

**NAME OF APPLICANT:**

**MASASE MINING (PTY) LTD**

**REFERENCE NUMBER:**

**30/5/1/1/2/10084 MR**

**BELLEVUE PROJECT**

**SCOPING REPORT**

**NOVEMBER 2013**



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# 1 PROJECT BACKGROUND

## 1.1 Introduction

Masase Mining (Pty) Ltd lodged an application for a New Order Mining Right with the Department of Mineral Resources for the Bellevue Gold Mining Project a mining operation with an estimated gold production of 408 kgs per annum and a life of mine of 27 years.

## 1.2 Project Location

The Bellevue Gold Mining Project is situated 16 km south-west of the town Barberton in the Umjindi Municipal area, Mpumalanga Province. The project is located on Weltevreden 712 JT and Portion 1 of Weltevreden 697 JT).

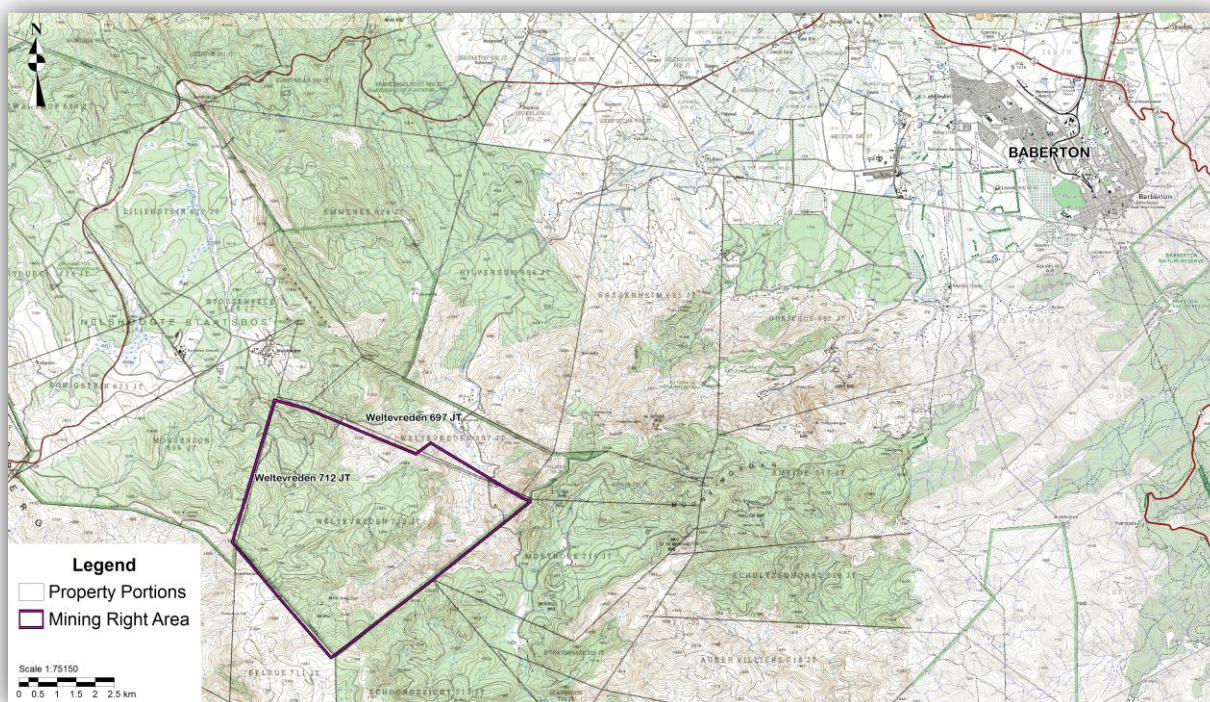


Figure 1-1: Locality Map

### 1.2.1 Community Description

The project surrounding area is currently utilised as State Forest, therefore there are no communities residing on the properties. The closest community is the Forestry workers accommodation area at Nelshoogte, approximately 6km in a north-west direction and Tjakastad (under Chief Mnisi) 10 km to the south of the project.

### 1.2.2 Surface Ownership

*Table 1-1: Surface ownership*

Property	Local Municipality	Magisterial District	Land Owner According to Title Deed	Title deed	Extent (ha)
Weltevreden 697 JT Ptn 1	Umjindi	Barberton	Republic of South Africa	T13807/1939	72.7910
Weltevreden 712 JT RE	Umjindi	Barberton	Republic of South Africa	T1438/1933	1346.8410
Weltevreden 712 JT Ptn 1	Umjindi	Barberton	Republic of South Africa	T1438/1933	1346.8427

### 1.2.3 Land Claimants / Traditional Authority

No response from the Mpumalanga Land Claims Commissioner has been received, but it is understood that the property is under claim by the Mnisi Tribe.

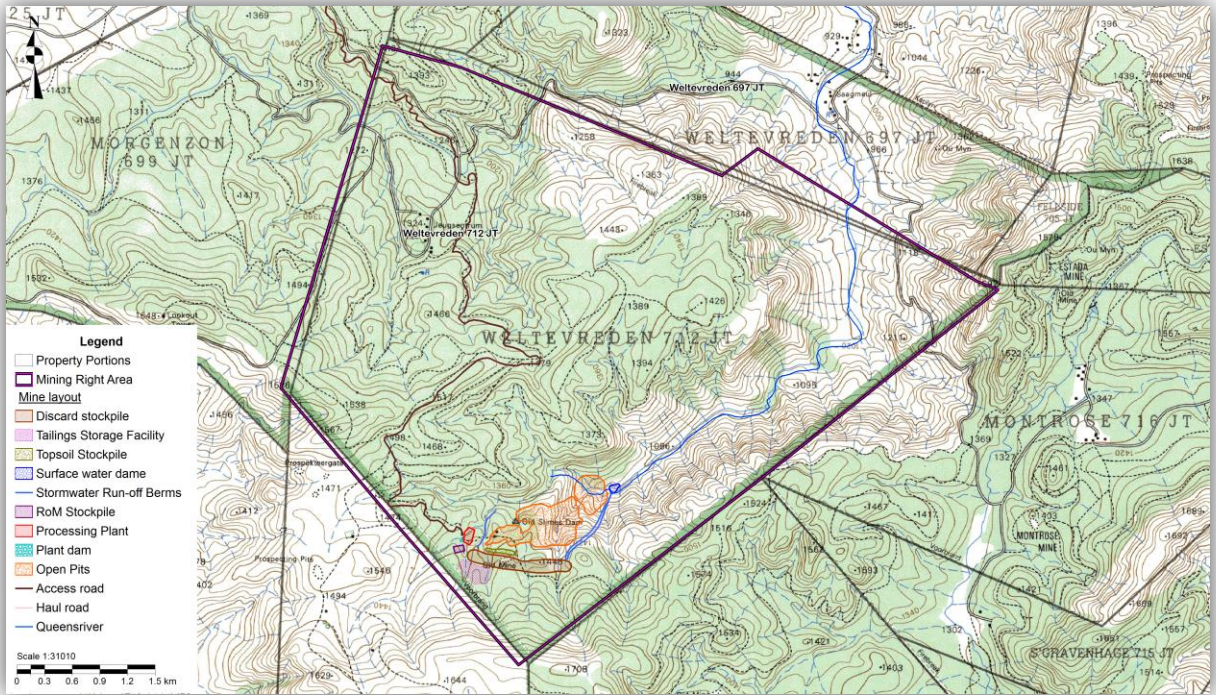
## 1.3 Brief Project Description

The Bellevue Gold Project is located in the district of Barberton in the Mpumalanga Province of South Africa (“SA”), approximately 370 km east of Johannesburg and 25 km southwest of the town Barberton in the Mpumalanga Province.

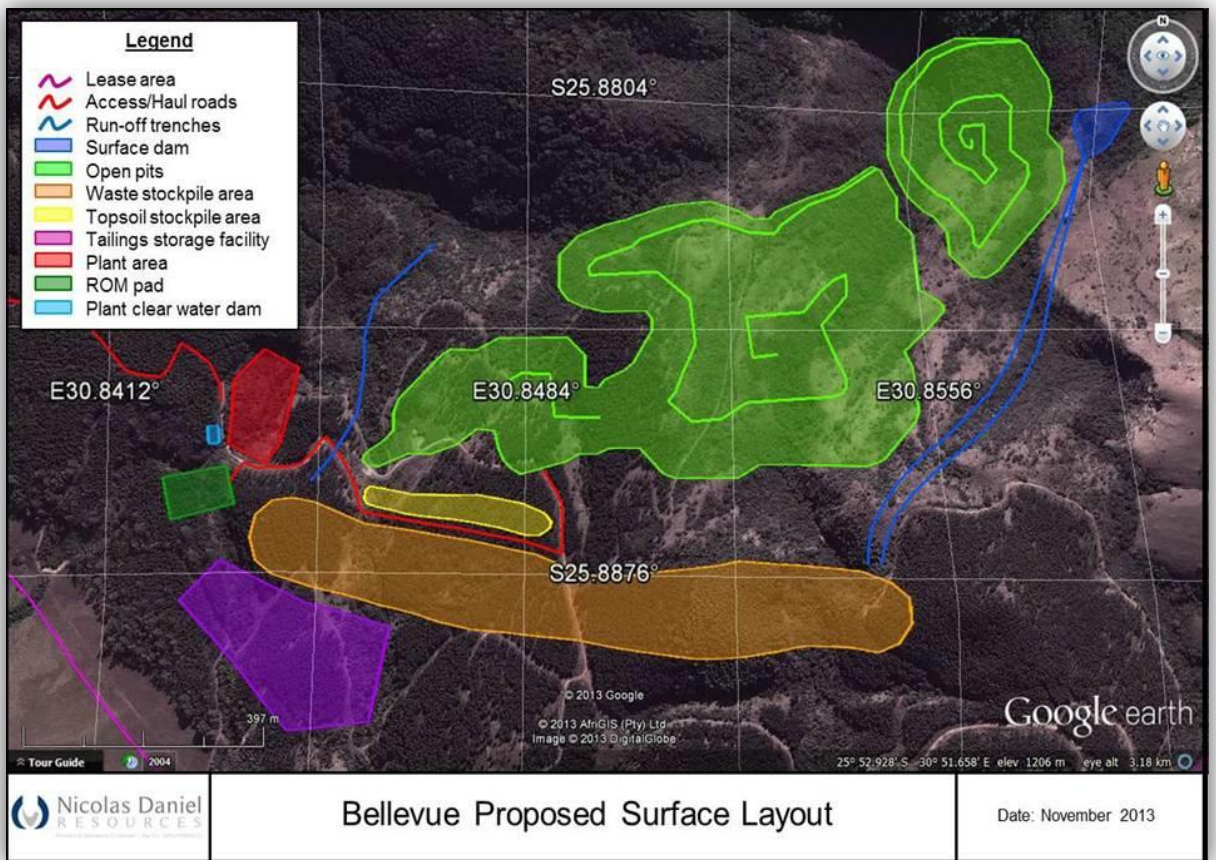
The commodities being applied for include Gold Ore, Copper, Silver, Cobalt and Antimony. The extent of the area required for the mining footprint is approximately 40.57 hectares on the southern corner of the property Weltevreden 712 JT Remaining Extent. The minerals will be mined via open cast methods.



**BELLEVUE PROJECT: SCOPING REPORT**



**Figure 1-2: Mine area in relation to Mining Right Application Area**



**Figure 1-3: Mine lay-out area**

## **2 LEGAL FRAMEWORK**

### **2.1 Applicable Legislation**

The main legal frameworks that require compliance in terms of Environmental and Water Use Authorisation are:

- Act No. 28 of 2002: Mineral and Petroleum Resources Development Act (MPRDA)
- Act No. 107 of 1998: National Environmental Management Act (NEMA)
- Act No. 36 of 1998: National Water Act (NWA)

Other legislative frameworks applicable to a development of this nature include:

- Act No. 25 of 1999: National Heritage Resources Act (NHRA)
- Act No. 10 of 2004: NEMA: Biodiversity Act (NEMBA)
- Act No. 43 of 1983: Conservation of Agricultural Resources Act (CARA)
- Act No. 84 of 1998: National Forests Act (NFA)
- Act No. 7 of 2003: Limpopo Environmental Management Act (LEMA)
- Act No. 39 of 2004: National Environmental Management: Air Quality Act (AQA)
- Act No. 57 of 2008: National Environmental Management: Protected Areas Act
- Act No. 59 of 2008: National Environmental Management: Waste Act (NEMWA)
- Act No. 101 of 1998: National Veld and Forest Fire Act
- Act No. 15 of 1973: Hazardous Substances Act
- GN No. R.527 of 23 April 2004: Mineral and Petroleum Resources Development Regulations
- GN No. 704 of 4 June 1999: Regulation on use of water for mining and related activities aimed at the protection of water resources
- GN No. R.544, R.545 and R.546 of 18 June 2010: NEMA: EIA Regulations
- GN No. 718 of 3 July 2009: NEMWA: Waste Management Activities
- GN No. 248 of 31 March 2010: AQA: Atmospheric Emissions Activities
- GN No. R.152 of 2007: NEMBA: Threatened or Protected Species (TOPS) Regulations

### **2.2 Purpose of this Document**

The purpose of this document is to address the requirements of the MPRDA. The MPRDA details specific timelines in which compliance with the various sections and

regulations is required. The diagram below indicates the timelines in terms of the MPRDA.

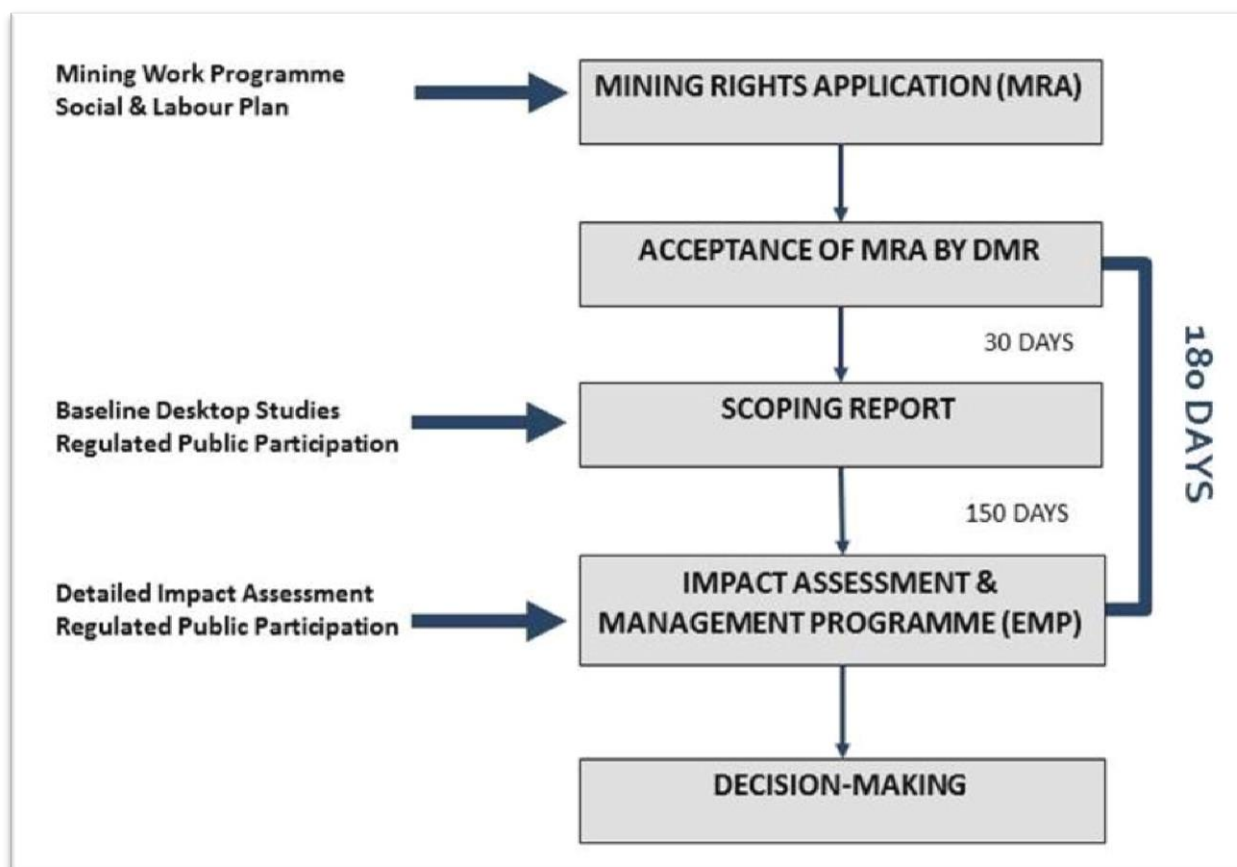


Figure 2-1: MPRDA Process

The NOMR applications for the proposed Bellevue Project was submitted on 10 August 2013 and accepted by the DMR on 17 October 2013. The date of submission of the Scoping and EIA/EMP Report is directed by the acceptance letter from DMR and is Scoping Report on 18 November 2013 and EIA/EMP Report on 16 April 2014.

The contents of the Scoping, EIA and EMP reports are prescribed by the MPRDA. The following reference documents were consulted to develop the framework of this Scoping Report:

- MPRDA Scoping Requirements:
- Regulation 49 of GN No R.527 of 23 April 2004: MPRDA Regulations
- DMR Scoping Report Guideline and Template

**BELLEVUE PROJECT: SCOPING REPORT**

**Table 2-1: Activity-based legal requirement assessment (high-level) for Bellevue Project**

ACTIVITY	NEMA/NEMWA	NWA
Opencast Mining		
Eastern & Central Open Pit	GNR 545 – A15: Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more.	S21(c)&(i) – impeding / altering of water courses S21(g) – dust suppression
In-pit water management {sumps / pumping}		S21(a)&(j) – Dewatering of pits S21(g) – Disposing of waste / water containing waste
Storm water management {river diversions / berms}	GN544 – A11: The construction of (i) canals; (ii) channels; (iii) bridges; (iv) dams; (v) weirs; (vi) bulk storm water outlet structures; (vii) marinas; (viii) jetties exceeding 50 square metres in size; (ix) slipways exceeding 50 square metres in size; (x) buildings exceeding 50 square metres in size; or (xi) infrastructure or structures covering 50 square metres or more, where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	S21(c)&(i) – impeding / altering of water courses
Beneficiation plant and infrastructure areas		
Access / haul roads	GN544 – A22: The construction of a road, outside urban areas, (i) with a reserve wider than 13.5 meters or, (ii) where no reserve exists where the road is wider than 8 metres, or (iii) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.	S21(g) – dust suppression
Stream crossings {bridges, pipelines, roads}	GN544 – A11: The construction of (i) canals; (ii) channels; (iii) bridges; (iv) dams; (v) weirs; (vi) bulk storm water outlet structures; (vii) marinas; (viii) jetties exceeding 50 square metres in size; (ix) slipways exceeding 50 square metres in size; or (x) buildings exceeding 50 square metres or more, where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	S21(c)&(i) – impeding / altering of water courses

## BELLEVUE PROJECT: SCOPING REPORT

ACTIVITY	NEMA/NEMWA	NWA
	GN544 – A18: The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from (i) a watercourse; (ii) the sea; (iii) the seashore; (iv) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater.	S21(c)&(i) – impeding / altering of water courses
Infrastructure area, workshops	GNR 545 – A15: Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more.	S21(g) – Disposing of waste / water containing waste
Plant stockpiles		S21(g) – Disposing of waste / water containing waste
Clean water storage tanks	GN546 – A2: The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres.	S21(b) – Storage of water
Dirty water dams	GNR 545 – A19: The construction of a dam, where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.	S21(a)&(g) – Disposing of waste / water containing waste
<b>Conveyance of ROM &amp; product (on site)</b>		
Haul / service roads	GNR 544 – A22: The construction of a road, outside urban areas, (i) with a reserve wider than 13.5 meters or, (ii) where no reserve exists where the road is wider than 8 metres, or (iii) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.	S21(g) – dust suppression
Stream crossings / culverts {roads, pipelines, conveyors}	GNR 544 – A11: The construction of (i) canals; (ii) channels; (iii) bridges; (iv) dams; (v) weirs; (vi) bulk storm water outlet structures; (vii) marinas; (viii) jetties exceeding 50 square metres in size; (ix) slipways exceeding 50 square metres in size; (x) buildings exceeding 50 square metres in size; or (xi) infrastructure or structures covering 50 square metres or more, where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	S21(c)&(i) – impeding / altering of water courses
<b>Mine residue management</b>		

## BELLEVUE PROJECT: SCOPING REPORT

ACTIVITY	NEMA/NEMWA	NWA
Overburden stockpiles Discards stockpile	GNR 545 – A15: Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more.	S21(g) – Disposing of waste / water containing waste
In-pit disposal / rehabilitation		S21(g) – Disposing of waste / water containing waste
General / hazardous waste	N/A – off-site disposal	
<b>Product transport</b>		
Access road {stream crossings, storm water management / dams}	GNR 544 – A22: The construction of a road, outside urban areas, (i) with a reserve wider than 13.5 meters or, (ii) where no reserve exists where the road is wider than 8 metres, or (iii) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.	S21(g) – Disposing of waste / water containing waste
	GNR 545 – A15: Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more.	S21(c)&(i) – impeding / altering of water courses
	GN544 – A11: The construction of (i) canals; (ii) channels; (iii) bridges; (iv) dams; (v) weirs; (vi) bulk storm water outlet structures; (vii) marinas; (viii) jetties exceeding 50 square metres in size; (ix) slipways exceeding 50 square metres in size; (x) buildings exceeding 50 square metres in size; or (xi) infrastructure or structures covering 50 square metres or more, where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	
	GN544 – A18: The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from (i) a watercourse; (ii) the sea; (iii) the seashore; (iv) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater.	S21(c)&(i) – impeding / altering of water courses

### **3 EXISTING STATUS OF THE CULTURAL, SOCIO-ECONOMIC AND BIOPHYSICAL ENVIRONMENT**

The existing status as reflected in this Section is based on desk-top information and published documents. At this point in time no site investigations have been undertaken. During the EIA Phase site visit observations, detail field surveys and additional literature reviews will be undertaken to verify the baseline information as well as the potential impacts identified in Section 5 of this report

#### **3.1 Cultural and Heritage Resources**

The study area is largely located within the Barberton Greenstone Belt (BGB), composed of the rock sequences of the Barberton Supergroup. It's varied and complex, folded rock-types give rise to deeply incised mountainous. The hills are steep and rocky, with moist grassy uplands and forested valleys. The altitude ranges from 600 to more than 1800 metres above mean sea level.

##### **3.1.1 Palaeontology**

The Barberton Greenstone Belt (BGB) is a geological formation in Mpumalanga that has produced some of the oldest evidence of life anywhere in the World. This formation is not limited to the Barberton area and several versions of it are found close to the study area. The BGB comprises 5 to 6 km of predominantly komatitic and basaltic pillow lavas and sheet flows and related intrusions that are interlayered with cherts and overlain by cherts, banded iron formations, and shales. This magmatic sequence has been interpreted to represent 3480- to 3220-million-year-old oceanic crust and island arc assemblages. These rocks have undergone metamorphism from prehnite-pumpellyite to green-schist facies. Within the originally glassy rims of many BGB pillow lavas, dense populations of mineralized tubular structures 1 to 9 um in width (average width, 4 Fm) and up to 200 Fm in length (average length, 50 Fm) are observed. These structures consist of fine-grained titanite and extend away from healed fractures along which seawater once flowed.

### **3.1.2 Stone Age**

#### **3.1.2.1 Early Stone Age**

Some hominids began to manufacture stone tools about 2.6 million years ago, thus beginning the Early Stone Age (ESA). Known as the Oldowan industry, most of the earliest tools were rough cobble cores and simple flakes. The flakes were used for such activities as cutting meat and skinning animals.

By about 1.4 million years ago hominids started producing more recognisable stone artefacts such as hand axes, cleavers, and core tools (Volman 1984). Although serving many purposes, these Acheulian tools were probably designed to butcher large animals, such as elephants, rhino and hippo. Because these animals were dangerous, they probably were not hunted. At this time, then, some hominids were specialised scavengers.

These early humans needed good raw material to manufacture tools, and their presence is often found near outcrops of suitable stone and ancient butchery sites. ESA sites are on record near Barberton (1:50 000 topographical map 2531CC).

#### **3.1.2.2 Middle Stone Age**

By the beginning of the Middle Stone Age (MSA), 250 000 years ago, tool kits included prepared cores, parallel-sided blades, and triangular points (Volman 1984). These points were hafted to make spears used to hunt large grazers such as wildebeest, hartebeest, and eland. By the MSA, then, hominids had become accomplished hunters.

These hunters are classified as archaic humans, and by 100 000 years ago, they were anatomically fully modern. The degree to which their behaviour was fully modern, however, is still under investigation. The repeated use of caves indicates that MSA people had developed the concept of a home base and that they could make fire. These were important steps in the cultural evolution of humanity. Furthermore, the widespread use of red ochre, presumably as body paint, also shows that MSA behaviour had become more human.



MSA artefacts have been found near Kaapmuiden (2531CB) during previous surveys (Huffman, et al. 1997) and more sites are known to the east (2531DA) and west (2531CA & CC, 2530AD, BA & DA).

### **3.1.2.3 Later Stone Age**

Although they lived in caves, it is not clear if the behaviour of MSA people was fully modern. In contrast, by 25 000 years ago and the beginning of the Later Stone Age (LSA), human behaviour was recognisably modern. Uniquely human traits such as rock art and purposeful burials with ornaments became regular practice. In Southern Africa these people were the ancestors of the San (or Bushmen).

San rock art has a well-earned reputation for aesthetic appeal and symbolic complexity. It is essentially religious (Lewis-Williams 1981). Among other aspects, the art expresses beliefs about the role of shamans in controlling rain and game, and animals of power, such as eland and rhino, figure prominently. Such art has been recorded in the broken country near Badplaas (2530DC) and Whiteriver (2531AC).

In addition to art, LSA sites contain a diagnostic tool kit. Characteristic LSA artefacts include microlithic tools such as scrapers and segments manufactured from cherts, chalcedonies and other crypto-crystalline materials (Deacon 1984). Spear hunting probably continued, but LSA peoples began to hunt smaller game with a bow and poisoned arrow. This technology was the norm by 20 000 years ago. Open sites are on record near Kaapmuiden (2531CB) and Badplaas (2530DC). Because of their skills as hunters and gatherers, LSA peoples developed a mutually beneficial relationship with the first Bantu-speaking farmers.

### **3.1.3 Iron Age**

Bantu-speaking people moved into East, Central, and Southern Africa about 2000 years ago. These people cultivated sorghum and millets, herded cattle, sheep and goats and manufactured iron tools and copper ornaments (Huffman 1989). Because metal working represents a totally new technology, archaeologists have named this period the Iron Age. The first 1000 years are known as the Early Iron Age (EIA).

### 3.1.3.1 Early Iron Age

As agriculturalists, EIA people lived in semi-permanent homesteads comprising pole-and-daga (mud or clay mixed with dung) houses and grainbins arranged around animal byres. As a rule these homesteads were sited near water and good alluvial and colluvial soils that could be cultivated with an iron hoe.

In addition to homestead remains, characteristic ceramic styles help archaeologists to divide the sites into different traditions and phases. For example, Eastern Bantu speakers who moved through Angola and Botswana into South Africa produced the Kalundu ceramic tradition, while other Eastern Bantu speakers who moved through East Africa and Mozambique produced the Urewe ceramic tradition (Huffman 1989).

Early Urewe tradition pottery has been found near Nelspruit (Huffman 1998) and Whiteriver (Evers 1977) while Kalundu pottery has been excavated in the Lydenburg area (2530AB). Lydenburg, in fact, produced the famous Lydenburg ceramic heads (Inskeep & Maggs 1976) now on display in the South African Museum, Cape Town.

### 3.1.3.2 Later Iron Age

For purposes of convenience, archaeologists call the present millennium the Late Iron Age (LIA). The Little Ice Age began during this period, at about AD 1300 (Tyson & Lindsay 1992), and its impact upon human population was particularly severe.

The ancestors of the present day Nguni and Sotho-Tswana speakers moved from East Africa into South Africa at this time. Because of the colder and drier conditions, these LIA people had to live in the few areas suitable for both agriculture and pastoralism. The climate ameliorated again between about AD 1425 and 1675, and LIA people inhabited a large part of the district. Sites of this period are known near Kaapmuiden (2531AD & CB) and in Swaziland (2631AB).

In the 16th or 17th century some LIA people began to build stonewalls around their cattle byres and settlements. In plan these settlements appear as simple concentric circles, somewhat like a 'fried egg', connected by cattle lanes (Collett 1982). Many examples of this type are known along the escarpment from Carolina to Lydenburg (Mason 1968). Indeed, on one farm near Waterval Boven (2530CB) over 150 such

settlements are recorded in one cluster. Large lower grindstones for processing maize - an American import via the Portuguese - date some of the stonewalled settlements to the 18th and 19th centuries.

### **3.1.4 The Historic Era**

This area is well known for its rich historic character and contains sites connected with several historic military and political conflicts. Historic cemeteries (victim of conflict sites), provincial and private museums, battlefield sites and other historic sites are found here.

Early European mining in the Barberton District is well known. Eureka City (2531CA), for example, was established in the 19th century. As a result of the mining, Barberton became an important centre with the first stock exchange, and several buildings are proclaimed monuments.

## **3.2 Socio-economic Environment**

### **3.2.1 Background**

The proposed project area falls within the Umjindi Municipal boundaries. Umjindi Local Municipality falls within the boundaries of the Ehlanzeni District Council, which is situated in the Southern Lowveld of Mpumalanga.

The villages within the municipal area are Barberton, Emjindini, Emjindini Trust, Verulam, Sheba Siding, Louw's Creek, Prison Farm, Lomshiyo Trust and Shiyalongubu.

Barberton and Emjindini can be classified as Urban Settlements. Some private residential urban areas have been developed for staff housing by the gold mines at Consort and Fair View. A residential urban area is also located at the Prison Farm not far from Barberton.

Areas in Emjindini are also classified as Dense Rural Settlements while the settlements of Verulam, Emjindini Trust and Lomshiyo Trust are classified as Rural Villages.

Rural Scattered Villages are situated in the forestry areas such as Nelshoogte, Highlands, Montrose, Inloop and Glenthorpe. A Scattered Village is also located at the Shiyalongubu Dam.

Several farms are located within the Umjindi Area and are classified as Farmland.

The land use within the Umjindi Area is mainly forestry and farmland. Farmers consist of small scale sugarcane farmers, wildlife farming and banana farms.

### 3.2.2 Population, Gender and Age Profile

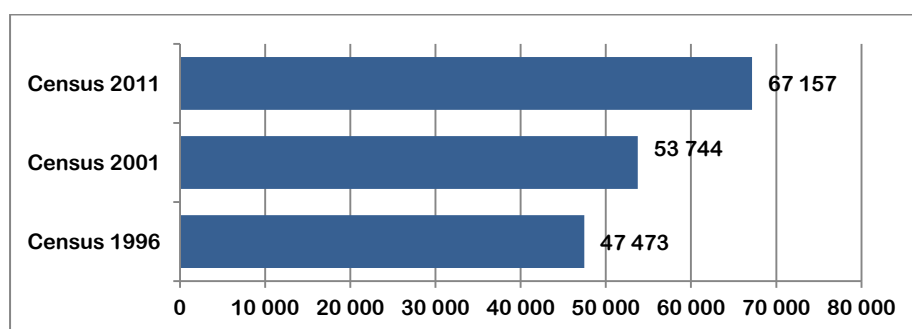
Umjindi LM has a relatively small population of less than 68,000 people. The male majority is evident, because females are more than males for Mpumalanga Province as a whole. This situation is indicative that the municipal area is a destination for male migrant labour. Population growth in this Municipality has been abnormally high during the past decade.

*Table 3-1: Population in the Project Area, 2011*

Area	Male	Female	Total
Umjindi LM	35 141	32 016	67 157

Source: Statistics South Africa, Census 2011

Census 2001 recorded a total population of 53 744 people. Compounded population growth was therefore 2.23% per year for the past ten years, compared to 1.54% per year for the District and 1.83% for the Province. Population growth in Umjindi LM was concentrated in the urban wards comprising Barberton town and Emjindini.



*Figure 3-1: Population growth*

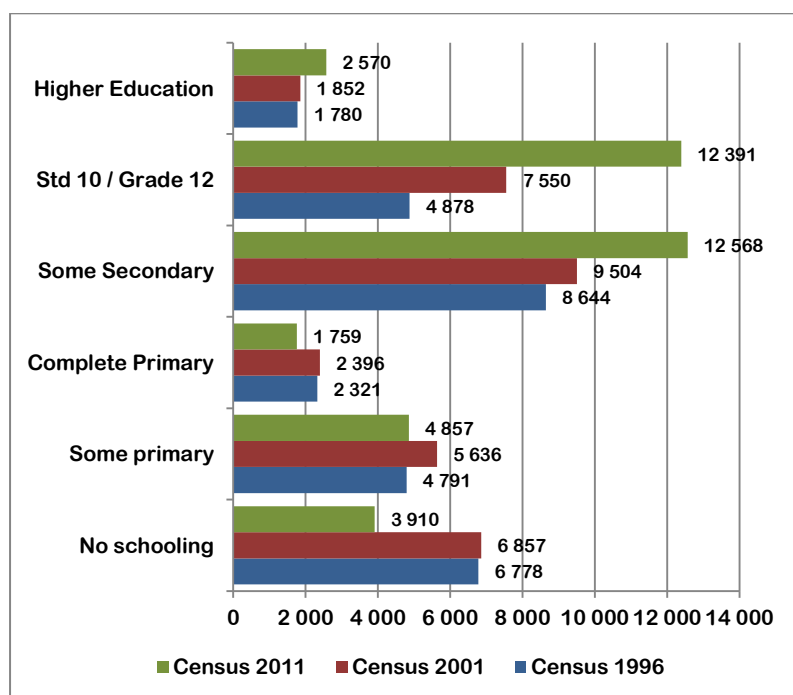
### 3.2.3 Education Levels

A total of 40% of the population who have passed school-going age in the area have completed secondary school or obtained a post-school qualification. 32% of the population who have passed school-going age in the area have only partially completed secondary school. This relatively low education level will have a negative implication for employability, as indicated below.

*Table 3-2: Education Profile in the Project Area for People Above School-going Age, 2011*

Education Level	Umjindi Municipal area
No Schooling	3 910
Some Primary	4 857
Complete Primary	1 759
Some Secondary	12 568
Senior Certificate	12 391
Post School Qualification	3 570
<b>Total</b>	<b>39 055</b>

Source: Statistics South Africa, Census 2011



*Figure 3-2: Education level change from 1996 - 2011*

### 3.2.4 Economic Profile

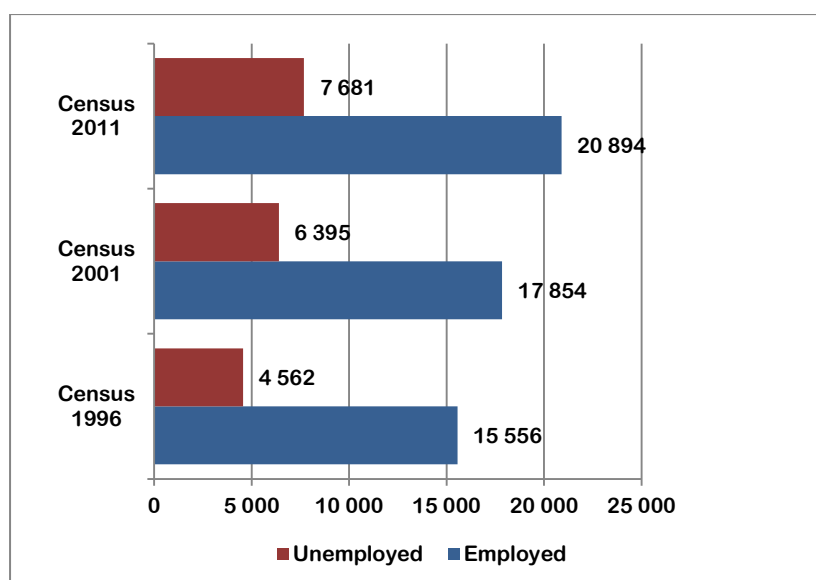
#### 3.2.4.1 Employment Profile

The municipal area's unemployment rate is at 26.9% which is below the district (34.4%) and the provincial (31.9%) rate. This could be mainly due to the current economic activities in mining, forestry and agriculture.

*Table 3-3: Employment Profile in the Project Area*

Area	Employed	Unemployed	Unemployment rate
Umjindi LM	20 894	7 681	26,9

Source: Statistics South Africa, Census 2011



*Figure 3-3: Change in Employment levels from 1996 - 2011*

#### 3.2.4.2 Income profile

There was an improvement in the Gini-coefficient from 0.60 to 0.58 between 2007 and 2011. The Gini coefficient is an index between zero and one, which is used to measure the gap between the rich and the poor in Umjindi. Even though there was a slight improvement in the Gini coefficient, the high illiteracy levels and lack of skills amongst the majority of the population thus contributing to the inequalities. There was a decrease in the poverty rate from 42.1% to 40.0% between 2007 and 2011.

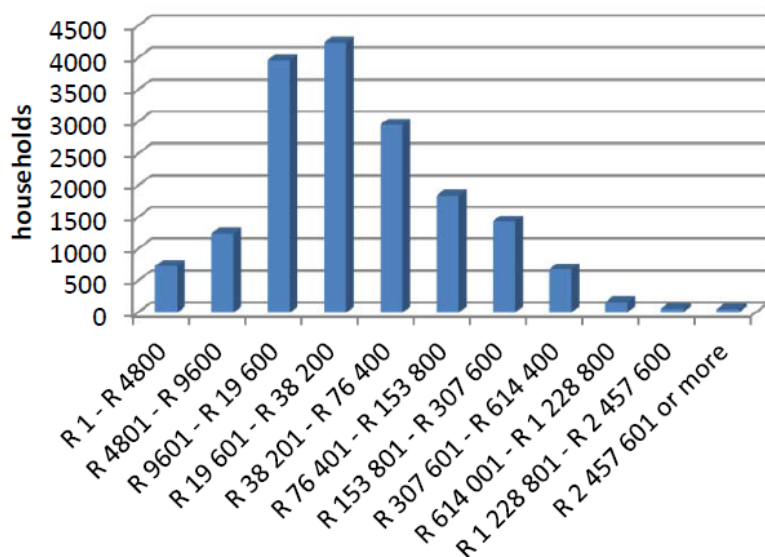


Figure 3-4: Income profile

### 3.2.4.3 Economic Sectoral analysis

The agricultural sector is the largest employer, followed by manufacturing, trade and government/community services. The smallest employer is the utilities sector. Mining is the second lowest sector.

Table 3-4: Key economic activities of the Umjindi Local Municipality, 2011

Activity	Percentage of Employment, 2011
Agriculture	32.3
Mining	3.5
Manufacturing	15.5
Utilities	0.4
Construction	6
Transport	3.7
Trade	14.5
Finance	4.5
Community Services	13.9
Private households	5.8
<b>Total</b>	<b>100%</b>

Source: Census 2011

### 3.2.5 Main infrastructure development

- Police Stations are situated within Barberton & Low's Creek. The Barberton Police station is serviced with water and sanitation services from the town's municipal infrastructure. Low's Creek police station has a borehole supplying water and a septic tank system for sewage;
- Magisterial Offices are situated within Barberton and served by the towns municipal water and sanitation system;
- Schools are situated within Barberton and Emjindini and consist of Primary and Secondary Schools. They are served by the towns municipal water and sanitation system;
- Clinics are situated in Barberton, Low's Creek and Emjindini. The gold mines in the area provide health care facilities for their employees. The Barberton and Emjindini clinics are served by water and sanitation services through the town's municipal infrastructure. The Low's Creek clinic has a borehole supplying water and a septic tank system for sewage;

#### 3.2.5.1 Access to services

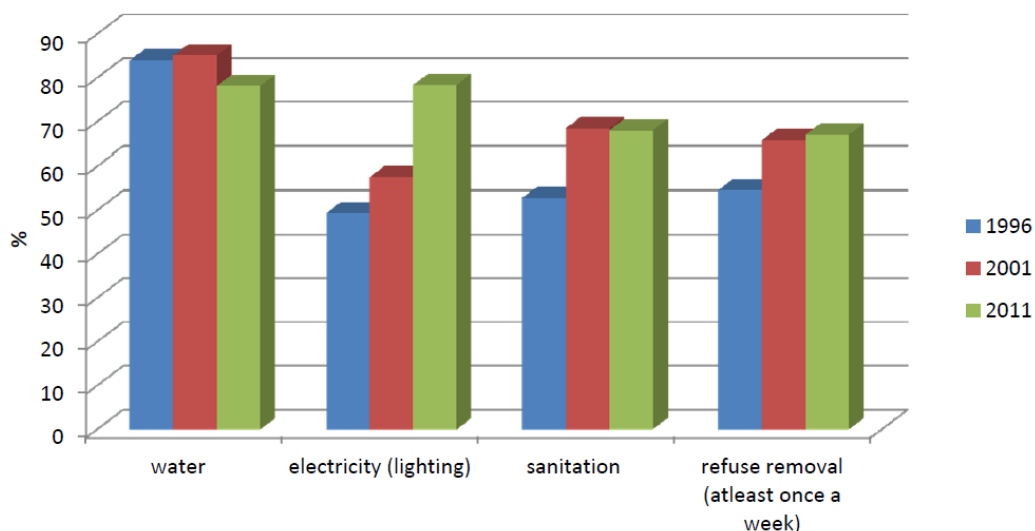


Figure 3-5: Access to services



### 3.2.5.2 Housing

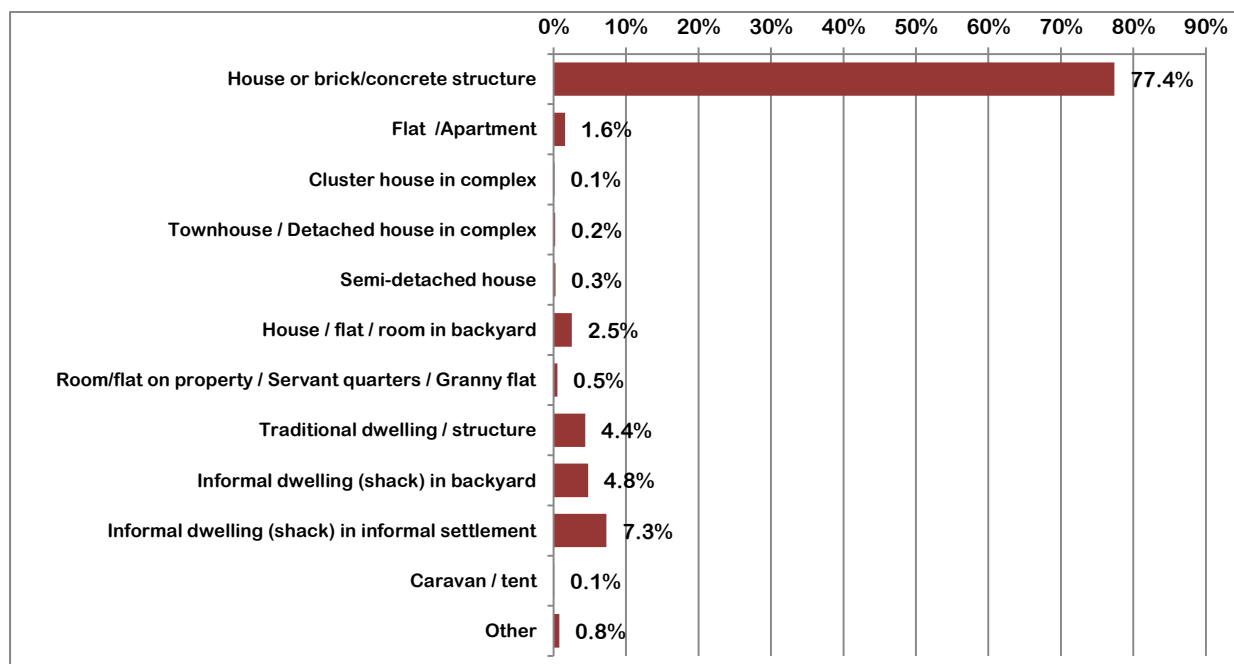


Figure 3-6: Housing

### 3.2.6 Local Context

The project area is located within the State Forest under Komati land Forestry. The project area is currently demarcated as a Special Interest area due to historical mining and is not being used for commercial forestry. There are no communities residing close to the mine area.

### 3.3 Biophysical environment

#### 3.3.1 Topography and Geology

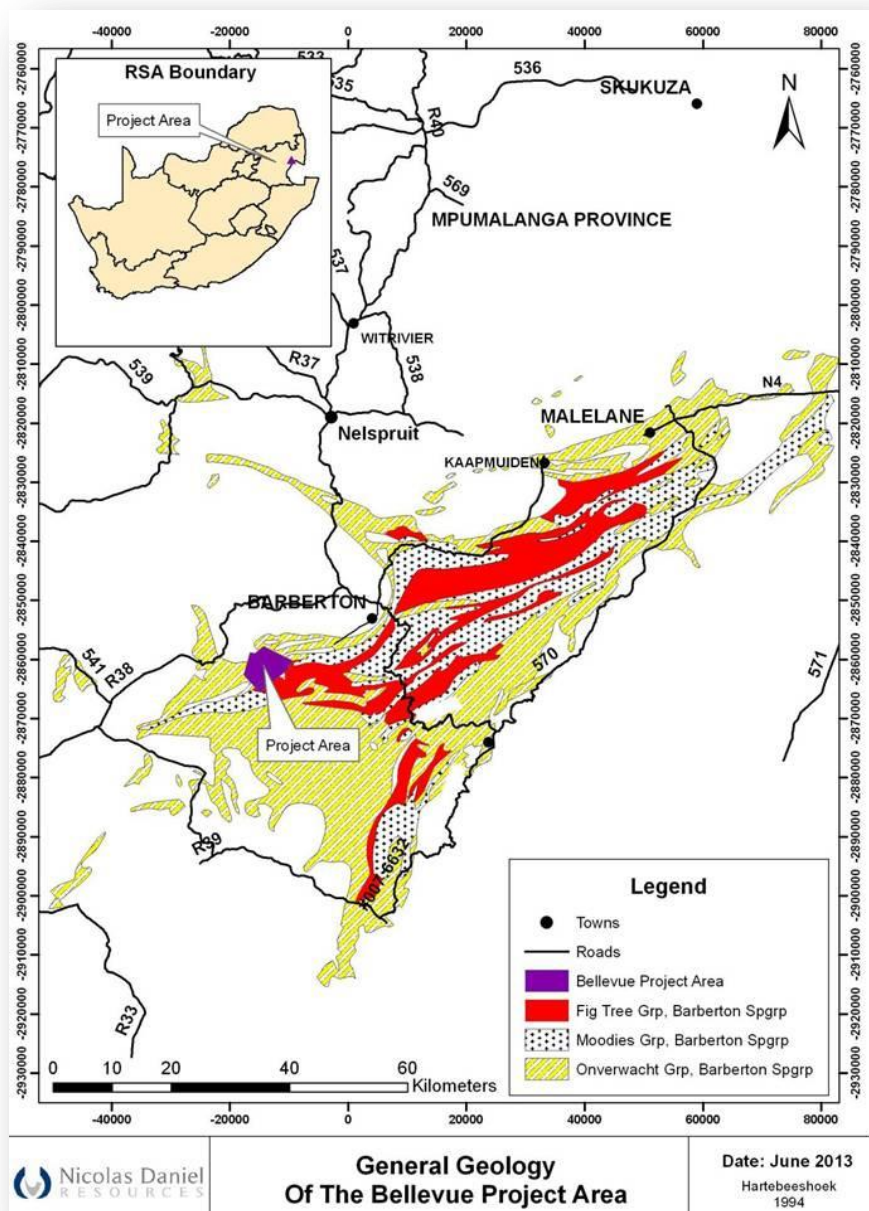


Figure 3-7: Regional Geological Setting of the Bellevue Project

The Bellevue project is situated in the south-western portion of the Barberton Greenstone Belt (“BGB”). The ore body dips to the north at a steep (75°) angle. Gold mineralisation occurs within the Onverwacht mafic and ultramafic sequence

close to the Bellevue fault, along a complex anti-formal structure. Mineralisation occurs within the ferruginous shale-chert horizon, within the shear zones associated with fuchsite (sericite) – silica-carbonate alteration and within the talcose schist wall rock adjacent to quartz arsenopyrite veinlets.

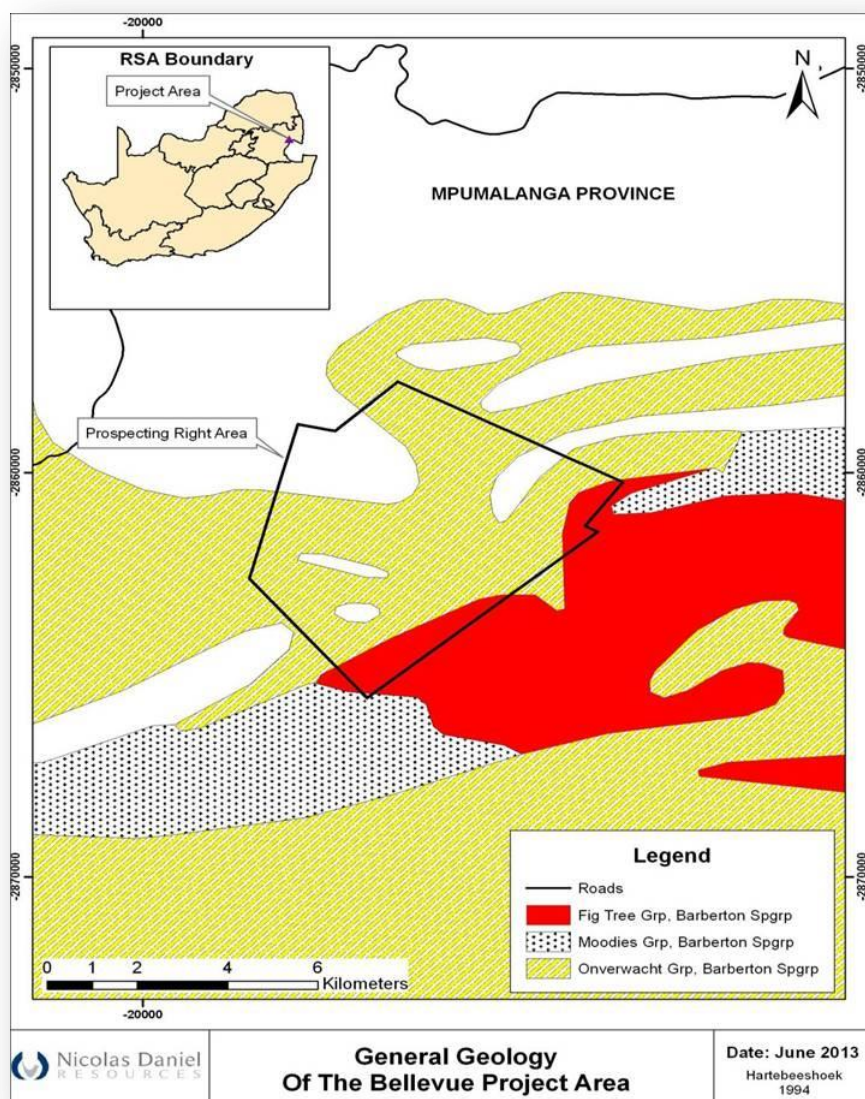


Figure 3-8: Locality Specific Geological Map

The Municipal Area is situated on the Lowveld escarpment with an average elevation of 877 m above sea level and altitudes varying from 600 to 2100 m. The escarpment and beautiful Makhonjwa Mountains provide an attractive variety to the landscape promoting scenic tourism. The majority of the area is level (68.44%) with moderate slopes (23.55%) and, thus, potentially fit for urbanisation and agriculture. Steep and very steep slopes occur in only 7.99% of the area.

### 3.3.2 Climatic Data

The Umjindi Municipality falls within the summer rainfall region with the rainy season normally lasting from October to March. The average mean annual precipitation for the Umjindi area varies between approximately 500 and 1700mm with averages varying from approximately 450 to 550 mm on the eastern areas to 1500 mm at the Escarpment and higher lying areas (DWAF 2000). The area falls within the mist belt. Barberton's climate is subtropical and the average day time temperature ranges from 18 degrees centigrade from June to August to the mid 30's from October to February. The region is the coldest during June when the mercury drops to 5.7°C on average during the night. It is a summer rainfall area and winters are dry. The size and percentage distribution of the climate zones are summarized in the figure and table below.

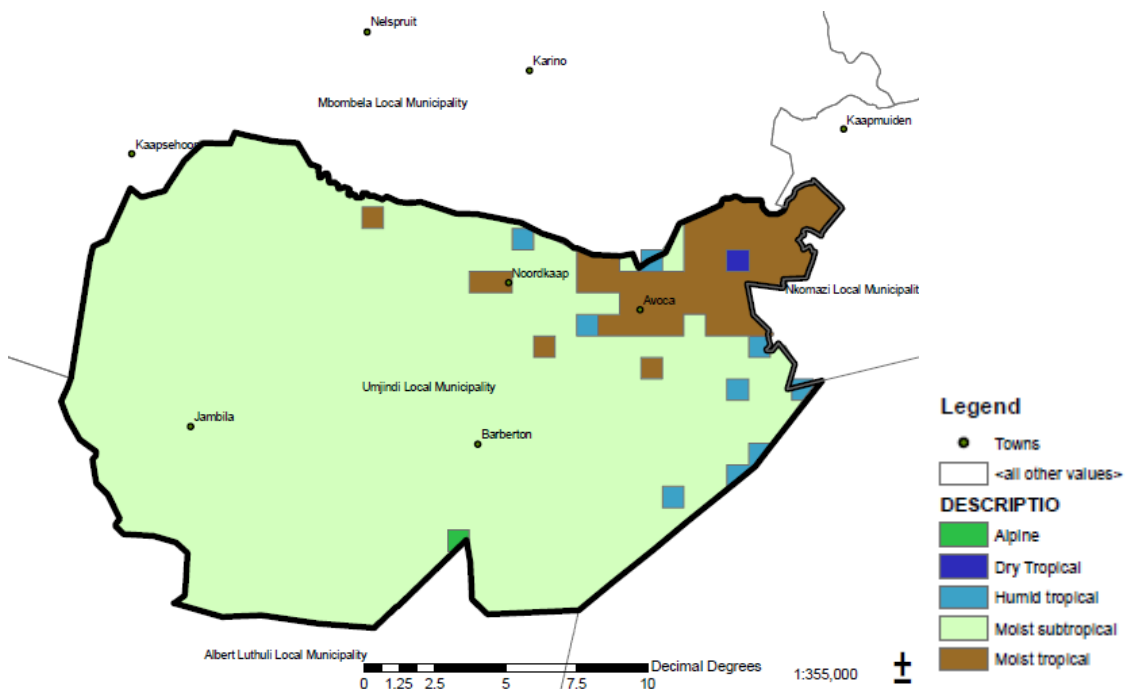


Figure 3-9: Map of climate zones

*Table 3-5: Size of the climate zones*

Description	Area ha	% of distribution
Alphine	255.84	0.15
Dry tropical	309	0.18
Humid tropical	2 567.91	1.47
Moist subtropical	156 556.45	89.58
Moist tropical	15 081.88	8.63
Total	174 771.06	100

Source: Umjindi Local Municipality Spatial Development Framework

The Temperatures for December, January and February (DJF) and June July and August (JJA) are set out in the table below.

*Table 3-6: Average Temperatures*

	DJF	JJA
Temperature - average nightly	7.5 - 12.9	2.8
Temperature - average daily	20.9 - 21.8	12
Temperature - average maximum	24.4 - 24.7	14.6

### 3.3.3 Soils, Land use and Capability

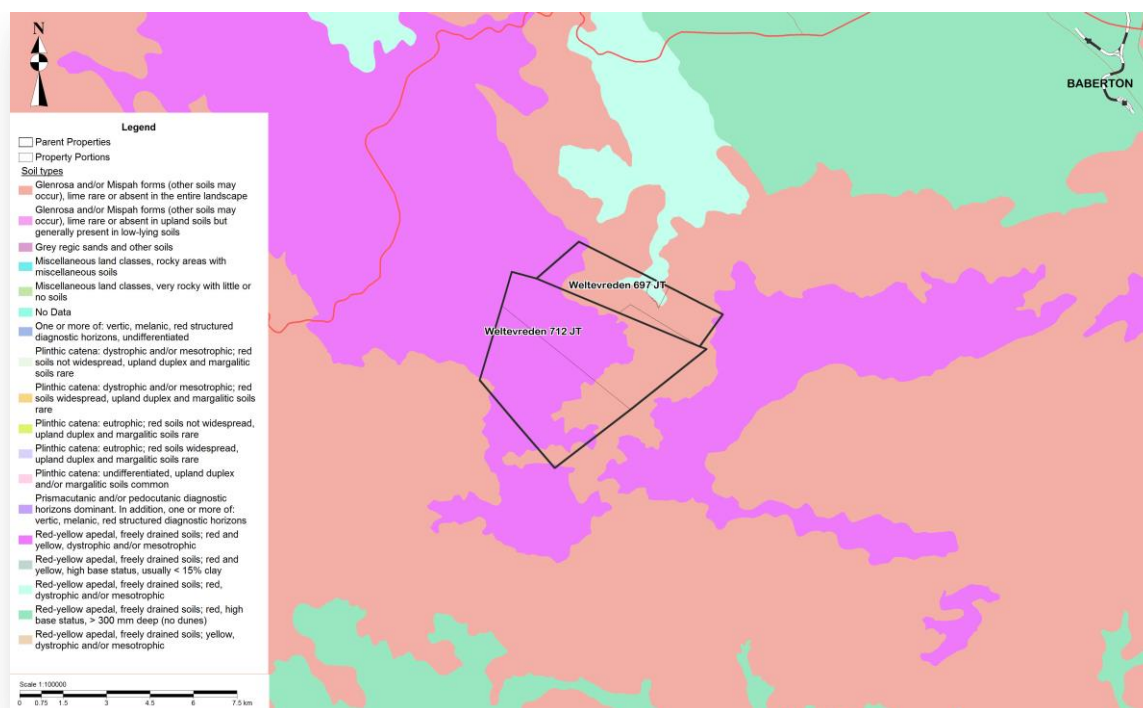
#### 3.3.3.1 Soil types

The project area has soil distribution of the following types:

- Fa 646:
  - Glenrosa and/or Mispah forms (other soils may occur).
  - Lime rare or absent in the entire landscape.
  - Extent: 602 ha.
  - Geology: metaquartzite, leucogneiss and pink gneiss of the mount dowe group and Beit Bridge complex.
  - Soil depth: < 450mm.
  - Plant available water content is between 21 - 40 mm indicating very low potential soils.
  
- Ah89:
  - Red-yellow apedal, freely drained soils.
  - Red and yellow, high base status, usually < 15% clay.
  - The majority of the area, namely 15 058 ha, falls within this class.

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- **Geology:** Beit Bridge complex, Mmalala Drift formation; leucogneiss, metaquartzite and amphibolites; gumbu gneiss, marble, gneiss; metaquartzite and amphibolite.
- **Soil depth:** 450mm - 750mm.
- **Plant available water content** is between 41 - 60 mm, indicating low potential soils.



**Figure 3-10: Soil Types**

- **Clay content:**
  - The clay content in the area is generally lower than 15%, but smaller areas have clay contents varying between 15% to 35%.
- **Erosivity:**
  - Western parts of the project area fall in erosivity class 4 with a rainfall class of between 301 to 400mm.
  - Eastern parts of the project area fall in erosivity class 5 with a rainfall between 401 to 500mm.

### 3.3.3.2 Pre-Mining Land Capability

The pre-mining land capability can be divided into 2 classes as illustrated in figure below:

- Soils of intermediate suitability for arable agriculture where climate permits
- Soils not suitable for arable agriculture; suitable for forestry or grazing where climate permits



Figure 3-11: Land Capability

### 3.3.3.3 Present Land Use

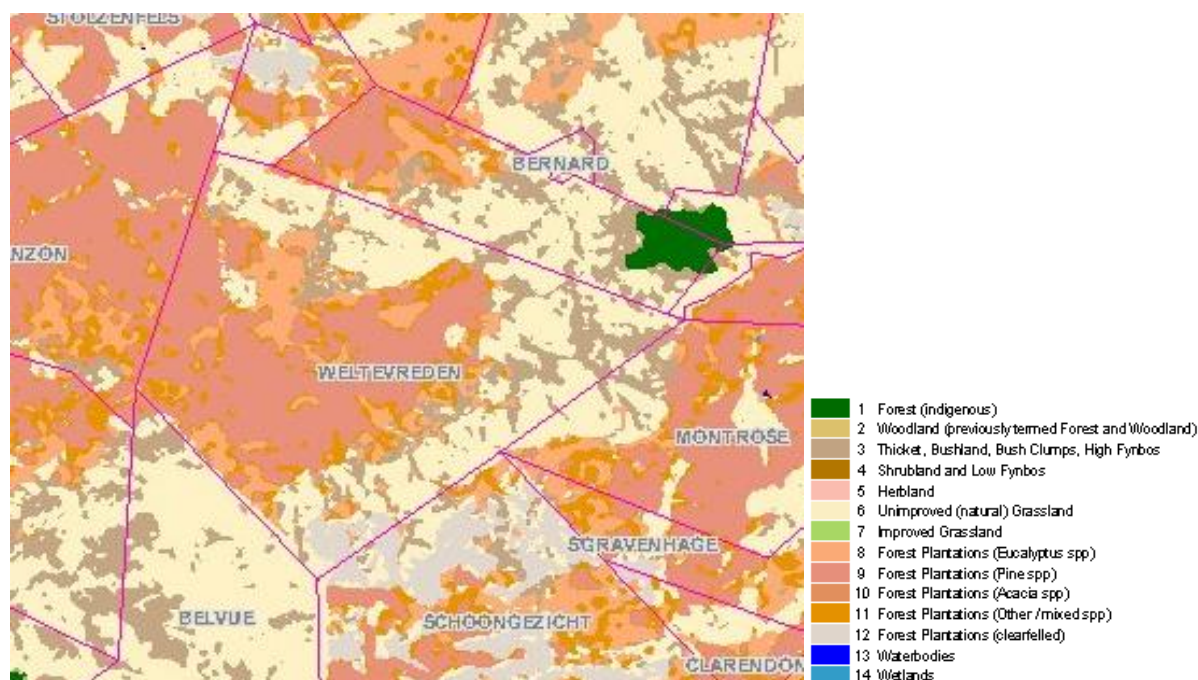


Figure 3-12: Land Use Project Area Specific

The current land use of the proposed mining area is identified as primarily forestry.

### 3.3.4 Biodiversity (Flora and Fauna)

The Umjindi Municipal Area forms part of the Grassveld Biome and grassland and bushveld cover a large part of the area. A biome can, in general terms, be described as a broad ecological unit, representing a large natural area with a relatively uniform plant and animal life, closely determined by environmental conditions and, especially, climate.

#### 3.3.4.1 Flora

According to Acocks (1975), the largest portion of the Municipal Area is categorised as Lowveld Sour Bushveld (47.89%) and North-Eastern Mountain Sourveld (19.01%) types as indicated in the table below.

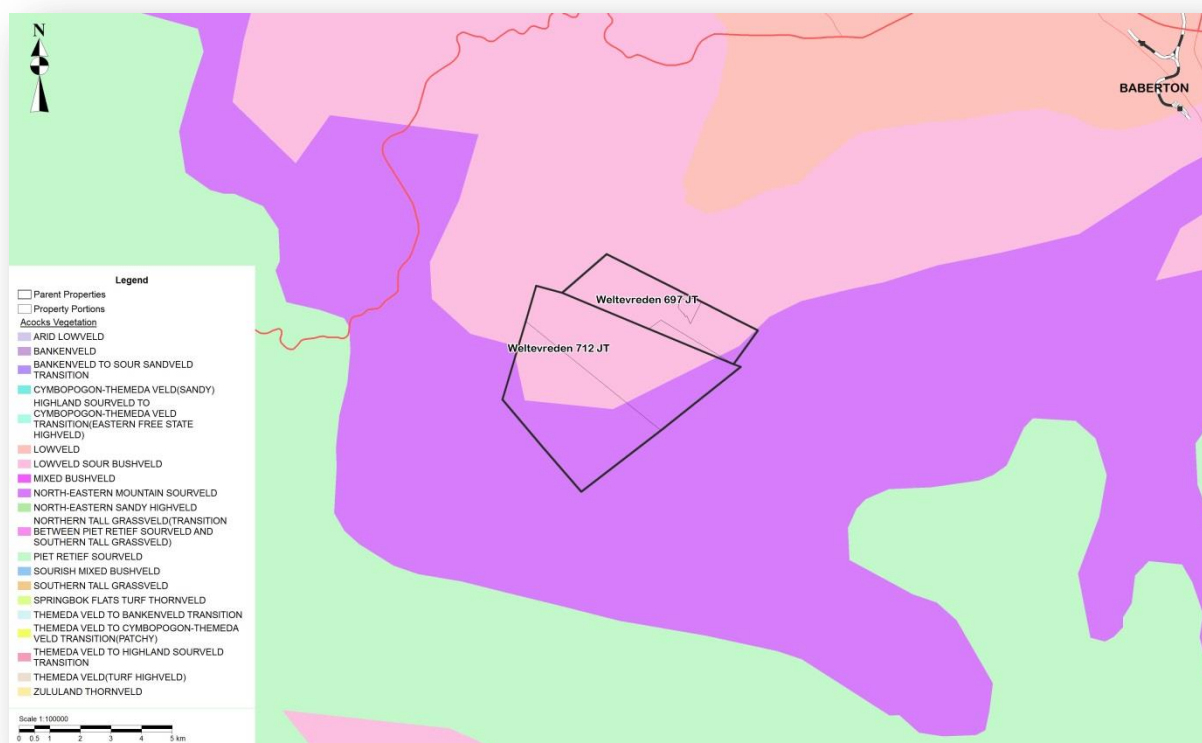
Veld Types	Area Ha	% of distribution
Lowveld Sour Bushveld	83 714.01	47.90
North-Eastern Mountain Sourveld	33 224.67	19.01
Piet Retief Sourveld	4 405.77	2.52
Lowveld	53 426.61	30.57
Total	174 771.06	100

Source: Acocks Veld Type (1975)



The project area has two main vegetation types:

- Lowveld Sour Bushveld
- North-Eastern Mountain Sourveld



### ***3.3.4.1.1 Lowveld Sour Bushveld:***

This open tree savannah is dominated by Silver Clusterleaf *Terminalia sericea*, Bushwillow *Combretum collinum*, Paperbark Thorn *Acacia sieberiana*, Parinari *curatellifolia*, *Pterocarpus angolensis*, *Acacia caffra*, *Ficus thonningii* and *Strychnos madagascariensis*. The shrub layer is characterised by Sickie Bush *Dichrostachys cinerea*, Large Sourplum *Ximena caffra*, Camel's Foot *Piliostigma thonningii*, *Antidesma venosum* and *Maytenus heterophylla*. The grass constituent is tall, tufted and relatively dense, and the common species are Yellow Thatching Grass *Hyperthelia dissolute*, Wire Grass *Elionurus muticus*, Common Thatchgrass *Hyparrhenia hirta*, *Setaria sphacelata*, *Melinis nerviglumis*, *Cymbopogon excavatus* and *Heteropogon contortus*.

### ***3.3.4.1.2 North-Eastern Mountain Sourveld:***

This grassland type contains many endemic plant species: 78 endemic or near-endemic species occur on the Black Reef quartzites. These are mostly

representatives of the Lilies (Liliaceae - now split into several families), Irises (Iridaceae), Daisies (Asteraceae), Mints (Lamiaceae) and Orchids (Orchidaceae). A further 31 endemic species occur on the drier dolomites of the Chuniespoort Group. These are all grassland species - no forest species are endemic to the vegetation type.

Typical species, possibly present, include the grasses Common Russetgrass *Loudetia simplex*, Giant Speargrass *Trachypogon spicatus*, Threadleaf Bluestem *Diheteropogon filifolius*, *Aristida junciformis*, *Tristachya leucothrix*, *Alloteropsis semialata*, *Eragrostis racemosa*, *Sporobolus pectinatus* and *Microchloa caffra*, and forbs such as *Aeschynomene nodulosa*, Geelkeurtjie *Eriosema angustifolium*, Bracken *Pteridium aquilinum*, *Berkheya echinacea*, *Pearsonia sessilifolia*, *Crassula alba*, *Vernonia centaurioides*, *V. natalensis*, *Clusia monticola*, *Stiburus alopecuroides*, *Helichrysum wilmsii*, *H. cephaloideum*, *H. acutatum* and *H. pilosellum*.

A number of species are, however, restricted to the mist belt zone of high mountain peaks and summits (exceeding 1 700 m). These include Tussock Fescue *Festuca costata*, Toothbrush Grass *Rendlia altera*, Everlasting *Helichrysum platypterum*, *H. umbraculigerum*, *H. mariepscopicum*, *Selago hyssopifolia*, *Rabdociella calycina*, *Lobelia flaccida*, *Scilla ner vosa*, *Craterocapse tarsodes*, *Wahlenbergia squamifolia*, *Crassula vaginata*, *Hemizygia subvolutina* and many more. At relatively lower altitudes, below 1 700 m, grass species such as Natal Panic *Panicum natalense*, Sicklegrass *Ctenium concinnum*, Junegrass *Koeleria capensis* and *Eulalia villosa*, forbs such as Everlasting *Helichrysum oreophilum*, Gifbossie *Gnidea caffra*, *Indigofera sanguinea* and *Monsonia attenuata*, and the woody species, Broadleaf Beechwood *Faurea rochetiana*, Common Sugarbush *Protea caffra* and African Sugarbush *P. gagedi* are considered as diagnostic.









Forest-related bush clumps occur on the Black Reef quartzites, situated at the edge of the escarpment in this area. Here woody species include Bastard Lemonwood *Psychotria capensis*, Broadleaf Waxberry *Myrica pilulifera*, Cape Beech *Rapanea melanophloeos*, Blueberry *Vaccinium exul*, *Cliffortia serpyllifolia*, *Psydrax livida*, *Protea roupelliae*, *Rhus tumulicola*, *Aloe arborescens*, *Passerina montana*, *Ekebergia pterophylla*, *Erica caffrorum* and *Englerophytum magalismontanum*.

Threats identified include fire misuse, alien plant infestation, over-grazing, timber plantations, uncontrolled bark-harvesting and firewood collection.

















### 3.3.4.2 Fauna

#### 3.3.4.2.1 Possible Species List

















Due to the fact that this study is still at scoping phase and no specialist modelling has been completed yet, a generic list of Fauna was compiled. Not all of these mammals will necessarily be applicable to the proposed project area and will be investigated further during the EIA phase.

No	Amphibians			
1	Name	Endangered Level	Photo	Area
2	African Common Toad / <i>Amietophrynus gutturalis</i>	Least Concerned		
3	African Red Toad / <i>Schismaderma carens</i>	Least Concerned		
4	Angola River Frog / <i>Amietia angolensis</i>	Least Concerned		
5	Clawed Toad / <i>Xenopus laevis</i>	Least Concerned		















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Amphibians				
6	Common Rain Frog / <i>Breviceps adspersus</i>	Least Concerned		
7	Common Sand Frog / <i>Tomopterna cryptotis</i>	Least Concerned		
8	Marbled Reed Frog / <i>Hyperolius marmoratus</i>	Least Concerned		
9	Natal Sand Frog / <i>Tomopterna natalensis</i>	Least Concerned		
10	<i>Amietophrynus garmani</i>	Least Concerned		
11	<i>Amietophrynus maculatus</i>	Least Concerned		
12	Senegal Land Frog / <i>Kassina senegalensis</i>	Least Concerned		
13	<i>Ptychadena oxyrynchus</i>	Least Concerned		

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Amphibians				
14	<b>Anchieta's Ridged Frog / <i>Ptychadena anchietae</i></b>	Least Concerned		
15	<b>Boettger's Dainty Frog / <i>Cacosternum boettgeri</i></b>	Least Concerned		
16	<b>Cape River Frog / <i>Amietia fuscigula</i></b>	Least Concerned		
17	<b>Gray's Stream Frog / <i>Strongylopus grayii</i></b>	Least Concerned		
18	<b>Mountain Caco / <i>Cacosternum parvum</i></b>	Least Concerned		
19	<b>Mozambique Rain Frog / <i>Breviceps mossambicus</i></b>	Least Concerned		
20	<b>Natal Dwarf Puddle Frog / <i>Phrynobatrachus natalensis</i></b>	Least Concerned		
21	<b>Natal Ghost Frog / <i>Heleophryne natalensis</i></b>	Least Concerned		

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Amphibians				
22	Ranger's Toad / <i>Amietophrynus rangeri</i>	Least Concerned		
23	Striped Stream Frog / <i>Strongylopus fasciatus</i>	Least Concerned		
24	Weale's Running Frog / <i>Semnodactylus wealii</i>	Least Concerned		
25	<i>Phrynobatrachus mababiensis</i>	Least Concerned		
26	<i>Ptychadena porosissima</i>	Least Concerned		
Mammals				
No	Name	Endangered Level	Photo	Area
1	Brown Hyaena / <i>Hyaena brunnea</i>	Near Threatened		
3	Straw-coloured Fruit Bat / <i>Eidolon helvum</i>	Near Threatened		

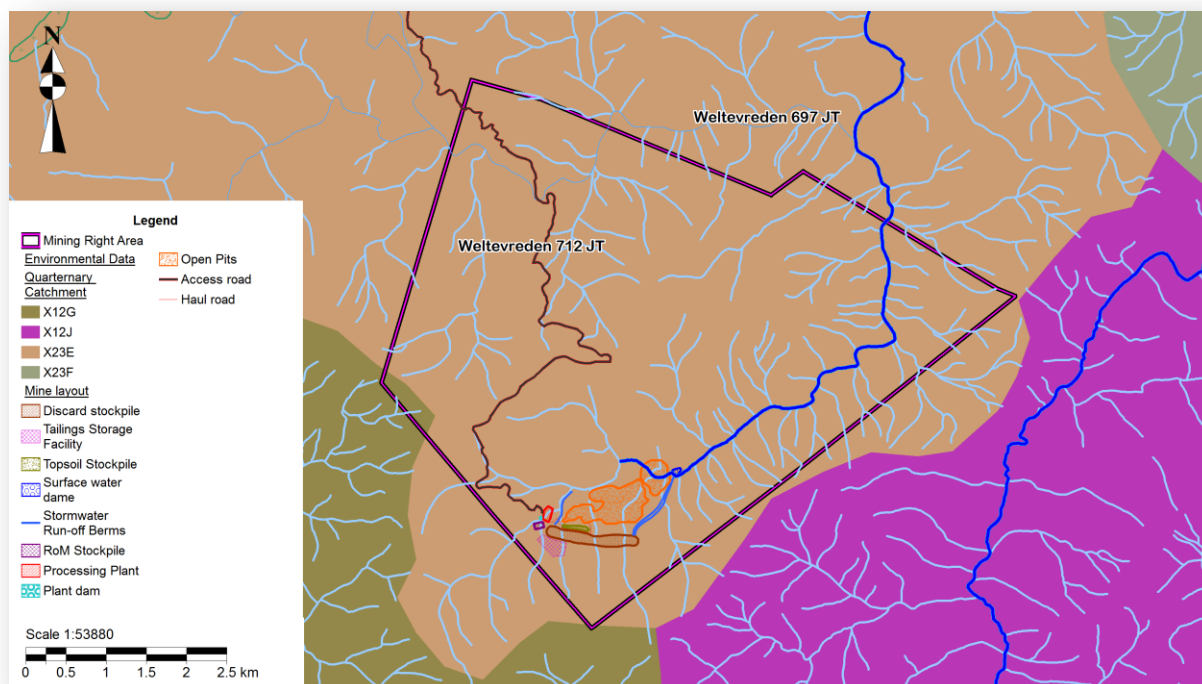
Amphibians			
5	Highveld Golden Mole / <b>Amblysomus septentrionalis</b>	Near Threatened	

Other mammals that might also be present in the area but falls under the “Least Concerned” endangered level includes but is not limited to: Aardvark, Aardwolf, African Buffalo, African Sivet, African Clawless Otter, African Mole Rat, African Striped Weasel, Banded Mongoose, Black-backed Jackhal, Black Wildebeest, Blesbok, Blue Monkeys, Bushbuck, Bushpig, Cape Fox, Cape Hare, Cape Porcupine, Caracal, Chacma Baboon, Common Duiker, Common Dwarf Mongoose, Common Eland, Common Genet, Common Warthog, Common Wildebeest, Egyptian Free-tailed Bat, Egyptian Slit-faced Bat, Four-striped Grass Mouse, Greater Cane Rat, Greater Kudu, Honey Badger, House Mouse, House Rat, Impala, Klipspringer, Mauritian Tomb Bat, Mountain Reedbuck, Natal Multimammate Mouse, Natal Red Duiker, Oribi, Plains Zebra, Rock Hyrax, Scrub Hare, Serval, Southern African Vlei Rat, Southern Lesser Galago, Southern Reedbuck, Spotted Hyaena, Spotted-necked Otter, Steenbok, Temminck’s Ground Pangolin, Thick-tailed Greater Galago, Topi, Waterbuck, White-tailed Mongoose, Wild Cat, Yellow Mongoose and Zorilla.

### 3.3.5 Surface water

Umjindi contains four river systems, the Noordkaap River, the Suidkaap River, Kaap River Queen's, flowing from the Highveld Plateau over the Drakensberg Escarpment towards the Indian Ocean.

The study area is situated in Quaternary Catchment X23E, with the main river cutting through the area the Queen River, as can be seen in the figure below:



*Figure 3-13: Catchment and main river system*

The mean annual precipitation of the catchment is 1016.1mm. The catchment area is 180km<sup>2</sup> with an average mean annual runoff of 204.1mm.

### 3.3.6 Groundwater

The water table is associated with two definable levels. The shallow aquifer associated with the seep zones, which retain groundwater for slow release to local streams. This water level is normally very shallow (3-5m) and fluctuates with rainfall conditions, with high rainfall events recharging the water levels in this zone. As the dry season follows, the water level is expected to decrease as water is released to the system.

The second level is the water level associated with deeper aquifers. The average depth of water in the project area is between 15 and 24 mbgl. There are no groundwater users within the areas to be disturbed.



### 3.3.7 Air Quality and Noise

No industries, other than mining, previously existed in the immediate area. The larger area is mostly utilised for forestry. No gaseous emissions are known to occur. The area is well vegetated and dust generation is insignificant.

Noise generation is insignificant. The nearest sensitive receptor is more than 3 km from the site.

### 3.3.8 Visual Assessment

There are dense forestry surrounding the proposed project area, therefore it is not expected that visual intrusion would be likely. Further assessment will however be conducted to determine any sensitive receptors in the surrounding area.



### 3.3.9 Sensitive Landscapes

#### 3.3.9.1 Formal Conservation Initiatives in the Region

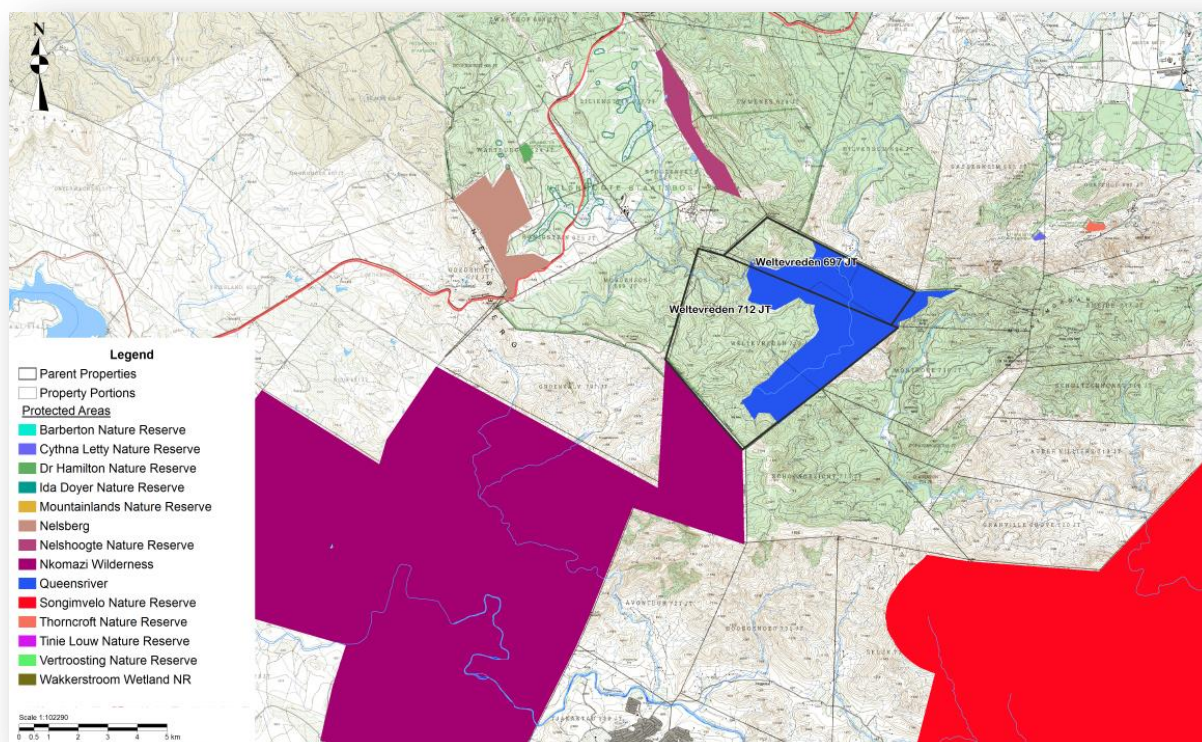


Figure 3-14: Protected Areas

The following table provides a summary of protected areas:

Table 3-7: Protected Areas

Name	Category	Size
Barberton Nature Reserve	Municipal Nature Reserve	1462.7ha (0.84% of municipality)
Blouswaelvlakte	Primary Conservation Area (DWAF)	2.5ha (0% of municipality)
Cythna Letty Nature Reserve	Provincial Nature Reserve	6.8ha (0% of municipality)
Dr Hamilton Nature Reserve	DWAF Nature Reserve	17.5ha (0.01% of municipality)
Mountainlands Nature Reserve	Provincial Nature Reserve	16685.3ha (9.56% of municipality)
Nelsberg	Primary Conservation	541.4ha (0.31% of municipality)

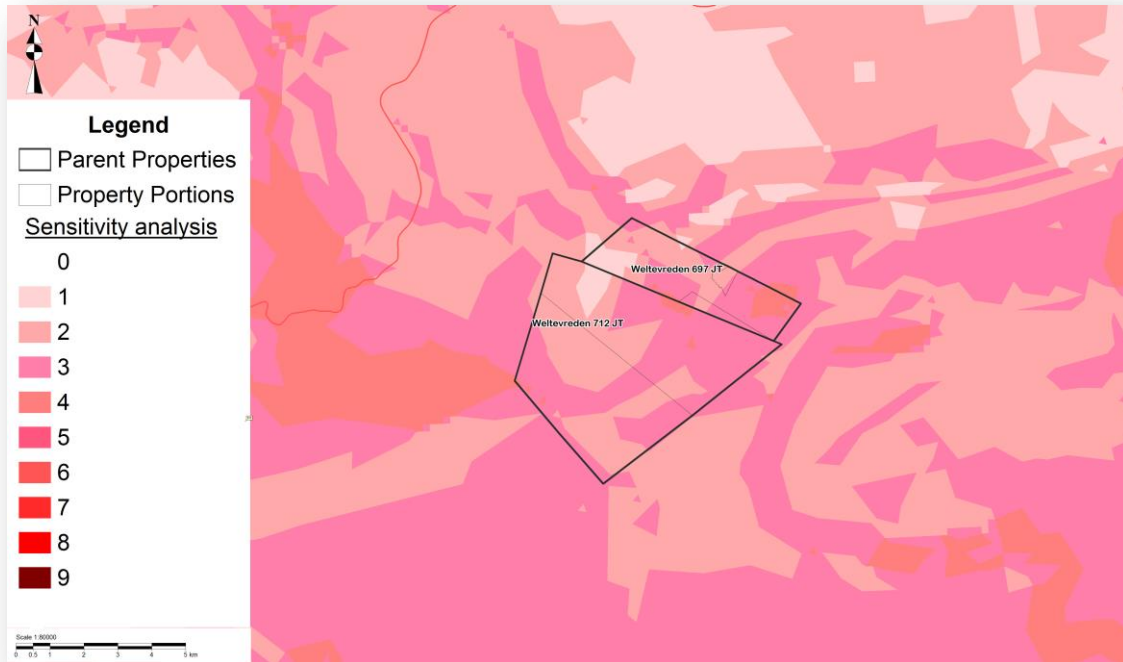
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			Area (DWAF)		
Nelshoogte Reserve	Nature		DWAF Nature Reserve		279.6ha (0.16% of municipality)
Queens river			Primary Conservation Area (DWAF)		1651ha (0.95% of municipality)
Songimvelo Reserve	Nature		Provincial Reserve	Nature	15296.4ha (8.76% of municipality)
Thorncroft Reserve	Nature		Provincial Reserve	Nature	16.6ha (0.01% of municipality)
Tinie Reserve	Louw Nature		Provincial Reserve	Nature	9.2ha (0.01% of municipality)
11 reserves in Umjindi Municipality covering 35 968.9ha (20.6% of municipality)					

The north eastern side of the proposed project area falls within the Queens River Protected area.

**3.3.9.2 Sensitivity Analysis**

In conducting a preliminary sensitivity analysis it is indicated that the project area is of moderate sensitivity. With the recent proclamation of the Queens river Forest Nature Reserve, the sensitivity of the project area is increase to moderate to high.



**Figure 3-15: Sensitivity Analysis**

## **4 DETAILED PROJECT DESCRIPTION**

The Bellevue Gold Project is located in the district of Barberton in the Mpumalanga Province of South Africa (“SA”), approximately 370 km east of Johannesburg and 25 km southwest of the town Barberton in the Mpumalanga Province.

Masase Mining (Pty) Ltd obtained the Prospecting Right for the properties Weltevreden 697 JT (Portion 1) and Weltevreden 712 JT and has now submitted a Mining Right for the area. The Mining Right has been accepted by the Department of Mineral Resources on 17 October 2013. The Bellevue Project has the potential to produce good quality gold ore with possible by-products of Copper, Silver, Cobalt and Antimony.

The area covered by the mining right application includes two farms (with total extent of 2809.4ha). The Bellevue Project footprint is located at the southern corner of the property and covers an area of 67.6ha for mining and infrastructure development.

### **4.1 Mining Operations**

#### **4.1.1 Methodology**

The Bellevue project is situated in the south-western portion of the Barberton Greenstone Belt (“BGB”). The ore body dips to the north at a steep (75°) angle. It is estimated that in most instances it is mineable to a depth of 250 m through open cut methods.

Based on current information the Bellevue mine resources is approximately 36, 180 kg gold content in 16.27 tonnes of reef processed.

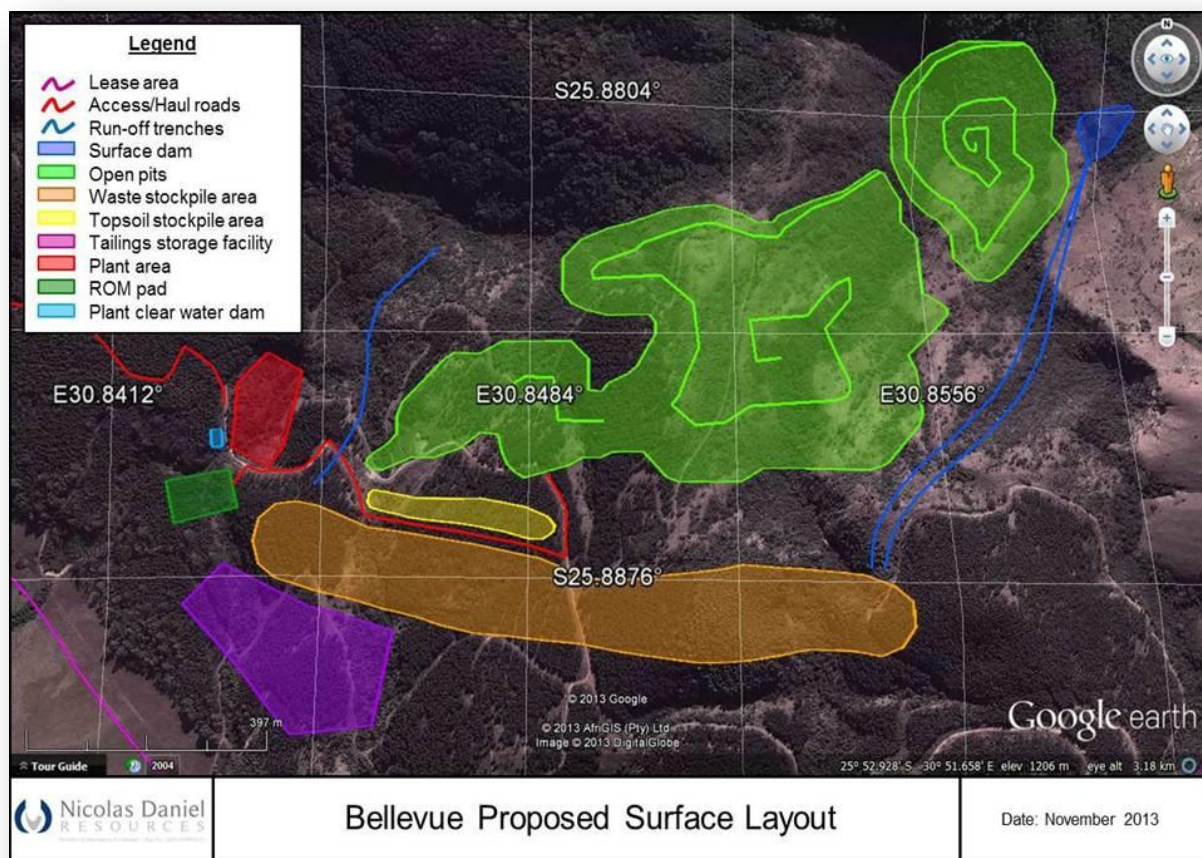


Figure 4-1: Mine layout

#### 4.1.2 Mining schedule

The current planning is that construction and mining will commence at central open pit first, followed by the eastern pit. The life of mine is expected to be 28 years.

The project study will be conducted during 2014. Start-up phases in order to start production are estimated to take approximately 12 months, starting in June 2015. These phases include testing and examining of all equipment and infrastructure and to comply with all legal requirements in order for production to start. Mining operations are planned to start in June 2016, with steady state production being reached in 2018.

Prior to construction all environmental and legal requirements will be adhered to as well as the procurement and construction of infrastructure and equipment.

The various phases are detailed in the table below:

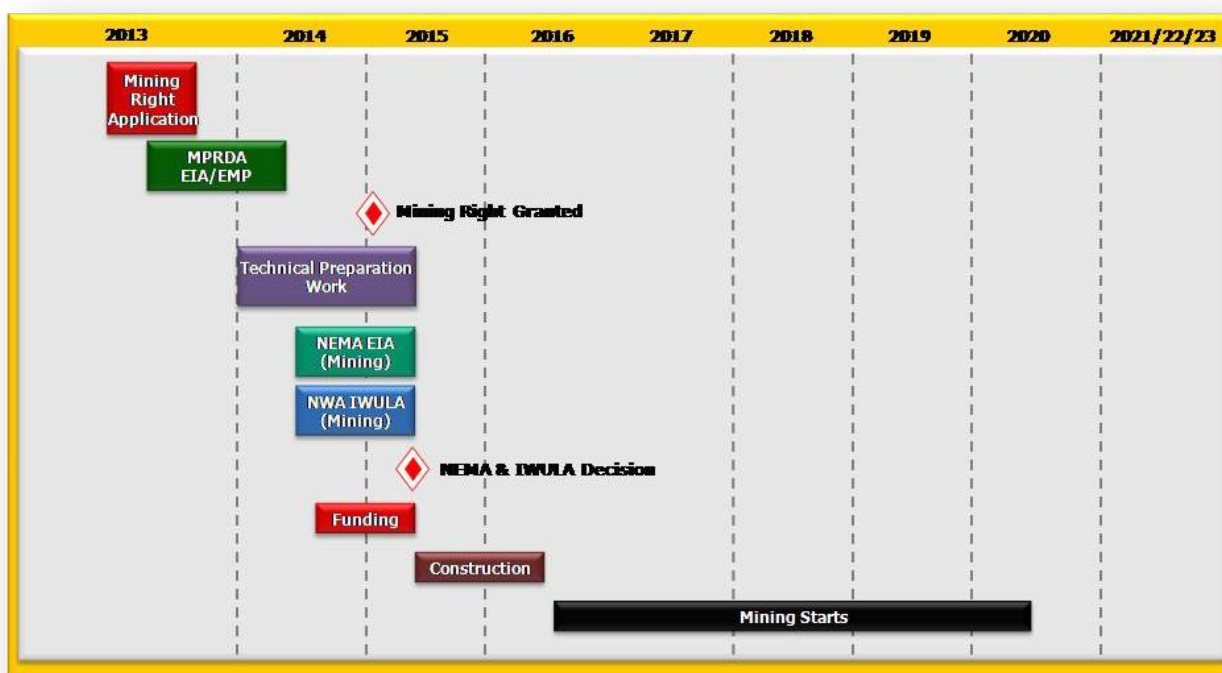


Figure 4-2: Implementation Plan

## 4.2 Mineral Processing

No plant currently exists; however, a plant design was completed by Minxcon based on historic information. A process has been selected to treat 20,000 tons per month “tpm”) of run of mine (“ROM”) ore. A full suite of metallurgical test work must be conducted to confirm assumptions and should be completed before the final design. In the interim a flow sheet has been developed which is based on feasible assumptions. The envisaged process will employ the following:

- 1 crushing;
- 2 milling and classification;
- 3 gravity recovery of free gold;
- 4 flotation;
- 5 Fine grinding and high-intensity leaching (“HIL”) with cyanide;
- 6 electro winning; and
- 7 smelting.

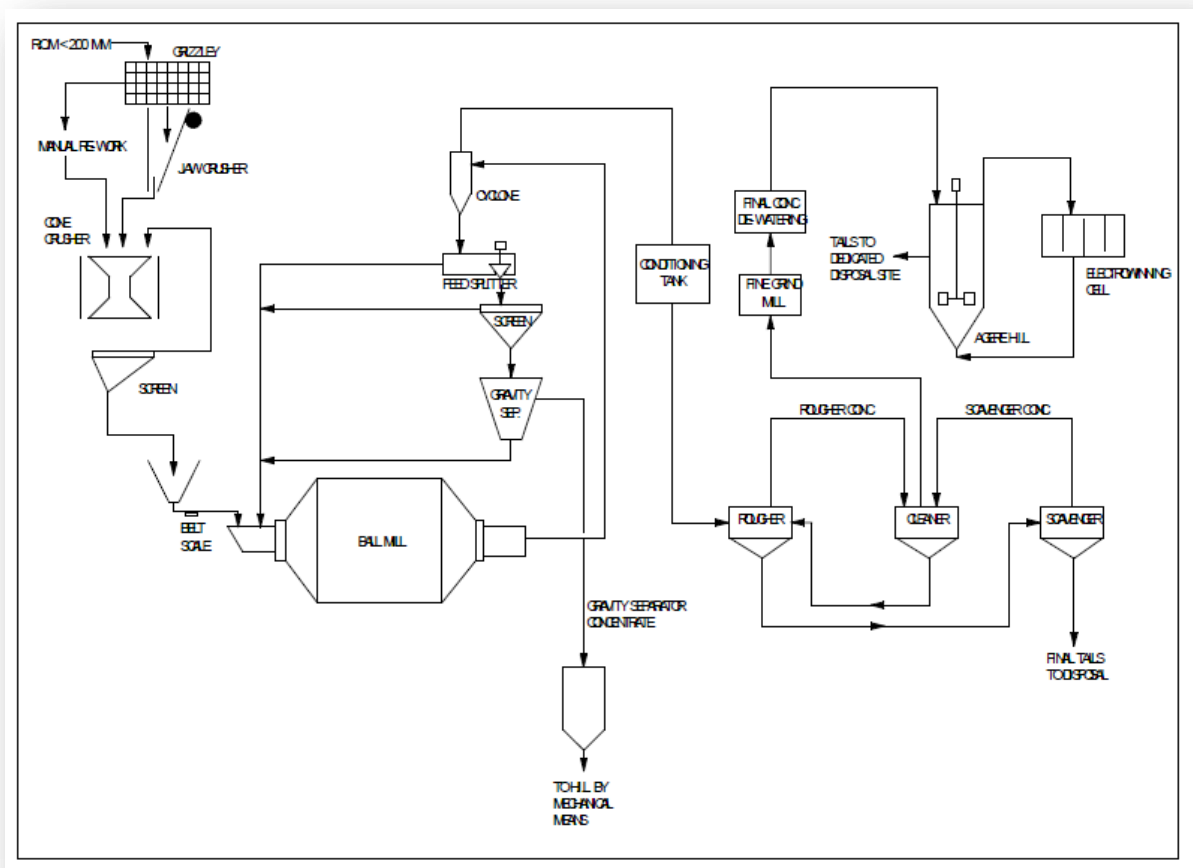


Figure 4-3: Processing Flow sheet

### 4.3 Infrastructure

The Infrastructure area will comprise a processing plant, personnel support structures, vehicle support structures, water management structures and management and monitoring systems. The product will be transported by truck between the open pit and the run of mine (ROM) stockpile. Other mine infrastructure includes:

- Access Roads
- Mining Roads
- Mine residue dumps (to accommodate mining overburden) initially stockpiled thereafter disposed in-pit
- Topsoil dumps and berms
- Office and Resource Handling Facilities
- Vehicle Support Structures and Stores

- Storm water Management Infrastructure (i.e. clean water run-off & Dirty water run-off)
- On-Site Water Management and sanitation infrastructure;
- Electricity provision infrastructure, such as power stations, substations, pylons and cables;
- Gold Processing Plant
- Housing, and
- Telecommunication infrastructure, such as masts and pylons;
- Waste removal and recycling infrastructure, such as refuse removal, pipelines, sewage plants and water purification plants.

#### 4.4 Closure Planning and Rehabilitation

It is envisaged that parallel rehabilitation will be done.

### 5 DESCRIPTION OF POTENTIAL IMPACTS ASSOCIATED WITH ACTIVITY

#### 5.1 Cultural and Heritage

The potential adverse impacts of the proposed development of the Bellevue Project are subject to the nature and scale of the proposed activities:

Activity	Potential Impacts
Open Cast Mining areas - extensive excavation and earthmoving	Total destruction of heritage resources Possible graves in the proposed area
Stockpiles and Discard	Overlaying (and destruction) of heritage sites. Possible graves in the proposed area
Mine Infrastructure / Processing Plant	Total destruction of heritage resources Possible graves in the proposed area
Access and mine roads	Total destruction of heritage resources Possible graves in the proposed area

It is difficult to make any definitive statement about direct and indirect threats to heritage resources in the activity areas until after a detailed ground reconnaissance has been carried out.



## **5.2 Socio- economic conditions**

The following potential socio-economic impacts have been identified and will be evaluated in further detail during the EIA phase:

- **Demographic and Population Impacts**
  - Population growth pressures
  - Influx of job seekers
- **Health and Social Well-being**
  - Safety and Risk Exposure: Increase in crime
- **Quality of the living environment**
  - Quality and Aesthetic Value of physical environment
  - Increased strain on infrastructure
  - Quality and availability of Housing
  - Impact on housing supply within formal towns
  - Change processes and impacts related to daily movement patterns
- **Socio-economic and material Well-Being**
  - Participation of Local Communities in Employment Opportunities and Skills Development
  - Participation of local business in procurement opportunities
  - Participation of Local Communities in Local Economic Development Initiatives
  - Conversion of land use
  - Decrease of visitors and tourists

## **5.3 Biophysical environment**

### **5.3.1 Soils, Land Use and Land Capability**

The impacts identified for the soils, land capability and land use are considered collectively as all of these facets are inter-related and inter-dependant, and so the impact to the soil depth and land capability distribution includes all other facets e.g. opencast, plant infrastructure areas, discard dumps and pollution control dams will be the same. Thus a collective impact assessment has been derived in order to prevent repetition. Opencast mining results in total destruction (before mitigation) of the various facets of the following:

- Soils (i.e. slope, depth, order of horizons, organic carbon, microbial activity, fertility, perched water table, hydrology and relative compaction);
- Land capability (i.e. capability class and distribution) – land capability is downgraded; and
- Land use.

Areas that will be totally to largely altered by mining related activities include the sites of the various features/facilities in the infrastructure areas, the overburden stockpiles and the haul/access roads.

Areas that will only be partially altered by mining related activities include the conveyors, power lines, gravel service roads and temporary ‘topsoil’ stockpiles.

#### **5.3.1.1 Post-Mining Land Capability**

Post-mining land capability may be considered from two different perspectives, namely according to:

- The Chamber of Mines post-mining land capability requirements; and
- The land capability potential (i.e. potential land-use).

##### ***5.3.1.1.1 Land capability requirements***

Rehabilitate to the Chamber of Mines (and Government Regulation R537) post-mining capability class standards. This scenario must represent at least equivalent (or increased) post-mining arable and grazing capability class percentages, relative to the pre-mining state. The aforementioned indicates a commitment by the mine to rehabilitate the post-mining land capability to the recommended standard.

##### ***5.3.1.1.2 Land capability potential (i.e. potential land use)***

Soil is a living ecological entity, therefore it is unlikely that rehabilitated post-mining arable capability class areas in the totally and totally - largely altered (and rehabilitated) areas may be successfully cultivated in the post-mining state, this being due to both a lowered production potential of the soils. The lowered potential / land capability could be attributed to the following:

- Compaction, Consistency and Hard Setting
- Subsidence

Other impacts include the following:

- Alteration of the topography (changed slope shape, slope grade, drainage distribution, drainage density, and increased soil erosion);
- Alteration of soil horizons (decreased permeability, decreased moisture holding capacity, increased susceptibility to erosion, reduced fertility, and decreased levels of plant growth);
- Alteration of sub-surface layers; and
- Soil pollution.

### **5.3.2 Biodiversity**

The following preliminary impacts are expected as a result of the proposed mining activity, although additional impacts may be identified during the site assessment:

- Loss of vegetation and habitat
- Loss of floral species of special concern
- Increased risk of alien invasion
- Increased risk of soil erosion
- Loss of faunal habitat
- Loss of faunal species of special concern

In addition, listed protected species could be damaged or destroyed during construction or operation of the mine. This could have an impact on the population and survival of the species. Removal of natural vegetation in the areas where opencast mining will take place will influence various listed protected species.

Different species, or categories of species, have different legal requirements in terms of actions to be taken and permit requirements and the specific circumstances, land ownership etc. will determine the action that needs to be taken to protect such a species. Potential impacts include:

- Destroy or damage of protected species.
- Influence on specific species population numbers and survival

### **5.3.3 Surface Water**

The surface water impacts of the Project can be divided into two aspects, namely:

- Impacts on surface water quantity
- Impacts on surface water quality

It should however be kept in mind that water quality is naturally linked to water quantity due to the fact that changes in water quantity are likely to affect the dilution of pollutants.

#### **5.3.3.1 Impacts on Quantity**

- **Impact on mean annual run-off to Queens River.** Mean annual run-off (MAR) from the Project site into the Queens River is anticipated to be primarily affected by the following:
  - Direct rainfall in the opencast pits.
  - Run-off from stockpiles.
  - Concentration of flow when run-off is intercepted by canals.
- **Change to peak flow rates in the Queens River during flood conditions.** A substantial increase to the peak flow of flood events in the Queens River could cause erosion and change in channel character and dimensions, destroy riverine vegetation, alter bed roughness and cause eroded sediment to be deposited downstream.
- **Drying up of tributaries and establishment of new watercourse due to canalisation.** A cut-off canal system is required to separate unpolluted ('clean') and polluted ('dirty') water, which is a positive intervention. However, intercepting the tributaries that flow from the water divide across the mining areas, and redirecting them via canals around the pits, will starve those same water courses of water along their reach between the point of interception and the Queens River.

#### **5.3.3.2 Impacts on Quality**

Quality impacts could include:

- Increased sediment load in Queens River
- Impaired water quality due to pollutants discharged from processing plant
- Impaired water quality due to pollutants in run-off from stockpiles
- Impaired water quality due to pollutants in water discharged from opencast pits
- Impaired water quality due to petrochemical spills

#### **5.3.4 Groundwater**

Mining can impact on groundwater by the cone of dewatering that forms from removal of inflows into the pit as it is deepened and by contamination of groundwater due to mining activities. The following impacts:

- Groundwater Inflows into the Open pits
- Groundwater Contamination from
  - Overburden and waste stockpiles;
  - Slurry dams;
  - Return water dams, effluent and evaporation ponds; and
  - Opencast pits.

### **5.3.5 Air Quality**

The following possible sources of fugitive dust have been identified as activities which could potentially generate dust during construction operations at the site:

- Product Transport
  - Haul Road corridor clearing;
  - Scraping;
  - Debris handling;
  - Debris stockpiles; and
  - Truck transport and dumping of debris.
- Processing Plant
  - Clearing of area for infrastructure;
  - Debris handling;
  - Debris stockpiles; and
  - Truck transport and dumping of debris.
- Creation and grading of access roads
- Preparation of areas identified for the construction of the plant and supporting infrastructure

The EIA phase impact modelling will aim to deal with the potential air quality impacts which could result due to the proposed operations. Details regarding the source characteristics will be obtained from site layout plans and process specific information provided and a questionnaire filled in by the client. Such information related to the activities carried out on site and the impacts resulting from them. Once all site layouts and final geotechnical works are complete, site specific information should then be sufficient for dispersion modelling and will then be included in the EIA report. More information pertaining to the operation impacts will be available at the EIA stage.

### 5.3.6 Ambient Noise

The following are possible to be the main construction related sources of noise for a gold mine and its infrastructure:

- Vegetation removal and the stripping of topsoil;
- Construction camp establishment;
- Development of the internal and access roads;
- Activities related to the deployment and implementation of services;
- Excavation of building foundations and service trenches. Blasting may be required but in general pneumatic breakers will be used where rock is encountered;
- Development of initial box-cut (excavation of soft overburden, drilling and blasting of hard overburden, loading of blasted hard overburden as well as material transport);
- Piling operations for large buildings and structures;
- Construction of offices and other structures;
- Installation of crushing and screening plant;
- Laying of railway lines and the installation of the siding ancillary equipment;
- General movement of heavy vehicles around the site; and
- Construction material and equipment delivery vehicles.

The following typical noise-generation activities are associated with gold mining activities:

- Surface preparation activities (vegetation removal and stripping of topsoil)
- Opencast activities
  - Excavation of soft overburden
  - Drilling and blasting of hard overburden
  - Excavation and loading
  - Hauling of overburden and product
- Plant activities (crushing, screening, stockpiling and material movement)

### 5.3.7 Visual and aesthetic

The main concerns in this regard are the following:

- The change of the topography by large scale (footprint and height) of the opencast areas, stockpiles and the processing plant and related infrastructure;

- The dumping and exposure of discard, the colour of which is in sharp contrast with the environment;
- The introduction of industrial activity with associated light and dust pollution; and
- The introduction of additional transport and delivery vehicles on local roads at a high rate of recurrence.

## **5.4 Sensitive Landscapes**

The project area is located within the newly proclaimed Queens River Forest Nature Reserve.

## **5.5 Cumulative Impacts**

The potential cumulative impact associated with the project and other existing mining development in the area will be investigated during the EIA phase, and will include the impact on the following environmental aspects:

- Bulk water requirements
- Bulk power requirements
- Vegetation clearance
- Land use / land capability
- Groundwater impact zone (quality and quantity)
- Surface water run-off (yield impact)
- Ambient air quality and noise levels
- Conservation and Protected Areas
- Influx of Work seekers
- Increased regional economic development and job creation
- Infrastructure requirements and housing

The impact will be quantified as far as possible based on available information; however, not all information will be readily available due to possible confidentiality and the level of technical detail. The cumulative impact will therefore not be determined to the same level as the Bellevue Project.

## 5.6 Concerns Raised by IAPs

The concerns of Interested and Affected Parties (IAPs) raised so far include the following:

- Transport of product on forestry roads: Quality, health and safety
- Impact on Queens River
- Impact on Queens River Forest Nature Reserve
- Impact on Biodiversity

# 6 LAND USE OR DEVELOPMENT ALTERNATIVES

## 6.1 Land Use Alternative

The current land uses in the region include:

- Livestock farming;
- Tourism
- Conservation
- Forestry
- Irrigation and dry-land.

## 6.2 Development Alternatives

A number of alternative options have been evaluated during the mine design. A high-level qualitative risk assessment was performed to determine the most preferred option from an environmental perspective.

The Bellevue Project footprint is in an environmental and ecological sensitive area and therefore the necessary diligence will be exercised when considering the final location, placement and orientation of the mine infrastructure and beneficiation plant. The following salient factors will be considered during the design and placement of the facilities:

- Energy efficiency
- Impacts of environmental conditions such as prevailing winds, dust and sun with respect to infrastructure placement



- Flood and rainfall immunity levels
- Water recycling and reuse

## 7 STAKEHOLDER ENGAGEMENT

### 7.1 Introduction

Public participation provides the opportunity for IAPs to participate on an informed basis, and to ensure that their needs and concerns are considered during the impact assessment process. In so doing, a sense of ownership of the project is vested in both the project proponent and interested or affected parties. The Public Participation Process is aimed at achieving the following:

- Provide opportunities for IAPs and the authorities to obtain clear, accurate and understandable information about the expected environmental and socioeconomic impacts of the proposed development;
- Establish a formal platform for the public with the opportunity to voice their concerns and to raise questions regarding the project;
- Utilise the opportunity to formulate ways for reducing or mitigating any negative impacts of the project, and for enhancing its benefits;
- Enable project proponent to consider the needs, preferences and values of IAPs in their decisions;
- Clear up any misunderstandings about technical issues; and
- Provide a proactive indication of issues which may inhibit project progress resulting in delays, or which may result in enhanced and shared benefits.

### 7.2 IAP Notification and Consultation – Scoping Phase

Activity	Details	Reference in Scoping Report
Identification of stakeholders	Development of stakeholder database, that includes IAPs from various sectors of society, including organs of state, local government, directly affected landowners, regional landowners, land claimants and communities.	Appendix A1 IAP Database

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<b>Activity</b>	<b>Details</b>	<b>Reference in Scoping Report</b>
Distribution of Background Information Documents	BID is continuously emailed, posted, hand-delivered to stakeholders that register.	Appendix A2 BID
Displaying site notices in and around the project area	A site notice was placed at the entrance to the proposed project area.	Appendix A3 Site Notices
Newspaper advertisements to announce the project	An advertisement was published in local newspaper (Barberton Times) on 13 November 2013.	Appendix A4 Copy of the advertisement
Registration and comment sheets	Registration and written comments were invited. Each written response has or is in the process of being responded to.	Appendix A5 Registration Forms / Written submissions and Responses
Obtained comments from stakeholders	Comments, issues of concern and suggestions received from stakeholders will be captured in a Comment and Response Report. No written comments have been received to date	
Announcing the availability of the Scoping Report	The Scoping Report will be made available to registered I&APs for 30 calendar days for comment to all registered IAPs.	

## **8 PLAN OF STUDY FOR EIA**

In this part of the document a description is given of the steps to be taken as part of the Environmental Impact Assessment process.

### **8.1 Specialist Studies**

The following specialist studies have been identified as part of the Environmental Impact Assessment phase of this project:

#### **8.1.1 Soil, Land use and capability**

To perform the necessary soil impact assessment required to support the applications, including:

- Detail soil, land use and land capability mapping
- Potential impact and quantification thereof (as far as possible) on soils, land use and land capability
- Recommendations for mitigation measures to reduce the identified impacts
- Conceptual rehabilitation plan based on soil types

#### **8.1.2 Biodiversity**

The proposed Biodiversity Impact Assessment Plan of Study is as follows:

- Undertake one field assessment site visit and compile detailed species lists (fauna & flora) using appropriate sampling methodology across affected communities.
- Identify protected and listed species.
- Assessment of vegetation communities and conservation status (PES /EIS), ecosystem services and processes and ecological sensitivity analysis based on available relevant Regional Planning Biodiversity Frameworks.
- Identify and map conservation areas / initiatives, including biosphere reserves, parks/game reserves, important bird areas, biodiversity programmes, etc.
- Compile a sensitivity map of vegetation communities incorporating the above.
- Assess potential impact and quantification thereof (as far as possible) on the above.
- Recommend appropriate mitigation measures to reduce the identified impacts.

- Identify any gaps in knowledge that can be translated to so called 'red-flags' or risks for the activity if necessary, and identify potential additional study requirements if necessary.
- Identify legal (permitting) requirements.

### **8.1.3 Surface Water**

The main objective of the Surface Water Impact Assessment is to develop a storm water management strategy that would separate clean water and dirty water and control polluted water sources for the life of the project. The mine closure systems are not considered at this stage of the project.

The storm water management strategy will conform to the requirements in the applicable legislation (i.e. the National Water Act and Government Notice GN704 as described in Section 2 of this report). In addition, the methodologies and systems described in DWA's Best Practice Guidelines will be applied, where applicable.

Flood-zones for the 1:100 year return period will be determined and indicated on the infrastructure layout maps. This will only be done after the infrastructure footprints have been made available in order to identify the relevant affected streams.

The surface water assessment will include proper engineering principles by providing conceptual designs of mitigation measures to ensure that the impact of the mining activity on the environment is limited to designated areas. This will include the provision of lined pollution control dams to contain dirty water. Clean water streams will be diverted by canals and berms to natural water courses and storm water control dams. The conceptual designs are also dependant on the availability of the infrastructure layouts.

The surface water plan will incorporate guidelines to implement preventative measures in the case of extreme flood events exceeding the 1:50 year recurrence period.

During the initiation phase of the study, baseline water quality samples will be obtained for further inclusion into the water quality monitoring plan, still to be developed. The monitoring will be done on a monthly basis and results will be captured to be incorporated into a quarterly report over the lifespan of the project,

which will provide a real time reflection/indication of the activities impacting on the surface water environment. It is however of importance that the monitoring points are only selected after the infrastructure layout plan is available to identify the correct and representative sampling point.

#### **8.1.4 Groundwater**

Tasks to be performed for the detailed EIA/EMP phase will include:

- Confirm the location and use of all groundwater abstraction systems i.e. boreholes, springs, caissons and well-points within a radius of 5km of the mining and infrastructure footprint
- Define the aquifer characteristics and develop a conceptual model of the groundwater regime.
- Set up a numerical groundwater model based on the conceptual model developed.
- Model the impact of mining on the groundwater system, determining inflows to the pits and water level variations over the life of mine.
- Determine the groundwater/surface water interaction with specific reference to the Sand River and the interaction with the alluvial aquifer.
- Conduct a risk assessment of the impacts.
- Recommendations for the implementation of a monitoring system.
- Set up an environmental management plan for groundwater with recommendations for mine closure.
- Cross-referencing with other specialists to evaluate impacts in terms of community health, downstream users, vegetation, agriculture and future projects.

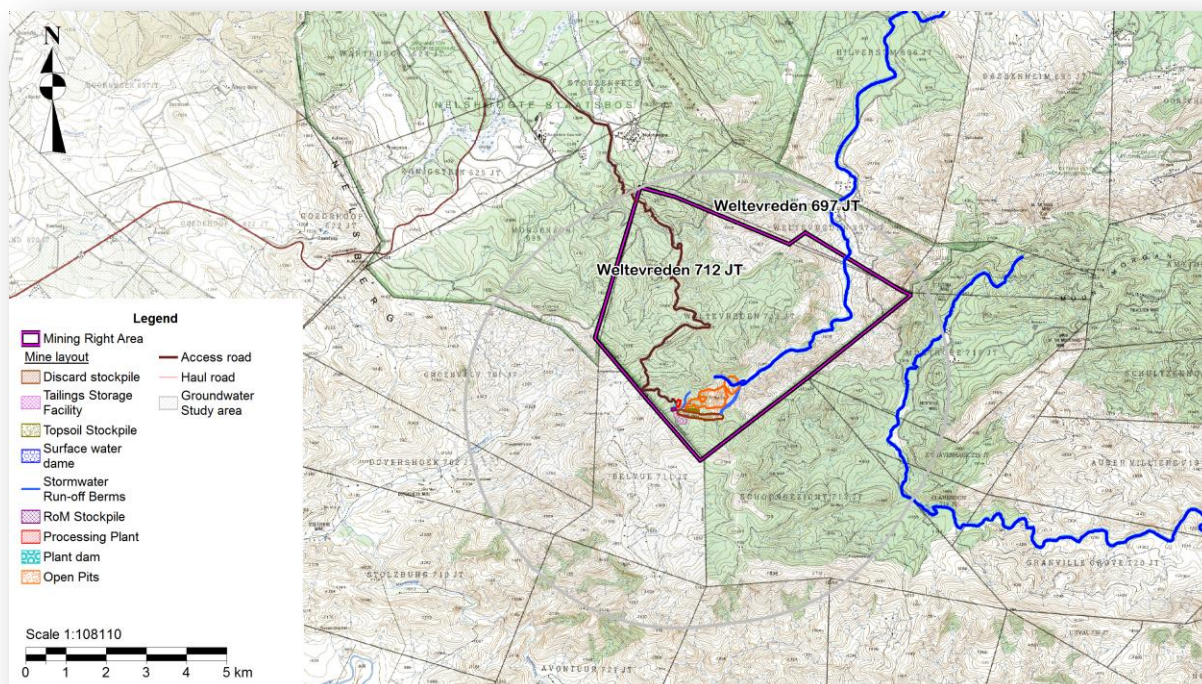


Figure 8-1: Groundwater Study area

### 8.1.5 Heritage and Culture Resource Impact Assessment

The proposed Plan of Action is guided by the NHRA No 25 of 1999. Apart from setting the thresholds for the HIA processes, Section 38 of the National Heritage Resources Act under Subsection 3 also provides a checklist of things that must be done in an HIA process. Section 38(3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:

- The identification and mapping of all heritage resources in the area affected;
- An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;
- An assessment of the impact of the development on such heritage resources;
- An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
- The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;

- If heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
- Plans for mitigation of any adverse effects during and after the completion of the proposed development.

In light of the above the next phase of the HIA will be structured as follow:

- Identification and contacts with potential informants
- Interview of informants and site visits
- Ground reconnaissance to identify/confirm heritage sites
- Documentation of sites
- Final assessment of potential impacts
- Mapping of sites that will be affected by the development (if necessary)
- Compilation of Phase 1 HIA report for submission to SAHRA / LIHRA

#### **8.1.6 Socio-Economic Impact Assessment (SEIA)**

Socio-economic impacts can be defined 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 physical reality, while other social impacts are perceptual or emotional.” (Vanclay, 2002)

The overall objectives of the socio-economic impact assessment are as follows:

- Understanding the spatial context of the area and mine surroundings;
- Becoming aware of the on-mine constraints and opportunities;
- Develop a baseline socio-economic profile of the primary, secondary and tertiary study areas;
- Determine positive and negative socio-economic impacts of the proposed project on the local and regional context, as well as during construction, operation and decommissioning phases; and
- Propose mitigation measures to reduce the expected negative effects and enhance positive impacts.

The SEIA study approach is proposed to be the following:

- Step 1: Orientation and scoping
- Step 2: Socio-economic profile development
- Step 3: Project description and interpretation
- Step 4: Social Impact Assessment
- Step 5: Interpretation
- Step 6: Ranking and recommendations

## **8.2 Risk Assessment Methodology**

Risk is a combination of the probability, or frequency of occurrence of a hazard and the magnitude of the consequence of the occurrence (Nel 2002). Risk estimation (RE) is concerned with the outcome, or consequences of an intention, taking account of the probability of occurrence and can be expressed as  $P$  (probability)  $\times$   $S$  (severity) = RE. Risk evaluation is concerned with determining significance of the estimated risks and also includes the element of risk perception. Risk assessment combines risk estimation and risk evaluation (Nel 2002). The risk assessment methodology that will be used during the EIA Phase to estimate the risk and determine the impact significance is tabled overleaf.

## **8.3 Risk Assessment Methodology**

Risk is a combination of the probability, or frequency of occurrence of a hazard and the magnitude of the consequence of the occurrence (Nel 2002). Risk estimation (RE) is concerned with the outcome, or consequences of an intention, taking account of the probability of occurrence and can be expressed as  $P$  (probability)  $\times$   $S$  (severity) = RE. Risk evaluation is concerned with determining significance of the estimated risks and also includes the element of risk perception. Risk assessment combines risk estimation and risk evaluation (Nel 2002).

The risk assessment methodology that will be used during the EIA Phase to estimate the risk and determine the impact significance is tabled overleaf.



# BELLEVUE PROJECT: SCOPING REPORT

**Table 8-1: Impact Rating methodology**

DURATION					
Short term	6 months				1
Construction	36 months				2
Life of project	50 years				3
Post Closure	Post closure or during decommissioning and downscaling				4
Residual	Beyond the project life				5
EXTENT					
Site specific	Site of the proposed development				1
Local	Farm and surrounding farms				2
District	Musina Local Municipality				3
Regional	Vhembe District Municipality				4
Provincial	Limpopo Province				5
National	Republic of South Africa				6
International	Beyond RSA borders				7
PROBABILITY					
Almost Certain	100% probability of occurrence – is expected to occur				5
Likely	99% - 60% probability of occurrence – will probably occur in most circumstances				4
Possible	59% - 16% chance of occurrence – might occur at some time				3
Unlikely	15% - 6% probability of occurrence – could occur at some time				2
Rare	<5% probability of occurrence – may occur in exceptional circumstances				1
SEVERITY					
Critical	Total change in area of direct impact, avoidance or replacement not an option, detrimental effects, huge financial loss				5
Major (High)	> 50% change in area of direct impact, relocation required and possible, extensive injuries, long term loss in capabilities, off-site release with no detrimental effects, major financial implications				4
Moderate (medium)	20 – 49% change, medium term loss in capabilities, rehabilitation / restoration / treatment required, on-site release with outside assistance, high financial impact				3
Minor	10 – 19% change, short term impact that can be absorbed, on-site release, immediate contained, medium financial implications				2
Insignificant (low)	< 10 % change in the area of impact, low financial implications, localised impact, a small percentage of population				1
RISK ESTIMATION (Nel 2002)					
RE (Risk Estimation) = P (Probability) X S (Severity)					
	SEVERITY				
PROBABILITY	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Critical (5)
Almost certain (5)	L 5	M 10	H 15	VH 20	VH 25
Likely (4)	L 4	M 8	H 12	H 16	VH 20
Possible (3)	L 3	M 6	M 9	H 12	H 15
Unlikely (2)	VL 2	L 4	M 6	M 8	M 10
Rare (1)	VL 1	VL 2	L 3	L 4	L 5

VH	Very High – immediate action required, Countermeasures and management actions to mitigate risk must be implemented immediately, alternatives to be considered	20 – 25
H	High risk – specific management plans required, determine if risk can be reduced by design and management in planning process, if cannot, alternatives to be considered, senior management responsibility	12 – 16
M	Moderate risk – management and monitoring plans required with responsibilities outlined for implementation, middle management responsibility	6 – 10
L	Low risk – management as part of routine requirements	3 – 5
VL	Very Low risk – no management required	1 - 2
<p>Mitigation - The impacts that are generated by the development can be minimised if measures are put in place to reduce them. These measures are mitigation measures to ensure that the development takes into consideration the environment and the impacts that are predicted so that development can co-exist with the environment as a basis for planning.</p>		
<p>Determination of Significance; without mitigation - Significance is determined through a synthesis of impact characteristics as described in the above paragraphs. It provides an indication of the importance of the impact in terms of both tangible and intangible characteristics. The significance of the impact “without mitigation” is the prime determinant of the nature and degree of mitigation required.</p>		
<p><b>IMPACT SIGNIFICANCE</b></p>		
<p>IS (Impact Significance) = D (Duration) + E (Extent) + S (Severity) X P (Probability)</p>		
Insignificant	The impact is non-existent or insubstantial, is of no or little importance to any stakeholder and can be ignored.	
Low	The impact is limited in extent, even if the intensity is major; whatever its probability of occurrence, the impact will not have a significant impact considered in relation to the bigger picture; no major material effect on decisions and is unlikely to require management intervention bearing significant costs.	
Moderate	The impact is significant to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.	
High	The impact could render development options controversial or the entire project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in project decision-making.	
Very high	Usually applies to potential benefits arising from projects.	
<p>Determination of Significance; with mitigation - Determination of significance refers to the foreseeable significance of the impact after the successful implementation of the necessary mitigation measures.</p>		

## 8.4 Public Participation

The fundamental objectives of the public participation process are to:

- Meet legal and formal requirements;
- Identify public concerns and values;
- Improve decision-making. Public involvement can often produce better “technical decisions” than a strictly technically oriented decision process;
- Establish and maintain good relationships with IAPs;
- Provision of information throughout the process;
- Find and build common ground and move from extremes; and

## BELLEVUE PROJECT: SCOPING REPORT

- Stimulate two-way engagement on specific issues. In many cases, not everybody needs or wants to be involved in every issue all of the time. Most people are partially involved, but these people should not be kept informed of these issues.

The following methods will be utilised throughout the Public Participation process:

- Compilation of a Background Information Document;
- Placement of Advertisements and Notices;
- Public Open day
- Availability of documents for public comment

## 9 REFERENCES

Umjindi Municipality 2013-14 IDP

Census 2011, Statistics South Africa

[http://www.mpumalanga-happenings.co.za/barberton\\_geology.htm](http://www.mpumalanga-happenings.co.za/barberton_geology.htm)

[http://www.saexplorer.co.za/south-africa/climate/barberton\\_climate.asp](http://www.saexplorer.co.za/south-africa/climate/barberton_climate.asp)

<http://www.mountainlands.co.za/barberton.aspx>

[http://www.protectedplanet.net/sites/Queensriver\\_Primary\\_Conservation\\_Area/species](http://www.protectedplanet.net/sites/Queensriver_Primary_Conservation_Area/species)

Barberton/Makhonjwa Mountain Land, World Heritage Site, Tentative List Submission, November 2007

**10 IDENTIFICATION OF THE REPORT**

Herewith I, the person whose name and identity number is stated below, confirm that I am the person authorised to act as representative of the applicant in terms of the resolution submitted with the application, and confirm that the above report comprises the results of consultation as contemplated in Section 16 (4) (b) or 27 (5) (b) of the Act, as the case may be.

Full Names and Surname	
Identity Number	
Signature	



# Appendix A: Public Participation Documents





## Appendix A1: IAP Database



Organisation	Type	Address	Tel No.	Fax No.	Cellphone	Email
Agri SA	Authorities	Private Bag X180 Centurion, 0045	012 322 6980	012 320 0557	0726922857	
Agricultural Research Council (ARC)	Authorities	P.O. Box 8783, Pretoria, 0001,	012 310 2561	012 323 1157	0727939692	althea@arc.agric.za
Agricultural Research Council (ARC)	Authorities	P.O. Box 8783, Pretoria, 0001,	012 808 8149	012 808 8299	0823368337	LotterL@arc.agric.za
Agricultural Research Council (ARC)	Authorities	P.O. Box 8783, Pretoria, 0001,	012 310 2686	012 323 1157	0845569861	
Belt 11	Neighbour				0735841011	
Belt 7	Neighbour				0823741535	
Chemicals and Waste Management	Authorities	Private Bag X447, Pretoria	0123103391	0123221936		Anaino@environment.gov.za
Chemicals and Waste Management:	Authorities	Private Bag X447, Pretoria	0123103391	0123221936		iabader@environment.gov.za
Acting Deputy Director-General	Authorities	Private Bag x 11219, Nelspruit, 1200		013 755 1961	0721301204	FransMas@nda.agric.za
Department of Agriculture (DoA)	Authorities	Private Bag x 11219, Nelspruit, 1200	013 755 1420	013 755 1961		RiaN@nda.agric.za
Department of Agriculture (DoA)	Authorities	Private Bag x 11219, Nelspruit, 1200		012 329 5938	0823338508	lydiab@nda.agric.za
Department of Agriculture (DoA):	Authorities	Private Bag X447, Pretoria	012 310 3606			
Landcare Programme	Authorities	Private Bag X447, Pretoria	012 310 3366	012 320 4740	0839689809	
Department of Environmental Affairs	Authorities	Private Bag X447, Pretoria	012 310 3919	012 322 6426 / 086 694	0826430623	
Department of Environmental Affairs	Authorities	Private Bag X447, Pretoria		2550		StanleyT@deat.gov.za
Department of Mineral Resources	Authorities	Province Building, Cnr Botha / Paul Kruger	0136561448	0136903288	0714768349	
Department of Mineral Resources	Authorities	Province Building, Cnr Botha / Paul Kruger	0136561448	0136903288		
Department of Mineral Resources	Authorities	Private Bag X 11302 NELSPRUIT	0136560500	0136903288	0714758354	Matsihlele.Ramovha@dmr.gov.za
Department of Public Works, Roads and Transport	Authorities	Private Bag X 11302 NELSPRUIT	013 766 8347			nnaidoo@mpg.gov.za
Department of Public Works, Roads and Transport	Authorities	Private Bag X 11302 NELSPRUIT	0137668515	0866246750		splenaar@mpg.gov.za
Department of Public Works, Roads and Transport	Authorities	Private Bag X 11302 NELSPRUIT	0137668516	0866246751		rpillay@mpg.gov.za
Department of Water Affairs	Authorities	Private Bag X313, Pretoria	0123367663	0123366608	0739322061	DuPlessisV@dwa.gov.za
Department of Water Affairs	Authorities	Private Bag X313, Pretoria	0123367663	0123366608		MeulenbeldP@dwa.gov.za
Department of Water Affairs	Authorities	22 Rooth Street, Bronkhorstspuit	0139322061		0720113012	
Department of Water Affairs	Authorities	22 Rooth Street, Bronkhorstspuit	0139322061		0826080080	mautjana@dwa.gov.za
Department of Water Affairs	Authorities	22 Rooth Street, Bronkhorstspuit	0139322061			maceveles@dwa.gov.za
Department of Water Affairs	Authorities	22 Rooth Street, Bronkhorstspuit	013 712 4508		0837706362	tonyferrari@lantic.net
Development Planner	Authorities	PO Box 678, Barberton 1300	0130906911	0136906207	0723762581	siphomsk@gmail.com
Emalaheni Local Municipality	Authorities	PO Box 1 Wtbank		086 6139622	0723762581	ursulaf@ewt.org.za
Endangered Wildlife Trust (EWT)	Authorities	Postnet Suite 1791 Ermelo	017 811 2817	0865146085	0833328859	d.zoekop@lando.co.za
Endangered Wildlife Trust (EWT)	Authorities				0839864400	
Federation for Sustainable Environment	Authorities					
Goedehoop	Neighbour				0826964614	
Mpumalanga Department of Agriculture & Land Administration	Authorities	Private Bag x 11219, Nelspruit, 1200		013 766 9655		AMadonsela@mpg.gov.za
Mpumalanga Department of Agriculture & Land Administration	Authorities	Private Bag x 11219, Nelspruit, 1200	013 766 6089	013 766 8437	0827764784	smaluleka@mpg.gov.za
Mpumalanga Department of Economic Development Environment and Tourism	Authorities	Cnr Rosmead and Ryna Street, Klipfontein	013692 7934	0866953928		cnmthmunye@mpg.gov.za

Organisation	Type	Address	Tel No.	Fax No.	Cellphone	Email
Mpumalanga Department of Economic Development Environment and Tourism	Authorities	Cnr Rosmead and Ryna Street, Klipfontein, Witbank, 1035	013 6920357	013 766 4614		mmseshweni@mpg.gov.za
Mpumalanga Department of Economic Development Environment and Tourism	Authorities	Cnr Rosmead and Ryna Street, Klipfontein, Witbank, 1035	013 6920359	013 766 4614		
Mpumalanga Department of Education	Authorities	Private Bag X11343, Nelspruit, 1200	013 766 5196	013 766 8256	0824070842	r.mazibuko@education.co.za
Mpumalanga Heritage Resources Authority	Authorities	Government Boulevard, Riverside Park, Nelspruit				bmaduka@nel.impu.gov.za
Mpumalanga Heritage Resources Authority	Authorities	Building 5, Government Complex, 7 Government Boulevard, Riverside Park, Nelspruit	013 766 5231 / 5070	013 766 5591	0725118140	
Mpumalanga Tourism and Parks Agency (MTPA)	Authorities	P Bag X11338, Nelspruit, 1200	0137595300	013 262 4858		dlyzwane@mpg.gov.za
Mpumalanga Tourism and Parks Agency (MTPA)	Authorities	P Bag X11338, Nelspruit, 1200	0137595300	013 254 0279		nilecrocs@mwweb.co.za
Mpumalanga Tourism and Parks Agency (MTPA)	Authorities	P Bag X11338, Nelspruit, 1200	013 235 2395	013 235 2741	0832997618	franskriige@telkomsa.net
Nelshoogte Plantation	Business					Mervyn@mtpa.co.za
Nkomasi Wilderness	Neighbour				0836054323	cfoster@klf.co.za
Running Waters	Neighbour				0824498869	
Sappi Forests: Doyershoek	Neighbour				0836015248	

# Appendix A2: Background Information Document





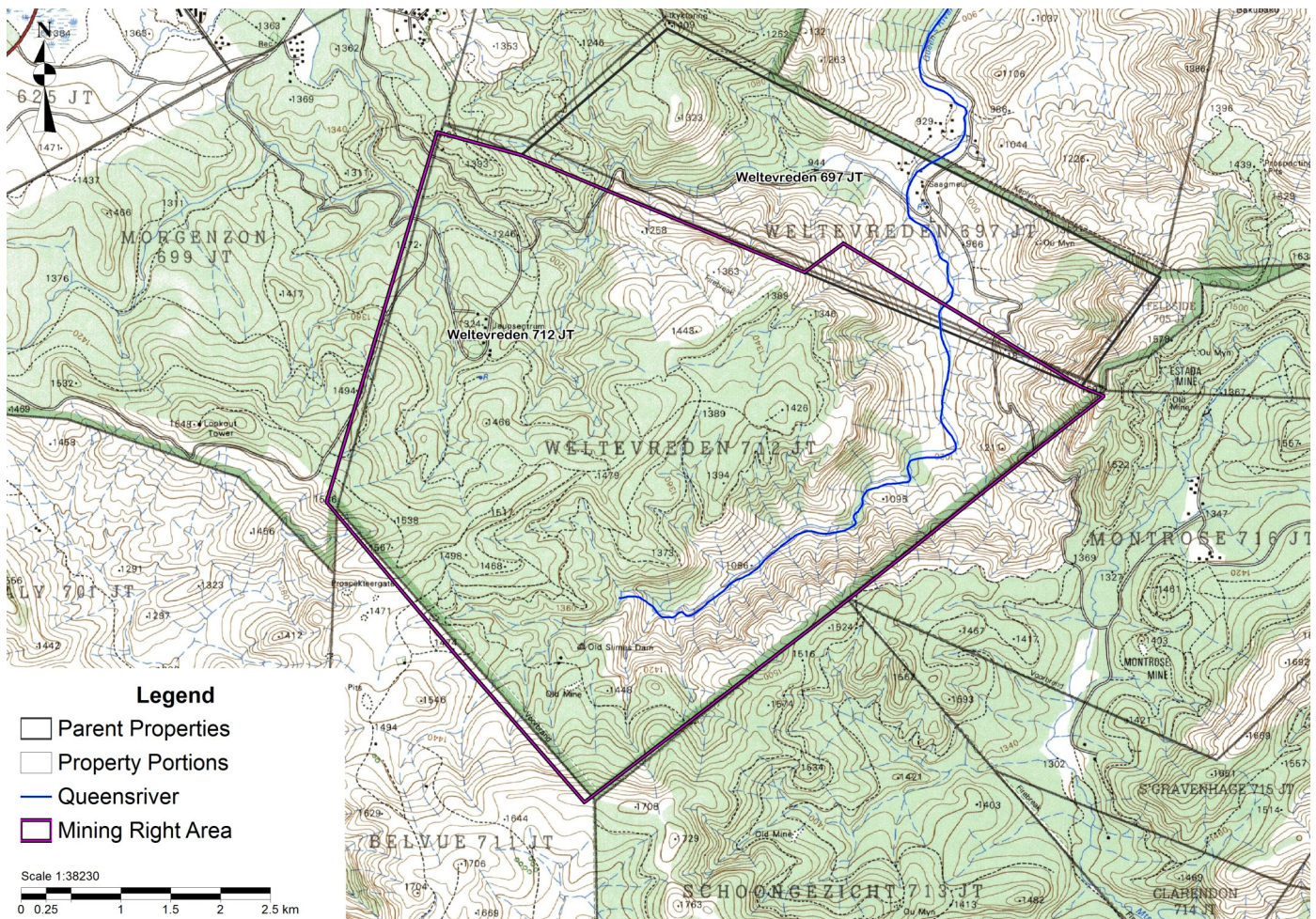
# Proposed Bellevue Mine

## MINING RIGHT APPLICATION

REFERENCE NUMBER: MP30/5/1/1/2/03PR

### BACKGROUND INFORMATION DOCUMENT

The Bellevue Gold Project is located in the Masase Mining (Pty) Ltd obtained the district of Barberton in the Mpumalanga Prospecting Right for the properties Province of South Africa ("SA"), Weltevreden 697 JT (Portion 1) and approximately 370 km east of Weltevreden 712 JT and has now Johannesburg and 25 km southwest of the submitted a Mining Right for the area. The town Barberton in the Mpumalanga Mining Right has been accepted by the Department of Mineral Resources on 17 October 2013.





## PROJECT DESCRIPTION

The area covered by the mining right application include two farms (with total extent of 2809.4ha). The Bellevue Project footprint is located at the southern corner of the property and covers an area of 67.6ha for mining and infrastructure development.

The Bellevue Project has the potential to produce good quality gold ore with possible by-products of Copper, Silver, Cobalt and Antimony.

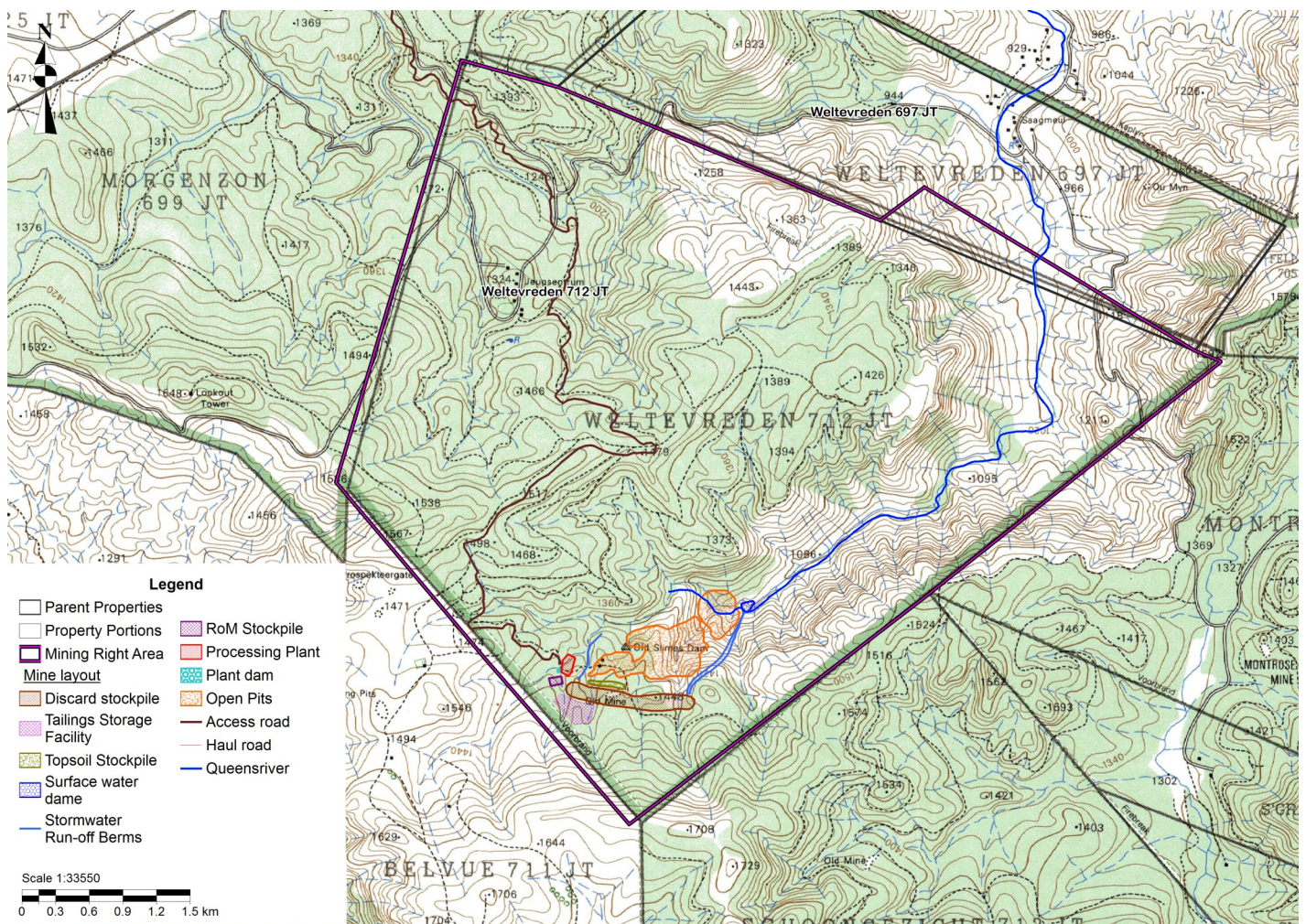
The Bellevue project is situated in the south-western portion of the Barberton Greenstone

Belt ("BGB"). The ore body dips to the north at a steep (75°) angle..

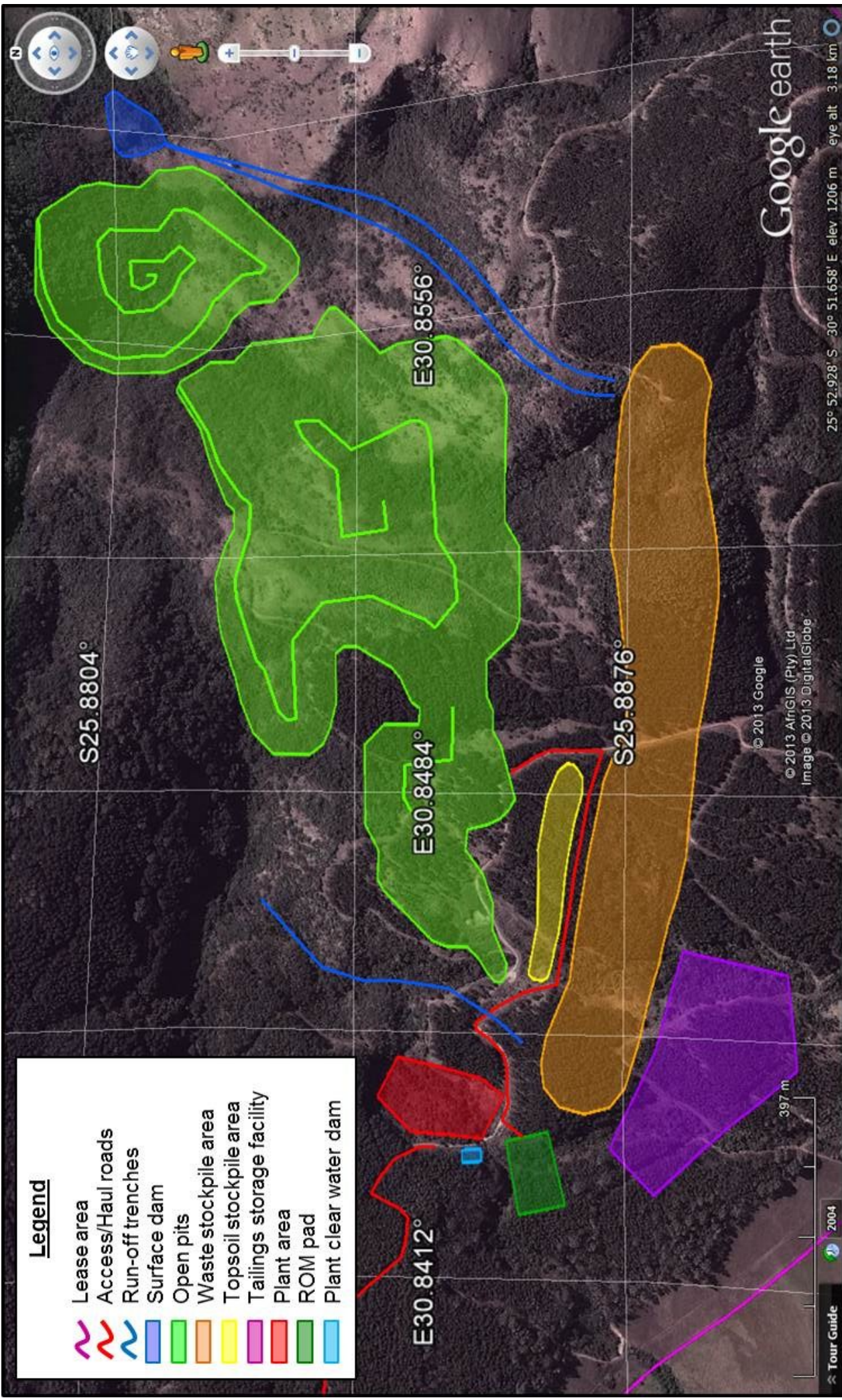
It is estimated that in most instances it is mineable to a depth of 250 m through open cut methods.

Based on current information the Bellevue mine resources is approximately 36, 180 kg gold content in 16.27 tonnes of reef processed.












The current planning is that construction and mining will commence at central open pit first, followed by the eastern pit. The life of mine is expected to be 28 years.







**Legend**

-  Lease area
-  Access/Haul roads
-  Run-off trenches
-  Surface dam
-  Open pits
-  Waste stockpile area
-  Topsoil stockpile area
-  Tailings storage facility
-  Plant area
-  ROM pad
-  Plant clear water dam



## ENVIRONMENTAL IMPACT ASSESSMENT AND MANAGEMENT PROGRAMME

Environmental management in the mining sector is currently regulated mainly by the MPRDA. Every applicant who has applied for a mining right in terms of Section 22 must conduct an EIA and submit an EMP for approval. The MPRDA allows 180 days (6 months) for this process to be completed.

Many of the ancillary activities required for mining operations (such as the construction of pipelines or roads) may also require environmental authorisation under the National Environmental Management Act 107 of 1998 (NEMA) EIA Regulations. In addition, many activities will also trigger a requirement for water use authorisation in terms of the National Water Act 36 of 1998.

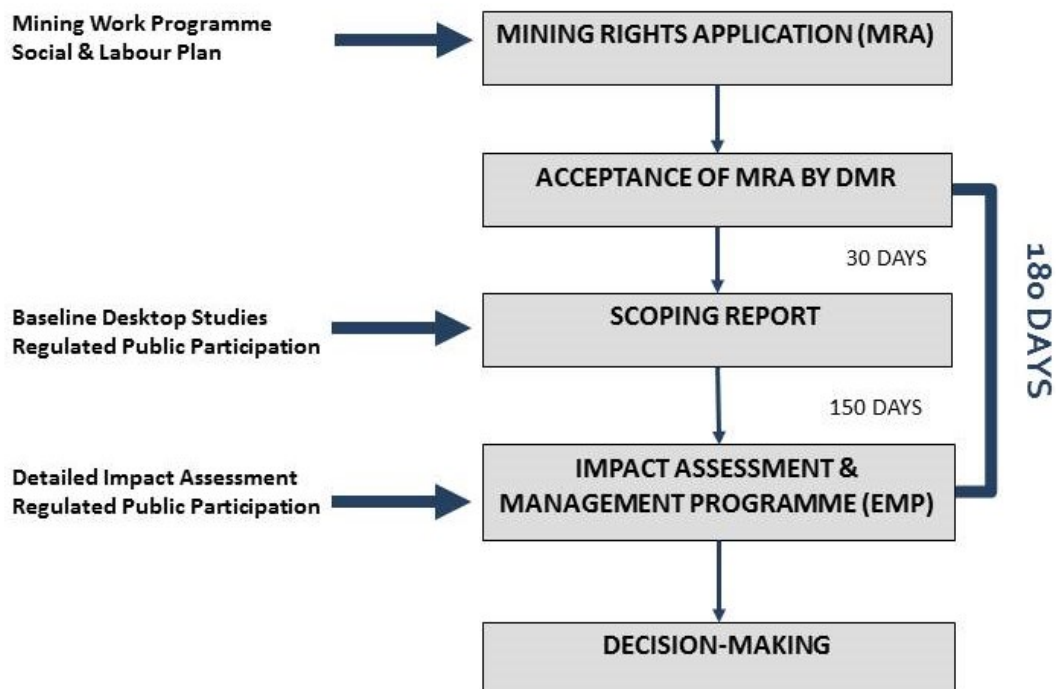
The approach for the Bellevue Project is to first apply for a Mining Right and follow the required Regulations in conducting the EIA and compile an EMP in terms of the MPRDA.

Once this process is completed and Masase Mining has obtained further detail in respect of its planned development, the applications for environmental authorisation in terms of NEMA and an Integrated Water Use License (IWUL) in terms of NWA will be conducted as separate processes.

It is important to note that the construction and mining activities cannot commence without compliance to all the legislative requirements and before all the necessary permits / licences are in place.

The EIA process in terms of the MPRDA requires the preparation of a Scoping Report within 30 days and an EIA/EMP Report within a further 150 days.

The coordination and management of the EIA process is done by an Independent Environmental Assessor (EA), Naledi Development (with appointed specialists).





## **PUBLIC PARTICIPATION**

The Public Participation Process is a process in which IAPs are given an opportunity to comment on, or raise issues relevant to the mining activities and / or the EIA process.

Please ensure that you are registered as an Interested and Affected Party by completing the registration form attached.

### **Responsibilities of IAP**

- Register or ensure you are registered as an IAP
- Inform others whom you think may be interested and/or affected by the proposed project, and encourage them to register
- Ensure comments are submitted within the allowed timeframes and received by the Public Participation Office
- Contributing information and/or knowledge of the environment
- Provide comments on the proposed Bellevue project
- Attend meetings scheduled throughout the process to participate and access information

### **Our Responsibilities as Consultants**

The following actions will be taken upon receiving any comments/inputs/issues:

- The contact details provided by you will be entered into the project database and you will be sent all further public notices and documents
- If you send us queries or comments, we will respond in writing to you
- If you call us, we will record your details and queries / comments. Should we not be able to answer your questions at that moment, we will provide an official response as soon as the information has been made available to us.

As registered Interested and Affected Parties the following opportunities will exist to participate in the process:

- Registration
- Public Comment period on the Scoping Report
- Public Open Day
- Public Comment period on the EIA/ EMP Report



## **Your registration as an IAP and comment is important**

The purpose of the EIA is to provide the authorities with sufficient information on which to base a decision on whether to grant environmental approval to the proposed project or not, and if yes, under which conditions. The contributions of stakeholders from all sectors of society will assist in informed decision-making. Naledi invites all stakeholders to participate freely, and to submit any comments or information they feel may be useful. Address details appear below.

**Naledi Development (Pty) Ltd**  
Public Participation Manager: Lizinda Dickson  
Tel: 012 543 9093 Fax: 012 543 9610  
Email: Lizinda@naledidev.co.za



# Bellevue Project - Registration Form

November 2013

This form must be filled in by all persons wishing to be registered as an Interested and Affected Party on the Bellevue Project. This form should be faxed back to the Public Participation Manager and/or Administrator.

## REGISTRATION:

Title:  Initials:  Surname:

Organization / Firm:

Position / Nature of involvement

Street address:

Postal address:

Work tel:  Work fax:  Cell:

Home tel:  Email:

## COMMENTS / QUESTIONS:

<p>1. What potential impacts do you foresee including any issues / concerns regarding the project?</p>	<p><i>Please feel free to attach a separate document</i></p>
--	--

<p>2. Do you have any direct business, financial, personal or other interests in the approval or refusal of an application</p>	<p>Yes</p>	<p>No</p>	<p>If yes, specify below</p>

<p>3. Are there any role-players that you feel we should consult with (please state their names and contact details)?</p>	<p>Initials &amp; Surname</p>	
	<p>Organisation</p>	
	<p>Contact number / email</p>	
	<p>Interest</p>	

<p>Signature</p>	<p>Date</p>
------------------	-------------

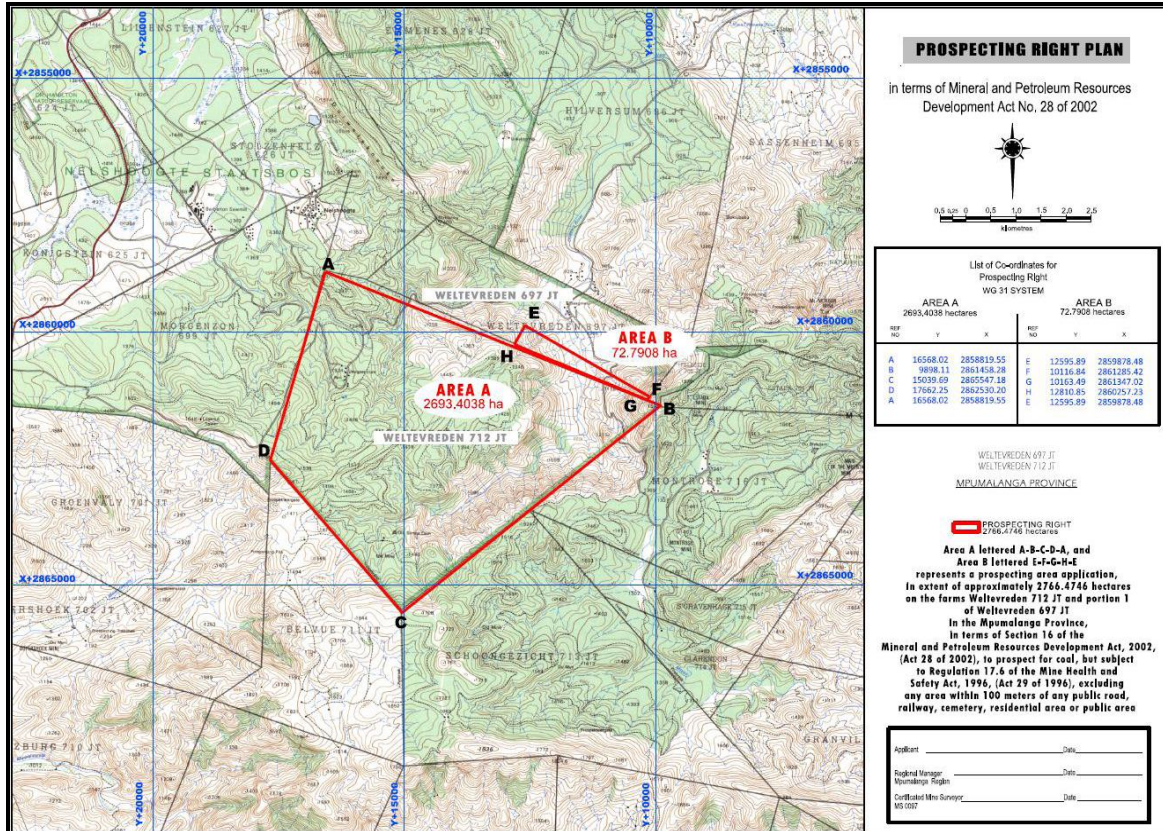
## Appendix A3: Site Notice



**NOTICE OF THE ACCEPTANCE OF A MINING RIGHT APPLICATION  
PUBLIC PARTICIPATION PROCESS**

**DMR Reference No: 30/5/1/1/2/10084 MR**

**Location:** The Bellevue Gold Mining Project is situated 16 km south-west of the town Baberton in the Umjindi Municipal area, Mpumalanga Province. The project is located on Weltevreden 712 JT and Portion 1 of Weltevreden 697 JT).



**Notice** is hereby given of a public participation process in terms of the Mineral and Petroleum Resource Development Act, 2002 (Act No. 28 of 2002) ("MPRDA")

**Applicant:** Masase Mining (Pty) Ltd

**Description:** Masase Mining (Pty) Ltd lodged an application for a New Order Mining Right with the Department of Mineral Resources The Bellevue Gold Mining Project will be a mining operation with an estimated gold production of 408 kgs per annum and a life of mine of 27 years.

**Opportunity to participate:** Interested and Affected Parties (IAPs) are invited to register and provide written comments. IAPs should refer to the reference numbers above, and must provide their comments with their name, contact details (preferred method of notification, e.g. email address or fax number) and an indication of any direct business, financial, personal or other interest which they have in the application to the contact person indicated below. A Background Information Document ("BID") is available on request.

For more information contact: Mrs Lizinda Dickson, Naledi Development (Pty) Ltd, PO Box 13509.

Tel: 012 543 9093, Fax : 012 543 9610, Email : Lizinda@naledidev.co.za



At the entrance gate to the Nelshoogte Forestry Station



## Appendix A4: Advertisement



Take note

Bingo drive at Bobs Centre on Wednesday November 13. All senior citizens welcome to come and join in the fun.



- Barberton Photographic Club meets on November 13 from 18:00 at the offices of Bosua & Cornelissen. Everyone interested in photography are welcome to attend. The challenge for this month is "yellow". Enquiries: Herman Bosua on 013-712-2139. Sopkombuis elke Vrydag vanaf 09:00 by Laeveld Smous in Crownstraat. Navrae: Verona by 073-390-2007. The Barberton AI-Anon group provides confidential support for the family and friends of problem drinkers, gamblers and drug addicts. Enquiries: 013-712-2503, 084-463-9966, 083-358-3550 or 076-145-6045.

Letters must be addressed to the editor at 72 Crown Street Barberton, 1300 or faxed to 013-712-6638 or emailed to editor@barbertontimes.co.za. Letters must be limited to 200 words and the editor reserves the right to edit and shorten. A writer may use the pseudonym but full details and telephone numbers must accompany the letter in order to be published.

Local SPCA's wagging tails show their gratitude

Marlies Liebenberg

If you want to bring happiness to dogs that are stray, have been abandoned or given away by owners who can no longer care for them, visit the kennels of the SPCA where, thanks to the kindness and dedication of very special people, these animals do not have to spend their days "behind bars" anymore.

Permission was given by the landlord, Cas du Preez, to extend the fence to create three separate runs at the back of the enclosure where impounded dogs can spend their day outside and only return to their respective kennels at feeding and sleeping time.



The SPCA sincerely appreciates this gesture from these companies

This freedom vastly reduces kennel stress and allows for exercise and socialisation between the animals. In order to get these runs erected, the public people became involved.

Animal champion number one is the well-known Bruce Robson who is Barberton's local fencing expert.

Robson and his team worked miracles to obtain material and do the construction in record time. Barberton SPCA cannot thank him enough for the effort they've put in.

The staff and the dogs are in his debt. He also involved former resident Edgar Rudge, who was only too willing to help with poles and material needed, a welcome donation. Robson then brought the SPCA in contact with yet another animal hero, Brandon Miller of Obaro, and within a day Miller had organised donations of the nine rolls of mesh needed for the runs from Obaro and two of its suppliers, Mpumalanga Discount

Materials and Transvaal Gate. The SPCA sincerely appreciates this gesture from these companies and wants to extend a special thank you to Miller for caring about these homeless dogs and bringing joy into their lives.

With the sponsorship of paint from NTT Toyota and Sturgeons Hardware, the kennels and buildings have a coat of fresh paint and now have a brighter and more inviting exterior.

The SPCA again thanks all of these wonderful people and businesses for their support - you are the best!

There are still some boarding kennels available for the holidays.

Dankie

Johan en Babette Feuth skryf:

Ons was in die bevoorregte posisie om 'n naweek by die Sanbonani Lodge, Hazyview te ween.

Vyf leerders van die Kalei Deo Skool het gedurende die Septembervakansie 'n konferensie aan die Vrystaat Universiteit bygewoon. Om fondse hiervoor in te samel, het een van die kinders se oupa en oma 'n naweek as prys geborg vir 'n kompetisie waarvoor daar kaartjies verkoop is.

Ons wil beide vir Johan en Chrismie Zeelie wat die prys geborg het en ook die skool bedank vir 'n wondelike, sorgvrye naweek wat ons saam met ons kinders en kleinkinders kon deel, veral hierdie besige tyd van die jaar. Die verblyf was absoluut luuks!

.online

www.barbertontimes.co.za

Top stories

- Policeman shot in apparent hit
Two young men die in accident
Getaway car didn't get far
Assault and robbery at New Hope Ministries



Vote

This week's poll question reads: Do you think there will be another civil war in Mozambique?

- 54% replied: "Yes, that is where the situation is inevitably heading."
23% replied: "No, tensions between Frelimo and Renamo will not escalate to that point."
23% replied: "I don't know."



Top view - Assault and robbery at New Hope Ministries

Adri Havenga Dis vreeslik! Shame julle, so verskriklik jammer om dit te hoor! Karin Potgieter Dit gebeur al hoe meer. Marica. Laat ons weet hoe dit met jou gaan en as jy hulp nodig het, laat weet asseblief.

Barberton Times

CONTACT NUMBERS

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editor@barbertontimes.co.za
Editorial: 072-328-7065
Classifieds: 079-960-5550
Advertising: 079-960-5550
advertising@barbertontimes.co.za
Accounts: 013-712-7329

FAX NUMBERS

013-712-6638
086-696-2865

ADDRESS

72 Crown Street
Barberton

OFFICE HOURS

Mon-Thu 08:00-16:30
Friday 08:00-16:00

MANAGEMENT

Regional Manager:
Boks Esterhuizen
Managing Director:
Irma Green
Advertising Manager:
Nadia Theron
Distribution Manager:
Monya Burger
Marketing and PR:
Linda Pieters

AFTER HOURS EMERGENCY NUMBERS

FIRE/RESCUE/WATER/ELECTRICITY
013-712-2222
013-712-8800

BARBERTON PROVINCIAL HOSPITAL
013-712-3011

MEDICLINIC
013-712-4279

SAPS EMERGENCY NUMBERS

COMMUNITY SERVICE CENTRE
013-712-2233
013-712-1465/3

LT COL LS NDOLOVU
082-448-9012

LT COL JOOS JOUBERT
082-449-0329

CONST MXOLISI NYUNDU
079-891-5068

Anti-corruption Hotline
0800-701-701

NOTICE OF THE ACCEPTANCE OF A MINING RIGHT APPLICATION PUBLIC PARTICIPATION PROCESS

DMR Reference No: 30/5/1/1/2/10084 MR

Location: The Bellevue Gold Mining Project is situated 16km south-west of the town Barberton in the Umjindi Municipal area, Mpumalanga Province. The project is located on Weltevreden 712 JT and Portion 1 of Weltevreden 697 JT.

Notice is hereby given of a public participation process in terms of the Mineral and Petroleum Resource Development Act, 2002 (Act No. 28 of 2002) ("MPRDA")

Applicant: Masase Mining (Pty) Ltd

Description: Masase Mining (Pty) Ltd lodged an application for a New Order Mining Right with the Department of Mineral Resources. The Bellevue Gold Mining Project will be a mining operation with an estimated gold production of 408kg per annum and a life of mine of 27 years.

Opportunity to participate: Interested and Affected Parties (IAPs) are invited to register and provide written comments. IAPs should refer to the reference numbers above and must provide their comments with their name, contact details (preferred method of notification, e.g. email address or fax number) and an indication of any direct business, financial, personal or other interest which they have in the application to the contact person indicated below. A Background Information Document ("BID") is available on request.

For more information contact: Mrs Lizinda Dickson, Naledi Development (Pty) Ltd, PO Box 13509, Sinoville, Pretoria, 0182. Tel: 012-543-9093, Fax : 012-543-9610, Email : lizinda@naledidev.co.za

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www.abc.org.za



PO Box 47184
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Tel: 011-444-1264/5/6
Fax: 011-447-1289

Website
cpa@printmedia.org.za



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Group editor Irma Green

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All queries on advertisements and accounts must be done in writing and must reach Lowveld Media within 14 days of publication of advertisement. Failing to do so will result in the order and advertisement being accepted as correct. No further discussions will be entered into.

Accounts strictly 30 days

Cancellations of advertisements (including reserved space) must reach Lowveld Media in writing at least 4 working days before publication date. Failing to comply, the advertiser will be held liable for the cost of the allotted space reserved.

Lowveld Media Bank Details

FNB Corporate Account Services Pretoria (CAS)
Account Name: CTP Ltd T/A Lowveld Media
Account Number: 62104927457
Branch code: 253145
Reference number: Please use your telephone number including the dialling code or your cell number (10 digits)
Fax proof of payment to: 013-755-3096

NOTICE

SERVICE CHARGE ON ARTWORK PROOF OF ADVERTISEMENTS

When advertising in any of Lowveld Media's publications, an artwork proof is sent to every client. Since we simultaneously work on numerous publications, each has certain deadlines to be adhered to, eg. for material to be handed in, design, client and production deadlines.

Upon receiving the first proof, the onus is on the client to read it and carefully check spelling, prices, dates, telephone numbers, names, etc. Due to time constraints in the printing industry, ONE HOUR is allowed per client per advertisement. ALL changes should be done after receipt of first proof. These will be done as requested and a second will sent to client. Thereafter a signature of approval is expected as it is of vital importance to continue with production.

We take no responsibility for errors after SECOND proof has been signed.

In the event of a third proof being required, a service fee of R350-00 incl VAT will be charged per advertisement per client.

Please feel free to contact us at any time. Tel: 013-754-1600



# Appendix A5: Registration Forms / Written submissions and Responses



## Lizinda

---

**From:** tonyferrar@lantic.net  
**Sent:** 13 November 2013 10:48 AM  
**To:** Lizinda@naledidev.co.za  
**Cc:** Marje Nuns  
**Subject:** Bellevue Gold Mining Project - DMR ref 30/5/1/1/2/10084 MR

**Flag Status:** Flagged

Dear Mrs Dickson,

Please provide me with electronic copies of all documents relating to this mining application, on the farms Weltevreden 697 & 712 JT, as advertised in the Barberton Times today.

Please also register me (contact details below) as an I&AP and also Mrs Marjorie Nunns (email address above, phone no: 0137127449).

I am involved in land use planning in the region and Mrs Nunns is secretary of the Umjindi Environmental Committee.

Best regards,

~~~~~

*Tony Ferrar*

Development Planner  
PO Box 678, Barberton 1300  
Landline: 013 712 4508  
Cell: 072 376 2581  
Skype name : Tony.Ferrar