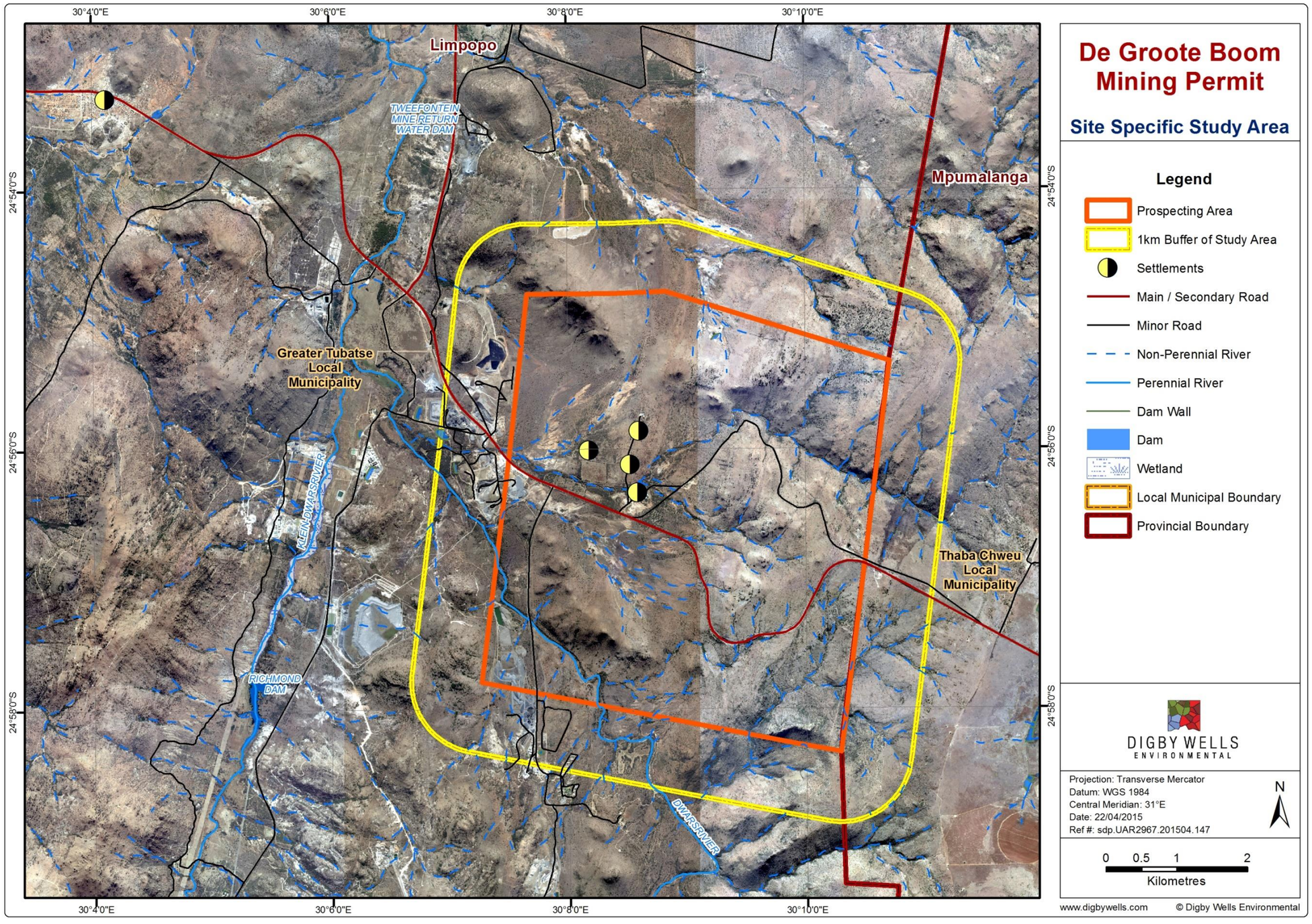
Appendix A: Plans



Plan 1: Regional Study Area



Plan 2: Local Study Area



Plan 3: Location Relative to the Site-specific Study Area