

BAUBA A HLABIRWA MOEIJELIK PROJECT BAUBA A HLABIRWA MINING INVESTMENTS (PTY) LTD

EIA PHASE - SOCIAL IMPACT ASSESSMENT (SIA)

A PORTION OF THE REMAINING EXTENT OF THE FARM MOEIJELIK 412 KS. LIMPOPO PROVINCE

REPORT



ENVIRONMENTAL & PROJECT MANAGEMENT PROFESSIONALS

2015

Email: info@ecoelementum.co.za
Contact: 012 348 5214 /
082 690 9105



עוֹלָמֵנוּ
הַיְשָׁרָה
ENVIRONMENTAL & PROJECT
MANAGEMENT PROFESSIONALS

DOCUMENT CONTROL

Project Number:	Version:	Date:
15-077-SIA-REP EIA Phase	BB	07/07/2015

QUALITY CONTROL

COMPILED BY: Mr Vernon Siemelink

BSSci: GeoSci Honns UP

M(EnvMan) UP

ISO 14001:2004 Auditor



07-07-2015

SIGNATURE

DATE

REVIEWED BY: Mr Henno Engelbrecht

Senior Environmental Consultant

B.Sc. (Hons) Environmental Analysis and Management



30-06-2015

SIGNATURE

DATE

DISCLAIMER

This is not a legally binding document and many of the actions and recommendations remain the responsibility of the client (as the owner/lessee of the property). This is the Social Impact Assessment for Bauba A Hlabirwa Moeijelik Project 2015.

Eco Elementum (Pty) Ltd and the authors of this report are protected from any legal action, possible loss, damage or liability resulting from the content of this report. This document is considered confidential and remains so unless requested by a court of law. Please only print this document if necessary

CONTENTS

CHAPTER 1: PROJECT INFORMATION	6
CHAPTER 2: INTRODUCTION	7
CHAPTER 3: SCOPE OF WORK	9
3.1 Approach to the SIA Study	9
3.2 Key Components of an SIA	9
3.3 Terms of Reference	10
3.4 Assumptions and Limitations	10
CHAPTER 4: STUDY AREA	11
4.1 LOCATION	11
4.2 SURFACE INFRASTRUCTURE	11
CHAPTER 5: LEGISLATION AND POLICY INSTRUMENTS	15
5.1 The Constitution of the Republic of South Africa	15
5.2 National Environmental Management Act (No107 of 1998)	15
5.3 National Water Act (No 36 of 1998)	16
5.4 Mineral and Petroleum Resources Development Act No 22 of 2008)	16
5.5 Sekhukhune District Municipality Integrated Development Plan (2013-2014)	17
5.6 Fetakgomo Local Municipality Spatial Development Framework (2008)	17
5.7 LimPopo Economic Growth and Development Path (2011)	17
CHAPTER 6: SOCIO-ECONOMIC OVERVIEW OF THE STUDY AREA	18
6.1 FETAKGOMO LOCAL MUNICIPALITY DEMOGRAPHICS	18
6.1.1 Population figures	18
6.1.2 Location	19
6.2 SEKHUKHUNE DISTRICT MUNICIPALITY (SDM):	20
6.2.1 Demographics	20
6.2.2 Home Language	21
6.2.3 Education Profile In The Sekhukhune District	22
6.2.4 Employment By Industry	22
6.2.5 Economically Active Population	23
CHAPTER 7: DESCRIPTION OF AFFECTED AREA AND ENVIRONMENT	24
7.1 SURROUNDING AREA	24
7.2 TOPOGRAPHY AND CLIMATE	25
7.3 LAND COVER	26
CHAPTER 8: SOCIAL IMPACT RATING METHODOLOGY	27
CHAPTER 9: EIA PHASE - SOCIAL IMPACT ASSESSMENT	29
9.1 Construction Phase	30
9.2 Operational Phase	37
9.3 Decommissioning Phase	42
CHAPTER 10: CUMULATIVE IMPACTS	43

CHAPTER 11: CONCLUSION	44
REFERENCES	46

LIST OF TABLES

Table 1: Applicable farm information as per the title deed	11
Table 2: Community Survey by age and gender – Fetakgoma’s Population	18
Table 3: Population stats for Sekhukhune District Municipality	20
Table 4: Rural statistics.....	21
Table 5: breakdown of employment by industry in the SDM:.....	23
Table 6: Economically active population	23
Table 7: The Primary SLP Commitments	45

LIST OF FIGURES

Figure 1: Location of the farm Moeijelik 412 KS, portions	7
Figure 2: Map indicating the location of the mining area and local Municipality	8
Figure 3: Full scale mining layout – June 2015.....	13
Figure 4: Full scale mining layout	14
Figure 5: Location of the Fetakgoma Local Municipality.....	19
Figure 6: population growth rates in Sekhukhune 2011.....	21
Figure 7: Education status in SDM	22
Figure 8: Land Use classification in the Fetakgomo Local Municipality	24
Figure 9: Moeijelyk Elevation map	25

ABBREVIATIONS

AIDs	Acquired Immune Deficiency Syndrome
CS	Community Survey
CSI	Corporate Social Investment
DEADP	Department of Environmental Affairs and Development Planning
DMR	Department of Mineral Resources
DM	District Municipality
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GHS	General Household Survey
GVA	Gross Value Add
HD	Historically Disadvantaged
HIV	Human Immunodeficiency Virus
IDC	Industrial Development Corporation
IDP	Integrated Development Plan
IEM	Integrated Environmental Management
KPA	Key Performance Area
LM	Local Municipality
MEGDP	Mpumalanga Economic Growth and Development Path
MPG	Mpumalanga Provincial Government
MPRDA	Mineral and Petroleum Resources Development Act
NEMA	National Environmental Management Act
PGDS	Provincial Growth and Development Strategy
ROM	Run of Mine
SDF	Spatial Development Framework
Stats SA	Statistics South Africa
Std	Standard
STD	Sexually Transmitted Disease
SIA	Social Impact Assessment
WULA	Water Use License Application

CHAPTER 1: PROJECT INFORMATION

Key Project Information

Project Title:	Bauba A Hlabirwa Moeijelik Project
Farm Description:	Moeijelik 412 KS
Company registration Number:	(Reg. No. 2006 / 039054 / 07)
District Municipality:	Greater Sekhukhune District Municipality
Local Authority:	Fetakgomo Local Municipality
Nearest Town:	Ga-nkoana (25 Km)
Site Midpoint Coordinates:	South: 24° 17' 00" East 29° 58' 37"

Project applicant:	Bauba A Hlabirwa Mining Investments (Pty) Ltd		
Trading name (if any):	Bauba A Hlabirwa Moeijelik Project		
Industry:	Chrome mine		
Contact person:	Nicole Upton		
Physical address:	Farm Moeijelik 412 KS, Limpopo Province		
Postal address:	PO Box: 1658, Witkoppen, 2068		
Postal code:	2068	Cell:	082 059 3714
Telephone:	011 699-5720	Fax:	011 462-6184
E-mail:	Nicole@menco.co.za		
EAP:	Ilze Ueckermann for Eco Elementum (Pty) Ltd		
Contact person:	Vernon Siemelink (Project Manager)		
Postal address:	26 Greenwood Crescent, Lynnwood Ridge, Pretoria		
Postal code:	0040	Cell:	072 196 9928
Telephone:	012 348 5214	Fax:	086 714 5399
E-mail:	vernon@ecoelementum.co.za / info@ecoelementum.co.za		
Qualifications & relevant experience	Master's Degree specializing in Environmental Management 10 Years' experience in Environmental Consultancy		
Professional affiliation(s) (if any)	Chartered Environmental Assessment Practitioner South Africa (CEAPSA)		
Contact person:	Vernon Siemelink and Henno Engelbrecht		
Assessment:	Social Impact Assessment		
Mining Activities:	Mining, blasting, crushing, screening, loading, transporting.		
Products:	Chrome - Material will be obtained by employing an open cast bench mining method in order to extract material from the proposed excavation (bulldozers to remove surface vegetation and topsoil layers, excavators to extract material from the pit and loader and tipper trucks to deliver the material to the stockpile area).		

CHAPTER 2: INTRODUCTION

Eco Elementum (Pty) Ltd has been appointed by M2 Environmental Connections on behalf of the applicant Bauba A Hlabirwa Mining investments (Pty) Ltd to undertake the Social Impact Assessment (sIA) for the required authorisations and gather all the necessary information needed for the proposed mining operations on farm Moeijelik 412 KS. The project is currently in the final EIA phase. This document describes issues relating to possible social impact on the final EIA level.

The mining right area is situated on a portion of the farm Moeijelik 412 KS in the Magisterial District of Greater Sekhukhune District Municipality. The mining right area subjected to this Social Impact Assessment (SIA) is situated on the farm Moeijelik 412 KS, only on a portion of portion Moeijelik 412 KS, next to the road and the mountain. It is approximately 85km directly south east from central Polokwane, 56km South-south- east of Tzaneen, 42km south of Misty Crown (and Haernertsburg), 25km east north east of Ga-nkoana and 50km North-north-west of Steelpoort (and Burgersfort).

It is adjacent to the local towns / settlements of Tsiheng.

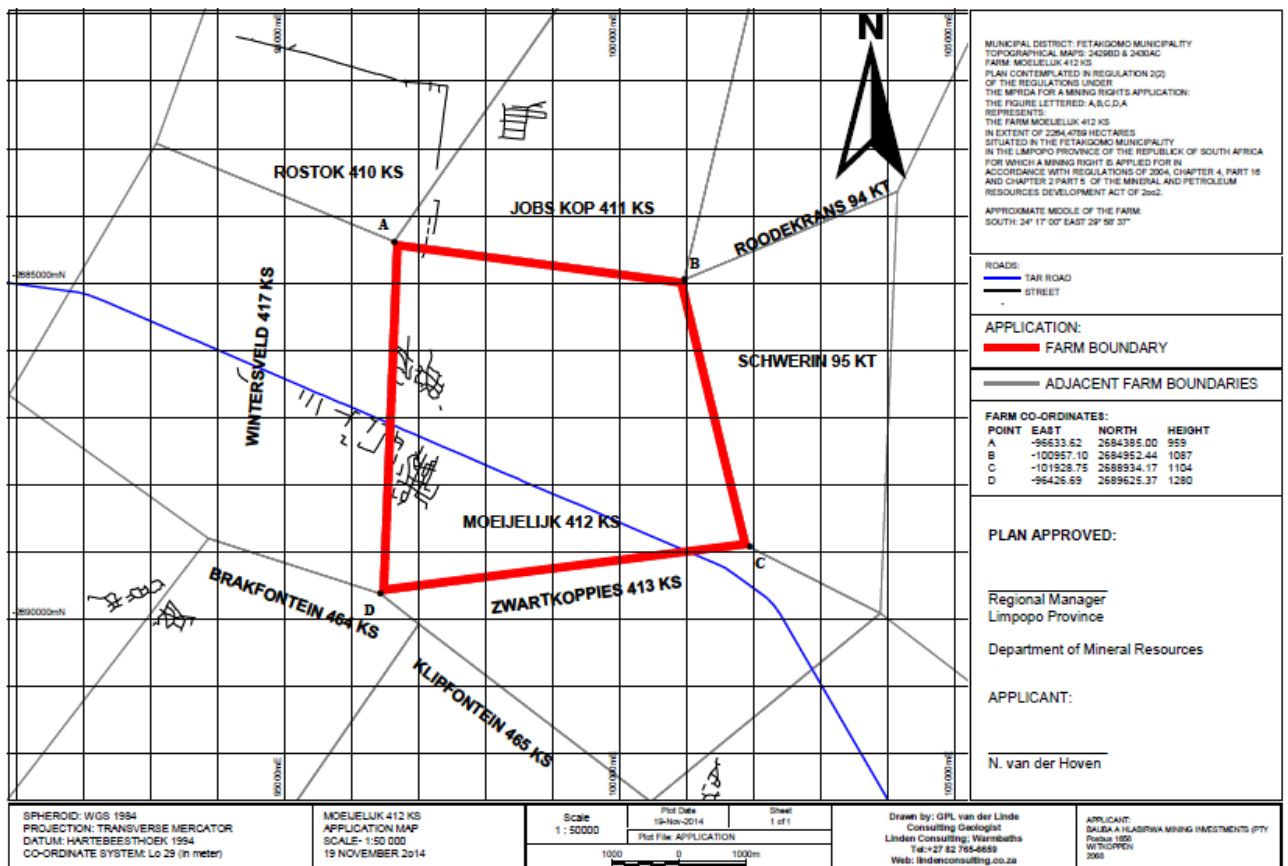


Figure 1: Location of the farm Moeijelik 412 KS, portions

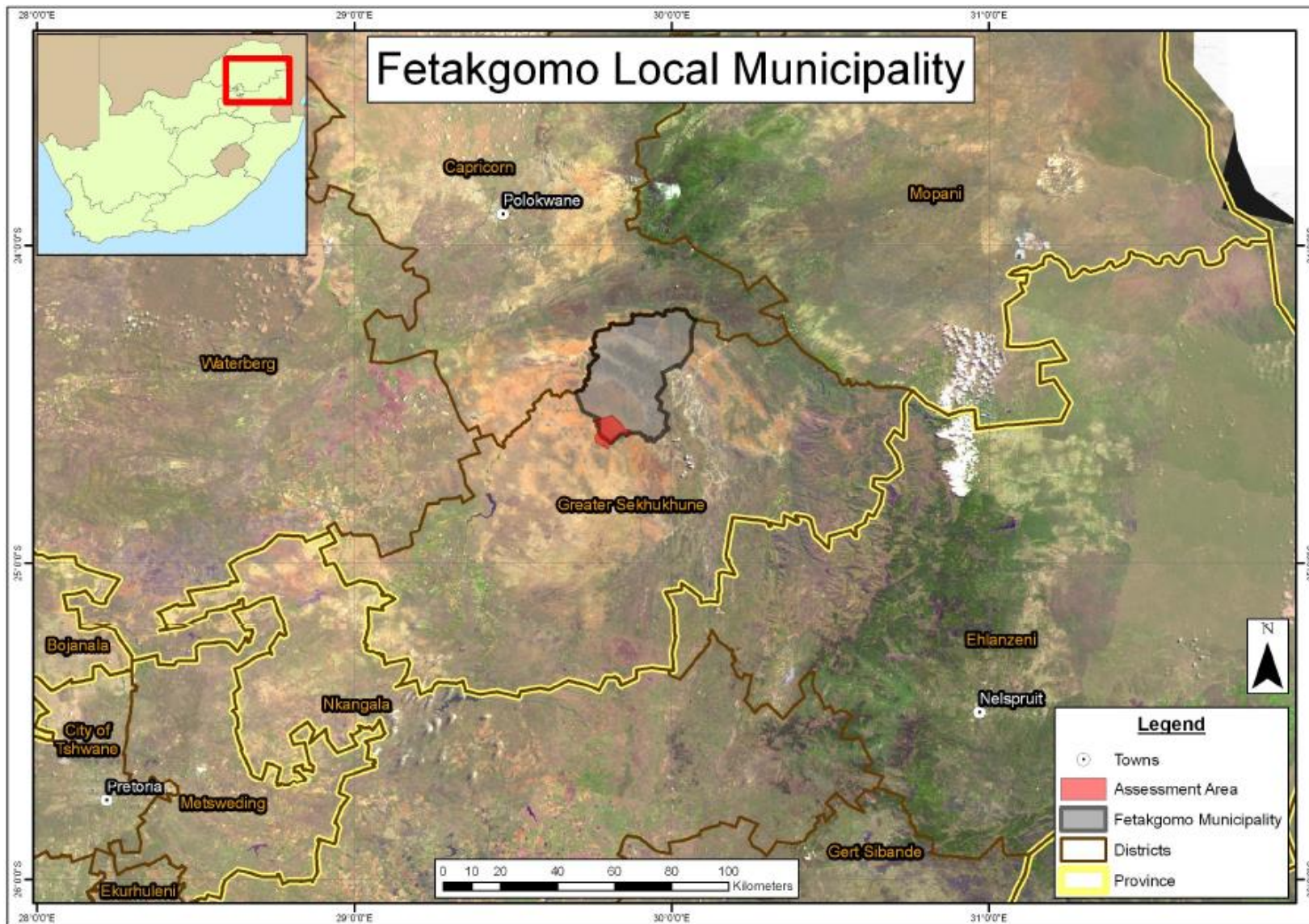


Figure 2: Map indicating the location of the mining area and local Municipality

CHAPTER 3: SCOPE OF WORK

According to (Vanclay, 2002) a Social Impact Assessment (SIA) is defined as *“the process of analysing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of planned interventions (policies, programmes, plans and projects) and any social change processes invoked by those interventions so as to bring about a more sustainable and equitable biophysical and human environment”* In summary, it involves the identification and evaluation of social impacts and thereafter proposing mitigation measures to enhance or prevent the impacts.

The key objective of an SIA is to give the opportunity to Interested and Affected Parties (I&AP's)(e.g. state organs, developers, communities, non-governmental organizations, civil society) to understand what the project is about and identify social impacts that may arise from a project (DEADP, 2007).

3.1 APPROACH TO THE SIA STUDY

For this particular SIA, a technocratic approach has been used that makes use of a quantitative research technique and this mainly involved the use of secondary data from census results, Integrated Development Plans, Spatial Development Strategies, Provincial Growth Paths and the internet.

3.2 KEY COMPONENTS OF AN SIA

The role of an SIA as part of an EIA study cannot be downplayed as it aids in providing a better understanding of the affected communities who make up the social environment. The Guidelines for Involving Social Assessment Specialists in EIA Processes (DEADP, 2007), outlines the following as key components of an SIA:

- *“Describing and obtaining an understanding of the proposed intervention (type, scale, location), the communities likely to be affected and determining the need and scope of the SIA.*
- *Collecting baseline data on the current social environment and historical social trends.*
- *Identifying potential alternatives.*
- *Identifying and collecting data on the SIA variables and social change processes related to the proposed intervention. This requires consultation with affected individuals and communities.*
- *Assessing and documenting the significance of social impacts associated with the proposed intervention.*
- *Assessing the alternatives and identifying potential mitigation measures.*
- *Developing a Monitoring and Evaluation Programme.”*

3.3 TERMS OF REFERENCE

Based on the above, this SIA will entail:

- Describing the environment that may be affected by the proposed chrome mine;
- Describing the manner in which the environment may be affected by the proposed mine;
- Describing and assessing the potential social issues associated with the proposed mine; and
- Identifying negative and positive impacts that may arise as a result of the proposed mine and suggesting ways in which these impacts may be enhanced or mitigated against.

The tasks outlined above will be achieved by:

- A review of indicators with data from 2001 and 2011 Censuses, 2007 Community Survey and General Household Surveys (GHS) from Statistics South Africa (Stats SA);
- Review of legislation and policies of the geographical area; and
- Review of information from other specialist studies undertaken for the project and other comparable projects.

3.4 ASSUMPTIONS AND LIMITATIONS

- All information provided to Eco Elementum by M2 Environmental Connections is correct and valid;
- Eco Elementum does not accept responsibility for information that is availed later in the study;
- All data from published sources is accurate and valid as the time of publication; and
- The scope of this study is limited to assessing the potential social impacts arising as a result of the proposed Chrome Mine.

CHAPTER 4: STUDY AREA

4.1 LOCATION

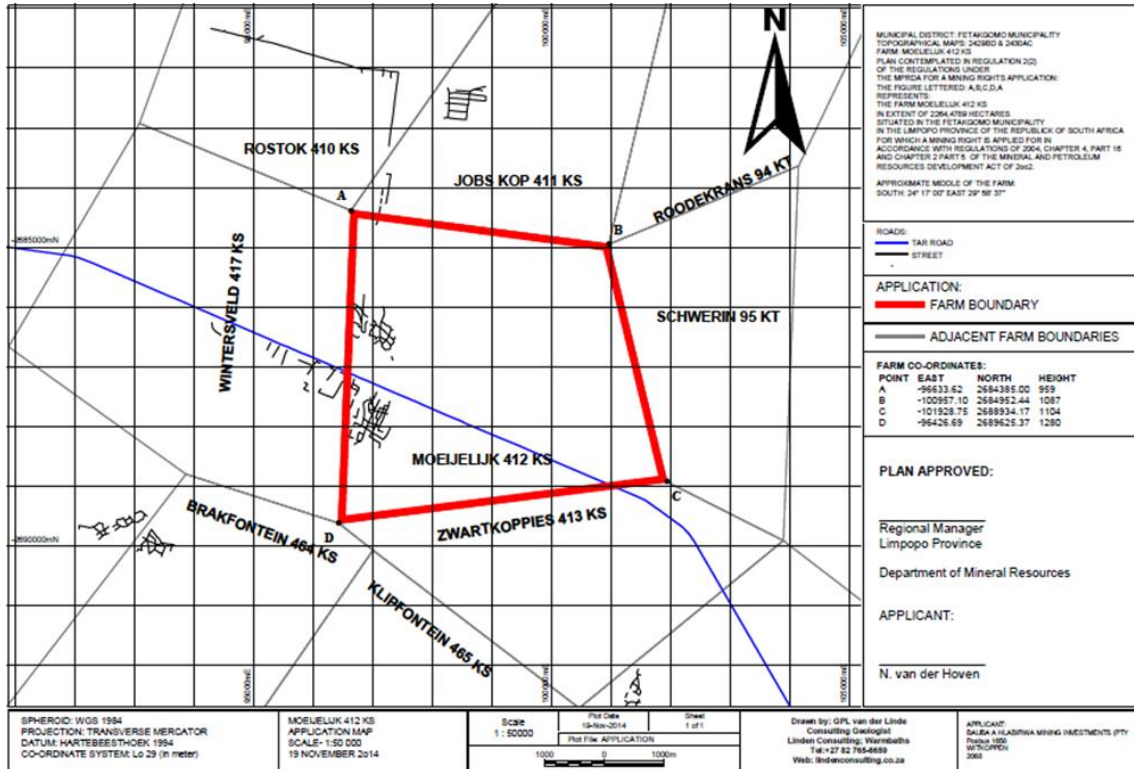


Table 1: Applicable farm information as per the title deed

Moeijelik 412 KS	
	Farm
Owner(s)	Moeijelik 412 KS Bauba A Hlabirwa Mining Investments (Pty) Ltd
Size (ha)	2264,4789 HECTARES
Title deed Number	
Topographical Maps	2429BD & 2430AC

4.2 SURFACE INFRASTRUCTURE

BASIC PLANT DESIGN

No process facility is planned at the Moeijelik reserve area. ROM chrome ore will be transported to an off-site beneficiation facility.

MINING DESIGNS

Due to the differing nature of the identified chrome resources, their metal content and accounting for the considerations highlighted above, three mining methods were identified. Resources situated close to surface will be mined via open pit type mining up to a depth of approximately 50m.

Below the pit underground mining will target two distinct horizons, the LG7 and LG6, separated by a vertical distance of approximately 30m. The LG6 reef horizon will be mined with a conventional board and pillar methodology, and the LG7 horizon with a conventional breast methodology.

Both these target horizons will be accessed via a cluster decline system, to access the defined levels.

DEVELOPMENT METHODS

The development methods to be employed for the development of the underground mine are as follows:

- Declines: The declines will be developed employing mechanized methods employing single boom drill rigs and Load Haul Dumpers (LHD's). The waste rock will be loaded by the LHD's loaded in to trucks and removed to surface.
- ASD's: The trackless haulage will be developed in the same manner as the declines.
- Raises and ASG's: Reef raises, due to their steepness (dip of 18°-19°) will be developed using conventional hand held drill and blast methods. The raises will connect each ASG with the main haulage or ASD to allow for ore removal logistical requirements. The raises will be developed on a follow behind method. When the panel advanced has progressed more than 75m from the previous raise line a new raise will be established, by footwall lifting, behind the panel face to minimise the scraper distances.

PRODUCTION SYSTEM

The production methods to be used are typical of open pit operations and consist of the following steps on a daily basis:

- Strip the 70cm of top soil and stockpile for future rehabilitation work;
- Strip overburden until solid rock encountered and stockpile for future rehabilitation
- Drill and blast the solid overburden and remove for stockpiling and later back filling the pits
- On encountering the ore seams reduce bench height and drill and blast the ore
- The ore is loaded into trucks using hydraulic shovels or front end loaders
- Transport the ore to the processing plant ROM for stockpiling
- Drill and blast the internal overburden solid rock and remove for stockpiling

LOGISTICS

Ore Handling Logistics

The broken ore is loaded using hydraulic shovels with 3m capacity loading in to articulated dump trucks. The trucks then transport the ore to the ROM pad plant some 2.5km away.

The free dig top soil is loaded into trucks using the same equipment as used for the ore extraction process. This soil is then transported a distance of 1km and stockpiled for future rehabilitation use.

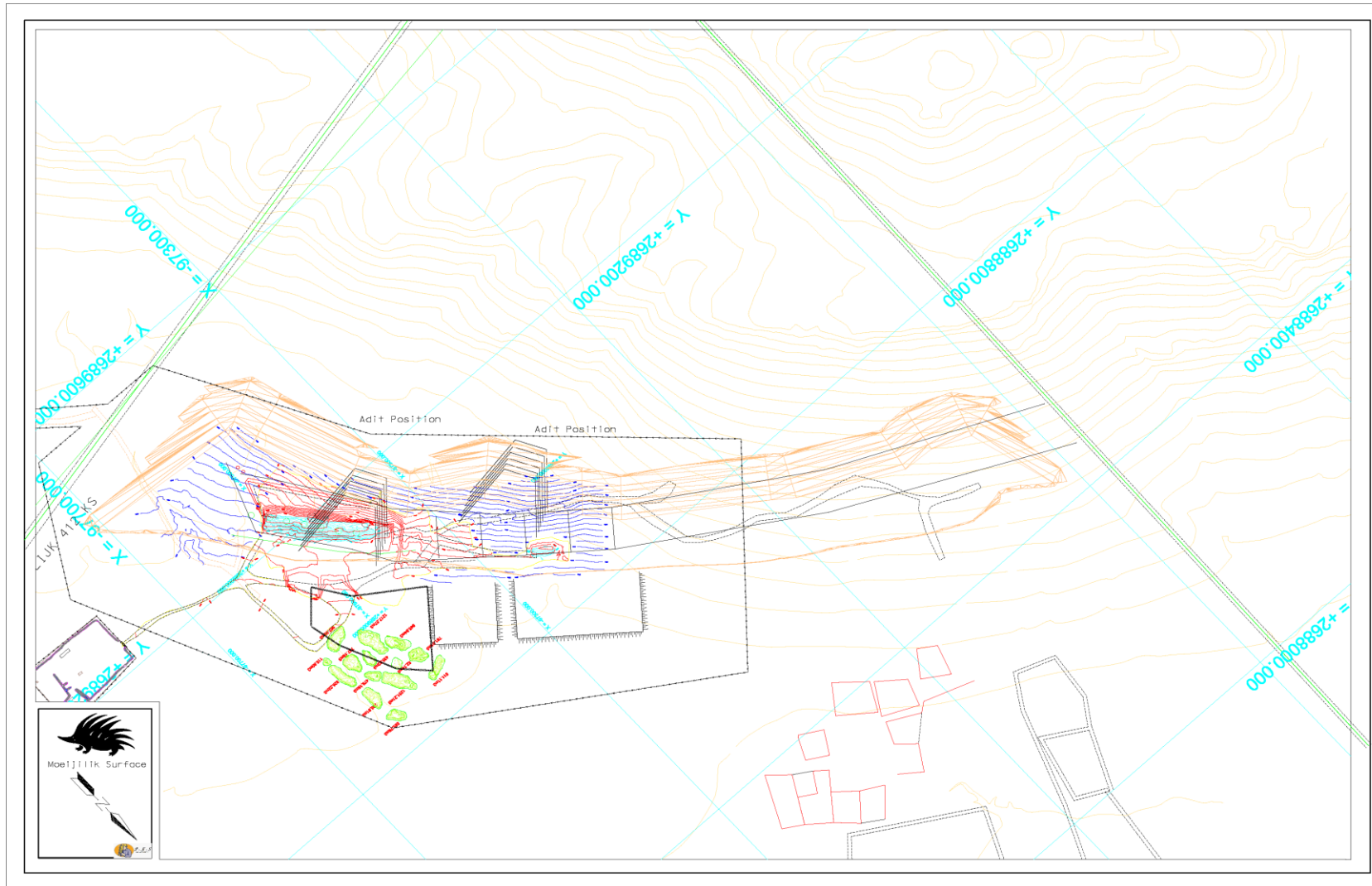


Figure 3: Full scale mining layout – June 2015

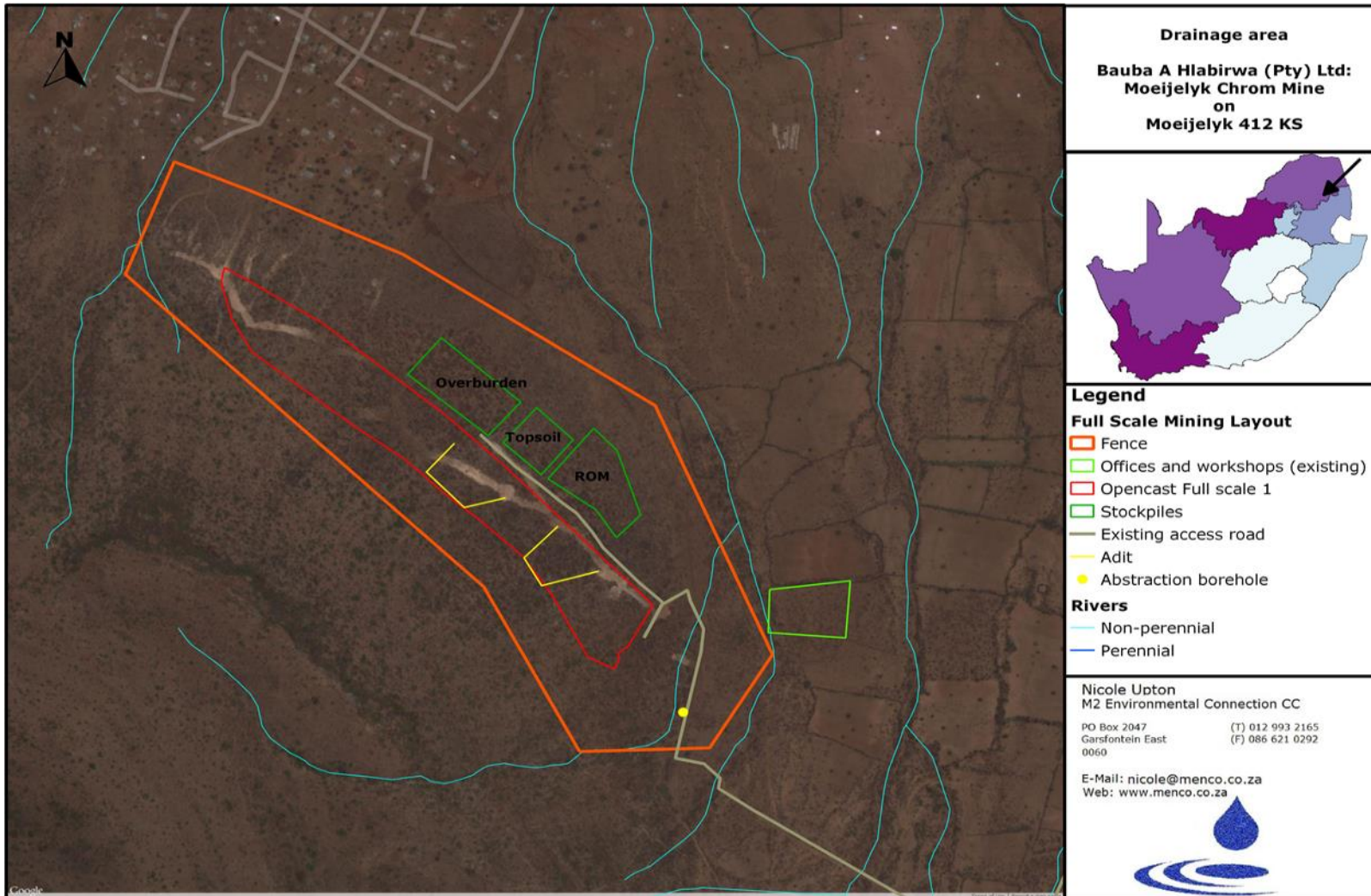


Figure 4: Full scale mining layout

CHAPTER 5: LEGISLATION AND POLICY INSTRUMENTS

5.1 THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA

The Constitution of South Africa (Act No 108 of 1996) is the cornerstone of democracy in South Africa and under Chapter 2 it outlines the Bill of Rights which includes Section 24 that states:

Everyone has the right

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

Section 24 thus requires that all activities that may significantly affect the environment and require authorisation by law must be assessed prior to approval.

5.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NO107 OF 1998)

The National Environmental Management Act (No 107 of 1998) (as amended) is the main piece of legislation in South Africa that governs all matters pertaining to the protection and conservation of the environment. This Act sets out in Chapter 1 the National Environmental Management Principles which amongst other things states that:

“(2) Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.

(3) Development must be socially, environmentally and economically sustainable.

(4) (a) Sustainable development requires the consideration of all relevant factors including the following:

(viii) that negative impacts on the environment and on people’s environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

(b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.

(h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.

(i) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.”

NEMA also establishes the platform for ensuring Integrated Environmental Management (IEM) whose objective includes:

“23 -2(b) identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management.”

24 (1) In order to give effect to the general objectives of integrated environmental management laid down in this Chapter, the potential impact on—

(a) the environment;(b) socio-economic conditions; and (c) the cultural heritage,

of activities that require authorisation or permission by law and which may significantly affect the environment, must be considered, investigated and assessed prior to their implementation and reported to the organ of state charged by law with authorising, permitting, or otherwise allowing the implementation of an activity.”

From the above excerpts of the Act, it can be seen that there is a strong focus on addressing social issues in the quest to ensure sustainable environmental management.

5.3 NATIONAL WATER ACT (NO 36 OF 1998)

The purpose of the National Water Act is *“to ensure that the nation’s water resources are protected, used, developed, conserved, managed and controlled in ways which take into account amongst other factors (a) meeting basic needs of current and future generations; (e) facilitating social and economic development.”*

5.4 MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT NO 22 OF 2008)

Mining operations require environmental authorisation from the Department of Mineral Resources (DMR) for the mining right application in terms of Section 22 of the Mineral and Petroleum Resources Development Act (MPRDA). The following issues must be considered whilst undertaking the Environmental Impact Assessment study.

- The objectives of the MPRDA include giving effect to Section 24 of the Constitution by ensuring that the Nation’s mineral and petroleum resources are developed in an orderly and ecologically sustainable manner while promoting justifiable social and economic development. (Section 2(h) of the MPRDA).
- The principles set out in Section 2 of NEMA serve as guidelines for the interpretation, administration and implementation of the environmental requirements of Section 37(1)(b) of the MPRDA.
- Section 38(1)(a) of the MPRDA requires that effect be given to the general objectives of Integrated Environmental Management laid down in the NEMA. IEM is a philosophy, which prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development process in order to achieve a desirable balance between conservation and development;
- The Environmental Management Programme (EMPr) to be submitted is not limited to but must inter alia include the requirements of regulation 51 of the MPRDA. For instance, where regulation 51(a)(ii) refers to measures for the prevention, management and remediation of each environmental impact, these clearly must be understood in the context of the NEMA where the general objectives of the IEM include ensuring that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them. This clearly requires

a description of the mining project that lists each activity pertaining to the mining project, in order that each such activity can be assessed.

5.5 SEKHUKHUNE DISTRICT MUNICIPALITY INTEGRATED DEVELOPMENT PLAN (2013-2014)

The District's latest Integrated Development Plan (IDP) states that "it is the *principal strategic planning instrument, which guides and informs all planning and development, and all decisions with regard to planning, management and development, in the municipality. It is the the key instrument to achieve developmental local governance for decentralised, strategic, participatory, implementation orientated, coordinated and integrated development.*" The compilation of the IDP must take into account the current social environment in order to come up with Key Performance Areas (KPA) that would be formulated so as to address the various issued identified during that financial year.

5.6 FETAKGOMO LOCAL MUNICIPALITY SPATIAL DEVELOPMENT FRAMEWORK (2008)

The Spatial Development Framework (SDF) is a document that is prepared by the local government in order to direct the planning, development and use of municipality land with a view of ensuring development that is economically, socially and environmentally sustainable. The drafting of an SDF must include the assessment of the social environment of the local municipality which involves variables such as population, employment and economic status. SDFs and IDPs are related and therefore "they need to be aligned with set goals and directives and need to be reviewed continually to ensure synergy with local, provincial and national government" NDM, 2008.

5.7 LIMPOPO ECONOMIC GROWTH AND DEVELOPMENT PATH (2011)

The Limpopo Economic Growth and Development Path (LEGDP) was compiled in a bid to address three main challenges facing the inhabitants of the province namely *unemployment, poverty and inequality*. These challenges could be attributed to and augmented by the history of apartheid and in more recent times the global economic recession. As a result, there have been concerted efforts to foster integrated economic development and to ensure sustainable natural resource use. An annual provincial economic growth rate of 5% to 7% has been marked as one of the ways in which targets set to address these challenges will be achieved with mining being a pivotal sector. The Growth Path thus succinctly outlines its key objective is "to *improve the labour absorption of the economy, to reduce carbon emissions and to strengthen the link between science and technology on the one hand and growth and jobs on the other.*"

This Growth Path identifies that mining (mainly of coal, chrome, gold and platinum) is a key sector (although it is a capital intensive) identified for the provision of jobs in the province with projections from the Industrial Development Corporation (IDC) showing that mining could create 140000 direct jobs by 2020 and 200000 by 2030. At present, the vital role of mining in the provision of jobs in the province is acknowledged as worldwide, Limpopo ranks as the third largest mining region.

CHAPTER 6: SOCIO-ECONOMIC OVERVIEW OF THE STUDY AREA

6.1 FETAKGOMO LOCAL MUNICIPALITY DEMOGRAPHICS

6.1.1 POPULATION FIGURES

The most recent census (2011) finds the Fetakgomo's population at about 93 814 which represents a drop of 16% compared to 112, 232 population in 2007 (Statistics South Africa, Community Survey 2007). However when a comparative study is done with the 2001 census which found 92 083 population (Statistics South Africa, Community Survey 2001), it represents a marginal upward population growth of 1.8%. Table 2: Disaggregation of Fetakgomo's Population by Age and Gender Distribution (2011).

Table 2: Community Survey by age and gender – Fetakgoma's Population

Age	Male	%Male	Female	%Female	Total	Total Population
0 - 4	6 007	6.4%	6 149	7%	12 226	13.4%
5 - 9	5 422	6%	5 447	6%	10 869	11.2%
10 - 14	5 183	6%	4 930	5.2%	10 113	11.2%
15 - 19	5 441	6%	5 437	6%	10 878	12%
20 - 24	4013	4.2%	4 342	5%	8 355	9.2%
25 - 29	3 099	3.3%	3 906	4.1%	7005	7.4%
30 - 34	2 319	2.4%	3 059	3.2%	5377	5.6%
35 - 39	1 893	2.0%	2 763	2.9%	4656	4.9%
40 - 44	1 573	2%	2 449	3%	4022	5%
45 - 49	1 493	2%	2 523	3%	4016	5%
50 - 54	1 271	1.3%	1 972	2.1%	3243	3.4%
55 - 59	1 229	1.3%	1 737	2%	2966	3.3%
60 - 64	976	1.04%	1 495	2%	2471	3.04%
65 - 69	645	1%	1 649	2%	2294	3%
70 - 74	752	1%	1 261	1.3%	2013	2.3%
75 - 79	382	0.4%	925	1%	1307	1.4%
80 - 84	274	0.2%	734	1%	1008	1.2%
85+	217	0.2%	774	1%	991	1.2%
Total	42 258	45%	51 556	54%	93 814	100%

Statistics South Africa, 2011.

There is ample evidence demonstrating that the population has decreased. This decrease has adverse budgetary implications and in the results represents a major challenge for service delivery. To give a mathematical perspective to this observation, Fetakgomo's population has decreased by 16.4% just in four years, between 2007-2011. FTM's population: 92 083 (census 2001), 112, 232 increased 18%, (Community survey 2007), 93 814 decrease of 16.4% (StatsSA Census 2011).

This decrease is explained largely by migration i.e there is out-migration of people from rural to the urban areas for various reasons including but not limited to better job opportunities, access to social amenities and facilities in urban areas (water, good roads, hospitals, schools, higher educational facilities etc.). Demographic factors such as morality and fertility factors appear to also play a role.

Current demographic research observes that median age for Fetakgomo's population is around 15-19 years. Female population (54%) remains higher than the male population (45%) . It means female exceed male population by 9% (9298).

The fact that 21.2% (51601) of the population is concentrated within women who are still at their child bearing (those who are aged 15-49), leads us to hope for the exponential population growth in the foreseeable future. This projection (futures studies) can be falsified if women develop fairly low fertility aspirations in the intervening period.

Flowing from age composition presented earlier, it is quite evident that a significant proportion, 48.6% (44086) of Fetakgomo's population is under 20 years old and that about 9.2% (7613) are elderly resident (65+). The former is indicative of the fact that parents in urban areas often send their children to family members in areas to be looked after. From a pure economic viewpoint, persons aged 0-04 and as a social demographic category are economically inactive. So are the older people (age 65 and above). Thus Fetakgomo exhibits a relatively lower proportion of economically active population.

There is a large-scale rural out migration of economically active population to economic growth areas/points in search for work. Migration has huge effects on rural municipality population such as Fetakgomo. The latter serves as an additional account of why Fetakgomo has little to benefit from its demographic dividend. The fact that the aging (65+) population accounts for more than 9.2% (7613) of the population in Fetakgomo has obvious implications for the provision of social welfare services. It would seem that mortality commences to increase at the age of 75+ within Fetakgomo. Although it is widely assumed that the more population ages, the more mortality instances occur, the table above posits that the distribution of mortality is biased towards the males in this regard. The trend of high female concentration among the older generation is not exceptionally a phenomenon of Fetakgomo but a common occurrence in developing or developed countries. Most demographers or population scientists assume that, as time elapses, more males die because they tend to engage in hard and risky activities/jobs. This IDP hypothesises that, absence of hospital within the municipal area, lack of access to better medical facilities et cetera is the major source of mortality trends in Fetakgomo.

6.1.2 LOCATION



Figure 5: Location of the Fetakgomo Local Municipality

The FTM is a Category B4 Municipality that is located within the Sekhukhune District Municipality (SDM) of the Limpopo Province. In its 'State of Local Government in South Africa: Overview Report, the Department of Cooperative Governance (CoG) (2009:22) describes category B4 municipalities as those municipalities which are mainly rural, located in economically depressed areas, consequently having difficulties in attracting and retaining skilled managers/professionals and are struggling from a revenue generation perspective. As noted in the FTM's Spatial Development Framework (SDF) (2007/8), the Municipality borders Makhuduthamga in the south, Greater Tubatse in the east and Lepelle Nkumpi Local Municipality (situated in the Capricon District Municipality) on the west and north. The municipality area covers **1104.745 square meters (11474.5 hecots)**, which represent 8.3% of the Sekhukhune District's total area (13 264). The Municipality is divided into 13 wards and four nodal points., viz Atok, Apel, Mphanama and Strydkraal Node. The Municipality is completely rural in nature, dominated by traditional land ownership with a population of approximately 93814 people that reside in 87 settlements. The majority of these settlements are small with less than 100 inhabitants in each. Like most rural municipalities in the country (Republic of South Africa), Fetakgomo is characterised by weak economic base, poor infrastructure, major service backlogs, dispersed human settlements and high poverty levels. The Municipality itself is also an embryonic one that is currently grappling with revenue generation and performing its functions.

6.2 SEKHUKHUNE DISTRICT MUNICIPALITY (SDM):

6.2.1 DEMOGRAPHICS

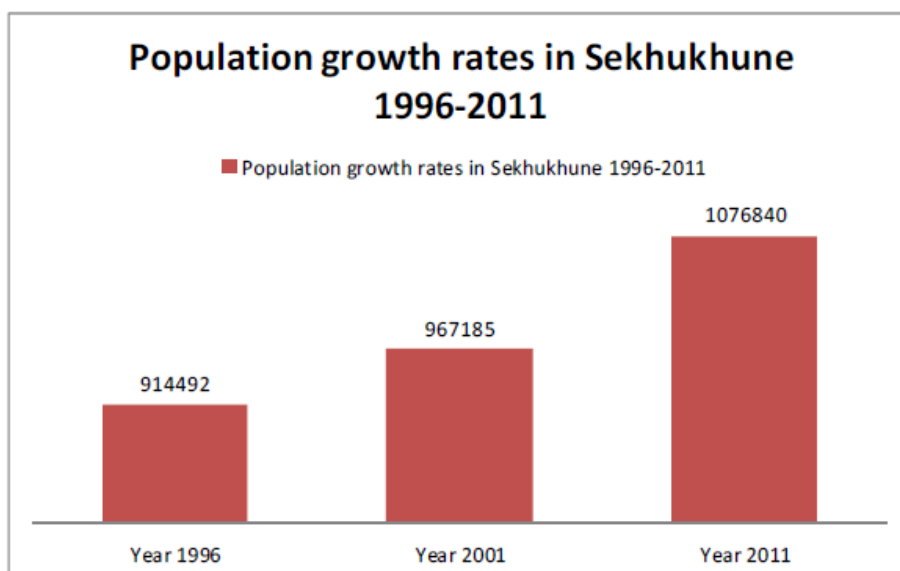
The present total population of the SDM is at 1,076, 840 (Statssa, 2011 Statistics) according to the current year projections, with 217,000 households living in the municipal areas. Half the population is below 18 years and the male, female ratio at this age is equal whilst the female population is 60% over the age of 18 or the working age.

The population growth rate for the district is expected to drop to approximately 1% per year until 2008 and to increase slowly after that. This estimate is derived from the Bureau for Market Research at UNISA. This anticipated drop in population growth rates until 2008 is due to the HIV and AIDS pandemic.

In applying the Bureau for Market Research growth rates, the population for the 2005 to 2009 is calculated as follows:

Table 3: Population stats for Sekhukhune District Municipality

MUNICIPALITY	2005	2006	2007	2008	2009
Fetakgomo	97 141	98 278	99 349	100 342	101 346
Groblersdal	233 215	236 014	238 657	241 115	243 599
Makhuduthamaga	276 404	279 417	282 266	284 920	287 598
Marble Hall	127 668	129 072	130 363	131 667	133 115
Tubatse	290 319	293 803	297 035	300 005	303 005
TOTAL	1 024 748	1 036 583	1 047 670	1 058 049	1 068 662



Source: CENSUS (2011)

Figure 6: population growth rates in Sekhukhune 2011

The Sekhukhune District is mainly rural, with 94.7% of the total population residing in the rural areas and 5.3% in the urban areas.

Table 4: Rural statistics

MUNICIPALITY	URBAN	RURAL
Fetakgomo	0%	100%
Groblersdal	7.8%	92.2%
Marble Hall	11.8%	88.2%
Tubatse	0.9%	99.1%
Makhuduthamaga	5.9%	94.1%
Makhuduthamaga	5.9%	94.1%
SEKHUKHUNE	5.3%	94.7%

Given the nature of the rural economy, where economically active people migrate to cities, the majority of the population (56%) of Sekhukhune is youthful aged below 19 years of age. 38% is part of the economically active group i.e. between 20 and 59 years while 6% are older than 60 years. Women constitute the majority of the population at 55.2%.

6.2.2 HOME LANGUAGE

The dominant home language in SDM is Sepedi with 83% followed by IsiNdebele in 4.4%. According to statistics, the areas that are predominantly Pedi speaking are Makhuduthamaga and Greater Tubatse. Comparing English and Afrikaans speakers, there are few English speakers in 0.22% while the Afrikaans speakers in 0.83%. Most Afrikaans speakers are in our former white only towns of Groblersdal, Marble Hall and Burgersfort.

6.2.3 EDUCATION PROFILE IN THE SEKHUKHUNE DISTRICT

The majority of persons within Sekhukhune District Municipality have some secondary school. It is also equally noticeable that 117 139 persons have no schooling in 2011. This is concerning because those who cannot read and write will not be able to access better job opportunities in the market as in most training programmes there is a need to have basic writing and reading skills. There are also very insignificant numbers of the persons that have higher education in the district.

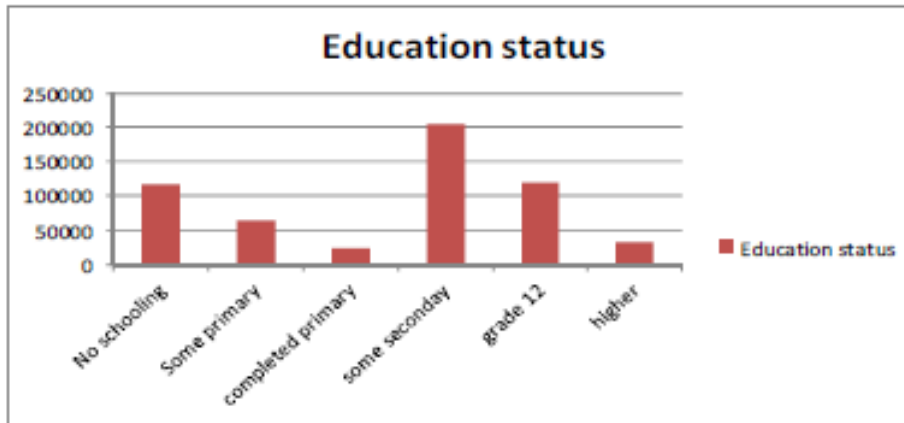


Figure 7: Education status in SDM

As indicated by stats sa, (census 2011), the district has a relatively high illiteracy level, with almost 28% of the population having no formal school education whatsoever. Only 1% of the population has obtained tertiary educational qualifications.

The Limpopo Provincial Growth and Development Strategy indicate that Sekhukhune has the least of highly skilled individuals in the province. The low skills reduce the ability of the District to be innovative and economically productive.

6.2.4 EMPLOYMENT BY INDUSTRY

Conventional wisdom has it that agriculture; mining and tourism are three leading sectors in the Sekhukhune economy. Official statistics, however, paint a slightly different picture of the district economy being dominated by community services, mining and trade. It must be noted that it is very difficult to find accurate data for the local level in South Africa. Those data gathering exercises that do exist often yield vastly different accounts of local realities. Most public sector plans and IDPs, however, draw on Stats SA data even whilst recognizing some of its limitations.

Table 5: breakdown of employment by industry in the SDM:

Sectors	Makhuduth amaga	Fetakgomo	Ephraim Mogale	Elias Motsoaledi	Greater Tubatse	Grand Total
Agriculture, Hunting, Forestry and fishing	0.23	0.01	0.29	0.54	0.31	1.38
Mining and Quarrying	0.02	0.39	0.02	0.03	1.72	2.18
Manufacturing	0.17	0.02	0.25	0.47	0.49	1.41
Electricity, Gas and Water Supply	0.03	-	0.04	0.07	0.02	0.16
Construction	0.31	0.05	0.16	0.33	0.32	1.17
Wholesale and retail trade	0.52	0.10	0.26	0.96	0.83	2.66
Transport, Storage and communication	0.09	0.01	0.08	0.28	0.26	0.72
Financial, Insurance, real Estate and	0.05	-	0.19	0.44	0.44	1.12
Community, Social and personal Services	0.77	0.32	0.59	1.00	0.93	3.62
Other and no adequately defined	0.14	0.03	0.36	0.41	0.39	1.32
Not applicable	19.40	8.64	8.75	16.69	24.63	78.11
Unspecified	1.54	0.34	0.35	1.96	1.98	6.16
Grand Total	23.26	9.92	11.33	23.18	32.31	100.00

The Three main contributors to GGP were community services (3.62%), mining (2.38%) and trade (2, 66%). Despite these findings, the district has very consciously chosen to explore the potential of mining, agriculture and tourism as key contributors to the Sekhukhune economy up to the year 2025. This is also in recognition of the fact that thriving local economics should not depend overly on public sector injections of income.

6.2.5 ECONOMICALLY ACTIVE POPULATION

The SDM like any other District in South Africa is experiencing a decline in formal job opportunities because of the general global economic meltdown. This has led to an escalating unemployment particularly among the economically active population of 18 years and above. Unemployment rate has encouraged the fast growth of informal sector in the district. The table below provides a breakdown of the employment patterns within the District.

Table 6: Economically active population

Description	Ephraim Mogale	Tubatse	Fetakgomo	Elias Motsoaledi	Makhutha maga	Sekhukhune
Employment	15056	45321	7236	39098	21978	127688
Unemployment	11098	51551	11566	16725	33346	124226
Non economically active	40787	90696	39511	79066	77494	327553
N/A	20,031	110,467	43,390	42,472	126,622	354,626
Unspecified	40					
Total	87,012	298,035	101,703	176,361	259,440	934,093

Further information on the Social Assessments which include Health, Education, Housing and Safety and Security statistics can be read in the [Integrated Development Plan of Greater Sekhukhune District Municipality](#).

CHAPTER 7: DESCRIPTION OF AFFECTED AREA AND ENVIRONMENT

This section of the scoping report provides a description of the current status of the environment. This provides a baseline scoping context for assessment of the proposed mine activities.

7.1 SURROUNDING AREA

The proposed mining right area is situated on the farms Moeijelik 412 KS in the Magisterial District of Greater Sekhukhune District Municipality. The mining right area subjected to this Social Impact Assessment is situated on the farm Moeijelik 412 KS, only portion next to the road. It is approximately 85km directly south east from central Polokwane, 56km South-south-east of Tzaneen, 42km south of Misty Crown (and Haernertsburg), 25km east north east of Ga-nkoana and 50km North-north-west of Steelpoort (and Burgersfort).

- It is adjacent to the local towns / settlements of Jibeng.

Various small streams and dongas occur on the farm with a predominantly east heading cross the plain in to the Sebitsa river which in turn feeds the Motse River to the east.

The proposed mining right area on Moeijelik 412 KS is located near the base of a prominent curvilinear chain of mountains which run along the central axis of the prospect and whose orientation rotates from north north-west in the south to west North-west in the north.

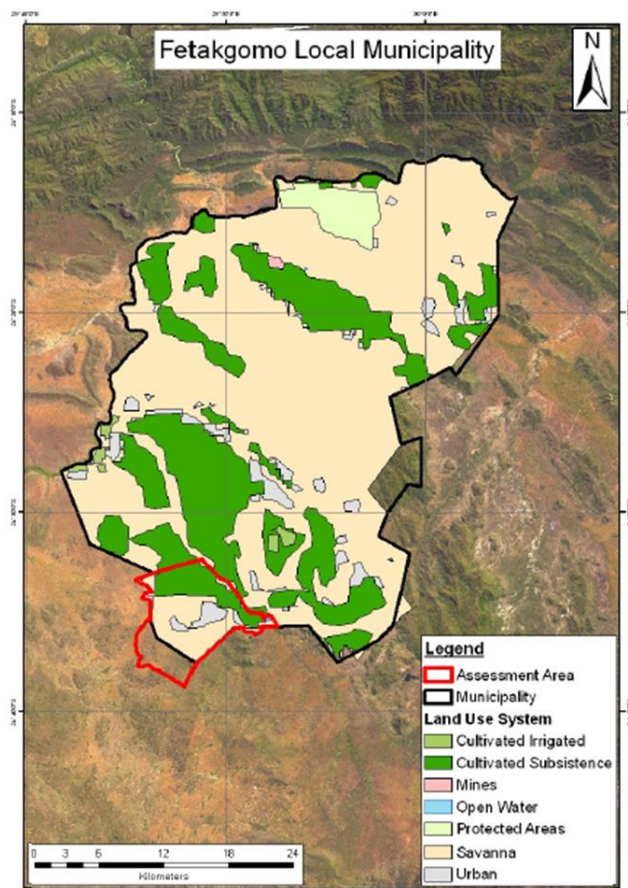


Figure 8: Land Use classification in the Fetakgomo Local Municipality

7.2 TOPOGRAPHY AND CLIMATE

The proposed mining right area on Moeijelik 412 KS is located near the base of a prominent curvilinear chain of mountains which run along the central axis of the prospect and whose orientation rotates from north north-west in the south to west North-west in the north.

These hills form a chain of high points climbing from an altitude of 820 to 860m in the valleys to a height of 1293.7m on a hill called Tshailane at the western corner of adjacent farm Zwartkoppies 413 KS and to an altitude of 1399.5m on a hill called Serafa close to the southern corner of Farm Waterkop 113 KT. These hills are covered with thorn trees and bushes.

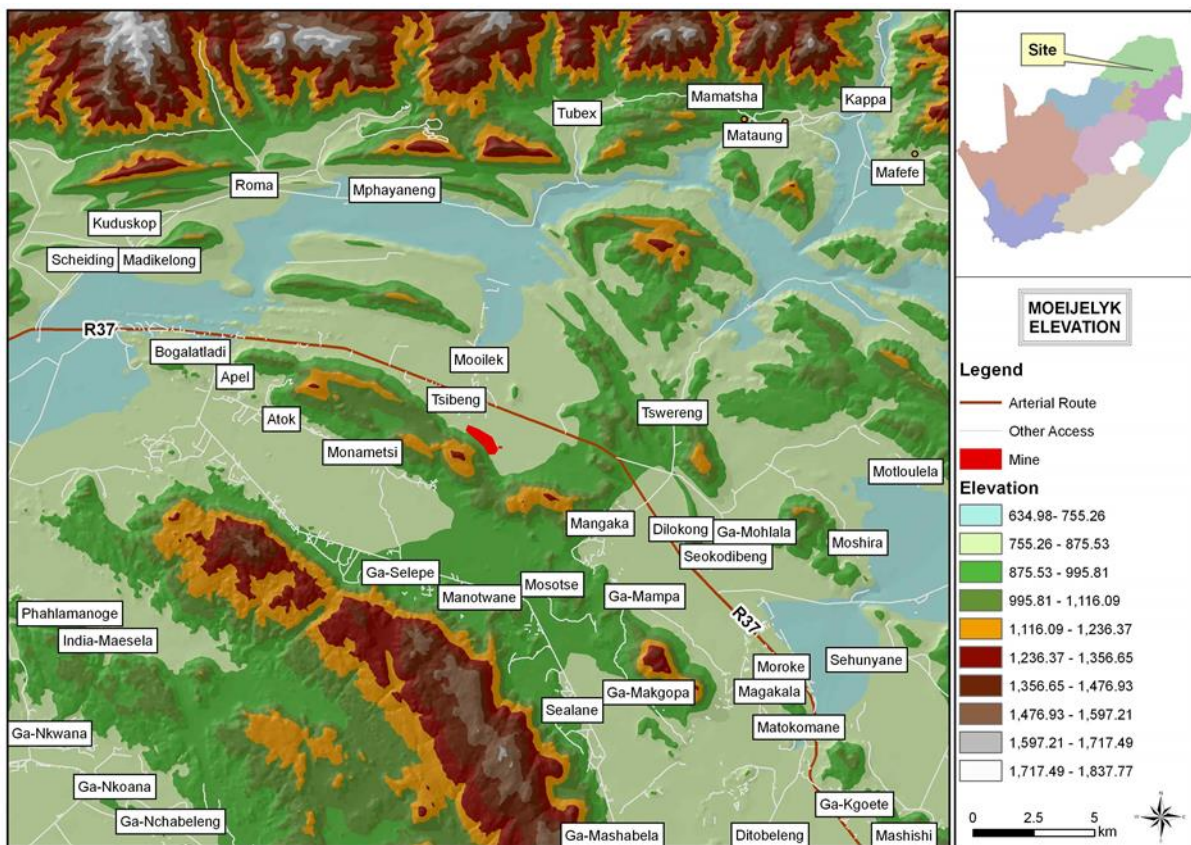


Figure 9: Moeijelyk Elevation map

The proposed development is located in the summer rainfall region of South Africa.

The mean annual precipitation of the study area is approximately 332 mm according to the Excelsior weather station.

The rainy season extends over the summer months from October through to April, with the highest rainfall occurring during December and January

Precipitation is usually associated with thunderstorms. These sudden downpours pose some risk of flooding in low-lying areas. Maximum temperatures for the area can reach 37.3°C in January. Minimum temperature can fall to -2°C in June. The mean daily temperatures averaging from 14 to 30 °C

7.3 LAND COVER

The area as described by Adcocks, is Mixed Bushveld, with the upper slopes of the mountain merging into Sourish Mixed Bushveld.

The dominant **grass** species found in undisturbed areas are:

- Panicum coloratum
- Themedia triandra
- Cymbopogon plurinodes
- Heteropogon contortus
- Eragrostis superba
- Eragrostis rigidior
- Digitaria eriantha
- Triraphis andropogonoides
- Aristida congesta baricocollis
- Aristida sciuris
- Tricholaena monachne
- The following species are dominant in disturbed areas:
- Pennisetum setaceum
- Enneapogon centroides
- Enneapogon scoparius

The dominant tree species found are:

Boscia albitrunca	Sheperd's tree	Witgat
Acacia tortilis	Umbrella torn	Haak en steek
Acacia Karroo	Sweet torn	Soetdoring
Acacia caffra	Common hook-thorn	Gewone haakdoring
Acacia nilotica	Scented torn	Lekkerruikpeul
Balanites maughamii	Green thorn	Groendoring
Peltophorum africanum	Weeping wattle	Huilboom
Kirkia wilmsii	Mountian seringa	Bersering
Bolusanthus speciosus	Tree wisteria	Vanwykshout
Combretum hereroense	Russett bushwillow	Kierieklapper
Combretum apiculatum	Red bushwillow	Rooiboswilg
Combretum zeyheri	Large fruited bushwillow	Raasblaar
Combretum molle	Velvet bushwillow	Fluweelboswig
Sclerocarya birrea	Marula	Maroela
Dichrostachys cinerea	Sickle bush	Sekelbos
Vitex wilmsii	Hairy vitex	Harige vingerblaar
Mundulea sericea	Cork bush	Kurkbos
Strychnos madagascariensis	Black monkey orange	Swartklapper

The dominant shrubs are:

Euclea crispa	Blue quarry	Bloughwarrie
Euclea undulate	Common quarry	Gewone ghwarrie
Elephantorrhiza burkei	Sumach bean	Basboontjie
Diospyros lycioides	Bluebush	Bloubos
Grewia flava	Brandybush	Wilderosyntjie
Grewia vernicosa		
Catha transvaalensis	Transvaal Bushman's tea	Basterboesmanstee
Psiadia punctulata		

CHAPTER 8: SOCIAL IMPACT RATING METHODOLOGY

The impact assessment criteria used to determine the impact of the proposed development are as follows:

- **Nature** of the impact
- The **Source** of the Impact
- **Extent** - The physical and spatial scale of the impact
- **Duration** - The lifetime of the impact, that is measured in relation to the lifetime of the proposed development
- **Intensity** - The intensity of the impact is considered by examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment itself
- **Probability** - This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time;

Mitigation: The impacts that are generated by the development can be minimised if measures are implemented in order to reduce the impacts. The mitigation measures ensure that the development considers the environment and the predicted impacts in order to minimise impacts and achieve sustainable development.

Previous experience has shown that it is often not feasible or practical to only identify and address possible impacts. The rating and ranking of impacts is often a controversial aspect because of the subjectivity involved in attaching values to impacts. Therefore, the assessment will concentrate on addressing key issues.

Activities within the framework of the proposed development and their respective construction and operational phases, give rise to certain impacts. For the purpose of assessing these impacts, the project has been divided into two phases from which impacting activities can be identified, namely:

- a) Construction phase: All the construction related activities on site, until the contractor leaves the site.
- b) Operational phase: All activities, including the operation and maintenance of the proposed development.

The criteria against which the activities were assessed are given below.

CATEGORY	VALUE	DESCRIPTION OR DEFINITION
	Extent	Extent to which the impact will occur
Site	1	Only as far as the activity
Local	2	Site and immediate surroundings
Regional	3	Impact on a regional scale
National / International	4	National or International
	Duration	The term or time period during which the impact is expressed, not the time until the impact is expressed. Where necessary, the latter is separately specified.
Temporary	1	This is very short term, usually a construction impact
Short term	2	During the operational activities
Long term	3	During closure / decommissioning of the operation
Permanent	4	Post-closure phase

<u>Severity</u>		The magnitude of the potential impact
Very Low	1	Natural, cultural and social functions are not affected
Low	2	Affected environment is altered but natural, cultural, and social functions and process continue both in a modified way
Moderate	3	Natural, cultural and social functions and processes are altered to the extent that it would temporarily cease
High	4	Natural, cultural and social functions and process are altered to the extent that it would permanently cease

<u>Probability</u>		The likelihood of the impact occurring
Improbable	1	Low possibility because of design or historic experience
Probable	2	Distinct probability to occur
Highly probable	3	Most likely to occur
Definitely	4	Will occur regardless of any prevention measures and/or there is a history of (an) incident/s and/or complaints

<u>Significance</u>	This is integration (i.e.an opinion) of the severity, type, extent, probability and duration of the impact. It is the best judgment of whether the impact is important or not within the broad context, once mitigation is taken into account. By adding the value of the extent, duration, severity and probability, a significance value will be obtained for each impact. A significance rating is assigned twice to the impact. Firstly, to indicate significance without mitigation or optimization and secondly, to indicate significance after mitigation or optimization. This is done to highlight the importance of mitigation or optimization of potential impacts.	
No impact	A potential concern or impact, which, upon evaluation, is found to	

		have no impact.
Very Low	1 - 4	Impacts will be of very low significance if the added values are between 1 and 4.
Low	5 - 8	Impacts will be of low significance if the added values are between 5 and 8.
Moderate	9 - 12	Impacts will be of moderate significance if the added values are between 9 and 12.
High	13 - 16	Impacts will be of high significance if the added values are between 13 and 16.
Very High	17 - 20	Impacts will be of very high significance if the added values are between 17 and 20.

CHAPTER 9: EIA PHASE - SOCIAL IMPACT ASSESSMENT

Vanclay (2002) describes social impacts as *“The consequences to human populations of any public or private actions (these include policies, programmes, plans and/or projects) that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally live and cope as members of society. These impacts are felt at various levels, including individual level, family or household level, community, organisation or society level. Some social impacts are felt by the body as a physical reality, while other social impacts are perceptual or emotional”*. Social impacts are rarely objective but instead are mostly subjective as individuals interpret matters differently depending on factors such as religion, culture, gender and level of education.

This section will attempt to quantify these baseline scoping phase social impacts in their respective geographic locations and in terms of the identified issues related to the social impact.

9.1 CONSTRUCTION PHASE

The key social issues associated with the construction phase include:

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:
<p>Approximately more than 30 direct jobs will be created which will be a mix of skilled (e.g. engineers, land surveyors, project managers), semi-skilled (e.g. equipment operators, vehicle drivers) and non-skilled (e.g. manual labourers) positions.</p> <p>The jobs created are mainly associated with the construction of various infrastructure that is required at a mine e.g. roads, offices, stores, dams, fences, etc. A portion of the jobs created should be made available to local community members particularly the historically disadvantaged (HD) ones.</p> <p>Additional, complementary local jobs other than those directly associated</p>	<p>Extent: Local (+2) Duration: Short term (+1) Intensity: Low (+2) Probability: Definite (+4) Significance: Moderate (+9)</p>	<ul style="list-style-type: none"> ▪ Labour (particularly semi-skilled and low skilled) and contractors should be sourced locally where possible and reasonable. ▪ Local construction personnel and contractors must be trained so that their skills may be developed for use in the future beyond the jobs at the mine. ▪ Local community members, authorities and organizations should be informed of job opportunities available and the procedures (if applicable) to be followed in order to secure the jobs. A Constitution for a Communal Association was formed as per the meeting held with the local community 21 May 2015. The Mine lawyers, Steyn Kinnear will be drafting the constitution for a communal association. ▪ The Communal Association constitution shall regulate the internal and external relationship between all the relevant communities and mine. ▪ Women should be considered in the provision of jobs to ensure that the entire community benefits. 	<p>Extent: Local (+2) Duration: Short-term (+2) Intensity: Moderate (+3) Probability: Definite (+5) Significance: Moderate (+12)</p>

<p>with the construction of mine infrastructure might also be created. These include businesses such as catering grocery, plant hire / supply, cleaning, transport, security, rental of accommodation, clothing stores, training facilities etc.</p> <p>All the above have the net effect of transforming the township of Tsibeng into thriving township. Furthermore, the income generated will add to the much needed revenue that will be collected by the Fetakgomo Local Municipality.</p>		<ul style="list-style-type: none"> ▪ The developer must compile a database of goods and services providers from the local community who comply with their procurement requirements before commencement of the tender process for acquiring various services and goods. ▪ The developer and the local branch of the chamber of commerce in the Fetakgomo Local Municipality should strategize on ways in which the benefits of the proposed mine can be enhanced for the benefit of the receiving area. 	
<p>Disruption of existing family structures and social networks due to the in migration of workers and job seekers into the area and possible relocation of households that are too near the mine site.</p> <p>The movement of people particularly males into the local municipality may lead to incidences such as increased</p>	<p>Extent: Local (-2) Duration: Short-term (-2) Intensity: Low (-2) Probability: Highly Probable (-3) Significance: Moderate (-9)</p>	<ul style="list-style-type: none"> ▪ Labour (particularly semi-skilled and low skilled) and contractors should be sourced locally where possible and reasonable. This is because those from the local community already form a part of that society and there will be no added pressure on available local amenities such as housing. ▪ A monitoring forum – inform of the Communal Association with its Constitution, should be formed consisting of community members so that the community can be briefed from time to time on the 	<p>Extent: Local (-2) Duration: Short-term (-2) Intensity: Very low (-1) Probability: Probable (-2) Significance: Low (-7)</p>

<p>crime levels for those who are not able to secure employment; dilution of family values leading to behaviours such as prostitution, promiscuity, teenage pregnancies and alcohol and drug abuse; increased number of people infected with HIV/AIDs and Sexually Transmitted Diseases (STDs).</p>		<p>risks to the society's fabric as a result of the project.</p> <ul style="list-style-type: none"> ▪ A code of conduct for the construction workers should be compiled, and the information provided to and signed by all relevant stakeholders in order to provide guidance on what behaviour is or is not permitted or acceptable. ▪ A HIV/AIDs, STDs awareness programme should be designed and the members of the community together with the workers should be regularly trained and road shows conducted on risky behaviour that could expose them to these diseases. ▪ The contractor / developer should plan and provide for transport, housing, weekend breaks of any workers who are brought in from outside the town. ▪ The development site must be fenced off to prevent trespassing. 	
<p>Increased risk of damage to infrastructure on surrounding properties. The presence of workers at the site and their constant movement and activities could potentially result in veld fire incidences, damage to fences, gates,</p>	<p>Extent: Local (-2) Duration: Temporary (-1) Intensity: Low (-2) Probability: Probable (-2) Significance: Low(-7)</p>	<ul style="list-style-type: none"> ▪ Surrounding land owners need to be notified well in advance of planned developments so that they are able to secure their property – as per the agreement in the Communal Association. ▪ The agreement needs to be deliberated on, accepted and signed by all parties on what action to take in the event of damage to property. 	<p>Extent: Local (-2) Duration: Temporary (-1) Intensity: Very Low (-1) Probability: Improbable (-1) Significance: Low (-5)</p>

crops and possible death of livestock.

- An incidents report needs to be opened and maintained by the Environmental Control Officer at the site and the allocated attorneys (Steyn and Kinnear). This report will be used to record any complaints or incidences of damage to property.
- A code of conduct for the construction workers should be compiled and the information provided to and signed by all relevant stakeholders in order to provide guidance on what behaviour is or is not permitted and the consequences of disobedience.
- The development site must be fenced off to prevent trespassing.
- Housing for site workers should be provided at a properly designed and constructed camp.
- Open fires for whatever purpose be it cooking or heating must be strictly prohibited at the construction site and camp.
- Construction activities such as welding should be confined to designated areas and should be conducted during weather conditions that are not risky e.g. calm winds.
- Adequate and easily accessible firefighting equipment and a well-stocked tool shed must be maintained to enable repairs on damage property to be done without delay. In addition, a few workers

		<p>should be trained on the proper use of the equipment.</p>	
<p>Reduced quality of life of the community in terms of physical and psychological health. During construction, many trucks, cars, and equipment such as fork lifts, cranes, and excavators will be in use at the site. This might lead to damage of existing roads; decreased safety of pedestrians and other road users; increase in traffic, increase in dusty and noisy conditions; improper waste management; and contamination of ground and surface water resources. Presently, only the regional road (R37) is tarred and in a fairly good condition. The local roads towards the houses in the township are gravel roads.</p>	<p>Extent: Local (-2) Duration: Short term (-2) Intensity: Moderate (-3) Probability: Definite(-4) Significance: Moderate (-11)</p>	<ul style="list-style-type: none"> ▪ Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during construction. ▪ All safety incidents must be reported to the appointed safety officer. ▪ Proper signage must be erected on the site and adjacent properties so that people are made aware of the activities and its dangers. ▪ Ablution facilities must be provided on site and should be regularly emptied by a licensed service provider. Workers should be informed that relieving of oneself in surrounding bushes is strictly prohibited. ▪ Speed limits that have been set at the site and surrounding areas must be strictly adhered to and harsh punishments set for offenders. ▪ The appointed contractor must ensure that any road damage caused by mine trucks is swiftly repaired to ensure safety of all road users. ▪ Dust suppression measures must be implemented to reduce the amount of dust released into the air. Such measures include using water bowsers to periodically spray the site especially during dry weather conditions. In addition, trucks transporting spoil material or top soil 	<p>Extent: Local (-2) Duration: Temporary(-1) Intensity: Low (-2) Probability: Probable (-2) Significance: Low (-7)</p>

		<p>from the site must be covered to prevent loss of material while in transit.</p> <ul style="list-style-type: none">▪ Equipment and trucks that produce loud noise must be fitted with appropriate silencers where possible.▪ Workers on site must be trained on the correct handling of spillages and precautionary measures that need to be implemented to minimize potential spillages.▪ Workers must be provided with spill kits and spills must be cleaned up immediately.▪ General and hazardous waste disposal bins must be provided at various strategic locations on the site.▪ An Environmental Control Officer (ECO) must be appointed to monitor that measures prescribed for noise, dust, and water resources protection are adhered to.▪ A system needs to be put in place at the local health centres to monitor any changes in diseases particularly respiratory or those associated with contaminated water such as dysentery, typhoid etc.▪ Ground water, surface water, air quality, and noise monitoring system must be implemented to ensure that levels prescribed are complied and if not urgent measures are taken to correct the situation.	
--	--	---	--

<p>Damage to small scale farming land and infrastructure such as buildings and roads due to construction activities may result in huge financial losses (repair costs, demolitions or decreased property values) and loss of land for cultivation and grazing particularly on surrounding farm portions. Blasting of the ground for establishment of foundations might cause sink holes, underground fires or reduce stability of the land. This impact is critical because rural folk mainly rely on natural resources to sustain their livelihoods</p>	<p>Extent: Local (-2) Duration: Temporary (-1) Intensity: Moderate (-3) Probability: Highly Probable (-3) Significance: Moderate (-9)</p>	<ul style="list-style-type: none"> ▪ The mine should be designed in an efficient way that maximizes use of space and reduce wastage. This will eventually reduce the footprint of the mine. ▪ A rehabilitation programme must be compiled before construction commences. In addition, the compliance with the rehabilitation programme must be included in the appointed contractor's contract. ▪ Disturbed areas must be fully rehabilitated so that in future they can be utilized for uses such as maize farming that is presently being undertaken. ▪ The appointed ECO must ensure that the rehabilitation programme is complied with. 	<p>Extent: Site (-1) Duration: Temporary (-1) Intensity: Low (-2) Probability: Probable (-2) Significance: Low (-6)</p>
--	--	---	--

9.2 OPERATIONAL PHASE

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:
<p>The operation of the mine will create a number of full time direct jobs which will be created which will be a mix of skilled (e.g. engineers, land surveyors, project managers), semi-skilled (e.g. equipment operators, vehicle drivers) and non-skilled (e.g. manual labourers) positions.</p> <p>Additional, complementary local jobs other than those directly associated with the operation of the mine infrastructure might also be created. These include businesses such as catering grocery, plant hire / supply, cleaning, transport, security, rental of accommodation, clothing stores, training facilities etc.</p> <p>All the above have the net effect of transforming the township of Tsibeng into a thriving community.</p>	<p>Extent: Local (+2) Duration: Temporary (+1) Intensity: High (+4) Probability: Definite (+4) Significance: Moderate (+11)</p>	<ul style="list-style-type: none"> ▪ Labour (particularly semi-skilled and low skilled) and contractors should be sourced locally where possible and reasonable. ▪ Local construction personnel and contractors must be trained so that their skills may be developed for use in the future beyond the jobs at the mine. ▪ Local community members, authorities and organizations should be informed of job opportunities available and the procedures (if applicable) to be followed in order to secure the jobs. A Constitution for a Communal Association was formed as per the meeting held with the local community 21 May 2015. The Mine lawyers, Steyn Kinnear will be drafting the constitution for a communal association. ▪ The Communal Association constitution shall regulate the internal and external relationship between all the relevant communities and mine. ▪ Women should be considered in the provision of jobs to ensure that the entire community benefits. ▪ The developer must compile a database of goods and services providers from the local community who comply with their procurement requirements before 	<p>Extent: Local (+2) Duration: Temporary (+2) Intensity: High (+4) Probability: Definite (+5) Significance: High (+13)</p>

<p>Furthermore, the income generated will add to the much needed revenue that will be collected by the Fetakgomo Local Municipality.</p>		<p>commencement of the tender process for acquiring various services and goods.</p> <ul style="list-style-type: none"> The developer and the local branch of the chamber of commerce in the Fetakgomo Local Municipality should strategize on ways in which the benefits of the proposed mine can be enhanced for the benefit of the receiving area. 	
<p>The employment of workers at the mine will lead to an increase in disposable income in the township of Tsibeng. These workers will spur economic growth by spending money in the local towns by shopping for household items, clothing, and spending money in entertainment areas and by rental or purchase of property.</p>	<p>Extent: Local (+2) Duration: Long-term (+3) Intensity: High (+4) Probability: Definite (+4) Significance: High (+13)</p>	<ul style="list-style-type: none"> The local municipality must improve the social amenities so as to encourage its residents to spend money locally. 	<p>Extent: Regional (+3) Duration: Long-term (+3) Intensity: High (+4) Probability: Definite (+4) Significance: High (+14)</p>
<p>The operation of the mine may lead to an improvement of the quality of life of the community due to an increase in income levels.</p>	<p>Extent: Local (+2) Duration: Long term (+3) Intensity: Low(+2) Probability: Highly Probable (+3) Significance: Moderate(+10)</p>	<ul style="list-style-type: none"> All workers must be trained on financial management to ensure that they spend their money prudently and thus eventually having a positive impact on their living conditions – please refer to the SLP primary commitments. 	<p>Extent: Local (+2) Duration: Long term (+3) Intensity: High (+4) Probability: Definite (+4) Significance: High (+13)</p>

		<ul style="list-style-type: none"> ▪ As per the requirements of the Social and Labour Plan, the mine must be obliged to form a community trust into which a certain percentage of the coal revenue will be deposited into the trust. The money in the trust must be used in community up-liftment projects such as building of schools, health centres, libraries, community halls, crèches etc. ▪ The funds in the trust must be monitored and audited to ensure that they are used for credible projects that benefit all members of the community. ▪ Five plans, namely the Skills Development Plan, a Career Development and Progression Plan, Mentorship and Coaching Plan, an Internship / Bursary Plan and an Employment Equity Plan will be used to achieve the SLP objectives. The mine manager or responsible person appointed by Bauba A Hlabirwa will be responsible for the implementation of the human resources development plan. 	
<p>Disruption / modification of the sense of place and visual landscape. Currently, the proposed site is being used for cultivation land for cattle which is a typical rural land use.</p>	<p>Extent: Local (-2) Duration: Short term (-2) Intensity: Moderate (-3) Probability: Definite(-4) Significance: Moderate (-11)</p>	<ul style="list-style-type: none"> ▪ Natural vegetation must be maintained as much as possible during mining. This is because vegetation creates a screening effect thereby reducing the impact on the natural landscape. ▪ Other mitigation measures prescribed in the visual impact assessment report must be implemented. 	<p>Extent: Site (-1) Duration: Short term (-2) Intensity: Low (-2) Probability: Probable (-2) Significance: Low (-7)</p>

<p>Reduced quality of life of the community in terms of physical and psychological health. During operation, many trucks, cars, and equipment such as fork lifts, cranes, and excavators will be in use at the site. This might lead to damage of existing roads; decreased safety of pedestrians and other road users; increase in traffic, increase in dusty and noisy conditions; improper waste management; and contamination of ground and surface water resources.</p>	<p>Extent: Local (-2) Duration: Short term (-2) Intensity: Moderate (-3) Probability: Definite(-4) Significance: Moderate (-11)</p>	<ul style="list-style-type: none"> ▪ Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during the operation. ▪ All safety incidents must be reported to the appointed safety officer. ▪ Proper signage must be erected on the site and adjacent properties so that people are made aware of the activities and its dangers. ▪ Ablution facilities must be provided on site and should be regularly emptied by a licensed service provider. Workers should be informed that relieving of oneself in surrounding bushes is strictly prohibited. ▪ Speed limits that have been set at the site and surrounding areas must be strictly adhered to and harsh punishments set for offenders. ▪ The appointed contractor must ensure that any road damage caused by mine trucks is swiftly repaired to ensure safety of all road users. ▪ Dust suppression measures must be implemented to reduce the amount of dust released into the air. Such measures include using water bowsers to periodically spray the site especially during dry weather conditions. In addition, trucks transporting spoil material or top soil from the site must be covered to prevent loss of material while in transit. 	<p>Extent: Local (-2) Duration: Temporary(-1) Intensity: Low (-2) Probability: Probable (-2) Significance: Low (-7)</p>
--	--	---	--

		<ul style="list-style-type: none"> ▪ Equipment and trucks that produce loud noise must be fitted with appropriate silencers where possible. ▪ Workers on site must be trained on the correct handling of spillages and precautionary measures that need to be implemented to minimize potential spillages. ▪ Workers must be provided with spill kits and spills must be cleaned up immediately. ▪ General and hazardous waste disposal bins must be provided at various strategic locations on the site. ▪ An Environmental Control Officer (ECO) must be appointed to monitor that measures prescribed for noise, dust, and water resources protection are adhered to. 	
<p>The mine will contribute to the growth of the national economy by creating employment opportunities which consequently improves the lives of the employees and the communities in which they live. In addition, the chrome mined will be exported.</p>	<p>Extent: National (+4) Duration: Long-term (+3) Intensity: High (+4) Probability: Definite (+4) Significance: High (+15)</p>	<ul style="list-style-type: none"> ▪ No mitigation measure proposed. 	<p>Extent: National (+4) Duration: Long-term (+3) Intensity: High (+4) Probability: Definite (+4) Significance: High (+15)</p>

9.3 DECOMMISSIONING PHASE

The proposed mine is expected to last for approximately 20 years after which it will need to be decommissioned. This may involve the demolition of the infrastructure, removal of equipment, and rehabilitation of the entire status to the natural state that it was in originally. Few job opportunities will be available during decommissioning and will only be temporary in nature. Furthermore, those employed at the mine will be laid off which has a negative spin off on their dependents and community in which they are based. This therefore, highlights the critical importance of a Social and Labour Plan in which the mine owners must fund and facilitate implementation of programmes that ensure the livelihoods of the community are protected throughout the life of the mine up to decommissioning. A positive impact of the decommissioning is that after rehabilitation, the natural environment will be restored to a post mining condition and also the site can be used for cultivation or livestock grazing which the local community can use to sustain their livelihood.

In order to reduce the negative impacts associated with decommissioning the following should be implemented:

- All workers must be given sufficient notice to allow them to plan for the immediate future.
- Adequate and reasonable severance packages must be provided to all workers to be retrenched.
- All rubble from demolition and disused and damaged equipment must be transported off site to a licensed disposal facility so that it does not become an eyesore.

One of the cumulative impacts of constructing and operating a mine near the township of Tsibeng is that the ripple effects of disruption of existing family structures, dilution of the society's values and social networks will be felt for a long time. Increased incidences of teenage pregnancies, alcohol and drug abuse and increased rates of infection of people with HIV/AIDS (Sekhukhune District Municipality IDP-2014/15) and STD's will put more pressure on the local government to provide social facilities such as rehabilitation centres, day care centres and social grants. In addition, a high incidence of disease occurrence reduces the number of able bodied individuals who can contribute to the growth of the local economy and creates more dependents. Lastly, teenage pregnancies result in the creation of single parent families and may prevent the teenage mothers from completing their education due to the diverted attention to the children.

Another cumulative impact of establishing the mine is that the natural landscape of the rural area is diminished and land uses that are compatible with the surrounding environment (e.g. livestock rearing and food crops cultivation) are reduced and replaced with large earth work operations that are characteristic of a mine. The net effect of this is a change in the sense of place and perception of Limpopo as a wildlife rich, fertile province that is scenic and dotted with natural features such as savannahs and various wild animals. A decrease in the amount of arable land poses a threat to food security which is one of the pillars of the growth of a nation. Therefore, local community members must be encouraged to established vegetable gardens for their own consumption and possibly selling any surplus.

CHAPTER 11: CONCLUSION

The findings of this SIA indicate that the construction and the operation of the proposed Bauba Chrome Mine have both positive and negative impacts. Positive impacts are mainly due to creation of employment opportunities, boosting of the local economy due to increased disposal income and contribution to the revenue of Fetakgomo LM which ultimately may lead to improved quality of life. On the contrary, negative impacts may be experienced due to migration of job seekers into Tsibeng; damage to property and infrastructure because of mine activities; decline in the quality of life due to air, noise, land and water pollution and increased traffic.

Striking a balance between economic, social and environmental conservation is often challenging considering the numerous stakeholders and differing motives. A healthy competitive environment needs to be established for the opposing land uses such as mining, agriculture and human settlement because mining activities lead to large scale destruction of the environment and land disturbance. The mining companies and their owners must be held responsible and be obliged to rehabilitate disturbed land and implement Corporate Social Investment (CSI) projects so that community members benefit from the proceeds of the mine. On the other hand, challenges that hinder the mining industry must be addressed in order to create a level playing field and welcoming environment and encourage compliance with environmental legislation by those wishing to invest in mining. These include:

- Inadequate water supply
- Shortage of skilled personnel that forces mining companies to source workers from elsewhere
- Industrial strikes that paralyze operations
- High rates of HIV / AIDs infection rates that lead to an increase in lost man hours
- Flouting of environmental and mining legislation leading to creation of negative perceptions
- Poor quality human settlement leading to poor living conditions for mine workers
- Limited infrastructure which increases the cost of operations.
- Land claims which create uncertainty for mining operations

Ultimately, if the proposed Bauba Moeijelik Project is authorized, every effort must be directed to ensure that it leaves a lasting positive legacy in the community of Tsibeng. This can be done by enforcing the implementation of mitigation measures that are outlined in the Environmental Management Programme (EMPr) which is a legally binding document under the National Environmental Management Act (No. 107 of 1998). Commitments was also made in regards with the Social and Labour Plan, with fixed activities and timelines. As this will also be a legally binding document, it will be beneficial if the SLP commitments and EMPr reflects and enforces the same commitments and vision, as can be seen below:

Activity	Commencement	Complete
Human Resources Development		
Undertaking of employee skills and aspirations survey	3 months after the identification of a workforce	2 months thereafter
ABET Level 1	Within 3 months of completion of employee skills / aspiration surveys	3 months thereafter
ABET Level 2	As above	3 months thereafter
ABET Level 3	As above	3 months thereafter
ABET Level 4	As above	3 months thereafter
Workplace Skills Plan	Mine Production ("MP")	3 months thereafter
Skills Development Plan	MP	3 months thereafter
Submission of Form Q	Establishment of workforce	1 month after completion of employee survey
Submission of Form R	Establishment of workforce	2 months after completion of employee survey
Submission of Form S	Establishment of workforce	1 month after completion of employee survey
Mentorship plan	MP	3 months thereafter
Internship and bursary plan	MP	3 months thereafter
Employment Equity Plan	MP	3 months thereafter
Career Development and progression plan	MP	6 months thereafter
Downscaling and Retrenchment		
Downscaling and retrenchment strategy	MP	3 months thereafter
Establishment of a Future Forum	6 months after MP	Mine Closure
Financial Provision		
Implementation of funding for Human Resources Development Program	Within 4 months of MP	Mine Closure
Establishment of funds for managing downscaling and retrenchment	Incorporated into mining costs	Mine Closure

Table 7: The Primary SLP Commitments

REFERENCES

- Bauba A Hlabirwa Mining Investments (Pty) Ltd: Moeijelyk Chrome Reserve Project – Social and Labour Plan (2015).
- Fetakgomo Local Municipality, 2010. *Integrated Development Programme Draft Budget and Report, 2010*.
- DEADP, 2007. *Guidelines for Involving Social Assessments Specialists in EIA Processes*. Western Cape Provincial Government
- Limpopo Provincial Government, 2004. *Provincial Growth and Development Strategy, 2004-2014*.
- Sekhukhune District Municipality. *Integrated Development Plan, 2014-2015*.
- Sekhukhune District Municipality, Final IDP Review 2014/15.
- Statistics SA, 2012. *Census 2011 Census in Brief*.
- Statistics SA, 2012. *Census 2011 Municipal Fact Sheet*.
- Statistics SA, 2014. Interactive Data-www.interactive.statssa.gov.za/superweb
- Vanclay, F, 2002. *Conceptualizing Social Impacts: Environmental Impact Assessment Review*, 22: 183-221